

Ego Depletion and Charitable Support: The Moderating Role of Self-Benefit and Other-Benefit Charitable Appeals

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ABSTRACT

This research investigates the interaction between ego depletion (a state of reduced self-regulatory resources) and different types of charitable message appeals upon subsequent charitable support. Three experiments compare the time donation intent and actual monetary donations of depleted (vs. non-depleted) individuals who have been exposed to either a self-benefit message, highlighting the gains to be accrued to donors themselves, or an other-benefit message which focuses on the welfare of beneficiaries. The results show that when people are depleted, self-benefit messages are more effective than other-benefit messages in generating charitable support. When people are not depleted, the opposite pattern is observed. It appears that generosity among depleted people is self-seeking. As a processing mechanism, we show that depleted individuals perceive self-benefit messages as more appealing than the other-benefit messages. This research demonstrates that charities can maximize donations by advertising other-benefit messages in the morning and then self-benefit messages in the evening, given depletion occurs naturally over the course of the day.

Keywords: ego depletion, self-regulation, charity, donation, message type

Charitable organizations are facing increased competition. In the USA, donations remain stable at approximately 2% of GDP; however the growth rate of non-profit organizations has been estimated at 3.4% per annum (Harrison and Irvin 2018). This competition can lead to an excessive, inefficient level of fundraising (Casteneda, Garen, and Thornton 2008; Thornton 2006). Further compounding the problem, donors have shown a preference for charities with low administrative expenses. As a result, charities may decrease their fundraising expenses, which reduces future donations and their capacity to deliver social programs (Burkart, Wakolbinger, and Toyasaki 2018). This feedback loop has been termed the non-profit starvation cycle (Lecy and Searing 2015). Competition is forcing charities to invest in advertising, but donors perceive this advertising as diverting their contribution away from potential beneficiaries. This paper provides a means by which charities can increase the effectiveness of their donation appeals.

Benefactors are under pressure themselves. Modern consumer culture provides endless choice, managing workplace and relational stressors requires self-regulation and achieving personal goals taps one's self-control resources. These pressures can result in ego depletion, a state in which one's self control resources have been temporarily exhausted after exertion (Baumeister et al. 1998). Existing literature suggests that ego depletion reduces prosocial behavior, as depleted individuals feel less guilt and are therefore less inclined to help others (Xu, Bègue, and Bushman 2012). Furthermore, donors are often exposed to multiple donation requests (Erceg et al. 2018) as it is more cost effective to re-approach a known donor than to attract a new one. In response, donors may reduce subsequent donations after having previously made a contribution (Adena and Huck 2019). In-line with the consequences of ego depletion, other researchers have shown that individuals are more likely to engage in a selfish act after a prosocial act (Krishna 2011; Schwabe, Dose, and Walsh 2018).

This research examines a means by which charity organizations can mitigate against the negative effects of ego depletion. We examine the moderating role of message appeal type. Two types of appeals are frequently examined in the prosocial literature: other-benefit and self-benefit messages (Nelson et al. 2006; White and Peloza 2009). Three experiments compare the time donation intent (studies 1 and 2) and actual monetary donations (study 3) of depleted (vs. non-depleted) individuals who have been exposed to either a self-benefit message, highlighting the gains to be accrued to the donor themselves, or an other-benefit message which focuses on the welfare of beneficiaries.

These studies contribute to the literature in several ways. First, we provide the first empirical demonstration of Inzlicht and Schmeichel's (2012) process model of ego depletion in a charity context. We demonstrate that as donors become depleted, their attention shifts from cues requiring self-control, towards cues which signal self-benefit. Previous research suggests ego depletion increases selfishness – harming charity donations. We show that appealing to this selfishness can promote time donation intent and actual monetary donations, mitigating or reversing the effects of ego depletion. Second, as a processing mechanism, we empirically demonstrate that depleted individuals pay more attention to self-benefit messages, which in turn increases charitable support. Third, by examining time of the day effects (morning vs. evening), we offer a practical implication. The data suggests that charities can maximize donations using other-benefit messages in the morning and self-benefit messages in the evening. Lastly, we treat depletion as both a manipulated and measured variable. We manipulate depletion in study 1 using a standard method taken from the depletion literature. Then, to enhance external validity, we measure depletion without a manipulation (studies 2 and 3).

EGO DEPLETION AND PRO-SOCIAL BEHAVIORS

Self-regulation refers to one's conscious efforts to regulate their emotions, thoughts, impulses, desires, and automatic behavioral responses in order to achieve a goal (Vohs and Schmeichel 2003). A body of literature suggests that people have a limited capacity for self-regulation. For example, the strength-resource model of self-control posits that when people engage in a self-regulatory activity, the self-control resource is temporarily exhausted. Consequently, they are likely to fail in subsequent attempts at self-regulation (Baumeister et al. 1998; Muraven, Tice, and Baumeister 1998). In this strength model, the regulatory resource is thought to work like a muscle, in the sense that strength decreases after muscle use and remains exhausted until a sufficient recovery period has elapsed. This reduction in the self-control resource is called "ego depletion" (Baumeister et al. 1998).

The ego depletion effect suggests that when self-control resources are used, subsequent self-control suffers, thus people are less able to override their impulses. Considerable evidence supports this view of self-regulation as a limited resource (Hagger et al. 2010). Furthermore, the ego depletion effect has been observed in a wide range of contexts. For instance, depleted people are more likely to engage in behaviors providing immediate gratification (Metcalf and Mischel 1999), impulsive buying (Vohs and Faber 2007), temptation to cheat (Mead et al. 2009), binge eating (Joiner, Vohs, and Heatherton 2000), unhealthy food consumption (Job, Dweck, and Walton 2010), and violent impulses (Finkel et al. 2009).

Prior research in self-regulation has also examined the relationship between ego depletion and pro-social behaviors. A line of research posits that helping others requires self-control. Baumeister and Exline (1999) view self-control as a "moral muscle" because self-control curbs selfishness in favour of other-focused behaviors; enabling society to function. In a similar vein,

DeWall et al. (2008) argue that “to help others, people may overcome a natural impulse toward selfishness and self-interest—but overcoming it may require advanced psychological processes, such as self-regulation” (p. 1653-1654). As such, a selfish or less altruistic behavior becomes more likely when one’s self-control resource is depleted. Hence, depletion increases self-serving behaviors and / or decreases pro-social behaviors.

Empirical evidence has demonstrated that when depleted, people are less likely to override their selfish inclinations, thus subsequent pro-social behaviors / intent are reduced (Achtziger, Alós-Ferrer, and Wagner 2015; Balliet and Joireman 2010; DeWall et al. 2008; Osgood and Muraven 2015; Xu, Bègue, and Bushman 2012). For example, DeWall et al. (2008) found that depleted participants were less willing to engage in helping strangers in six hypothetical scenarios. Osgood and Muraven (2015) found that ego depletion negatively influences cooperation behaviors by reducing motivation to overcome egoistic desires when helping others comes at a cost to the self. Depleted participants chose to allocate a greater reward to themselves as compared to non-depleted participants in a dictator game where one player (dictator) makes a decision on how a reward is divided between herself / himself and the other player (Achtziger, Alós-Ferrer, and Wagner 2015; Xu, Bègue, and Bushman 2012). Other studies using a decomposed game (i.e., a choice from various distributions of resources between the self and another person) reported similar results (Balliet and Joireman 2010). These findings support the idea that ego depletion leads to selfishness.

Depletion, however, does not always lead to selfish behaviors. Some studies have found boundary conditions under which depletion does not decrease pro-social behaviors. For example, DeWall et al. (2008) reported that although depletion reduced helping toward strangers, it did not decrease helping toward family members. Similarly, Balliet and Joireman (2010) found that there

was no depletion effect on pro-social behaviors when participants had a prosocial orientation, a trait concerned with maximizing joint gain and quality with others.

Interestingly, a body of research has found that depletion can even increase pro-social behavior under certain conditions. Studies found ego depletion enhanced compliance with charitable requests when social influence techniques were used (Fennis, Janssen, and Vohs 2009; Janssen et al. 2008). For example, Janssen et al. (2008) tested the heuristic principle of authority. Participants in the ego depletion condition were exposed to a charitable message from either a well-known charity organization or an unknown charity organization. Those who were depleted donated more than non-depleted people when the authority principle was activated (i.e., well-known organization). However, for the unknown charity organization, depletion did not affect compliance. Similarly, Fennis et al. (2009) investigated the reciprocity principle. Depleted (vs. non-depleted) participants were assigned to either the reciprocity condition or non-reciprocity condition and then a compliance behavior was measured. In the reciprocity condition, the experimenter told participants she would make an exception and excuse them from the next quite boring test, because she collected enough data from the previous test. Participants in the non-reciprocity condition were not told about this exemption from a non-existent test. Those who were depleted showed higher compliance in volunteering than non-depleted individuals in the reciprocity condition. Fennis et al. (2009) also tested the heuristic principle of likability. Participants in the likability condition were complimented for their ability to complete a task. In the control condition, no comments were made. Results were consistent. Depleted participants showed higher compliance in volunteering under the likability condition. These studies suggest that depletion fosters compliance with a charitable request through reliance on salient heuristics.

THE MODERATING ROLE OF SELF VS. OTHER-BENEFIT APPEALS

Researchers have argued that people give for two basic reasons: altruistic and egoistic (Cialdini et al. 1997). Altruistic giving refers to giving in order to enhance the well-being of others, while the primary goal of egoistic giving is increasing one's own image and positive affect. Similarly, an other-benefit appeal focuses on altruistic reasons for giving, such as benefits to be accrued by people in need, whereas a self-benefit appeal heightens egoistic reasons for giving, such as incentives or rewards. Self-benefit appeals vary in reward types, which can include tangible (e.g., tax offset) or intangible (e.g., feeling good about oneself) benefits.

Charity organizations use two types of message appeals: other vs. self-benefit appeals. Strategic use of other vs. self-benefit messages has been a popular topic in advertising and marketing literature (Brunel and Nelson 2000; Feiler, Tost, and Grant 2012; Green and Peloza 2014; Kareklas, Carlson, and Muehling 2014; Nelson et al. 2006; White and Peloza 2009). For example, research found that other-benefit appeals generated more favorable donation support (White and Peloza 2009) and environmentally friendly products (Green and Peloza 2014) than self-benefit appeals when consumers were publicly accountable for their responses while the opposite pattern was found when consumers' responses were private. Prior research has found gender and cultural differences. For example, Brunel and Nelson (2000) showed that females respond more favorably to other-benefit appeals and males to self-benefit appeals. The findings were replicated in masculine cultures, however, the opposite pattern was observed in feminine cultures (Nelson et al. 2006). While it is possible for a charity organization to highlight both self and other-benefits in a single message (Feiler, Tost, and Grant 2012; Kareklas, Carlson, and Muehling 2014), we separate the two appeal types in order to examine when each appeal is most effective.

In the previous section, we described how heuristic cue salience effects are thought to occur because depletion hinders systematic message-relevant processing and enhances the weight of heuristic processing in decision making (Fennis et al. 2009). Other researchers provide a similar argument, suggesting that ego depletion increases susceptibility to situational cues (Banker et al. 2017). As far as depletion enhances the effects of heuristic cues, loss of self-control may generate more selfish or more prosocial decisions, depending on what the cues advocate (Banker et al. 2017).

The process model of ego depletion proposed by Inzlicht and Schmeichel (2012) provides a theoretical explanation for what makes a cue salient to depleted people; that is a *rewarding cue*. They propose a “shifts in attention” hypothesis. It posits that “ego depletion leads to a shift in attention away from signs of goal conflict and discrepancy and instead toward signs of possible reward and gratification” (p. 457). Using functional neuroimaging, Wagner et al. (2013) examined brain activity in response to viewing food items among chronic dieters. They found that depletion enhances neural responses to rewards. Depleted dieters showed greater food-cue-related activity in the orbitofrontal cortex which is associated with coding the reward value.

Schmeichel, Harmon-Jones, and Harmon-Jones (2010) suggest that self-benefit messages may be more engaging for depleted individuals as a result of shifts in attention. They assigned participants to depleted and non-depleted conditions. Following the manipulation, participants were exposed to visual symbols that are associated with reward (e.g., \$ sign) or to symbols that are not associated with reward (e.g., % sign). They were asked to make quick identity judgments about these symbols. Results found that depleted participants perceived and detected the dollar signs more accurately, compared to non-depleted participants, suggesting that depletion facilitates, rather than interferes with, attention to a cue that is associated with reward. These

empirical studies demonstrate that depletion increase the likelihood of attending and responding to reward stimuli.

The critical aspect of self-benefit appeals is that they include a self-serving or self-rewarding stimuli or cue. For example, other-benefit messages may say “save people’s lives and help others live” while a self-benefit message would say “save your life and protect your future” (Brunnel and Nelson 2000). Another study used stimuli suggesting that volunteering can “help make the community a better place for everyone” (other-benefit) vs. “build your resume by developing and practicing job skills” (self-benefit) (White and Peloza 2009). Thus, shifts in attention towards rewarding cues should make self-benefit appeals salient to depleted people.

Building upon the shifts in attention hypothesis and its empirical evidence, we propose that a self vs. other-benefit message appeal plays a moderating role between ego depletion and charitable support. When people are depleted, attention should shift to reward seeking cues. Therefore, depleted people pay more attention to self-benefit messages, which in turn generates more charitable support. As such, we propose:

H₁: When depleted (versus non-depleted) individuals are exposed to a self-benefit (versus other-benefit) message, they are more likely to provide charitable support.

H₂: Self-benefit (versus other-benefit) messages are more effective in generating charitable support among depleted individuals as they pay more attention to self-benefit messages.

STUDY 1

The goal of study 1 was to test an interaction between ego depletion and message appeals on time donation intent. The experiment involved a 2 (self-regulation: depleted vs. non-depleted) \times 2 (message appeals: self vs. other benefit) between-group design. A total of 225 college students from a major mid-western university in the U.S. participated in the experiment in exchange for extra course credit (57% female, $M_{\text{age}} = 20.4$, $SD = 3.04$).

Method

Stimuli development

For the ad stimuli, we used a health charity as the target organization. The stimuli was a modified version of that used by Brunel and Nelson (2000) and White and Peloza (2009). In the other-benefit appeal, the stimuli described how the charity helped those in need, while the self-benefit appeal highlighted the benefits to be accrued by donors. For example, the headline of the other-benefit (vs. self-benefit) message stated that donating could “save people’s lives” (vs. “save your life”). In the body of the text, the other-benefit appeal stated that small gestures of caring, such as a meal or soft blanket, mean a lot to patients. The self-benefit message highlighted that employers are impressed by volunteer work on an applicant’s resume and that volunteers may meet important contacts who can help them to secure a good job (see Appendix A for stimuli).

Experimental procedure

The experiment was conducted in a computer lab, in groups of 10 – 20 participants. Each participant sat at a computer and finished the experiment using a web-based interface.

Participants were randomly assigned to one of four conditions. In order to avoid potential demand effects of the ego depletion manipulation (Stroop task), participants were told that they were participating in two independent studies in which the first study involved a computer-based cognitive task (Stroop task) and the second one focused on charitable behaviors.

For the ego depletion manipulation, we used the Stroop task which is a common depletion manipulation method used in the ego depletion literature. Participants were presented with 52 color words (e.g., red, blue, yellow, and green), one at a time on the computer screen. These words appeared in either the same font color or a different color with the semantic meaning of the word. For example, the word “blue” could be written in a blue color or in red, yellow, or green. Respondents were informed that the task was to indicate the correct font color as quickly and accurately as possible. Participants responded by clicking one of four color buttons at the bottom of the screen. Before participants began the task, they practiced the task with two examples.

For participants in the depleted condition, 75% of the words were mismatched with the font colors. This task requires self-regulation because the semantic meaning of the word is an automatic response, hence, avoiding this response requires regulatory control (Fennis et al. 2009). For participants in the non-depleted condition, all of the words were matched with font colors. Thus, no self-regulation was required. After they completed the Stroop task, we administered manipulation check questions and measured current feelings, using the PANAS affective schedule (Watson, Clark, and Tellegen 1988). The proctor told participants to wait until further notice for the next study.

When all participants had completed the first study, the proctor explained the second study. Participants were told that this was a pilot test for a charity campaign in the future. The

proctor advised the participants that providing an honest response was important because the test results would help develop an effective message for the target charity. Immediately after participants were exposed to the stimulus material, we measured the dependent and other variables.

Measures

Dependent measure. Three questions were asked to measure the participant's time donation intent ($\alpha = .85$): (a) How likely would you be to donate your time by volunteering for the charity organization? (b) How inclined are you to volunteer for the charity organization? (c) How willing are you to volunteer for the charity organization? A 7-point scale was used, where 7 indicates more generous time donation intent.

Attention to the message. Three questions were asked to measure overall attention to the message ($\alpha = .87$). The scale was taken from Laczniak and Muehling (1993): (a) How much attention did you pay to the message? (b) How much did you concentrate on the message? (c) How involved were you with the message? A 7-point scale was used, where 7 indicates high attention.

Emotions. We asked participants to indicate to what extent they presently felt, (a) enthusiastic, (b) active, (c) distressed, (d) tense, (e) irritable, and (f) frustrated. A 7-point scale was used, with 1 being "not at all" and 7 being "very much."

Manipulation checks. Three questions were asked to measure the extent to which the Stroop task was effortful ($\alpha = .81$): (a) How much effort did you exert on the task (b) How difficult the task was, and (c) how much attention did the task require. All items were measured by a seven-point scale. A composite variable was created by averaging the items.

Self vs. other-benefit appeal. We asked three questions ($\alpha = .67$): (a) the message is trying to help ____: “people in general”-- “me and my family,” (b) the message talked about how ____ can benefit by donating my time to the charity organization (a reversed item): “people in general” – “I” and (c) the message seemed like it was directed to: “everyone” – “me specifically.” A seven-point scale was used. The reversed item was re-coded. Thus, a higher value indicated that the message was more self-benefit oriented. A composite score was generated averaging the three items. Finally, we collected participants’ demographics (e.g., age and gender).

Analysis and results

Manipulation checks and other tests

The results indicate that ego depletion and message appeal manipulations were evident. Those who were in the depleted condition indicated that the task was more effortful than those who were in non-depleted condition ($M_{\text{depleted}}=4.08$, $SD = 1.37$; $M_{\text{non-depleted}} = 2.66$, $SD = 1.10$, $F(1,223) = 73.44$, $p < .001$, $\eta_p^2 = .25$). We also found that the self-benefit message was perceived as being more self-benefit oriented than the other-benefit message ($M_{\text{self}}=4.13$, $SD = 1.17$; $M_{\text{other}} = 3.17$, $SD = 1.28$, $F(1,223) = 36.63$, $p < .001$, $\eta_p^2 = .12$). In addition, we examined whether participants’ mood states differed because of the different levels of the Stroop task. Two positive moods were averaged (enthusiastic and active, $\alpha = .76$) as were four negative moods ($\alpha = .79$). Participants’ moods were not different across the non-depleted and depleted conditions: positive mood ($M_{\text{non-depleted}} = 4.33$ vs. $M_{\text{depleted}} = 4.51$, $F < 1$, $p = .32$, $\eta_p^2 = .004$) and negative mood ($M_{\text{non-depleted}} = 3.11$ vs. $M_{\text{depleted}} = 3.10$, $F < 1$, $p = .98$, $\eta_p^2 < .001$).

Effects of ego depletion and message appeals on time donation intent

The results of a two-way Analysis of Covariance (ANCOVA) including age, gender, positive mood, and negative mood as covariates revealed that none of the covariates were associated with the dependent variable. Thus, we report the results of 2 (depleted vs. non-depleted) x 2 (self vs. other benefit appeal) between-subject ANOVAs.

[Insert Figure 1 about here]

The main effect of ego depletion on time donation intent was marginally significant ($F(1, 221) = 2.77, p = .097, \eta_p^2 = .012$). The main effect of message appeals was not significant ($F(1, 221) < 1, p = .81, \eta_p^2 < .001$). Our focal interest was the interaction effect. The results indicate that there was a significant interaction effect ($F(1, 221) = 12.74, p < .001, \eta_p^2 = .055$). Figure 1A presents the means and standard deviations for the four conditions. A simple effect analysis shows that when participants were not depleted, the other-benefit appeal resulted in more generous time donation intent than the self-benefit appeal ($M_{\text{other}} = 4.66, M_{\text{self}} = 4.33, F(1, 221) = 5.65, p = .018, \eta_p^2 = .025$). Conversely, when participants were depleted, the self-benefit appeal was more effective than the other-benefit appeal in generating time donation intent ($M_{\text{self}} = 4.52, M_{\text{other}} = 4.15, F(1, 221) = 7.12, p = .008, \eta_p^2 = .03$). The findings supported our interaction hypothesis (H_1).

Moderated mediation analysis

We predicted that attention to the message would mediate the interaction effect of ego depletion and message appeal upon time donation intent. To test this mediated moderation model, PROCESS Model 8 was used (Hayes 2018). The moderated mediation model is presented in Figure 2.

[Insert Figure 2 about here]

The self-benefit message was coded “1” whereas the other-benefit message was coded “0” (zero). The depleted condition was coded “1” and the control condition was coded “0.” A bias-corrected confidence interval (95%) and bootstrapping with 5,000 repetitions were employed to estimate the indirect effect.

First, we examined the effects of two independent variables on attention to the message. The ego depletion ($b = -.18, SE = .22, p = .40$) and message appeal ($b = -.21, SE = .22, p = .34$) variables did not predict attention to the message. However, the interaction effect was significant ($b = .74, SE = .31, p = .02$). Second, we looked at whether attention predicted time donation intent. We found attention was positively associated with the dependent variable ($b = .15, SE = .04, p < .001$). Next, we observed a significant index of moderated mediation ($b = .12, SE = .06$) with a 95% CI of [.0174, .2508]; thus, a moderated mediation was established. The conditional indirect effects were examined. The indirect effect model, depletion (vs. non-depletion) → attention to the message → time donation intent was significant when the message appeal was self-benefit ($b = .08, SE = .04, CI [.0199, .1837]$). However, when the message appeal was other-benefit, the indirect effect was not significant ($b = -.03, SE = .04, CI [-.1092, .0449]$).

The differential conditional indirect effects were derived from the interaction effect of depletion × message appeals on attention. More specifically, the self-benefit message had a significantly higher attention score than the other-benefit message when participants were depleted ($M_{\text{depleted}} = 4.73$ vs. $M_{\text{non-depleted}} = 4.17, F(1,220) = 6.62, p = .011$). However, the other-benefit message did not differ in attention scores between depleted vs. non-depleted conditions ($M_{\text{depleted}} = 4.19$ vs. $M_{\text{non-depleted}} = 4.37, F(1,220) = .07, p = .40$). The results supported our second

hypothesis. The means and standard deviations of attention to the message for the four conditions are presented in Figure 1B.

Study 1 Discussion

We proposed an interaction effect between ego depletion and charitable message appeal on subsequent time donation intent. As hypothesized, we found a significant interaction effect such that when participants were depleted (vs. non-depleted), the self-benefit (other-benefit) appeal was more effective in generating time donation intent. The mediation analysis suggests this is due to the self-benefit message attracting more attention from depleted individuals.

Although this study provides empirical evidence of a reward seeking tendency when control resources are depleted, the study has some limitations. First, college students may be more generous with their time compared to the general public. A study with an adult sample is needed. Second, although the Stroop task as a manipulation of depletion is a commonly used method in the ego depletion literature, it lacks ecological validity. Ego depletion research is overwhelmingly conducted in controlled laboratory experiments. However, given the study's managerial context, an alternative means of measuring depletion is warranted.

STUDY 2

Study 1 appears to support the theoretical model presented. The purpose of study 2 was a replication and extension of study 1, designed to address the limitations detailed above. As such, Study 2 utilized a different charity organization and an adult sample. In addition, this study treated ego depletion as a measured, as opposed to a manipulated variable. In this way, study 2 employed a single factor, between group experiment: self vs. other benefit appeal.

Method

Stimuli development

Where our previous study used a health charity, this study used a stimulus based on an appeal from a charity for children. This charity was chosen as it is politically neutral, focusing on helping terminally ill children. Stimuli in the self-benefit condition featured the headline, “Charity benefits the giver too.” The body of the text supported this self-benefit message, stating “You will find it personally rewarding and that it makes you happy knowing you’re doing something important, knowing that you’re contributing to a greater cause.” Conversely, the stimuli to be used in the other-benefit appeal condition featured the headline, “Help grant wishes, Transform lives.” The body text said that volunteering will make a significant difference in the lives of ill children and that the children will benefit a lot from just a little of the donor’s time (see Appendix B for stimuli).

Experimental procedure

A sample of 104 Americans (45% female, $M_{age} = 39.5$, $SD = 12.7$) from Amazon’s Mechanical Turk (MTurk) website elected to participate in the study. Participants were randomly assigned to one of the two experimental conditions and began by providing demographic data. Next, participants were provided with instructions, advising them to pay attention to the charity message stimuli. Immediately after exposure, participants were asked to indicate their agreement with items measuring the dependent variable, control variables and manipulation check questions.

Although MTurk is a popular platform for data collection, there are some concerns regarding data quality. Following recommendations from the literature (Burhmester, Talaifar,

and Gosling 2018; Chmielewski and Kucker 2020), we screened MTurk participants to improve data quality for both study 2 and study 3. All participants were required to 1) be located in the United States, 2) have an approval rate above 95%, and 3) have completed more than 1,000 approved tasks.

Measures

The dependent variable (time donation intent) and positive and negative affect were measured as described in study 1. The major difference regarding measures in this study was the treatment of ego depletion. Given the Stroop task is an artificial means of inducing ego depletion, we opted to increase realism in study 2. This was achieved by using a natural state measure of depletion. A six item ($\alpha = .89$) depletion instrument was used (Lisjak and Lee 2014) to measure the degree to which participants agreed with the following statements; (a) At this moment, I feel my energy is running low, (b) At this moment, I feel my willpower is gone, (c) At this moment, I feel mentally exhausted, (d) Today, I have worked on mentally challenging tasks, (e) Today, I have made important decision, and (f) Today, I have thought deeply about something. A 7-point Likert scale was used, anchored at strongly disagree (1) and strongly agree (7).

Analysis and Results

Manipulation checks and other tests

The message appeal manipulation was evident. The self-benefit appeal was perceived more self-benefit oriented than the other-benefit appeal ($M_{\text{self}}=3.91$, $SD = 1.28$; $M_{\text{other}} = 3.08$, $SD = 1.15$, $F(1,102) = 11.98$, $p = .001$, $\eta_p^2 = .11$). In addition, we examined whether participants'

depletion and mood states were affected by the different message appeals. Participants' mean scores for depletion across the two conditions did not differ ($M_{\text{self}} = 3.31$, $SD = 1.61$; $M_{\text{other}} = 3.53$, $SD = 1.54$, $F(1,102) < 1$, $p = .49$, $\eta_p^2 = .005$). Participants' moods were not different either: positive mood ($M_{\text{self}} = 4.34$, $SD = 1.66$; $M_{\text{other}} = 4.42$, $SD = 1.46$, $F(1,102) < 1$, $p = .81$, $\eta_p^2 = .001$) and negative mood ($M_{\text{self}} = 2.50$, $SD = 1.50$; $M_{\text{other}} = 2.82$, $SD = 1.48$, $F(1,102) = 1.25$, $p = .29$, $\eta_p^2 = .012$).

Effects of message appeals and depletion on time donation intent

We used Process Model 1 (Hayes 2018) which tests a moderation effect. The independent variable was depletion which was a continuous variable. The moderating variable was the message appeal. The other-benefit message was coded "0" whereas the self-benefit message was coded "1." The dependent variable was time donation intent.

Results show that the more participants were depleted the less time they intended to donate ($b = -.59$, $SE = .13$, $p < .001$). This depletion effect on time donation intent was very strong. The message appeals did not show a significant effect on time donation intent ($b = -1.15$, $SE = .69$, $p = .099$). However, as per hypothesis 1 the interaction effect was significant ($b = .39$, $SE = .18$, $p = .03$). Next, we ran a Johnson-Neyman analysis. Figure 3 presents the interaction pattern and the zone of significance. As shown, depletion had a negative impact on time donation regardless of the message appeal used. Both message appeals showed a downward slope. However, when the level of depletion was 4.89 (80th percentile) or above, the self-benefit message generated significantly higher time donation intent than the other-benefit message. Below the cut-off point of 4.89, there was no significant difference between the two appeals in time donation intent. We did not see any evidence to suggest that the other-benefit appeal was

more effective than the self-benefit appeal when depletion was low as in study 1. For example, when the depletion value was 1.5 (16th percentile), there was no difference between the self and other benefit messages in time donation intent ($b = -.56, SE = .45, p = .22$).

[Insert Figure 3 about here]

Study 2 Discussion

Study 2 also found an interaction effect of depletion and message appeals. However, the patterns of interaction were different from study 1. In study 1, the interaction shows a X shape in which a self-benefit (other-benefit) appeal is more effective when people are depleted (not-depleted). In study 2 where depletion was measured (not manipulated), the relationship between depletion and time donation intent shows a negative slope for both appeals, but the other-benefit appeal is steeper. This pattern indicates that a self-benefit appeal is more effective than an other-benefit appeal when the level of depletion is high. However, when the level of depletion is low or moderate, no difference between the self-benefit and other-benefit appeal was found. In sum, consistent across both studies is the finding that when people are depleted the use of a self-benefit appeal is more effective in generating time donation intent.

STUDY 3

The two previous studies had several limitations. First, they involved a hypothetical volunteering intent. Second, no monetary donation was examined. Third, the advertising messages differed in ways other than the experimental manipulation, i.e. self vs. other-benefit. For example, the other-benefit messages had a more relational appeal and emphasis on people (plural), while the self-benefit messages featured a transactional tone and a single entity.

Addressing these limitations, study 3 strengthened both the internal and external validity of the research. More specifically, study 3 used a genuine monetary donation to a real charity organization as the dependent measure and featured two new ads in which the differences between the two messages, except for other vs. self-benefit, were minimized.

Furthermore, study 3 examined time of the day effects: morning vs. evening. Everyday decision making requires exertion of self-regulation (Kouchaki and Smith 2014). For example, people often control their desires and impulses when deciding what to eat for lunch, whether to travel on the weekend with family or dealing with a difficult client. Therefore, self-control resources should deplete gradually throughout the day. This prediction is consistent with earlier work on ego depletion and self-control failure. For example, Kouchaki and Smith (2014) show that people are more likely to make an impulsive decision later in the day. These impulsive decisions are often interpreted as reflecting the depletion of self-regulatory capacity (Dewitte, Bruyneel, and Geyskens 2009; Vohs et al. 2008; Vohs and Faber 2007). In line with this theorizing, we hypothesize:

H₃: People are more likely to donate to a self-benefit message (vs. an other-benefit message) in the evening (vs. in the morning).

Method

The study utilized a 2 (time of the day: morning vs. evening) × 2 (message appeals: self-benefit vs. other-benefit) between-group design. The dependent variable was an actual monetary donation to a real charity.

Stimuli development

We developed ad stimuli around raising funds to help young people with a physical disability. The self-benefit ad featured the headline, “Your donation can help you” and sub-headline, “Donate now and feel good. You deserve happiness.” Conversely, the other-benefit ad’s headline and sub-headline read: “Your donation can help Maria” and “Donate now and help Maria feel good. She deserves happiness.” The body copy and the visual elements in the two ads were identical (See Appendix C for ad stimuli).

Experimental procedure

To avoid sample selection bias in the morning vs. evening conditions, we followed the two-part procedure used by Kouchaki and Smith (2014). In Part 1, we posted an unrelated study (i.e., product evaluation survey) onto the MTurk platform at mid-morning on a weekday. A total of 700 MTurk participants completed this unrelated study. At the end of the survey, we asked respondents whether they were interested in participating in another study (Part 2) on the following day in exchange for 60 cents. A total of 537 participants indicated that they were interested. These participants were the base sample from which we randomly assigned them to either the morning (8-11 a.m.) or evening condition (6-9 p.m.) for the main study (Part 2). The times were based on the participants’ local time. On the following day, an email was sent to each participant approximately one hour before the designated time window. The email invitation included the study link and the instruction that they must complete the study during the designated time.

Participants were randomly presented either the self-benefit or other-benefit message. Then, they were asked how much of their participation fee (60 cents) they would like to donate

to the charity. The maximum donation was the entire 60 cents. They were told that their donation decision was real and the amount they wished to donate would be deducted from their compensation and donated to the charity. Following their donation decision, we measured state depletion, state mood, manipulation checks, demographics, the attention check questions, job status (full time, part-time, or unemployed) and other measures (e.g., current time, how long have you been awake).

As in study 2, we used the same procedure to screen MTurk participants to improve data quality. In addition, we used an attention check question and those who failed it were excluded from the analysis.

Measures

For the dependent measure, we asked participants how much of their participation fee (60¢) they would like to donate to this cause. Options included 0¢, 5¢, 10¢, 15¢, 20¢, 25¢, 30¢, and other. Ego depletion ($\alpha = .73$) was measured as described in study 2. We measured general positive / negative mood in this study. We asked participants how they were feeling at that particular point in time (Lisjak and Lee 2014): (a) bad mood, (b) sad, (c) anxious, (d) good mood, (e) happy, and (f) relaxed (positive mood: $\alpha = .92$, negative mood: $\alpha = .80$). For the message manipulation checks ($\alpha = .84$), we used two additional items from White and Peloza (2009): To what degree is the message about (a) looking out for others and (b) looking out for one's self. The other-benefit orientation was reverse coded; thus, a higher value indicated the message was more self-benefit oriented. All items were measured on a 7-point scale.

Analysis and Results

In total, 231 participants (44.3% female; $M_{\text{age}} = 38.4$, $SD = 10.5$) completed the main experiment. The final sample for analysis was 220, excluding 11 participants who failed attention checks or indicated an unusual sleep pattern (i.e., those who did not sleep before the morning session or woke up a few hours before the evening session). We ran two separate analyses with and without those cases. No substantial differences were observed.

Manipulation checks and other tests

The manipulations worked. The self-benefit message ($M = 3.46$, $SD = 1.59$) was perceived as being more self-benefit oriented than the other-benefit message ($M = 1.86$, $SD = .96$, $F(1, 218) = 81.03$, $p < .001$, $\eta_p^2 = .27$). Levels of depletion varied according to the time of day. Participants who were in the evening condition indicated to be more depleted than those in the morning condition ($M_{\text{evening}} = 4.57$, $SD = .96$; $M_{\text{morning}} = 3.51$, $SD = 1.17$, $F(1, 218) = 52.95$, $p < .001$, $\eta_p^2 = .19$).

Participants' moods were not different across the two conditions: Positive mood ($M_{\text{morning}} = 4.81$, $SD = 1.66$; $M_{\text{evening}} = 4.91$, $SD = 1.55$, $F(1, 218) < 1$, $p = .61$, $\eta_p^2 = .001$) and negative mood ($M_{\text{morning}} = 2.16$, $SD = 1.27$; $M_{\text{evening}} = 2.18$, $SD = 1.34$, $F(1, 218) < 1$, $p = .91$, $\eta_p^2 < .001$). In addition, the morning vs. evening condition did not differ in terms of age ($M = 38.4$ vs. 38.7 , $p = .83$), gender (Female: 42% vs. 48%, $p = .39$), education ($M = 5.62$ vs. 5.57 , $p = .74$), and job status (Full time: 70.1% vs. 70.9%, $p = .29$).

Effects of time of the day and message appeals on monetary donation

The results of a two-way ANOVA showed that neither the main effect of time of the day ($F(1, 216) < 1, p = .56, \eta_p^2 = .002$) nor message appeals ($F(1, 216) < 1, p = .71, \eta_p^2 = .001$) were significant. However, more importantly, there was a significant interaction effect ($F(1, 216) = 6.29, p = .013, \eta_p^2 = .028$). The pattern of interaction has an X shape, similar to that found in study 1. A simple effect analysis shows that the self-benefit message generated larger average donations than the other-benefit message in the evening condition ($M_{\text{self}} = .16, M_{\text{other}} = .09, F(1, 221) = 3.89, p = .05, \eta_p^2 = .018$). Conversely, the opposite pattern was observed in the morning. The mean donation was higher when the other-benefit message was used. However, the difference was marginally significant ($M_{\text{other}} = .14, M_{\text{self}} = .08, F(1, 221) = 2.44, p = .12, \eta_p^2 = .011$). The results, in general, supported our third hypothesis. Figure 4 presents the mean and standard deviation values across the four conditions.

[Insert Figure 4 about here]

Study 3 Discussion

Study 3 found that in the evening, the self-benefit message generated larger donations than the other benefit message. In the morning, the opposite pattern was observed although the difference was marginally significant. Prior research suggests that money and time are psychologically distinct, thus lead to different consequences in charitable support (e.g., Liu and Aaker 2008; MacDonnell and White 2015). It is worth noting that the interaction effects of depletion and message appeal were consistent, regardless of whether participants were asked for time or money.

GENERAL DISCUSSION

Theoretical Contributions

Previous studies have suggested a relationship between ego depletion and pro-social behaviors. Our studies advance this line of enquiry, asking how charity groups might make use of this depletion → donation relationship. As such, the moderating role of self-benefit versus other-benefit messages was examined.

The data from three studies suggests an individual's self-regulatory resources interact with message appeal types upon subsequent charitable support. The results show that when people were depleted, self-benefit messages were more effective than other-benefit messages. In general, when people were not depleted, the results generally show the opposite pattern. It appears that generosity among depleted people was self-seeking, given 'self-benefit' messages were more appealing thus, depleted individuals paid more attention to self-benefit appeals than other-benefit appeals. The interaction effect on charitable support was consistent, regardless of whether participants were asked for time or money.

With regards to theoretical implications, these studies represent a novel contribution to the advertising, ego depletion, and charity literature. If the self-regulatory resource worked strictly like a muscle, then depleted individuals would be less likely to donate. However, we found this negative effect of depletion on charitable support was evident only when charitable messages use other-benefit appeals. When self-benefit messages were used, the negative effect was attenuated (study 2) and reversed (studies 1 and 3). In assessing the mediating role of attention to the message, we have provided the first empirical demonstration of Inzlicht and Schmeichel's (2012) attention shift hypothesis in a charitable context. This suggests that the

process model of depletion perhaps provides a better theoretical account for the previously established depletion → selfishness relationship. It appears that as benefactors become depleted, they are likely to pay more attention to a charitable message which includes personal reward.

Our research provides additional theoretical contributions. There is ample evidence to suggest that ego depletion leads to an increase in immediate gratification seeking (Baumeister 2002; Metcalfe and Mischel 1999; Mischel et al. 1989; Vohs and Faber 2007). However, the stimulus used in studies 1 and 2 point towards a future personal reward. Improving one's resume for future job opportunities (study 1) or increases in personal happiness as a result of future volunteering (study 2) are delayed forms of gratification, however they appear sufficient to induce the effects reported by others. Furthermore, empirical evidence of the depletion → selfishness relationship has perhaps suffered from a narrow methodological approach. That is, dictator games, which are zero-sum games, have been used in the majority of studies reported to date (Achtziger et al. 2015; Balliet and Joireman 2010; DeWall et al. 2008; Osgood and Muraven 2015; Xu et al. 2012). These dictator games are structured such that a gain by one player results in a loss to other players. Generalizing these findings to a charitable context is unwarranted, given volunteering and donation behaviors do not involve the zero-sum rule.

There has been considerable controversy regarding ego-depletion research. Some researchers have questioned the replicability of ego-depletion effects (e.g., Hagger et al. 2016). Others have provided rebuttal (Baumeister and Vohs 2016; Dang 2016). In a recent paper, Friese et al. (2019) provide a well-rounded summary of the ego-depletion debate – both for and against. They conclude that further work is required to make a compelling case for either position. Friese et al. (2019) also note that several field studies show evidence of effects in support of the general notion of the ego-depletion phenomenon. We believe that our findings contribute to this

additional evidence in support of ego-depletion. Furthermore, we believe our studies motivate future replication work, specifically studies investigating real-world behaviors that may reflect an ego-depletion effect. The current research provides evidence of an individual's attention shift when in a depleted state. This attention shift occurs using both a manipulation task as well as natural means of ego-depletion. We hope our findings, along with other evidence of ego-depletion effects in real-world phenomena (see Kouchaki and Smith 2014) contribute to the ongoing debate regarding ego-depletion.

Practical Implications

Our findings point to a number of concrete, easy-to-enact recommendations. First, the initial motivation for ego depletion research by Baumeister and colleagues (1994) was the observation that self-control failures often occur later in the day when self-control resources are depleted. Our findings suggest that charitable organizations could maximize donations by developing and deploying two different appeals to be used at different times of the day. Utilizing this strategy, the organization would push other-benefit messages in the morning and then switch to advertisements featuring a self-benefit message in the evening. This approach is certainly feasible in online contexts. It may also be suitable for telephone or face-to-face campaigns, although additional research would be required in these contexts. Second, our results suggest that charitable organizations may want to adjust their appeal type based on the potential donor's occupation. Individuals with occupations that require large amounts of self-regulation (e.g., frontline service providers) should be presented with advertising which appeals to their own self-interest. Furthermore, there may be a correlation between an individual's capacity to donate (i.e.,

financial resources) and the self-regulation they are required to exercise at work (i.e., executives, stock-brokers, medical professionals).

Limitations and Future Research

The sampling method in our third experiment was modelled by Kouchaki and Smith (2014, study 4). We found that our study had a higher attrition rate (57%) than their study (29%). We observed that there were some key differences. First, their study offered more generous compensation. For example, they offered participants \$1 for Part 1 and an additional \$1 for Part 2. We offered 60 cents and 60 cents. Second, while their participants were given several options during the upcoming week to complete Part 2, our study did not provide such options. We believe that these differences in compensation and flexibility explain the different attrition rates. In our research, attention to the message was a self-report measure to gauge participants' overall attention level to the message (e.g., how much attention did you pay to the message?). Future research may utilize other methods to measure attention, such as physiological responses, eye-tracking methods, etc.

Our research may seed future inquiry. When people were not depleted, the results (studies 1 and 3) generally show that other-benefit messages were more effective than self-benefit messages. However, the reason why this occurred is unclear because the mediating variable, attention to the message, does not explain the observed effect. Specifically, the results show that there was no significant difference in attention paid to the two message appeals among non-depleted people (see Panel B in Figure 1). If the processing mechanism of attention among depleted people holds for non-depleted people, attention to the message should show a reversed

pattern. In other words, non-depleted people should have paid more attention to the other-benefit message than the self-benefit message. However, the results did not support this.

These results suggest another processing mechanism for non-depleted people. White and Peloza (2009) offer a clue. They suggest that people share the normative expectation that pro-social behaviors should be altruistic rather than egoistic. From this perspective, when people are not depleted, they may be more likely to hold this normative belief; that is, an other-benefit message adheres to the social norm and a self-benefit message violates the norm. This normative belief may explain the current findings. If so, there may exist two different processing variables: “normative beliefs” may account for non-depleted people while “attention shifts” may account for depleted people. Future research is needed to investigate this issue.

Our studies measured time donation intent and monetary donations. Researchers may wish to examine the interaction between ego depletion and appeal type upon physical artefacts (goods, blood donation, etc). Second, the three studies examined two types of message appeals: other-benefit and self-benefit. However, there is a third type of appeal in which these two strategies are used simultaneously in a single advertisement. One may expect that a mixed message appeal is likely to be more effective, given it suggests more total benefits to be derived from a donation. However, Feiler, Tost and Grant (2012) have shown that a mixed message appeal is in fact less effective than either an other-benefit or self-benefit appeal in isolation. The mixed message appeal is thought to be less effective because it is perceived as overt persuasion, resulting in awareness of the persuasion attempt, eliciting psychological reactance. There is no known research into the effectiveness of a mixed message upon depleted people. We suspect that the mixed message approach will increase in effectiveness among depleted people, given

depletion decreases one's analytical capacity (Lindner et al. 2017) which may act as cover for the persuasive attempt. Further research is required.

In conclusion, our findings demonstrate that when people are depleted, self-benefit messages are more effective than other-benefit messages in generating charitable support. When people are not depleted, the opposite pattern is observed. It appears that generosity among depleted people is self-seeking. We hope these findings can enhance the efficacy of charitable advertising, increasing funding for social programs and beneficiaries.

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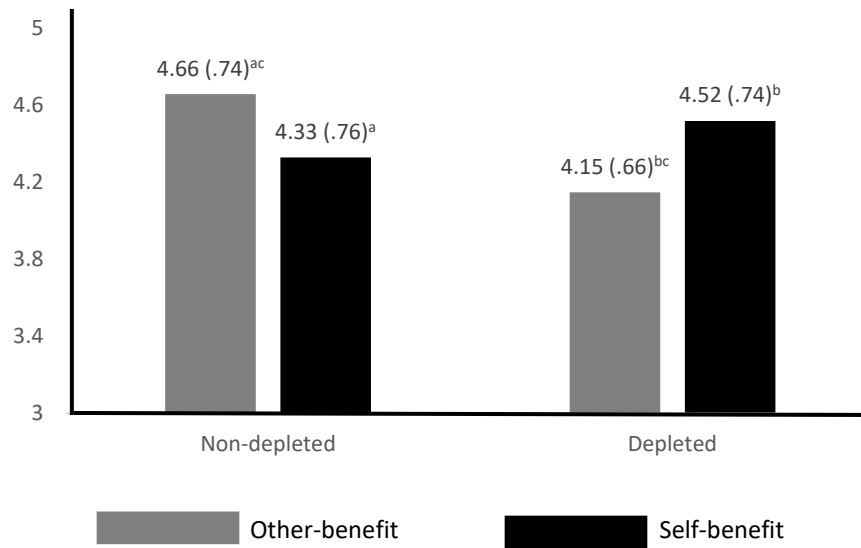
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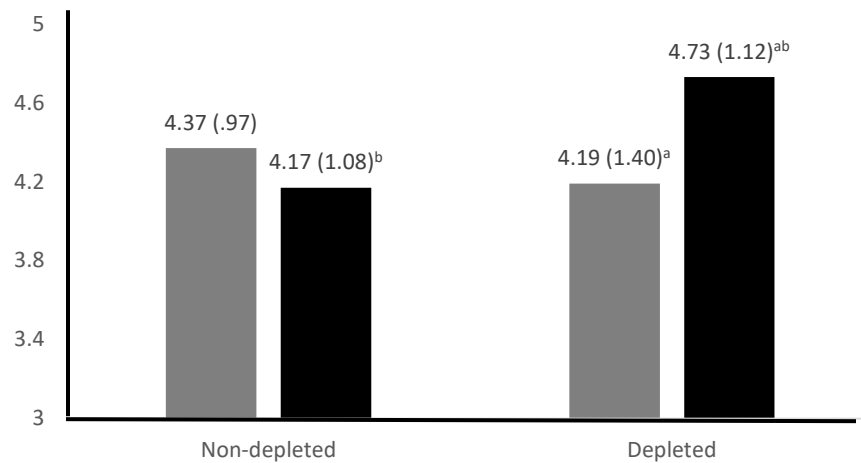
FIGURE 1

Study 1: Time Donation Intent and Attention to the Message

Panel A: DV = Time donation intent



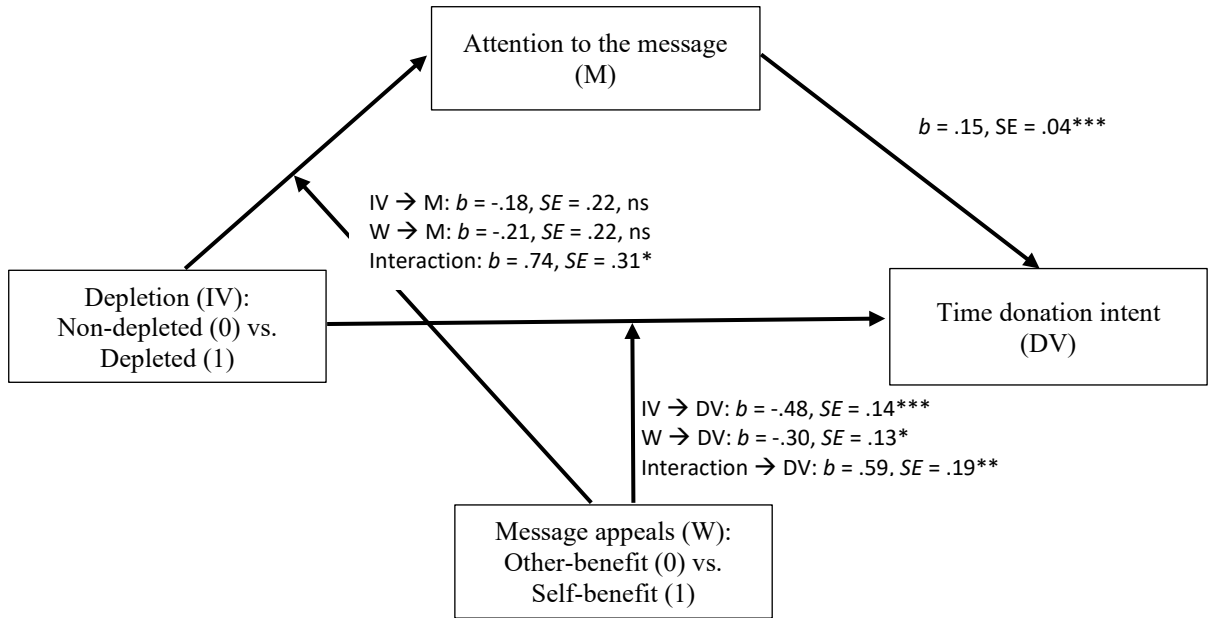
Panel B: DV = Attention to the message



Note: The values are means (standard deviations). The same letter indicates a significant mean difference ($p < .05$).

FIGURE 2

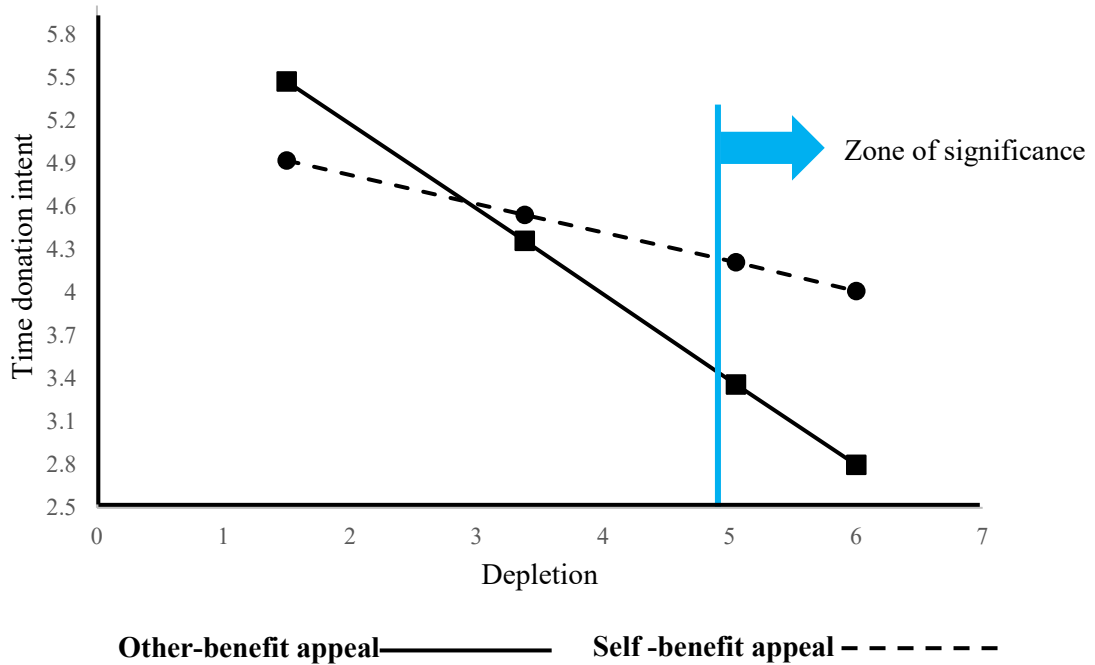
Study 1: A Moderated Mediation Model (Process Model 8)



* $p < .05$ ** $p < .01$ *** $p < .001$

FIGURE 3

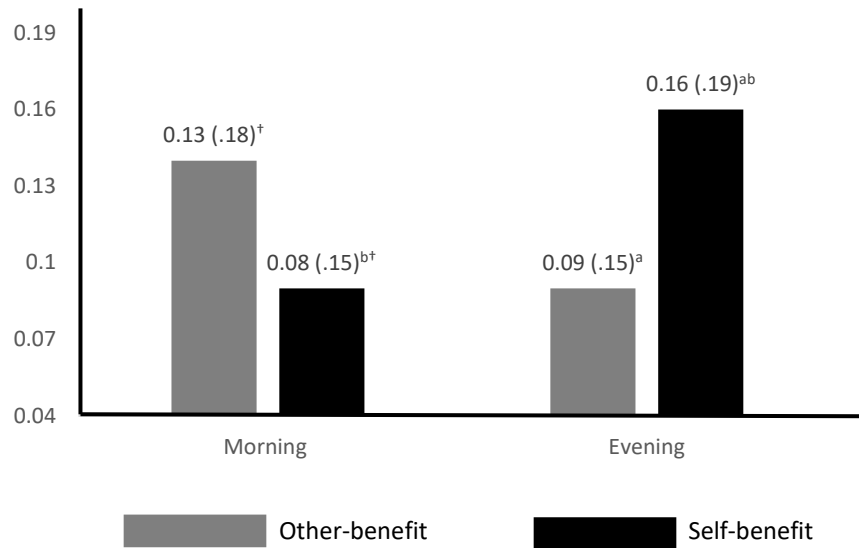
Study 2: Effects of Ego Depletion and Message Appeals



Note: There was a significant interaction effect of depletion and message appeals on time donation intentions. The results of Johnson-Neyman analysis shows the zone of significance. The self-benefit appeal generated significantly higher volunteering intentions than the other-benefit message appeal when the level of depletion was 4.89 (80th percentile) or above. At depletion levels below 4.89, there is no significant difference between the two appeals.

FIGURE 4

Study 3: Effects of Time of the Day and Message Appeals on Monetary Donation



Note: The values are means (standard deviations). The same letter indicates a significant mean difference ($p < .05$). † refers to a marginal significance.

APPENDIX A: Study 1 Advertising Stimuli: “Other-benefit message” (left) and “Self-benefit message” (right).



You can help save people’s lives:

Help us find cures for cancer and protect their future.

More than 1,500 Americans die of cancer every day. You understand the importance of making sure their friends and family remain healthy and happy. But if they get cancer one day, they want to be cured. You want to make sure that they receive the most advanced cancer treatment when it is needed.

Unfortunately, cancer research is underfunded and there are not enough volunteers to help patients.

By giving money to cancer research, you help ensure that today’s patients will be healthy and vital in the future. There are other ways you can get involved and help others. You can also

volunteer by giving a cancer patient a ride to chemotherapy or sending emails about cancer screening guidelines.

By volunteering, you can make a significant difference in a cancer patient’s life, as well as provide support to the patient’s caregivers. Even your small gestures of caring, such as a meal or soft blanket, mean a lot to patients.

By volunteering, patients receive love and caring when they need it.




Save your life:

Help us find cures for cancer and protect your future.

More than 1,500 Americans die of cancer every day. You understand the importance of making sure that your friends and family remain healthy and happy. You may get cancer one day and want to be cured. You want to make sure that you and your loved ones receive the most advanced cancer treatment when it is needed.

Unfortunately, cancer research is underfunded and there are not enough volunteers to help patients.

By giving money to cancer research, you help ensure that you and your family will be healthy and vital in the future. There are other ways you can get involved. You can also volunteer by giving a cancer patient a ride to

chemotherapy or sending e-mails about cancer screening guidelines.

While you’re helping others, volunteering can also help you. College students’ resumes tend to all look the same. Employers are impressed by volunteer work on your resume. Through volunteering, you can meet important contacts who can help you in getting a good job.

By volunteering, you get a head start on a career.



APPENDIX B: Study 2 Advertising Stimuli: “Other-benefit message” (left) and “Self-benefit message” (right).



Help grant wishes. Transform lives.

Children who have been diagnosed with a critical illness still have wishes that mean a lot to them. They need social interaction. By giving a little of your time, you can help grant their wishes. They enjoy visits, receiving letters and cards, even listening to someone read stories to them in real time online.

It will make a significant difference in their lives. The children will benefit a lot from just a little time. Contact us today at <https://loveforchildren.com/>. Take action, take some time. The children will know someone cares and it will have a positive impact on them.

find us at <https://loveforchildren.com/>

Love for Children



Charity benefits the giver too.

Children who have been diagnosed with a critical illness still have wishes that mean a lot to them. They need social interaction. By giving a little of your time, you can help grant their wishes. You’ll enjoy visiting with them, writing to them, even reading stories to them in real time online.

You will find it personally rewarding and that it makes you happy knowing you’re doing something important, knowing that you’re contributing to a greater cause.

Do the right thing. Contact us today at <https://loveforchildren.com/>. Take action, take some time. You’ll know you’ve done something good and will feel the positive impact on you.


find us at <https://loveforchildren.com/>

Love for Children

APPENDIX C: Study 3 Advertising Stimuli: “Other-benefit message” (left) and “Self-benefit message” (right).

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