Comparing disgust and sadness: examining the interaction of emotion and information in charity appeals

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Abstract

Purpose – This study aims to compare the use of disgust and sadness – two negative emotions associated with different appraisals and information processing styles – in charity social marketing appeals.

Design/methodology/approach – An experiment ($n = 247$) examined effects when disgust or sad imagery was used alone versus when images were accompanied by information about the cause.

Findings – OLS regression results show including information reduced empathy when participants were exposed to sad images, replicating prior research on sadness in charity marketing. No similar effect was observed for disgust-evoking images. Although disgust images alone reduced empathy compared to sad images alone, disgust images paired with information were just as effective as sad images alone and sad images accompanied by information. Empathy mediated the relationship between exposure to each type of appeal and donations – this relationship was negative for sad images but not for disgust images accompanied by information.

Research limitations/implications – These findings suggest the use of disgust may help to mitigate the loss of empathy that occurs when individuals engage in deliberative tasks, such as reading information about a cause. They also illustrate how the distinct properties of discrete emotions can be used strategically to influence social marketing outcomes.

Originality/value – Existing research has compared disgust-evoking images to appeals using neutral, mildly disgusting or positive emotional imagery. This study compares disgust to sadness, a negative emotion commonly used in charity marketing, and considers interaction effects with informational elements of the appeal.

Keywords Social marketing, Empathy, Disgust, Sadness, Charity appeal

Paper type Research paper

Introduction

Disgust-evoking messages are not uncommon in social marketing where emotion appeals are used to encourage socially desirable behaviors (Casais and Proença, 2022; Donovan, 2011). Social marketers draw on disgust to target health behaviors, such as deterring smoking or improve handwashing (Clayton *et al.*, 2017; Judah *et al.*, 2009). Disgust has also been used to promote charitable behaviors that improve social outcomes for others. Organizations like Green Peace, PETA and other charities use disgust-evoking imagery to raise funds to protect the environment and animal rights, to provide treatment for individuals with cleft palates or neglected tropical diseases (NTDs), and to address other issues involving gruesome depictions.

Research has recently begun examining disgust in this context. Initial evidence suggests disgust-evoking imagery may negatively affect charity goals, primarily because disgust reduces empathy (Chan and Septianto, 2022). Yet, some studies show disgust has positive

effects, such as by increasing perceived difficulty of psychological escape or bolstering effects that do not rely on empathy to motivate helping (Chan and Septianto, 2022; Kemp, 2023). To date, studies have primarily compared severe disgust to mild disgust, no-emotion control or positive emotional appeals (Allred and Amos, 2018; Chan and Septianto, 2022; Kemp, 2023). Published research has yet considered how disgust-evoking messages compare to other discrete negative emotions, such as guilt or sadness, typically evoked in charity campaigns.

Considering effects of disgust-evoking charity appeals compared to those only evoking sadness is important as both emotions may be used together in practice. For instance, fundraising messages to aid treatment for people with visibly debilitating diseases often include images of individuals looking sad due to their illness. These messages may also include sad narration and music. But, showing the effects of the disease, usually to signal its direness, can elicit feelings of disgust too. It is possible evoking disgust and sadness is less effective than only evoking sadness – consistent with most studies examining disgust in charity appeals. Alternatively, much like disgust enhances the effectiveness of fear appeals in health social marketing (Morales *et al.*, 2012), perhaps it also enhances or overrides, the effects of sadness in charity campaigns. Although prior research shows sad images can effectively increase empathy and giving, there is also evidence sad messages actually reduce support, and effects differ based on other elements of an appeal (Choi and Park, 2021; Small and Verrochi, 2009).

The current study replicates prior research that found showing participants sad images alongside information about the cause was less effective than presenting sad images alone. It also extends this research by examining whether the inclusion of disgust moderates this effect. The findings broaden the literature on the role of disgust in social marketing and provide insight for employing disgust to motivate charity and impact social problems.

Literature review

Social marketing and charity advertising

Social marketing involves the use of marketing principles and techniques, such as product development, audience segmentation, and advertising and promotion, to achieve socially desirable goals (Kotler and Zaltman, 1971; Truong, 2014). An important social marketing goal is reducing social inequities by providing aid to groups facing poverty, civil unrest, natural disasters, lack of access to education or health care, and myriad other challenges (Wood, 2012). Nonprofit charity and humanitarian aid organizations seeking to address these challenges rely heavily on fundraising to accomplish their missions. In 2023, American consumers donated nearly US $375bn to charities, but competition for these donations is stiff with more than 1.8 million charities in the USA alone (National Philanthropic Trust, 2023). To sustain themselves, charities must capture attention and motivate action from new and repeat donors alike.

Advertising campaigns are one technique social marketers use to encourage support for social change. Social marketing advertisements help reach audiences, increasing their awareness of specific challenges and inspiring them to act. As charities rely on advertising to reach potential donors, it is important for them to consider the effectiveness of different message strategies in influencing perceptions and behaviors. Successful framing of social causes is linked to better charitable outcomes (Bhati and Hansen, 2020). Charity ads have used various message features from positioning social causes in terms of positive or negative outcomes for beneficiaries (i.e. framing), to providing statistical versus anecdotal information on the prevalence of an issue (Wymer and Gross, 2023).

Emotional appeals are another common message feature. Social marketing researchers have long sought to understand how evoking emotion impacts prosocial behavioral (Bagozzi and Moore, 1994). Although early studies considered differences in the general use of

positive versus negative emotions in charity messages, contemporary research has examined discrete emotions like guilt, pride and sadness (Choi and Park, 2021; Paramita *et al.*, 2020; Xu, 2022). Some charities use disgust-evoking imagery as a tactic to shock audiences and gain attention (Cockrill and Parsonage, 2016) but only a few studies have considered the distinct effects of this approach (Allred and Amos, 2018; Sung *et al.*, 2023). The current study extends this work applying discrete emotion theory to examine effects of disgust and sadness in charity appeals.

Emotion and charity appeals

According to discrete emotion theories, emotions are distinct feelings in response to events in our environment (Frijda, 1986; Lazarus, 1991). Appraisal theories posit that discrete emotions coordinate how we respond to these events by directing us to think and act in ways consistent with the core appraisals of a particular emotion. Appraisals go beyond the dimension of valence (i.e. negative versus positive) to represent the various ways we evaluate emotion-evoking events, such as the novelty of a situation or the degree of certainty or control we perceive we have. Patterns of appraisals distinguish one emotion from another. They also determine the intensity of feelings, physiological responses and behaviors experienced (for a review, see Moors *et al.*, 2013).

The appraisal tendency framework (ATF) has been widely used to predict the influence of emotions on information processing and decision making (Lerner *et al.*, 2015). ATF links cognitive appraisals with specific emotions. For instance, we are expected to perceive events as more certain when experiencing disgust and less certain when experiencing sadness. In turn, specific appraisals are predicted to motivate specific cognitive and behavioral outcomes, such as thinking deeply about an issue or taking steps to regain control. Thus, emotions with different appraisals should trigger different responses even if they share the same valence. In the social marketing context, evoking different emotions should influence charitable behaviors in distinct ways (Kandrack and Lundberg, 2014). The following sections review the distinctive feelings, relevant appraisals and action tendencies associated with sadness and disgust.

Role of sadness

Sadness is both a response to and a feeling of loss (Lazarus, 1991). We can experience sadness when witnessing another person's suffering or pain (Kim and Cameron, 2011); expressions of sadness signal helplessness and a need for support (Hackenbracht and Tamir, 2010). As such, sadness is often used in charity appeals, via images of beneficiaries with sad expressions experiencing profound loss, to solicit aid. Prior research has shown evoking sadness also induces feelings of sympathy or empathy [1] (Baberini *et al.*, 2015; Small and Verrochi, 2009). For instance, Small and Verrochi (2009) found people exposed to sad charity images "caught" feelings of sadness themselves, which led to greater empathy for the people portrayed. Similarly, Baberini *et al.* (2015) found sad photographs induced more empathic feelings than photos of smiling children. Empathy, as conceptualized in the charity literature, is an other-focused emotion that involves comprehending the feelings or condition of another person and responding with care and concern. It is regarded as a key motivator of helping behavior (Batson, 2022).

A sizeable body of research shows exposure to sad charity images produces empathy responses that motivate helping (Baberini *et al.*, 2015; Bagozzi and Moore, 1994; Homer, 2021; Small and Verrochi, 2009). However, studies have also found sad charity appeals reduce empathy and helping under certain conditions (Cao and Jia, 2017; Choi and Park, 2021; Dahlinger and Wortmann, 2016; Kang *et al.*, 2018). The current study draws on early

work demonstrating a negative effect of prompting participants to deliberate or think about the charity request (Loewenstein and Small, 2007; Small *et al.*, 2007; Small and Verrochi, 2009). Specifically, Small and Verrochi (2009) found positive effects of sad images were not replicated when those images appeared with information about the cause. They suggest reading information was cognitively demanding and disrupted the emotional process, prompting participants to "engage a more deliberative mindset" (p. 778).

Although sad images can motivate helping behavior, sadness is also associated with inaction, withdrawal and rumination in some situations (Nabi, 2014). People experiencing sadness often process information systematically, or deliberatively, compared to individuals experiencing happiness or anger (Wagner and Petty, 2022). Sad individuals appear to consider persuasive arguments more carefully and pay more attention to message details (Duque *et al.*, 2013; Xing, 2014). Thus, sad imagery may sensitize people to elements that trigger deliberation.

The relationship between sadness and systematic processing is attributed to the low appraisal of certainty that accompanies sadness. Certainty appraisals involve perceptions about the degree to which emotion eliciting events and their outcomes are predictable and comprehensible. According to ATF, low-certainty emotions frame events as unpredictable and motivate systematic processing to reduce uncertainty (Lerner *et al.*, 2015). Deliberation may help to resolve uncertainty by pointing to causes or solutions for the problem (Andrews and Thomson, 2009). Deliberation may also help to distract from the sad event, resolving associated emotions (Isbell and Lair, 2013). In other words, the act of thinking itself may diminish empathy and helping in response to sad appeals. In keeping with Small and Verrochi's original findings, the following hypotheses are proposed:

> *H1*. Participants exposed to sad images with information will report less empathy (*H1a*) and donate less money (*H1b*) than participants exposed to sad images alone.

In replicating prior findings regarding the impact of deliberation cues on responses to sad charity images, the current study aims to explore whether empathy disruption occurs when pairing other negative stimuli, specifically disgust-evoking images, with deliberation cues. Although both negative emotions, ATF predicts different effects due to distinct appraisals for sadness versus disgust.

Disgust and charity aid
Disgust is a feeling of visceral repulsion to physically or psychologically contaminated objects (Rozin *et al.*, 2008). Like sadness, disgust is often used in charity appeals to draw attention to a cause and the dire needs of the individuals it aims to help. Beneficiaries depicted in disgust-evoking charity appeals may appear sad or be in sad circumstances, but these messages also contain elements that commonly elicit disgust such as showing people who are extremely sick, have an injury or physical deformity, or live in unsanitary environments.

Because disgust motivates action to immediately cut off contact with and avoid spoiled objects, researchers argue evoking disgust is not suitable for helping people engage with prosocial issues (Kelly and Morar, 2014). Furthermore, disgust has been described as the antithesis of empathy. Whereas empathy involves considering others, disgust is often used to minimize concern for others (Pizarro *et al.*, 2004). Disgust appears to dampen activation in parts of the brain involved in social cognition (i.e. thinking about people; Harris and Fiske, 2006). Studies show people express greater implicit bias and dehumanizing beliefs toward outgroup members when disgust is evoked (Buckels and Trapnell, 2013; Giner-Sorolla and Russell, 2019).

In a medical training study, vignettes describing patients with disgusting symptoms elicited lower levels of caring and engagement among trainees (Reynolds *et al.*, 2019). Likewise, charity research has generally found a negative impact of disgust on empathy and helping. In a series of studies, participants who recalled disgusting events irrelevant to the charity situation experienced less empathy and donated less money (Chan and Septianto, 2022). Other studies show people who are highly sensitive to, and thus experience greater disgust, express negative attitudes toward helping behaviors like organ and blood donation (Gilchrist *et al.*, 2021; Mazur and Gormsen, 2020).

Among studies that manipulated disgust as an element of the charity's advertisement, findings are mixed. For instance, Allred and Amos (2018) found severe disgust imagery elicited greater empathy than mild disgust but decreased helping intentions. Kemp (2023) found disgust reduced empathy relative to a positive appeal immediately following message exposure but was not a significant predictor of giving. And Sung *et al.* (2023) found images of skin cancer affecting socially distant others reduced giving. Despite differences, the overall trend across these studies points to diminished engagement because of disgust exposure, at least when other factors are not accounted for. Thus, it is predicted that:

> *H2*. Participants exposed to disgust images alone will report less empathy (*H2a*) and donate less money (*H2b*) compared to participants exposed to sad images alone.

While the evidence on disgust mainly points to negative outcomes for charity-related social marketing, there is also evidence for potential positive effects. In one view, disgust has positive effects through mechanisms other than empathy. For instance, Chan and Septianto (2022) drew on the notion of disgust as a self-focused emotion designed to protect the self from contamination or harm. They found charity appeals focused on self-protection, such as an appeal to support cancer research highlighting one's own cancer risk, increased donations when evoking disgust. In another study, Kemp (2023) found disgust motivates helping by increasing the perception it would be difficult to escape or forget the situation. The latter finding is consistent with research referencing a paradox effect, whereby disgust captivates attention even while compelling us to look away (Joffe, 2008).

Research in other domains also point to disgust attributes that influence information processing. Specifically, disgust is associated with high-certainty appraisals, similar to anger and happiness (Inbar and Gilovich, 2011; Winterich *et al.*, 2015). High-certainty emotions frame events as predictable and comprehensible and decrease motivation to process information systematically as there is no sense of uncertainty to resolve (Lerner *et al.*, 2015). People experiencing disgust, thus, have intuitive confidence about what is happening and how to respond, obviating the need to think deeply before acting. As such, disgust is expected to result in heuristic rather than systematic processing. Indeed, prior studies show people experiencing disgust relied *more* on heuristic cues, like stereotypes or the magnitude of a consequence, in making decisions (Tiedens and Linton, 2001; Winterich *et al.*, 2015). For instance, Winterich *et al.* (2015) found disgusted participants took fewer contextual factors into consideration than sad participants when making judgments about unethical behaviors. Furthermore, studies in health social marketing suggest disgust captures our attention leaving limited cognitive resources for processing additional information (Clayton *et al.*, 2017; Leshner *et al.*, 2013). Callister *et al.* (2022) found participants viewing digitally distorted bodies did not devote much attention to other message elements. They conclude the images "stunt" further deliberation (p. 18). This effect is likely due in part to the high degree of certainty audiences have about the meaning of such images.

If disgust makes people less sensitive to elements that trigger deliberation, including additional information with a disgust-evoking appeal may not disrupt empathy in the way it

affects responses to sad images. Given differences in processing between sadness and disgust, it is expected that a decrease in empathy and helping will not be found when disgust images are paired with information compared to the effects of disgust images alone:

> *H3*. Participants exposed to disgust images with information will report similar empathy levels (*H3a*) and donate similar amounts of money (*H3b*) as participants exposed to disgust images alone.

The differences between the sad and disgust conditions are also examined. While disgust is expected to reduce empathy compared to sad images, it is not known whether disgust will still reduce empathy when additional information is included. It is possible deliberation might negatively impact responses to sad images to the extent that disgust images with information perform similarly or better than sad images with information. Thus, a research question is proposed:

> *RQ1*. Will exposure to disgust images still evoke less empathy (*RQ1a*) and result in lower donations (*RQ1b*) than sad images with the addition of information?

Empathy and giving
Numerous studies show empathy is related to helping and often mediates the effect of message exposure on charitable behavior (Batson, 2022). Based on the literature reviewed above, it is predicted that:

> *H4*. Empathy will mediate the effect of the different appeals on donation behavior (*H4a*) and the mediation effect will be negative for disgust alone (*H4b*) and the addition of information (*H4c*) compared to sadness alone.

This study also explores whether the interaction of disgust and information changes this pattern such that there is no difference or a positive mediation effect of disgust when compared to sad images with information:

> *RQ2*. Will the mediation effect of empathy differ between disgust and sad appeals that include information?

Figure 1 provides a conceptual model of the proposed hypothesis. Table 1 provides the operationalization for each hypothesized construct.

Method
Study design and stimuli
The study used a 2 (emotion: disgust vs sadness) × 2 (appeal type: image alone vs image with information) factorial experiment. Participants were randomly assigned to view images manipulated to include or exclude disgust elicitors. The disgust condition depicted children with signs or symptoms of tropical diseases, which can be quite gruesome. For example, one image showed a child with leishmaniasis – a skin disease caused by the bite of infected sandflies. Images were taken from an actual NTD campaign as well as from medical journals and websites. Five images were selected so children of different ethnic backgrounds were represented to prevent implying these diseases only affect people of one region [2]. Sad images were the same images digitally altered to remove disgust elicitors. The presence of disgust is the only element that varied between the emotion conditions allowing for the effect of disgust to be isolated.
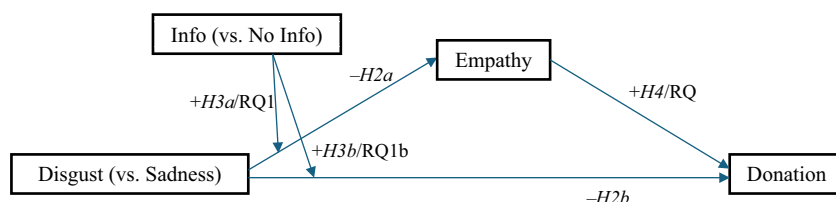
Notes: Hypotheses shown are for effects of the disgust appeals. The trait altruism
interactions are included in analyzes, but not shown in model. **+ positive effects
predicted; – negative effects predicted (compared to sad images alone)
Source: Author's own work

Figure 1. Hypothetical path model showing predicted main, interacting and mediating effects

Participants were also randomly assigned to view images alone or with information about
the cause. To provide context, participants assigned to images alone were told the content
was *taken from a medical database that provides information for tracking and diagnosing
tropical diseases.* Participants assigned to images with text were told the content was *taken
from a campaign that raises money for treating and preventing tropical diseases.* These
participants saw images along with text giving more information about the cause.

Thus, participants were randomly assigned to one of four conditions: disgust or sad
images alone or with textual information about the charity appeal. Except for differences
described, participants saw a consistent layout across conditions. Image order was not
randomized so the text condition read as a narrative similar to an actual appeal.

Participants
Participants ($n = 247$), recruited via Prolific Academic, were US adults age 25 and older not
currently enrolled in a full-time undergraduate degree program (i.e. nonstudent sample).
Participants were predominantly white (88.7%), Asian (6.1%) or black (4%); most were
between 25 and 34 (51%) or 35 and 44 (28.7%); 54.7% were male. There was diverse
educational attainment among participants: 27.1% reported a high school diploma as their
highest education level, 37.2% had a bachelor's degree and 22.3% a graduate, professional or
doctorate degree. Participants were mainly employed full time (62.9%) with household
incomes less than $20,000 (10.8%) to more than $100,000 (18.2%) per year.

Roughly half (50.6%) were aware of NTDs before the study; 12.1% indicated they or
someone they knew had an NTD previously; 6.9% reported feeling at risk for NTDs in the
past year.

Procedure
The experiment was conducted online. Study procedures received IRB approval. After
giving consent, all participants were told they were selected to complete an extended version
of the study and would receive an additional $5 for the added time. However, there were no
additional questions. This was only a cover story to convince participants they were earning
the additional money, which would later be used to measure their giving behavior in response
to the ads. If participants perceived they did not earn the money, they may have given it away
simply because they saw it as a windfall, creating a potential confound (Cherry *et al.*, 2002).
Participants were then randomly assigned to one of the four stimulus conditions. After

Table 1. List of constructs and measurement items

Variable	Measurement items	Response options
Disgust	I felt sick	Not at all (1) to a
	I felt disturbed	Great deal (5)
	I felt repulsed	
	I felt disgusted	
	I felt wretched	
	I was grossed out	
	I wanted to escape the situation	
	I wanted to turn away	
	I had a bad taste in my mouth	
	A wave of nausea swept over me	
	I felt a gag reflex	
	My stomach churned	
Sadness	Heavyhearted	Not at all (1) to a
	Sad	Great deal (5)
	Sorrowful	
Empathy	Sympathetic	Not at all (1) to
	Softhearted	Extremely (7)
	Compassionate	
	Moved	
	Tender	
	Warm	
Donation	Would you like to donate some of your earnings from this study?	Any amount between $0 and $5
Altruistic personality	I have given money to a charity	Never (1) to Very
	I have donated goods or clothes	often (5)
	I have done volunteer work	
	I have donated blood	

Source: Author's own work

viewing the stimuli, they responded to items measuring the dependent variables including giving behavior.

Measures

Disgust. Disgust was measured using 12 items from the English-Language version of the Ekel-State-Fragebogen state disgust scale (Bates and Chadwick, 2015). Items measured both subjective (I was grossed out) and physiological (My stomach churned) disgust. Participants indicated the extent to which they experienced each item on five-point scales from not at all (1) to a great deal (5). Items were summed and averaged to a single index ($\alpha = 0.96$; $M = 2.67$, $SD = 1.21$).

Sadness. The level of sadness participants experienced was measured with three items (Fultz *et al.*, 1988). Participants reported how sad, sorrowful or heavy-hearted they felt on five-point scales from not at all (1) to a great deal (5). Items were summed and averaged to single index ($\alpha = 0.84$; $M = 3.79$, $SD = 1.02$).

Empathy. Six items measured state empathic concern (Batson, 2022). Participants indicated how compassionate, moved, softhearted, sympathetic, tender and warm they felt while viewing the content – not at all (1) to extremely (7). Items were summed and averaged to a single index ($\alpha = 0.93$; $M = 5.05$, SD = 1.50).

Giving behavior. Giving was measured with a donation task. Participants were asked whether they wanted to donate some of their study earnings to The END Fund to provide help for persons with NTDs. Those who answered *yes (n* = 115, 46.6%) were then asked how much they wanted to donate. Participants could donate up to $5 ($M$ = 1.07, SD = 1.52; range: 0.00–5.00).

Covariates. Altruistic propensity was measured using four items from the altruistic personality scale (Rushton *et al.,* 1981). These items were included to control for trait prosociality whereby some individuals are naturally inclined to help simply because they are asked. Participants reported how frequently they volunteered and donated money, clothing and blood on a five-point scale. Items were summed and averaged to create a single index (α = 0.70; M = 3.17, SD = 0.83).

Analysis

Data were analyzed using IBM SPSS version 29. *t*-Tests were conducted for the manipulation checks. All hypotheses and associated research questions were tested with an ordinary least squares regression path model using PROCESS for SPSS Model 8 – moderated mediation analyses – with 5,000 bootstrap samples at the 95% confidence interval. The model included emotion manipulation as predictor, text manipulation as moderator, empathy as mediator and giving as outcome variable. The model also included the trait altruism covariate and its interactions with the independent variables.

Results

Table 2 presents the unadjusted dependent variable means and confidence intervals by condition. Means for the manipulation check items are also included. Bivariate correlation analyses showed altruistic propensity was positively correlated with both empathy and giving.

Manipulation check

For the manipulation check, the image-alone conditions were compared on the amount of sadness and disgust they evoked. Feelings of sadness were above the scale midpoint for both conditions. In addition, there were no differences in sadness between participants exposed to sad (M = 3.68, SD = 1.10) and disgust images (M = 3.88, SD = 1.13; $t(123)$ = 0.98, p = 0.328). However, participants exposed to disgust (M = 3.39, SD = 1.13) experienced

Table 2. Descriptive statistics by condition with 95% confidence intervals

	Sadness	Disgust	Empathy	Donation amount	*n*
Image alone					
Sad	3.68 (1.10) [3.40, 3.96]	2.08 (0.96) [1.84, 2.32]	5.44 (1.35) [5.10, 5.79]	0.98 (1.44) [0.62, 1.35]	62
Disgust	3.89 (1.13) [3.59, 4.16]	3.39 (1.13) [3.10, 3.67]	4.94 (1.75) [4.50, 5.38]	1.00 (1.56) [0.61, 1.40]	63
Image w/text					
Sad	–	–	4.70 (1.33) [4.36, 5.04]	0.92 (1.26) [0.60, 1.24]	61
Disgust	–	–	5.13 (1.44) [4.76, 5.50]	1.39 (1.77) [0.93, 1.84]	61

Source: Author's own work

significantly greater levels of disgust than participants exposed to sad images ($M = 2.08$, SD = 0.96; $t(123) = 6.95$, $p < 0.001$). Thus, the addition of disgust only impacted participants' feelings of disgust.

Regression model summary

The regression path model for empathy was significant (R-sq = 0.16, $F(7, 239) = 6.57$, $p < 0.001$) as was the model for giving (R-sq = 0.09, $F(8, 238) = 3.00$, $p = 0.003$). In addition, results show a significant interaction effect of the emotion and information independent variables on empathy ($b = 3.92$, se = 1.42; $t = 2.76$; $p = 0.006$) indicating empathetic responses to the different images varied depending on whether they were accompanied by text. The interaction effect of emotion and information on giving was not significant ($p = 0.87$). The three-way interaction effect of trait altruism with the independent variables was significant in the empathy model only ($b = -0.93$, se = 0.43; $t = -2.16$; $p = 0.032$).

Hypothesis testing

H1 predicted participants exposed to sad images with information would report less empathy (*H1a*) and donate less (*H1b*) than participants exposed to sad images alone. The results of the regression model show compared to sad images alone, the addition of text to sad images reduced empathy ($b = -2.37$, se = 1.07; $t = -2.21$; $p = 0.028$), supporting *H1a*. However, *H1b* was not supported as the addition of text to the sad images did not affect giving ($p = 0.59$).

H2 predicted participants exposed to disgust images alone would report less empathy (*H2a*) and donate less (*H2b*) than participants exposed to sad images alone. Results show disgust images alone reduced empathy ($b = -2.30$, se = 0.99; $t = -2.31$; $p = 0.022$), compared to sad images alone, supporting *H2a*. However, *H2b* was not supported – there were no significant differences in giving between the disgust and sad image-alone conditions ($p = 0.66$).

H3 predicted there would be no difference in levels of empathy (*H3a*) and giving (*H3b*) between participants exposed to disgust images alone and participants exposed to disgust images with information. In a reverse model with disgust as the comparison condition, the addition of text to disgust images was not significantly different for empathy ($p = 0.10$) or giving ($p = 0.70$), supporting *H3a* and *H3b*.

RQ1 asked whether exposure to disgust images still evoke less empathy (*RQ1a*) and lower giving (*RQ1b*) than sad images with the addition of information. Examination of the conditional moderation effects show while disgust alone reduced empathy compared to sad images alone, there were no significant differences in empathy, or giving, between the sad images and disgust images when text was added to the disgust images. Figure 2 shows the results for the previous hypotheses related to empathy.

H4 predicted empathy would mediate the effect of exposure on giving (a) and this effect would be negative for both disgust images alone (b) and sad images with text (c) compared to sad images alone. *RQ2* asked whether the mediation effect would differ between sad images and disgust images with text. Results show empathy was a significant positive predictor of giving ($b = 27.59$, se = 6.85; $t = 4.03$; $p < 0.001$) and the index of moderated mediation was also significant ($b = 108.30$, se = 43.12; CI: 33.01–201.69), supporting *H4a*. A simple mediation model (PROCESS Model 4), with each condition as predictor, was run to examine pairwise differences in the mediation pathways between conditions. The indirect effect of empathy was negative when disgust images alone ($b = -63.40$, se = 30.45, CI: −128.07 to −9.76) and sad images with text ($b = -65.34$, se=28.96, CI: −129.08 to −15.21) were compared to the sad images alone, supporting *H4b* and *H4c*. There were no significant differences in the mediation effect when disgust images with text were compared to sad

Empathetic Responses
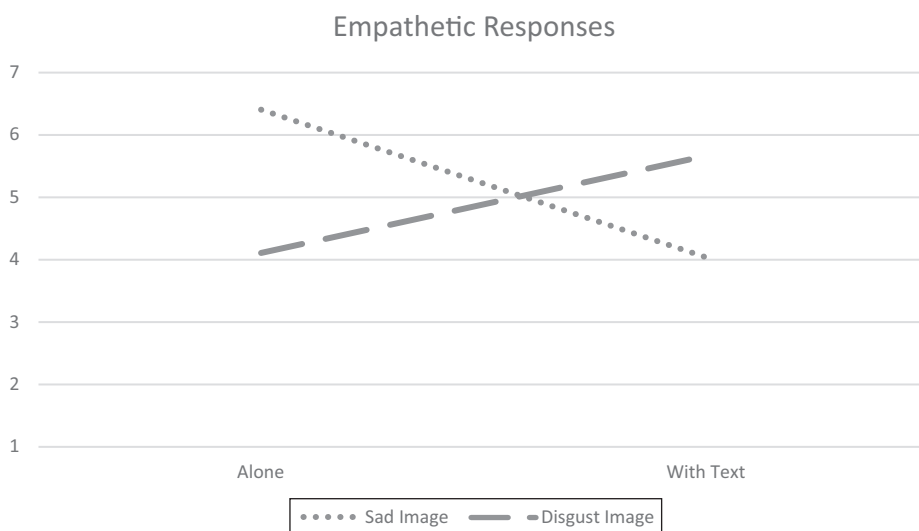
Source: Author's own work

Figure 2. Interaction effect of emotion and information on empathy (estimated marginal means controlling for trait altruism interactions)

images alone. Further comparisons of the mediation pathways show there were also no significant differences between the disgust images with text and the sad images with text, addressing RQ2.

Discussion

Although disgust-evoking imagery are often used in charity social marketing, research suggests disgust may be less effective than other emotions at motivating helping. However, studies have not compared disgust-evoking appeals with other negative emotions. The current study examined whether sadness and disgust produce distinct responses when images appear alone or with additional information about the cause. These two contexts have previously been investigated in studies of sad charity appeals. The prior results suggest the addition of information triggers deliberation, which disrupts empathy (Small and Verrochi, 2009). The current study replicates this finding. Participants viewing sad images with information reported less empathy than participants viewing sad images alone. In addition, the mediating effect of empathy on giving was negative for participants viewing sad images with information. No similar effects were found for disgust, suggesting negative effects of deliberation cues may only be relevant to certain emotional stimuli, while other emotions may override this effect.

These results can be explained in terms of disgust as a certain emotion associated with heuristic processing (Tiedens and Linton, 2001). Participants viewing disgust may be less sensitive to textual information, thereby circumventing in-depth processing. Limited processing is often considered a less than ideal persuasive outcome. Indeed, disgust has been characterized as ineffective because it reduced processing of pro-environmental messages (Schultz *et al.,* 2018). Yet, the current study provides evidence disgust can be beneficial for

the very same reason in the context of charity appeals. Thus, the effect of reduced processing due to disgust may be contingent on the social marketing context as well as outcomes of interest. This study also provides additional evidence of the potential for disgust to sustain empathy in response to factors, such as deliberation cues or the passage of time following exposure, that would otherwise reduce effectiveness (Kemp, 2023). It is worth noting that while disgust images alone reduced empathy, disgust images with text were not significantly different than either sad condition. Hence, the results are not merely a floor effect whereby empathy ratings were so low for disgust the addition of text could not make them appreciably lower. In fact, empathy scores were above the mean for both disgust conditions, and both disgust conditions trended higher, for empathy and giving, than sad imagery accompanied by text.

Theoretically, this research challenges assumptions, and some prior findings, that disgust is less effective than other emotions and points to conditions under which disgust does not have negative effects on responses to charity appeals. When accompanied by information, disgust images functioned just *as well as* sad images in terms of empathy and there were no significant differences in giving. This study also provides additional evidence in the context of social marketing that images that share the same valence can have divergent effects due to differing appraisals.

In terms of practical implications, one may question whether there is any benefit to using disgust in charity campaigns given disgust images with text did not perform significantly better than sad images with text. In addition, disgust performed worse in terms of empathy when comparing images alone. There are a few things to consider here. Real-world charity appeals rarely present pictures without accompanying information about the cause. Understanding how disgust functions in more realistic social marketing settings has greater ecological value. Furthermore, strategies identified to counteract disruptive effects of deliberation, such as increasing cognitive load, are usually not within a charity organization's control. However, they have control over the emotional imagery used in messaging. Studies like this can help them understand intended and unintended effects of different emotions. Social marketers, compared to researchers, may have greater risk tolerance when determining whether differences in effects are meaningful. A 20%, rather than 5%, chance there is no difference may be deemed acceptable when faced with the potential to increase donations by nearly 50% as observed in this study.

There are also ethical considerations when using emotions in charity appeals, especially emotions viewers may deem shocking (Kubacki and Szablewska, 2020). The use of disgust is particularly controversial given concerns it may stigmatize beneficiaries. Evoking disgust simply for shock value would violate ethical principles concerning the way charity beneficiaries wish to and should be portrayed. At the same time, for some charities addressing gruesome issues is integral to their mission. This raises questions about the ethics of masking such issues from society's view, especially when doing so may constrain their ability to remedy those issues effectively (Dean and Wood, 2023). To balance these concerns, social marketers must weigh the use of disgust-evoking images against other goals carefully.

Limitations

This study had several strengths and innovations. It was designed to isolate independent and interactive effects of disgust by using the same images for both emotion conditions. Ensuring images only differed on disgust alleviated the potential for confounds due to differences in content between the conditions. This study replicated prior research examining the effect of information on responses to charity images. Participants were also given context for what they would see. Telling participants images came from a charity appeal versus a medical

database may have impacted results in ways that cannot be distinguished from the effects of additional information. When Shaw *et al.* (1994) told people they would see a charity appeal, the authors found negative effects on empathy and giving similar to studies using deliberation cues. This suggests results would be the same without the contextual information – and disgust can mitigate both effects. Still, future research may examine the effect of alerting people to the charity context compared to just including information.

While prior research suggests these results are due to differences in deliberation and certainty–uncertainty appraisals, this study, and others, did not measure deliberation or certainty appraisals instead taking differences in effects as evidence of differences in processing. Future research examining disgust-evoking charity appeals should attempt to establish the role of both constructs. For instance, research could measure or manipulate systematic processing. The current study also did not measure negative empathy-related constructs, like pity, which involves perceptions of superiority, even contempt, toward beneficiaries (Goetz *et al.*, 2010). Such unintended outcomes are important to consider as they have implications for both the ethics and effectiveness of charity appeals.

One strength of this study was the use of an actual giving task. Although direct effects were observed for empathy, only mediation effects were observed for giving. This is not uncommon, but other studies looking at disgust, as well as sadness, have reported direct effects on both giving intentions and behavior. It is not clear why similar effects were not found here. It is possible differences in findings may be due to study design differences. For instance, the amount of money participants could donate ($5 instead of $1 or 50 cents) may have influenced results. Giving responses for the disgust conditions were also quite variable suggesting a need to identify additional moderators. Differences in the context or study sample may have also had an effect. Specifically, the issue of NTDs was a low-involvement context for most participants. Prior research has found significant differences in giving when the request for help was interpersonal (Sung *et al.*, 2023). Examining effects in high-involvement contexts with diverse participants will help to clarify other factors that influence giving in response to disgust-evoking appeals.

Future research
Prior studies have suggested negative effects of sad appeals may be due to low-control appraisals attributed to sadness. Future research might consider how differences in perceived control influence responses to sad- versus disgust-evoking images. Future research might also consider whether effects in this study occur when exposing participants to content that evokes disgust without inducing sadness. For instance, does portraying situations associated with extreme illness, like disease pathogens, without showing the people impacted produce similar results? Future research might also compare disgust to other negative emotions, such as guilt, and positive but uncertain emotions, such as hope. The interaction of message features that have been examined in other charity domains, such as varying details about the magnitude of need or the efficacy of aid, should be examined in conjunction with disgust to better understand the effect of this emotion in charity social marketing campaigns.

Notes
1. The terms sympathy and empathy have been used interchangeably in the charity literature to refer to feelings of concern for the wellbeing of individuals portrayed in charity appeals. The term empathy is used in the current study to maintain consistency with previous work examining the relationship between disgust and empathy. Empathy, which is defined as a personality trait (i.e. the ability to comprehend another's state) but also as an emotion (i.e. feeling with another), may

lead to sympathy (i.e. feeling for another) and vice versa. In practice, however, measures of empathy as an emotion state include sympathy and related feelings such as compassion.

2. NTDs are most prevalent in hard-to-reach areas lacking adequate access to sanitation and clean water. They affect more than 1 billion people (World Health Organization,2024).

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