

# How decision context changes the balance between cost and benefit increasing charitable donations

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## Abstract

Recent research on charitable donations shows that donors evaluate both the impact of helping and its cost. We asked whether these evaluations were affected by the context of alternative charitable causes. We found that presenting two donation appeals in joint evaluation, as compared to separate evaluation, increased the perceived benefit of the cause ranked as more important (Study 1), and decreased its perceived cost, regardless of the relative actual costs (Study 2). Finally, we try to reconcile an explanation based on perceived cost and benefit with previous work on charitable donations.

Keywords: prosocial behavior, altruism, decision context, charity

## 1 Introduction

People trying to determine whether to make a donation to a given cause are likely to consider several factors. Many potential donors feel so moved by a specific charitable cause that they perceive that cause as important enough to merit action (Batson, Batson, Slingsby, et al., 1991; Slovic, 2007). Such donors may also rely on their feelings to help them ascertain the extent to which their actions are needed, and evaluate how they feel about the prospect of helping those in need (Kogut & Ritov, 2005a, 2005b; Cameron & Payne, 2011; Dickert, Sagara & Slovic, 2011; Genevsky, Västfjäll, Slovic & Knutson, 2013; Slovic, Zientis, Woods, Goodman & Jinks, 2013; Västfjäll, Slovic, Mayorga & Peters, 2014; Västfjäll, Slovic & Mayorga, 2015; Agnoli, Pittarello, Hysenbelli & Rubaltelli, 2015). Moreover, making a donation entails the sacrifice of personal resources, whether money or time, that are frequently limited, and as such, could easily be put to a different use.

The present paper focuses on how people, deciding whether to make a donation, tend to balance the use of their resources against their appraisal of a particular cause or group's need for help. We suggest that this decision can be influenced by how donors perceive the appeal for help. In

particular, we demonstrate that contextual factors are likely to affect the tradeoff between the use of donors' resources and the perceived need to act. We are not suggesting that potential donors rely on an objective cost-benefit analysis, to render a "technical" assessment of the relative merits of assisting victims of a given crisis or humanitarian emergency. Instead, we ask whether identical quantities of money or help are perceived differently, depending on the context in which the appeal for a donation is presented.

### 1.1 Perceived cost for the donor and benefit to the recipients

Despite the important role that emotions play in driving donation decisions, prior research has overlooked other significant factors that may ultimately prove useful in understanding donation behavior. In particular, we hypothesize that a decision to donate will also depend on subjective judgments about the cost and benefit associated with a particular fundraising campaign. By cost, we refer to people's perceptions of the monetary cost involved in contributing to a charitable organization. We define benefit in terms of people's perceptions of the value of providing help to individuals in need. For instance, people are less willing to donate when they perceive their donation to be a mere "drop-in-the-bucket", which occurs when they regard their contribution as unlikely to have a significant impact on solving the problem (Fetherstonhaugh, Slovic, Johnson & Friedrich, 1997; Västfjäll et al., 2015).

Cryder, Loewenstein and Scheines (2013) found that an important predictor of willingness to help is the donor's perception of the impact that a given contribution will have on the provision of assistance to people in need. Cryder and colleagues' conclusion is also based on past work demonstrating the importance of perceived impact as a motivator of

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donation decisions (Duncan, 2004). Similarly, past research has identified a proportionality effect, which refers to the preference for interventions that make a proportionally large impact over interventions likely to have a relatively smaller impact, even when the overall impact does not vary across the two conditions (Baron, 1997; Fetherstonhaugh et al., 1997; Friedrich, Barnes, Capin, Dawson et al., 1999; Erlandsson, Bjorklund & Backstrom, 2014, 2015). We take these results as evidence that people are more willing to donate when they perceive higher benefits resulting from the donation.

We also consider donors' perception of the costs associated with the donation, as well as their perception of benefits. In particular, we expect people to decide whether it is worth making a donation on the basis of a subjective assessment of the balance between sacrificing personal resources and the amount of help provided thanks to their donation. People should therefore be likelier to donate when the perceived balance is tilted in favor of high benefit for the recipients, relative to the cost for the donor. Past research has shown that prosocial behavior and donations decrease with increased costs (Dovidio, Piliavin, Gaertner, et al., 1991; Shaw, Batson, & Todd, 1994; Rubaltelli & Agnoli, 2012). Similarly, reducing the perceived costs can result in larger donations (Bremen, 2011; De Bruyn & Prokopec, 2013; Richman, DeWall, & Wolff, 2015; Sussman, Sharma & Alter, 2015).

Our research question is consistent with the literature just reviewed. Perceived costs and benefits should show inverse (relative to each other) effects on willingness to give, so that an increase in the perceived benefit for the recipient of a donation, relative to an increase in the perceived cost for the donor, should lead to an increase in donations. However, an increase in the perceived benefit should not affect behavior if it is accompanied by an equally large increase in perceived cost. This hypothesis is consistent with previous research conducted on people's subjective evaluations of the impact of an aid intervention and the costs for the donor (Rubaltelli & Agnoli, 2012; Cryder et al., 2013; Erlandsson et al., 2014, 2015), but it has, to date, not been properly tested.

## 1.2 Outline of the studies

Previous studies showed an inconsistency between preferences elicited in joint evaluation (JE) and separate evaluation (SE; Hsee, 1996, 1998; Hsee, Zhang & Chen, 2004; Rubaltelli & Slovic, 2008; Hsee & Zhang, 2010). For instance, Hsee (1996) found that, in SE, people are willing to pay more for a second-hand dictionary with a lower number of entries that looks like new rather than for a dictionary with a higher number of entries and a torn cover. Conversely, in JE, people were willing to pay more for the dictionary with a higher number of entries. The explanation for this inconsistency is based on the evaluability hypothesis, which states how some attributes are hard to evaluate independently (Hsee, 1996). To explore the role of the balance between the perceived cost

for the donor and the perceived benefit for the recipients in predicting prosocial behavior, we will describe two studies wherein we compared joint versus separate evaluations of different donation appeals. Doing this enabled us to assess how donors' subjective perceptions of cost and benefit are influenced by decision context and also to determine whether presenting identical fundraising appeals in JE or in SE would result in different evaluations of the same appeal.

In Study 1, we show that donors perceive benefits differently, based on the presentation mode (JE vs. SE). The presence of a second appeal should modify the balance between perceived cost and benefit, thereby affecting donation decisions. To assess whether these changes operate independently of the relative costs of each cause, in Study 2, we manipulated the donation amount associated with one cause, while keeping the amount required for the second cause constant. We show that participants demonstrate a preference for supporting the charity they perceive as more important, regardless of the relative costs. In Study 2, we also measured, for each cause, affective reactions, perceived impact, and warm glow, to determine how perceived cost and benefit relate to variables that have traditionally been assessed in the literature on charitable donations.

## 2 Study 1

In Study 1, we manipulated the decision context, by seeking contributions to charitable causes, from potential donors, either in JE or in SE. Based on the literature on JE/SE differences (Hsee, 1996, 1998; Hsee & Zhang, 2010), we expected that perceived cost and benefit associated with contributing to a given cause could change, depending on the presence or absence of an opportunity for comparison. We conducted a pre-test, to select two charitable causes, one that people regarded as highly important and one regarded as relatively less important. A group of Amazon Mechanical Turk (MTurk) workers (distinct from the actual study participants) rated several causes, according to their importance and their perceived benefits for people in need of their advocacy. Selecting from a vast array of causes, we focused on the advancement of healthcare and the support of amateur sports, because they represented the largest disparity in perceived importance: respectively,  $t(29) = 9.00$ ;  $p < .01$ ;  $d = 3.34$ , for the ratings of importance ( $M_{\text{HEALTH}} = 6.00$ ,  $SD_{\text{HEALTH}} = 1.29$  vs.  $M_{\text{SPORT}} = 3.30$ ,  $SD_{\text{SPORT}} = 1.95$ ); and  $t(29) = 4.75$ ;  $p < .01$ ;  $d = 1.76$ , for the ratings of the perceived benefit associated with each of the two causes ( $M_{\text{HEALTH}} = 5.37$ ,  $SD_{\text{HEALTH}} = 1.54$  vs.  $M_{\text{SPORT}} = 3.57$ ,  $SD_{\text{SPORT}} = 2.00$ ; scales ranged from 1 to 7).

Based on previous literature showing that positive stimuli acquire value when paired with stimuli that are slightly more negative or less positive (Bateman, Dent, Peters, Slovic & Starmer, 2007), we expect that presenting an important cause

alongside a less important one (JE) should make the benefit of contributing to that cause stand out and, as a result, increase people’s willingness to support it compared to when it is presented in isolation (SE). Therefore, we expected that, in JE, the presence of a less important cause would produce, among potential donors, a heightened awareness of the benefits associated with the important cause.<sup>1</sup>

## 2.1 Method

**Subjects.** Three hundred and twenty seven Mturk workers (37.9% female; mean age 32 years, ranging from 18 to 69 years) participated in Study 1. Participants were paid \$0.30 for participation. All participants were from the United States and had minimum completion rates of 95% on past surveys. Use of Mturk has been validated by Buhrmester, Kwang and Gosling (2011), as well as Paolacci, Chandler, and Ipeirotis (2010; see also, Mason & Suri, 2012; Goodman, Cryder & Cheema, 2013; Chandler, Mueller & Paolacci, 2014). We used TurkGate (Goldin & Darlow, 2013), a system that prevents repeated participation, to filter out individuals who had taken part in similar studies (and in our own pre-test).

**Materials and procedure.** Participants were presented with a scenario wherein they were provided with the opportunity to make a donation. In JE, the scenario presented two causes; in the two SE conditions, participants were presented with only one of the two causes at a time. In accordance with the pre-test results, one cause was related to healthcare: participants were asked to contribute to a charity supporting research seeking a cure for cancer. The other cause was related to amateur sport: participants were asked to contribute to a charity supporting an amateur baseball league. Further, we assigned distinct amounts for the requested donations for each of the two charities: the cost of donating to cancer research was \$75, whereas for the amateur baseball league it was \$15. In this way, it was possible to test the extent to which people were willing to accept a higher cost, to help the more important of the two causes. In JE, the important cause (cancer research) was always presented first and the other cause (amateur baseball league) second.

After reading the scenario, participants were asked to respond to a series of questions. In JE, each question was repeated for both causes. An early question measured motivation to help on a scale ranging from 1 (“not at all motivated”) to 7 (“very motivated”). Subsequently, they were

<sup>1</sup>Our work is unlike previous tests of the JE/SE inconsistency in charitable giving. For instance, Kogut and Ritov (2005b), in studying the single-identifiable-victim effect, presented information regarding the benefit in terms of the number of children that could be helped (paired with their pictures), whereas we used qualitative rather than quantitative information (that is, the labels describing an important and an unimportant cause). And we examine perceived cost.

TABLE 1: Descriptive statistics (Study 1).

	JE		SE	
	M	SD	M	SD
<b>Cancer research</b>				
Cost for the donors	4.84	1.71	5.17	1.70
Benefit for recipients	5.60	1.57	4.55	1.83
Importance of the cause	5.68	1.27	5.09	1.42
<b>Amateur baseball league</b>				
Cost for the donors	3.73	1.83	4.41	1.86
Benefit for recipients	4.20	1.67	4.35	1.62
Importance of the cause	3.59	1.60	3.12	1.46

asked to decide whether they wanted to make a donation. After participants made their decision about whether to donate, they were asked to rate both perceived cost for the donor and benefit for the recipients, using two 7-point scales. At the end, they were presented with a manipulation check, where they rated the importance, value, and perceived benefit associated with each cause. Participants gave their ratings, using a scale ranging from 1 (“not at all”) to 7 (“very”).

## 2.2 Results

### 2.2.1 Manipulation check

For both causes, we averaged the three items that measured importance, value, and perceived benefit of the causes ( $\alpha = .86$  for cancer research, and  $\alpha = .92$  for the amateur baseball league; see Table 1 for descriptive analyses). A first t-test analysis showed that the importance of the cancer research cause was rated as significantly higher in JE than in SE,  $t(217) = 3.28, p = .001, d = .45$ . Similarly, the importance of the amateur baseball league cause was rated as significantly higher in JE than in SE,  $t(205) = 2.20, p = .03, d = .31$ . Furthermore, cancer research was rated significantly more important than the amateur baseball league in both JE ( $t(212) = 10.63, p < .001, d = 1.46$ ) and SE ( $t(210) = 9.90, p < .001, d = 1.37$ ). Finally, the interaction between condition and cause, tested using a formula previously described by Hsee (1996)<sup>2</sup>, was not significant,  $t(316) = .60, p = .55, d = .07$ .

We then assessed the correlations between perceived cost, perceived benefit, and motivation to help for the two causes in

<sup>2</sup>According to Hsee (1996) the interaction effect in a design where one condition is between subjects (JE) and the other is within-subjects (SE) should be tested with this formula:  $t = [(M_{JA} - M_{JB}) - (M_{SA} - M_{SB})] / \sqrt{(S_J^2/N_J + S_{SA}^2/N_{SA} + S_{SB}^2/N_{SB})}$ , where  $M_{JA}, M_{JB}, M_{SA},$  and  $M_{SB}$  are the respective means for joint (J) and separate (S) presentation of options A and B;  $S$  is the variance of the within-subject difference in JE and  $S_{SA}^2$  and  $S_{SB}^2$  are the variances for options A and B in separate evaluation;  $N_J, N_{SA},$  and  $N_{SB}$  are the respective numbers of subjects in the three conditions.

both JE and SE. Results showed that, in JE, the perceived cost of giving to cancer research was negatively correlated with the perceived benefit for the recipients, but the correlation was not significant ( $r = -.18, p = .07$ ). In SE, the cost for the donor and the benefit for the recipients were negatively correlated, but again the relationship was weak ( $r = -.15, p = .12$ ). Both dimensions were significantly correlated with the motivation to help and this relationship was negative for cost ( $r = -.28, p < .01$  in JE and  $r = -.25, p < .01$  in SE) and positive for benefit ( $r = .53, p < .001$  in JE and  $r = .55, p < .001$  in SE). For the baseball amateur league, in JE, cost and benefit were not correlated ( $r = -.09, p = .35$ ). In SE, the correlation between cost for the donor and benefit for recipients was a little higher but still not significant ( $r = -.13, p = .19$ ). The correlations with motivation to help were significant: this relationship was negative for cost ( $r = -.41, p = .02$  in JE and  $r = -.41, p < .001$  in SE) and positive for benefit ( $r = .58, p < .001$  in JE and  $r = .40, p < .001$  in SE).

**2.2.2 Effect of decision context on perceived costs and benefits**

We subsequently analyzed how the perceived cost for donor and benefit for recipient varied across causes (cancer research vs. amateur baseball league) and conditions (JE vs. SE). For cancer research, ratings of perceived cost for the donor were non-significantly higher in SE than in JE (Table 1;  $t(222) = 1.45, p = .15, d = .20$ ), whereas, for the amateur baseball league, perceived cost was significantly higher in SE ( $t(210) = 2.70, p = .01, d = .37$ ). In addition, for cost, a significant cost difference between the two causes (cancer higher) emerged both in JE ( $t(216) = 4.63, p < .001, d = .63$ ) and in SE ( $t(216) = 3.15, p = .002, d = .43$ ). Finally, the interaction between condition and cause was not significant ( $t(324) = 1.37, p = .17, d = .15$ ).

Ratings for the benefit of cancer research were significantly higher in JE than in SE ( $t(222) = 4.60, p < .001, d = .62$ ), whereas this difference was not significant for the amateur baseball league ( $t(210) = .65, p = .51, d = .09$ ). Furthermore, cancer benefit was significantly higher than baseball benefit in JE ( $t(216) = 6.36, p < .001, d = .87$ ), but not in SE ( $t(216) = .84, p = .40, d = .11$ ). Finally, the difference between the two causes was significantly greater in JE than in SE ( $t(324) = 4.21$  for the interaction,  $p < .001, d = .47$ ).

**2.2.3 Motivation to help**

We repeated the same analyses for participants' motivation to help. For cancer research, motivation was higher in JE than in SE (Figure 1;  $t(222) = 6.98, p < .001, d = .94$ ). This was also true for the amateur baseball league ( $t(210) = 2.14, p = .03, d = .30$ ). When comparing motivation to help the

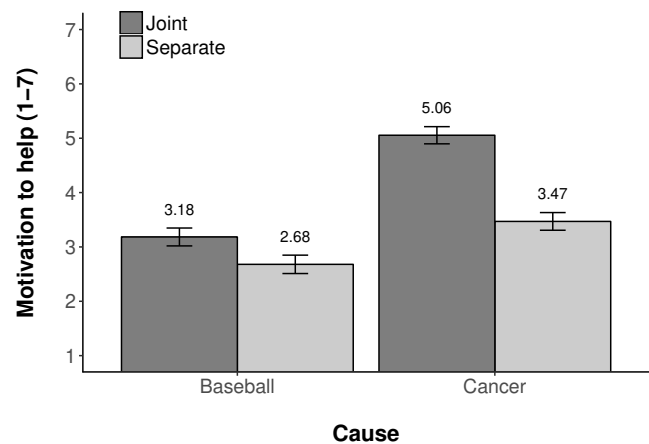


FIGURE 1: Motivation to help by condition (JE vs. SE) and type of cause (cancer research vs. amateur baseball league). Error bars indicate standard errors.

two causes, motivation was higher for cancer in both JE ( $t(216) = 8.20, p < .001, d = 1.12$ ) and SE ( $t(216) = 3.36, p < .001, d = .46$ ). Finally, the effect of condition was greater for cancer than for baseball ( $t(324) = 4.63$  for the interaction,  $p < .001, d = .52$ ).

**2.2.4 Donation decisions**

For cancer research, 71% of participants (N = 77 out of 109) chose to give in JE, whereas only 44% (N = 50 out of 115) did so in SE. A Wilcoxon test showed that the difference was significant,  $Z = 4.10, p < .0001$ . For the amateur baseball league, 39% of participants (N = 43 out of 109) chose to make a donation in JE, and 32% (N = 33 out of 103) chose to give in SE. This difference was not significant,  $Z = 1.13, p = .26$  (Figure 2).

**2.2.5 Mediation analyses**

For each cause, we tested mediation models for the effect of condition (JE vs. SE) using the lavaan package (Rosseel, 2012) for R (R Development Core Team, 2015). We first ran a model with motivation to help as the dependent variable (condition coded: JE = 0; SE = 1). For the cancer research cause, results showed an indirect effect of perceived benefit for the recipient ( $B = -.53, SE = .14, z = -3.88, p < .001$ ) but no indirect effect of perceived cost for the donor ( $B = -.06, SE = .05, z = -1.22, p = .22$ ). When both mediators were included in the model the effect of condition was still significant, indicating a partial mediation effect ( $B = -.99, SE = .20, z = -4.91, p < .001$ ; the mediation model was significant,  $p < .001$ ). For the amateur baseball league, results showed an indirect effect of perceived cost for the donor ( $B = -.17, SE = .08, z = -2.19, p = .03$ ), but no indirect effect of perceived benefit for the recipient ( $B = .07, SE = .12, z = .62, p = .53$ ). When both mediators were included in the



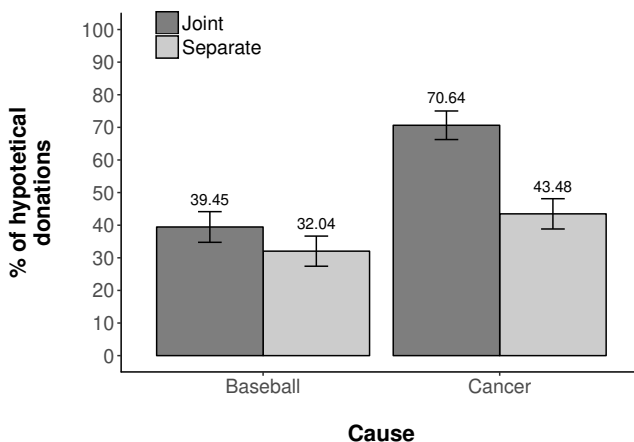


FIGURE 2: Percentage of hypothetical donations by condition (JE vs. SE) and type of cause (cancer research vs. amateur baseball league). Error bars indicate standard errors.

model the effect of condition was still significant, indicating a partial mediation effect ( $B = -.41$ ,  $SE = .20$ ,  $z = -2.08$ ,  $p = .046$ ; the mediation model was significant,  $p = .04$ ).

We then repeated the mediation analysis with participants' decisions as the dependent variable. For cancer research, we found again an indirect effect of perceived benefit ( $B = -.13$ ,  $SE = .03$ ,  $z = -3.91$ ,  $p < .001$ ) but not of perceived cost ( $B = -.03$ ,  $SE = .02$ ,  $z = -1.35$ ,  $p = .18$ ). When both mediators were included in the model the effect of condition was almost significant ( $B = -.11$ ,  $SE = .06$ ,  $z = -1.94$ ,  $p = .05$ ; the mediation model was significant,  $p < .001$ ). For the amateur baseball league, the mediation model was not significant ( $p = .27$ ), therefore we do not discuss it further.

### 2.3 Discussion

Study 1 examined the extent to which the method of presenting a fundraising campaign influenced people's perceptions of cost for the donor and benefit for the recipients. Specifically, we manipulated the way the two causes were presented and the possibility of comparing them. We selected two causes that were clearly different in the importance that people attach to them. We also set the cost associated with the causes in a way that the more important cause (cancer research) had the higher cost. Consistent with our hypothesis, results showed that people perceived a higher benefit for the recipients when the \$75 donation to cancer research was presented alongside a \$15 donation associated with a less important cause (amateur baseball league). As a result, participants demonstrated a higher level of motivation to help cancer research in JE, relative to SE and similar results were observed for the hypothetical donations. Interestingly, in SE, the perceived benefit for recipients was lower than the cost for the donor when participants were presented with the more important cause (cancer research).

Consequently, in SE, fewer than half of the participants were willing to support even the important cause. By contrast, in JE, the perceived benefit was higher than the perceived cost, so that most participants were willing to make a donation supporting cancer research. Further, and consistent with the above results, a mediation analysis indicated that, for cancer research, perceived benefit for the recipients partially mediated the effect of decision context both on motivation to help and hypothetical donations.

It would be reasonable to assume that cancer is sufficiently important to merit and receive widespread support from people, given how often they hear about it in the media and how likely they are to personally know someone who has suffered from it. Consistent with the above conclusion regarding the importance of cancer research, as a cause that merits support, it was perceived as significantly more important than the amateur baseball league; this was true both in JE and SE. Still, in spite of that, people's willingness to support a clearly more important charity, engaged in a fight against such a deadly disease, varied significantly depending on the decision context, which affected the perceived benefit of the donation. This result reflects the importance of further probing how people perceive the balance between perceived cost and benefit in deciding to support a charitable cause.

Although cancer research was generally perceived to entail a higher cost to the donor, thereby showing the sum of money to be assessable even in SE, its benefit was judged to be higher in JE than in SE. When each cause was presented in SE, the difference in the percentage of people who decided to donate to each was far smaller. These findings are consistent with the literature regarding JE/SE inconsistencies (Hsee, 1996, 1998; Hsee & Zhang, 2010) and suggest that the perceived impact of a cause is significantly influenced by the context in which the fundraising appeal is presented. Sometimes, the presence of a less important cause can effectively boost donations, by amplifying the disparity between perceived benefit for recipients and cost for the donor. Again, these data support our claim that people are likelier to donate when the perceived benefit outweighs the perceived cost.

## 3 Study 2

To evaluate whether the findings from Study 1 are independent of the relative cost associated with each of the two causes, in Study 2 we manipulated only the donation amount associated with the less important cause in JE, but we kept the donation amount constant for the more important cause. Consistent with the results of Study 1, we expected that participants would prefer to support the more important charity, regardless of the relative cost of the two causes. As in the previous study, we hypothesized that participants' perception of benefit associated with the donation and their willingness

to give to the more important charity would increase in JE (vs. SE).

### 3.1 Method

**Subjects.** Six hundred and eighty-six Mturk participants (56 % female, mean age 34.67 years, ranging from 18 to 80 years) participated in Study 2. Participants were randomly assigned to one of seven experimental conditions. Participants were paid \$0.20 for their participation. We used TurkGate (Goldin & Darlow, 2013) to filter out people who had previously participated in similar studies.

**Materials and procedure.** In Study 2, each participants read a scenario presenting them with the chance to make a donation. In the SE condition, participants were presented with only one of the two causes: either cancer research or the amateur baseball league. Further, in SE, the amateur baseball league was presented to three different groups, and in each case, it was associated with different donation amounts: \$20, \$50, and \$80, respectively. By contrast, cancer research was presented to only one group, and associated with a constant donation amount of \$50. In the three JE conditions, participants were presented with the same two causes tested in the SE condition, and again, we manipulated the amount required to support the amateur baseball league. While cancer research was always associated with a \$50 donation, depending on the specific JE condition, the amateur baseball league cause was associated with donation amounts of either \$20 (i.e., baseball less expensive), \$50 (equal cost for both causes), or \$80 (baseball more expensive). In this way, it was possible to ascertain the increased willingness to support the more important cause (cancer research), independently of the relative cost of the two causes. Similarly, we aimed to test whether the changing cost of the less important cause (baseball amateur league) would influence participants' willingness to support it.

After reading the scenario, participants were asked to report their motivation to help, whether they wanted to make a donation, and their perception of both cost and benefit of the donation. These variables were measured with the same questions that we used in Study 1. Further, in Study 2, participants were asked to rate each cause on the following 7-point scales: how positively or negatively they felt about the cause, from 1 (“*absolutely negative*”) to 7 (“*absolutely positive*”); how good they felt about giving to the cause, from 1 (“*not good at all*”) to 7 (“*very good*”); and how they perceived the impact of their donation, from 1 (“*no impact at all*”) to 7 (“*very large impact*”). Finally, participants were asked two additional questions about potential alternative uses of their money: the first question asked whether they would rather use the same amount of money of the donation cost to support a different charity; the second question asked whether they would rather use that amount of money to do something else

TABLE 2: Descriptive statistics for donation decision and motivation to help in Study 2.

		Donation decision	Motivation to help	
		%	M	SD
JE – Baseball less expensive	Cancer \$50	80.61	5.29	1.60
	Baseball \$20	26.53	2.58	1.59
JE – Equal cost for both causes	Cancer \$50	81.63	5.39	1.76
	Baseball \$50	20.40	2.48	1.60
JE – Baseball more expensive	Cancer \$50	86.73	5.64	1.42
	Baseball \$80	21.42	2.56	1.35
SE	Cancer \$50	50.00	4.02	1.78
	Baseball \$20	33.33	2.91	1.81
	Baseball \$50	21.78	2.41	1.63
	Baseball \$80	33.33	3.02	1.79

Note: The percentage of people choosing to give to the two causes in JE does not add up to 100% because participants were presented with two different questions, one for each cause. As a result, they could support both causes if they decided to do so.

entirely. Participants answered both questions on 7-point scales, ranging from 1 (“*not at all*”) to 7 (“*absolutely*”).

### 3.2 Results

#### 3.2.1 Descriptive analysis

In all three JE conditions, regardless of the relative price of the two causes, the percentage of people willing to give to cancer research was higher than the percentage of people who decided to make a donation in support of the amateur baseball league (Table 2). In addition, participants were more willing to donate to cancer research in JE than in SE.

Similarly, motivation to help the more important cause (cancer research) was higher when it was presented alongside the less important one (amateur baseball league), which was not particularly influenced by the decision context. Moreover, the different donation amounts associated with the amateur baseball league did not seem to influence participants' willingness to donate to this cause. A similar pattern of results was identified regarding hypothetical donations.

Before proceeding further with the analysis, we ascertained whether the amount of money associated with the donation to the amateur baseball league affected willingness to donate. First, an analysis of variance, using only the baseball league cause showed that neither in JE nor in SE was motivation influenced by the amount of money required for

TABLE 3: Descriptive statistics for affective reactions and cost (Study 2).

		Affective reactions		Cost	
		M	SD	M	SD
JE	Cancer	5.66	1.26	3.57	1.55
	Baseball	3.90	1.33	5.20	1.39
SE	Cancer	4.86	1.33	4.39	1.37
	Baseball	4.15	1.37	5.17	1.37

a donation ( $F(5, 582) = 2.20, p = .05$ ). Tukey multiple comparisons showed no significant difference ( $p = .09$  or higher). For cancer research, we analyzed only the three JE conditions in which support for this cause could be affected by the different amounts associated with the less important cause. Again, results did not show any effect on motivation ( $p = .29$  or higher). Based on these results, in the following analyses, we collapsed the three JE conditions, as well as the three baseball-only SE conditions.

### 3.2.2 Effect of decision context on cost and affective reactions

Based on a factor analysis that used a Varimax rotation and factor loadings selected on the basis of eigenvalues  $>1$  (see Appendix), for each cause, we combined several variables (affect, benefit for recipients, warm glow, and impact) into a single factor that we labeled “affective reactions”. Similarly, for each cause, we combined several variables (cost to the donor, desire to use money to support a different cause, and desire to use money to do something else entirely) into a single factor that we labeled “cost”. Together, the two factors explained 69% of the variance for the cancer research cause, and 71% of the variance for the amateur baseball league. For both causes, the affective reactions and cost factors reached good reliability (always  $\alpha > .70$ ).

We went on to analyze the effect of decision context on the cost factor. For cancer research, the cost factor was higher in SE than in JE (Table 3;  $t(388) = 4.61, p < .001, d = .47$ ), whereas, for the amateur baseball league, the effect of condition was not significant ( $t(588) = .25, p = .81, d = .02$ ). Furthermore, ratings of cost for baseball were higher than those for cancer in both JE ( $t(586) = 13.40, p < .001, d = 1.11$ ) and SE ( $t(390) = 4.48, p < .001, d = .45$ ). Finally, the interaction between condition and cause was significant (Table 3;  $t(682) = 5.20, p < .001, d = .40$ ).

We repeated the same analysis with affective reactions as the dependent variable. In this case, for cancer research, ratings of affective reactions were higher in JE than SE, whereas the opposite was true for the amateur baseball league (Table 3;  $t(388) = 4.21, p < .001, d = .43$  for cancer research and  $t(588) = 2.25, p = .03, d = .19$  for baseball). In addition,

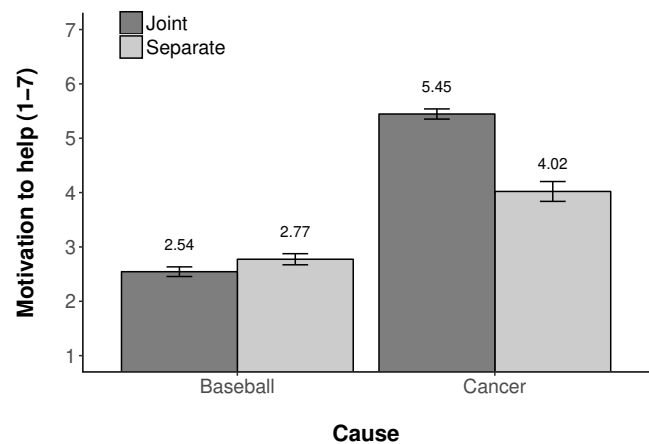


FIGURE 3: Motivation to help by condition (JE vs. SE) and type of cause (cancer research vs. amateur baseball league). Error bars indicate standard errors.

affective reactions were higher for cancer than for baseball in both JE ( $t(586) = 14.87, p < .001, d = 1.23$ ) and SE ( $t(390) = 4.86, p < .001, d = .49$ ). Finally, JE/SE difference was greater for cancer than for baseball ( $t(682) = 5.07$  for the interaction,  $p < .001, d = .39$ ).

### 3.2.3 Motivation to help

For cancer research, we found stronger motivation in JE than in SE (Figure 3;  $t(388) = 7.34, p < .001, d = .75$ ), whereas the effect of condition was not significant for the amateur baseball league ( $t(586) = 1.69, p = .09, d = .14$ ). Furthermore, motivation to help was higher for cancer research than the amateur baseball league in both JE ( $t(584) = 22.48, p < .001, d = 1.86$ ) and SE ( $t(390) = 4.86, p < .001, d = .49$ ), and this difference was greater for cancer than for baseball ( $t(681) = 9.15$  for the interaction,  $p < .001, d = .70$ ).

### 3.2.4 Donation decisions

For cancer research, 83% of participants ( $N = 244$  out of 294) chose to give in JE, whereas only 50% ( $N = 48$  out of 96) did so in SE. A Wilcoxon test showed that the difference was significant ( $Z = 6.47, p < .0001$ ). For the amateur baseball league, 23% of participants ( $N = 67$  out of 294) chose to make a donation in JE and 29% ( $N = 87$  out of 296) chose to give in SE. This difference was not significant ( $Z = 1.83, p = .07$ ; Figure 4).

### 3.2.5 Mediation analyses

For each cause, we tested a first mediation model with motivation to help as the dependent variable and condition as the main predictor (JE = 0; SE = 1). For the cancer research cause, results showed both an indirect effect of the factor cost ( $B = -.33, SE = .08, z = -4.28, p < .001$ ) and an indirect

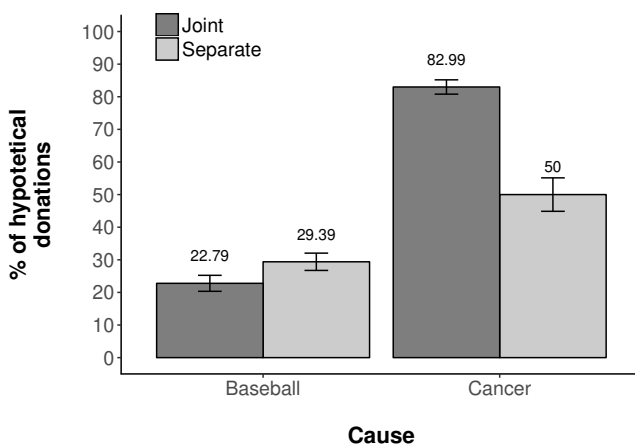


FIGURE 4: Percentage of hypothetical donations by condition (JE vs. SE) and type of cause (cancer research vs. amateur baseball league). Error bars indicate standard errors.

effect of the factor affective reactions ( $B = -.44$ ,  $SE = .12$ ,  $z = -3.68$ ,  $p < .001$ ). When both mediators were included in the model the effect of condition was still significant, indicating a partial mediation effect ( $B = -.66$ ,  $SE = .17$ ,  $z = -3.93$ ,  $p < .001$ ); the mediation model was significant ( $p < .001$ ). For the amateur baseball league, the mediation model was not significant ( $p = .08$ ), therefore we do not discuss it further.

We then repeated the same analysis with participants' donation decisions as the dependent variable. For cancer research, we found again an indirect effect of both the cost factor ( $B = -.07$ ,  $SE = .02$ ,  $z = -4.18$ ,  $p < .001$ ) and affective reactions ( $B = -.09$ ,  $SE = .02$ ,  $z = -3.53$ ,  $p < .001$ ). When both mediators were included in the model the effect of condition was still significant ( $B = -.18$ ,  $SE = .05$ ,  $z = -3.46$ ,  $p = .001$ ); the mediation model was significant,  $p < .001$ ). Once again, for the amateur baseball league, the mediation model was not significant ( $p = .07$ ).

### 3.3 Discussion

Study 2 examined whether results showing that, in JE, the more important cause is favored over the less important one, are independent of the relative cost of supporting the two charities. In the JE conditions of Study 2, we manipulated the donation amount associated with the amateur baseball league, while keeping constant the amount required to support cancer research. Accordingly, we also ran three different SE conditions for the amateur baseball league, varying the donation amount associated with this cause. Results showed that participants were more motivated to help and decided to donate more frequently to cancer research than to the cause that they regarded as less important, and this was significantly more notable in JE than it was in SE. People motivation to help and hypothetical donations in support of

cancer research were higher in JE (vs. SE), but this was not true for the amateur baseball league.

Importantly, participants' increased willingness to support cancer research (relative to amateur sport) was observed across all JE conditions, indicating that the increased propensity to support the more important cause was independent of the relative difference in donation amounts required to support each of the two causes. Moreover, mediation analyses showed that, for cancer research, the effect of decision context on motivation to help and hypothetical donations was partially mediated by cost and affective reactions.

Our results also showed a significant effect of affective reactions, indicating that people had a more positive reaction to cancer research and especially in JE. In terms of the perceived cost of a donation in support of cancer research, we found that it was perceived as lower in JE than it was in SE, indicating that the presence of a less important cause tended to reduce the perceived cost associated with supporting the more important one.

An important result from Study 2 is that, in JE, people were more willing to support the more important cause, regardless of the cost of the less important one. Indeed, when it was less expensive to support baseball than cancer, participants were still significantly likelier to support the more important cause than the less important one. Moreover, even when donations in support of baseball were objectively less expensive, the perceived cost of supporting amateur baseball was higher than that perceived in relation to cancer research (see Appendix). This finding shows the importance of subjective evaluation of cost for the donor and the extent to which the decision context can influence such evaluations. Finally, in JE, people always perceived the affective reactions toward cancer research as higher than the perceived cost, while the opposite was true for the amateur baseball league.

## 4 General discussion

In the present studies, we hypothesized that donations would increase when the perceived benefit for recipients outweighed the relative cost donors are asked to face, but they should decrease when the difference between these two dimensions is minimal or cost is perceived to be higher than benefit. In agreement with this hypothesis, the way that an appeal for donations is presented influences how people perceive the cost and benefit of giving. Some causes, as important as they may seem, come to seem even more valuable, with even greater perceived benefits, when presented alongside causes of relatively less importance. This type of effect was demonstrated in Study 1 by presenting an important cause and a less important one in either JE or SE. Further, in Study 2, we replicated these results while manipulating relative cost of the two causes.



Our studies revealed that, in JE relative to SE, people demonstrate increased motivation to help and donate to cancer research despite perceiving it to be a more important cause in both conditions. In other words, in JE, the presence of the amateur baseball league amplified the perceived benefit of cancer research, which came to appear even worthier of help than it did in SE. This result is consistent with previous work showing that positive stimuli can be perceived even more favorably when presented alongside negative or less positive ones (Bateman et al., 2007).

However, the decision context (JE vs. SE) had little or no effect on the less important cause (amateur baseball league). Although the present work focused on how the JE versus SE presentation influences people's decision to support an important cause, results for the less important one were a little surprising and, maybe, worth additional research. We could have expected a decrease in willingness to help and also a reduction in the ratings of perceived benefit when the amateur baseball league was presented alongside cancer research, but this did not happen. A possible explanation is that donors need reasons to give their money and the JE condition is more likely to make a worthy cause look even worthier rather than hit negatively a less worthy cause. In other words, the comparison made available in JE should give donors additional reasons to give to cancer research and to perceive the benefit for recipients higher than in SE, whereas the unimportant cause is simply used as a benchmark that helps the evaluation of the important one. It is worth noting that, for the less important cause, perceived cost for the donor is always higher than perceived benefit for the recipients. As a result, people's perception of the benefit associated with this cause is unlikely to decrease since the starting point is already fairly low. Therefore, results may be different if a slightly more important cause is used instead of the amateur baseball league. In this case, perceived benefit might be closer to perceived cost in SE leaving enough room for a lower rating of benefit in JE.

The paper contributes to the literature on prosocial behavior and charitable giving in multiple ways. One contribution is that it offers a way to link divergent research paths that have been investigated thus far. Some studies have already demonstrated the important role of perceived cost for the donor, but without clearly highlighting the link between this dimension and people's perception of benefits for recipients (Bremen, 2011; De Bruyn & Prokopec, 2013; Rubaltelli & Agnoli, 2012; Richman et al., 2015; Sussman et al., 2015). Other studies have investigated the perceived impact and effectiveness of the donation, but often without accounting for the perceived cost people face when deciding to donate (Cryder et al., 2013; Erlandsson et al., 2014, 2015). However, there are situations in which variations on how a donation appeal is presented can be targeted to modify the perceived benefit for recipients, whereas, under different conditions, it may be possible to target and modify the perceived cost for

the donor. As a result, it is important to assess both dimensions at once, to investigate how the tradeoff between benefit and cost develops, and the extent to which such changes affect giving.

Yet another of this paper's contributions is the fact that, in Study 2, we assessed both cost and benefit, alongside other dimensions that have traditionally been associated with prosocial behavior, such as warm glow, affective reactions, and impact. Results showed that perceived benefit for the recipients did cluster into the same factor as the above-mentioned dimensions. This is a reasonable result, given that all such variables pertain to people's perception of the donation and the cause, rather than centering on the donor. Even the dimension of warm glow, which relates to people's experience of positive feelings when they decide to donate, is largely focused on the act of giving (Andreoni, 1990). However, we did find that cost is still an independent factor that is worth being considered separately from these variables. This conclusion is also reasonable if we acknowledge that cost is not necessarily or solely focused on the act of giving and on the value of the cause, but also on how people prefer and then decide to use their own resources. This is especially true as, in Study 2, we added questions that asked participants to rate whether they would have liked to spend their money in other ways than giving it in support of the cause(s) they considered. As a result, Study 2 supported our main hypothesis that we should consider several dimensions at once when analyzing people's charitable giving decisions. In particular, these dimensions should facilitate the development of a way of measuring the tradeoff between how donors perceive the benefit for the recipients and how they perceive the cost of funding that cause. As the present work demonstrates, this tradeoff is critical to understanding people's willingness to give, and it also depends on how information about a given cause is presented; therefore, it cannot be regarded as an obvious conclusion based on objective information but requires careful consideration.

In line with the above conclusion, we demonstrated the importance of contextual factors in comprehending the balance between perceived cost and benefit people face when they are deciding whether to make a donation. In fact, in Study 2, we showed that, by presenting two causes in JE, it was possible to increase donations to the cause regarded as more important without increasing the perceived cost and irrespective of the donation amounts associated with the less important cause. This contribution could also stimulate an additional series of hypotheses with considerable applied value.

We have showed one of the many ways in which perceived benefit and cost can be affected so as to promote increased giving, but many other solutions to the same problem exist. For instance, another potential approach could rely on presenting donations in a foreign currency, if the fundraising is intended to help people abroad. In this case, the dimen-

sion of perceived cost is expressed in an unfamiliar format that might render donors less sensitive to the amount of money spent and therefore inclined to give it less weight in making a decision. Alternatively, presenting a single well-identified person in need, rather than a group, could increase the perceived benefit, because it triggers more intense affective reactions and a closer connection with the recipient (Kogut & Ritov, 2005a, 2005b; Slovic, 2007; Västfjäll et al., 2015). Study 2 seems to support this conclusion, as the perceived benefit was correlated with the affective reactions that participants experienced toward the two causes.

A limitation of the present work relates to the fact that donations were always and only tested in a hypothetical setting. Although donations were hypothetical, we found that perceived cost did, in fact, have an impact on participants' decisions. Still, field studies (or experimental studies with real donations) aimed at assessing the role of perceived cost and benefit are required to further strengthen the validity of our conclusions and increase the applied value of the present findings.

Despite several questions and research directions that remain open to investigation, we believe that the findings reported here are crucial to a better understanding of prosocial behavior and what drives people's decisions to give. We have shown that the decision to donate can be strongly influenced by how people perceive the balance between the cost of sacrificing personal resources and the help such resources represent to individuals in need. Finally, we believe that clarifying how the presentation of the donation appeal shapes this tradeoff is a critical aspect that can be used to increase the effectiveness of fundraising campaigns.

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## Appendix: Factor analysis

Before assessing the effect of our manipulation on cost, benefit, affect, warm glow, perceived impact, and the items asking about alternative uses of the donation amount, we ran a factor analysis. We started by looking at the correlations between our main variables. Correlations were calculated separately for each cause, and showed positive relationships between affect, perceived benefit for the recipients, warm glow, and impact ( $r$  between .48 and .77; Table S1), as well as between perceived cost to the donor, preference to use money in support of a different cause, and preference to use the money to do something else entirely ( $r$  between .33 and .70). Based on these two sets of correlations, it appeared reasonable to expect that a two-factor structure could be found, given that all variables related to the outcome for the recipients and donors’ feelings toward the cause correlated with each other. At the same time, the three questions regarding the cost of the donation or donors’ preferred use of their money correlated with each other, too.

We then proceeded with the factor analysis, which we ran separately for the two causes. In both cases, we used a Varimax rotation and factor loadings selected on the basis of eigenvalues ( $>1$ ). Results from the factor analysis are summarized in Table S2 and show that, for both causes, the expected two-factor structure was confirmed. The factor that includes affect, perceived benefit for the recipients, warm glow, and impact loaded to a first factor (affective reactions), whereas the perceived cost to the donor, along with the items regarding the alternative uses of money, loaded to a second factor (perceived cost).

Together, these two factors explained 71% of variance for the cancer research cause, and 69% of the variance for the amateur baseball league cause. All factors showed good reliability (see Table S2).

Finally, in Table S3, we report the descriptive statistics for both affective reactions and cost, divided by cause and condition, without collapsing the data across the three JE conditions and the three baseball-only SE conditions. In JE, the affect induced by cancer research was always higher than the perceived cost of the donation, irrespective of the different donation amounts associated with amateur baseball league. The opposite was found for the baseball league cause (cost was consistently higher than affect) with little difference across different JE conditions. In SE, the affect and the cost participants associated with cancer research were approximately the same, and this result is consistent with the 50% rate of hypothetical donations we found in this condition. For the baseball league, in SE, the perceived cost was still higher than affect, irrespective of the donation amount associated with this cause.

Table S1. Correlation matrix for Study 2. Correlations for the cancer research cause are reported on the top half of the table; correlations for the amateur baseball league cause are reported in the bottom half of the table.

	1	2	3	4	5	6	7
1. Affect	.	-.17	.68	.72	.48	-.42	-.45
2. Perceived cost to the donor	-.12	.	-.26	-.23	-.23	.33	.43
3. Perceived benefit for the recipients	.60	-.10	.	.77	.63	-.43	-.46
4. Warm glow	.67	-.19	.67	.	.62	-.41	-.48
5. Impact	.55	-.14	.64	.66	.	-.33	-.44
6. Support a different cause	-.35	.26	-.28	-.34	-.32	.	.69
7. Do something else with the money	-.38	.34	-.32	-.42	-.34	.70	.

All correlations are significant at  $p < .001$  except  $-.10$  ( $p < .05$ ) and  $-.12$  ( $p < .01$ ).

Table S2. Factor analysis for both causes (cancer research and amateur baseball league) for Study 2.

Items	Cancer research		Baseball league	
	Affective reactions	Perceived cost	Affective reactions	Perceived cost
Affect	.83		.80	
Benefit	.86		.86	
Warm glow	.89		.85	
Impact	.75		.82	
Cost		.78		.67
Use money to support a different cause		.75		.80
Use money to do something else		.78		.83
Proportion of variance	.43	.28	.42	.27
Cumulative variance	.43	.71	.42	.69
Cronbach's $\alpha$	.74	.88	.87	.70

Table S3. Descriptive statistics for the affect and cost factors in Study 2.

		Affect cancer	Affect b-ball	Cost cancer	Cost b-ball
JE baseball less expensive	M	5.57	3.87	3.52	5.05
	SD	1.23	1.42	1.47	1.51
JE equal cost	M	5.58	3.90	3.92	5.39
	SD	1.38	1.19	1.58	1.22
JE baseball more expensive	M	5.80	3.90	3.25	5.13
	SD	1.15	1.37	1.52	1.40
SE cancer research	M	4.86	-	4.38	-
	SD	1.32	-	1.37	-
SE baseball less expensive	M	-	4.10	-	5.02
	SD	-	1.41	-	1.37
SE equal cost	M	-	3.96	-	5.33
	SD	-	1.30	-	1.40
SE baseball more expensive	M	-	4.39	-	5.15
	SD	-	1.38	-	1.33