

# Others' opinions count, but not all of them: anchoring to ingroup versus outgroup members' behavior in charitable giving

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## Abstract

Because of the large amount of information and the difficulty in selecting an appropriate recipient in the context of charitable giving, people tend to make extensive use of heuristics, which sometimes leads them to wrong decisions. In the present work, we focused on exploring how individuals are influenced by anchoring heuristics and how group membership interacts with this heuristic. In Experiment 1, two different groups of participants were informed about low versus high average donations of other people, and a third control group did not receive any information about the others' donations. The results showed that participants were willing to donate significantly more in the high-anchor condition compared to the low-anchor condition, as well as about the same amount of money in the low-anchor condition and no-anchor condition. Experiment 2 and 3 showed that high anchors are more effective when the information about others' donations reflects members of the ingroup rather than the outgroup. Other variables related to these results are further discussed.

Keywords: heuristics, anchoring, charity giving, ingroup-outgroup, affective reactions.

## 1 Introduction

Past research has shown that people do not value lives at risk in a rational way, and, on many occasions, they are less willing to act when many lives are under threat than when only a few lives, or even just one life, are similarly threatened. Slovic (2007) argues that people can be extremely caring on a personal or individual level but remain largely unmoved by catastrophes that involve a large number of victims. Consistent with these findings, Kogut and Ritov (2005a; 2005b) have found that a single and identified victim receives significantly more support than either a group or unidentified victims. In later studies, Kogut and Ritov (2007, and Ritov & Kogut, 2011) found that the identifiability effect leads to different results for in-groups and out-groups depending on the presence or absence of a conflict between the two groups. In rival groups, an unidentified ingroup member is helped more than an identified one. However, for non-rival groups an identified ingroup member is helped more than an unidentified one. Moreover, adding statistical information about the overall number of people in danger decreases the donations for an individual victim (Small, Lowenstein, & Slovic, 2007). Furthermore, saving 80% of 100 lives at risk is considered more important

than saving 20% of 1000 lives at risk, despite the fact that the second alternative saves a higher number of lives (Fetherstonhaugh, Slovic, Johnson, & Friedrich, 1997).

Among the possible reasons for these results is people's tendency to rely on intuitions, emotions, and contextual information, rather than processing information in a more deliberative fashion (Chaiken & Trope, 1999; Kahneman, 2003; Slovic, Finucane, Peters, & MacGregor, 2002). As a consequence, people are not very good at managing information, and they use intuitive strategies, such as heuristics, to make decisions. Heuristics are often useful to make fast and fairly accurate decisions, and do not require extensive cognitive resources. However, they sometimes lead people to rely on irrelevant information and to make seemingly unreasonable mistakes (Tversky & Kahneman, 1974; Gigerenzer, Todd, & the ABC Group, 1999; Gilovich, Griffin, & Kahneman, 2002). For example, people use irrelevant information as an anchor when making judgments (anchoring heuristic), without adjusting enough to compensate for the effect of anchoring.

Here, we are interested in studying how individuals anchor to information about other people's behavior and assessing how this may influence decisions to donate money. When using the anchoring and adjustment heuristics, people rely more than necessary on arbitrary values, called anchors, even when they are clearly irrelevant to the question they have been asked to answer. For example, in one of their experiments, Tversky & Kahneman (1974) asked participants to estimate the percentage of African countries represented at the United Nations.

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Before providing an estimate, participants were asked to spin a “wheel of fortune,” which would return a value between 10 and 65. The number, extracted by chance from the wheel, was not relevant to the question participants were asked; however, their responses were still influenced by it. Those who were presented with the high value versus the low value as starting numbers estimated respectively a median of 45 and 25 percent of African countries represented at the United Nations. In studies like those conducted by Kahneman and Tversky, anchors were presented by the experimenters; however, when no starting value was provided, it was noted that participants sometimes self-generated an anchor in order to have a cue from which to start reasoning (Epley & Gilovich, 2006). For instance, Epley & Gilovich (2004) gave participants a series of 12 questions for which they did not know the correct answers but for which they could easily generate their own anchors. For example, most American citizens do not know when George Washington was elected president, but they do know that the Declaration of Independence was in 1776 and that it is close to the date of George Washington’s election. Therefore, they can hypothetically start from the date of the Declaration of Independence and then adjust it in the direction of the correct answer.

Self-generated anchors are more prone to adjustment, because the subject knows that the number that popped up in his or her mind is likely to be wrong and is simply a starting point he or she is using to reason the correct answer. Instead, when people have no previous knowledge about a certain topic and others provide an anchor for them, they start from the hypothesis that the anchor is a hint to the correct answer, assuming that the speaker should only provide relevant information (Epley & Gilovich, 2006).

More generally, the most accepted explanation for the anchoring bias is that the adjustment is often insufficient and requires effort (Ariely, Loewenstein, & Prelec, 2003; Sunstein, Kahneman, Schkade, & Ritov, 2003; Tversky & Kahneman, 1974). Recent studies have shown that this bias works in this way because people search for information that is consistent with the anchor (Mussweiler, Strack, & Pfeiffer, 2000), and they stop adjusting once they think that they have reached a plausible value (Epley & Gilovich, 2006). Often, people rely on anchors while they are interpreting ambiguous or conflicting social contexts or when they have information about what other individuals do in a particular situation. This is typically likely to happen when a situation involves moral evaluations (e.g., sexuality, human cloning, tax evasion, charitable giving). Sunstein (2005) showed that, in these circumstances, people anchor to some authority’s opinion; for example, Christian religion has shaped public attitudes toward abortion for two thousand years.

## 1.1 Social influence

People often compare themselves with others in order to reduce uncertainty (Festinger, 1954). Many times, they accept others’ responses because they do not have all the required information but other times people simply conform to others’ thoughts, attitudes, or behavior in order to be accepted and liked by them (Epley & Gilovich, 2006; Latané, 1981).

In a classical experiment of conformity, Asch (1955) showed that social pressure can have such a strong influence that it can even reduce subjects’ trust in their visual perception. When a group of three or more confederates were unanimously providing a clearly incorrect answer, 32% more participants gave the incorrect answer about the length of a series of lines compared to situations where there was no pressure to conform.

In the charitable-giving context, different theories have been proposed to explain the relationship between others’ contributions and an individual’s own contribution (Shang & Croson, 2009). For instance, substitute models state that, as the contributions of others increase, one’s own contribution should decrease (Andreoni, 1990; Becker, 1974; Roberts, 1984; Warr, 1982). However, complement models state that individuals use the contributions of others as an indicator of the appropriate contribution, so if others donate more, they do the same (Bernheim, 1994; Croson, 2007; Shang & Croson, 2009; Sugden, 1984; Vesterlund, 2003). In substitute models, individuals use others’ contributions as a guide to maximize the equality between private and public goods, while in complement models they use others’ contributions as a reference point to understand how to behave when the proper action is unclear.

Desmet and Feinberg (2003) state that the relation between what one asks for (the donation appeal) and what one receives is difficult to anticipate. Furthermore, the amount of money that people decide to donate when presented with a charitable-giving request is established by both internal and external resources. Internal resources are what someone knows by herself (i.e., if they have previous donation experiences, how well their money was managed, how much they helped to change the situation, how grateful the receiver was), whereas external resources are what someone is told about a certain charitable-giving situation (Sherif, Taub, & Hovland, 1958). People usually do not ignore external resources, since they can be instrumental in judging the appropriate donation amount, particularly when the situation is ambiguous (Crutchfield, 1955).

In addition, people are the most influenced about the amount of money they decide to donate when they believe others’ views are valid and reliable (Abrams, Wetherell, Cochrane, Hogg, & Turner, 2011; Cason & Mui, 1998).

If the anchor is too high, people may perceive the proposed donation amount as unfair or excessive, and compliance rates will decrease. Consistent with this, Rubaltelli and Agnoli (2012) found that the preference to help people can be inhibited by a high donation request. On the other hand, if the anchor is low, refusing to help may be perceived as socially embarrassing (Briers, Pandelaere, & Warlop, 2007).

## 1.2 Group membership

People have a natural tendency to feel a part of social groups and to categorize other individuals as either members of these groups or of an outgroup. Such categorization has implications for decisions related to social issues and can be activated with rather subtle and arbitrary manipulations (Tajfel, Billig, Bundy, & Flame, 2006). Ingroup members have a stronger influence than outgroup members (Barnum & Markovsky, 2007; Tajfel & Turner, 1979). They are likely to be perceived as more trustworthy and are judged more positively than outgroup members (Dovidio, Gaertner, Kawakami, & Hodson, 2002; Hewstone, Rubin, & Willis, 2002). Furthermore, individuals process arguments that are part of a discussion among people belonging to the ingroup more carefully than arguments proposed in a discussion among outgroup members (Mackie, Gastardo-Conaco, & Skelly, 1992).

Moreover, Abrams et al. (2011) suggested that feeling like part of an ingroup helps when people want to obtain approval because they know what other members expect from them. Social identity theory explains that people develop a bias which favors their own group because they want to maintain positive self-esteem (Tajfel & Turner, 1979). Tajfel & Turner (1979) identify three main processes to describe their theory: 1., categorization (where the individual builds belongingness categories based on different factors like gender, social position, and nationality, which maximizes the similarities between people inside a category and the differences from outside categories); 2., identification (in this case, belonging to a category or group provides a psychological base for people's social identity); and 3., social comparison (the individual constantly compares the ingroup to the outgroup, considering the first one superior to the second). This last point indicates that it is more likely for individuals to be influenced by ingroup, rather than outgroup, behaviors. In particular, in the domain of prosocial behavior, a person can be judged negatively for not helping, but can also find justifications to explain his or her behavior. This should make it easier to ignore the social pressure created by the outgroup and less easy to ignore the behaviors of members of the ingroup, whose judgment generally has a stronger impact on a person's self-identity. Consistent with this, Schervish & Havens (1997) claim

that moral decisions are rooted in the communities of belongingness; therefore, individuals are likely to look at the actions of their ingroup to understand which of them is the most suitable in a specific moral situation.

In Experiment 1, we manipulated the anchors related to how much other ingroup members donate to a charitable cause. The hypothesis of the present study assumed that participants in the high-anchor condition should donate, on average, more than participants in the other two conditions (low-anchor and control condition). In Experiment 2, we added the group variable (participants were informed about average donations made by ingroup vs. outgroup members) and tested participants' tendency to conform to the altruistic behavior of ingroup and outgroup members when the target of the charity cause belongs to the outgroup. In Experiment 3, we used the same variables as in Experiment 2, but this time with an ingroup target for the charity cause.

We also measured affective reactions and related these to the anchoring manipulation. Previous research (Kogut & Ritov, 2005a; Kogut & Ritov, 2005b, Small et al., 2007; Dickert, Sagara, & Slovic, 2011) has shown that feelings of empathy and concern are crucial to charitable behavior, but, to our knowledge, no literature explains the relation between anchors in charity giving and affective reaction. Based on limited-capacity attentional resources theory (Broadbent & Broadbent, 1987; Conway, 1996; Raymond, Shapiro, & Arnell, 1992), we hypothesized that anchorpoints presented as social information related to others' donations reduce affective reactions because they shift attention from contemplation of the victim to the social appropriateness of the decision to help. This hypothesis is also consistent with complement models (Bernheim, 1994; Croson, 2007; Shang & Croson, 2009; Sugden, 1984; Vesterlund, 2003) and the fact that other people's behavior becomes a reference point used to interpret which is the correct behavior in situations when it is not clear how much a person should donate. In other words, people should pay more attention to information about others' donations and attend less to their own empathic feelings, since that might be one of the most relevant elements when there is no other information available regarding to the appropriate donation amount (Crutchfield, 1955).

## 2 Experiment 1

### 2.1 Method

#### 2.1.1 Participants and design

137 students from the University of Padova ( $M = 19.56$ ,  $SD = 1.62$ ; 94 females) completed a paper questionnaire during a lecture break. Participants were randomly as-

signed to one of the three experimental conditions: 50 in the No Anchor condition (NA), 47 in the Low Anchor condition (LA), and 40 in the High Anchor condition (HA).

### 2.1.2 Materials and procedure

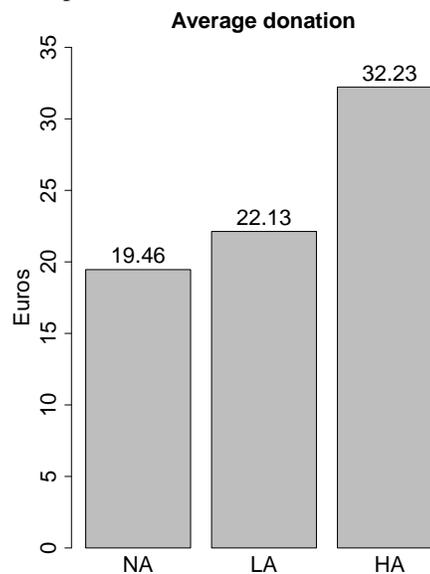
Participants read the story of a child named Elena who was affected by brain damage and in need of financial help. After a brief explanation of Elena's situation, accompanied by her picture, participants read a sentence related to their ingroup average donation (other Italians), and were asked whether they were willing to donate a sum of money to help her. Those who answered yes were then asked how much they were willing to donate. Depending on the experimental condition, one of the following statements was reported below the picture: "On average, Italians donate €10 to support this project" (LA condition) or "On average, Italians donate €90 to support this project" (HA condition). In the NA condition, there was no information about the average donation made by other Italians. We used a prize-draw methodology in which one from all participants was chosen by chance to win an amount of money equal to €100 minus the amount the participant decided to donate to the charity cause in the experiment.

**Mood and happiness.** Before reading the scenario, participants completed two 9-point items which measured mood (-4 = *very bad mood*; +4 = *very good mood*) and happiness (-4 = *very unhappy*; +4 = *very happy*). Given the positive correlation between the two items ( $r = .64, p < .001$ ), they were averaged together and it will be called only Mood in the results section.

**Affective reactions.** (Dickert et al., 2011). After deciding how much they were willing to donate, participants responded to six items related to their affective reactions toward the scenario (e.g., "I feel worried, upset, or sad thinking about Elena" or "Donating money to help Elena makes me feel better") on 7-point scales ranging from 1 (*not at all*) to 7 (*very much*). Cronbach's alpha for these items was .74.

Participants were also asked to answer a series of control questions: 1) how familiar they were with brain-injury illnesses; 2) how important they found the information about the average donations made by other Italians; and, 3) how realistic they found the average amount donated by other Italians (these last two questions were asked only in the conditions where there was an anchor: LA condition and HA condition). Responses were provided on a 7-point scale from 1 (*Not at all*) to 7 (*Very much*).

Figure 1: Average willingness to donate in the three conditions of Experiment 1.



## 2.2 Results

Initially, we ran a Chi-square analysis to test if there were differences in the Yes-No answers between the three experimental conditions. The results indicated that there were no significant differences ( $\chi^2(2, 137) = 4.30, p = .12$ ). In all conditions, the majority of participants decided to donate (94% Yes in NA condition; 89% Yes in LA condition; 80% Yes in HA condition).

Mood showed a positive correlation with the amount of money donated ( $r = .20, p = .02$ ). Therefore, we decided to add it as a covariate in the following analyses.

To test the effect of the anchors on donation amount, we ran an analysis of variance with the experimental conditions (LA, HA, and NA) as the independent variable, mood as covariate, and donation amount as the dependent variable. In the analysis we also included people who did not donate, setting their donation amount to zero. Results showed a significant effect of condition,  $F(2, 136) = 4.39; p = .01; \eta_p^2 = .06$  (see Figure 1). A test of planned contrasts revealed that participants in the HA condition ( $M = 32.22; SD = 33.98$ ) donated an average sum of money that was significantly larger than the sum of money donated by participants in either the LA ( $M = 22.13; SD = 23.61$ ) or the NA ( $M = 19.46; SD = 14.98$ ) conditions: respectively,  $t(134) = 2.44; p = .02; d = .42$  for the comparison between the HA and NA conditions and  $t(134) = 1.90; p < .06; d = .42$  for the comparison between the HA and LA conditions.

Further, we hypothesized that the presence of the anchor would affect affective reactions. To assess this hypothesis, we ran a second analysis of variance, which

showed a significant effect of the experimental condition on affective reactions ( $F(2,136) = 4.75; p = .01; \eta^2_p = .07$ ). Contrast effects indicated that affective reactions were significantly more intense in the NA condition ( $M = 4.60; SD = 1.09$ ) than in either the HA ( $M = 3.98; SD = .92$ ) or the LA ( $M = 4.17; SD = .95$ ) condition: respectively,  $t(134) = 2.96; p < .01; d = .51$  for the comparison between the NA and HA conditions and  $t(134) = 2.11; p < .04; d = .37$  for the comparison between NA and LA conditions.

We asked participants whether they were familiar with brain injuries in order to avoid the influence of this variable on the anchoring effect. As expected, a further analysis of variance did not show any difference in familiarity with brain injuries across the three experimental conditions ( $M_{NA} = 2.60; SD_{NA} = 1.34$  versus  $M_{LA} = 2.17; SD_{LA} = 1.40$  versus  $M_{HA} = 2.08; SD_{HA} = 1.35; F(2,136) = 2.32; p = .10; \eta^2_p = .03$ ).

Finally, we ran an analysis of variance to see whether the anchor was perceived differently in the two conditions in which it was presented. We found that there was no difference related to how important participants considered others' donation between LA ( $M = 3.26; SD = 2.04$ ) and HA ( $M = 2.69; SD = 1.63; F(1,85) = 2.08, p = .15$ ) conditions, but there was a significant difference related to how realistic participants found the information about other people's behavior ( $M_{LA} = 3.81; SD_{LA} = 1.69$  and  $M_{HA} = 2.40; SD_{HA} = 1.37, F(1,86) = 17.55, p < .01, \eta^2_p = .17$ ).

### 2.3 Discussion

The goal of Experiment 1 was to show how individuals are influenced by others' behavior when deciding how much they are willing to donate in the presence of a low versus a high anchor. Despite the fact that the high anchor (€90) was considered less realistic than the low anchor (€10), it still affected donations significantly ( $M_{HA} = €32.22$  and  $M_{LA} = €22.14$ ), a result that is consistent with the anchoring heuristic (Strack & Mussweiler, 1997). Moreover, willingness to donate in the LA condition ( $M = €20.25$ ) was not significantly different from the willingness to donate reported by participants in the NA condition ( $M = €17.80$ ). In addition to finding the expected difference between high- and low-anchor conditions, it is noteworthy that there is a significant difference between the NA and HA conditions, as it shows that the high anchor can increase willingness to donate compared to a situation in which participants have no information about others' donations.

Furthermore, participants in both the HA and the LA conditions showed less intense affective reactions comparing to the NA condition. It seems that simply providing information about other peoples' donations, regard-

less of the magnitude of the anchor, makes people emotionally less involved with the charity cause. This result can be explained by the limited attentional resources theory (Broadbent & Broadbent, 1987; Conway, 1996; Raymond et al., 1992). According to this theory, the anchor attracts attentional resources more than the victims' picture, likely because participants' concern regarding adherence to social norms is more important than concern about the victim. Moreover, since the anchor is more useful information in understanding how much it is worth contributing to the social cause, people are likely to pay more attention to this; therefore, the lower attention directed to the picture of the victim may have reduced the intensity of the emotional reaction in the LA and HA conditions. As a result, participants are less involved emotionally with the victims' situation when they are presented with an anchor.

Experiment 1 allowed us to show that reporting the average donation made by other people can serve as an anchor donors use to decide their own donations. In Experiment 2, we will test how the high and low anchors influence donations when they refer to the behavior of a people belonging to either an ingroup or an outgroup.

## 3 Experiment 2

The goal of Experiment 2 was to replicate the difference between high and low anchors in modulating donation decisions while at the same time adding the group membership dimension. As described previously, ingroup members have a stronger influence than outgroup members (Barnum & Markovsky, 2007; Tajfel & Turner, 1979). Given that nationality seems to be a robust ingroup-outgroup indicator, we decided to use it as a manipulation of our experimental design (Barrett, Wilson, & Lyons, 2003; Hagendoorn, 1995; Lee & Fiske, 2006; Van Oudenhoven, Grounewoud, & Hewstone, 1996).

This time, both the high and low anchor referred to the behavior of either ingroup or outgroup members. We hypothesized that, regardless of group membership, willingness to donate should be higher in the HA condition than in the LA condition. However, we also hypothesized an interaction between high/low anchor and ingroup/outgroup behavior. From Experiment 1, we know that donation amounts in the LA condition are very close to the average donations reported in the no-anchor condition, therefore participants should find very easy to conform to it and no difference between ingroup and outgroup should be found. On the contrary, when the anchor is high (HA condition), people should not just donate more than in the LA condition, but should also be more willing to donate when the reference point is the average donation made by members of the ingroup. There-

fore, we hypothesized that, in the HA condition, willingness to donate should be higher when participants are presented with the average donation made by ingroup members rather than the average donation made by outgroup members. This depends on the tendency of an individual to conform more to the behavior of individuals belonging to the ingroup because of the need to feel in tune with the values and beliefs of one's own group as well as the pressure of being accepted by other ingroup members.

### 3.1 Method

#### 3.1.1 Participants and design

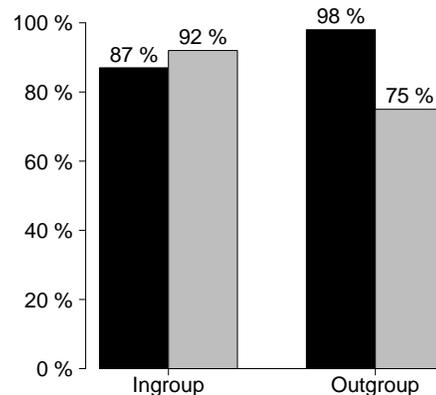
198 students from the University of Padova (mean age  $M = 21.46$ ,  $SD = 2.59$ ; 117 females) completed a paper questionnaire during class hours. They were randomly assigned to one of the four experimental conditions: 49 in the Low Anchor-Ingroup condition (LA-I), 49 in the High Anchor-Ingroup condition (HA-I), 51 in the Low Anchor-Outgroup condition (LA-O), and 49 in the High Anchor-Outgroup condition (HA-O).

#### 3.1.2 Materials and procedure

In Experiment 2, participants read the same scenario as in Experiment 1. In addition, the information about the average donation made by other people could refer to either members of an ingroup (Italians) or members of an outgroup (Germans). Ingroup and outgroup were decided on the basis of a pilot test in which Italian students perceived themselves as belonging more to the Italian group ( $M = 3.20$ ) than the German one ( $M = .85$ ),  $t(20) = 3.81$ ;  $p < .01$ . Both participants in the ingroup condition and those in the outgroup condition were presented with either a low anchor or a high anchor. Therefore, Experiment 2 had a  $2 \times 2$  design and four different conditions. Furthermore, we decided to present participants with a needy child who did not belong to either the ingroup (Italians) or the outgroup (Germans). For this reason, in Experiment 2, participants were asked to help Amina, a little African girl (we also presented them with a picture of Amina). Depending on the experimental condition, below the image of the child was written "On average, Italians (Germans) donate €10 (€70) to support this project." Because in the previous experiment high anchor was perceived as less realistic than low anchor and the average donations of the participants were more distant from the anchorpoint in the HA condition (€57.88 lower than the anchor) compared to the LA condition (€10.13 higher than the anchor), we decided to lower the high anchor from €90 to €70 in this second experiment and determine if that could influence the results.

As in Experiment 1, participants completed the mood and happiness scales first (Mood;  $r = .61$ ,  $p < .001$ ), then

Figure 2: Proportions of the decision to donate or not in the four conditions.



read the scenario about Amina and decided whether they wanted to make a donation and how much they wanted to donate. Finally, participants answered the questions related to their affective reactions (Dickert et al., 2011; Cronbach's alpha for these items was .82), and responded to the same control questions as in Experiment 1 (1) how familiar they were with brain-injury illnesses; 2) how important they found the information about the average donations made by other Italians; and, 3) how realistic they found the average amount donated by other Italians).

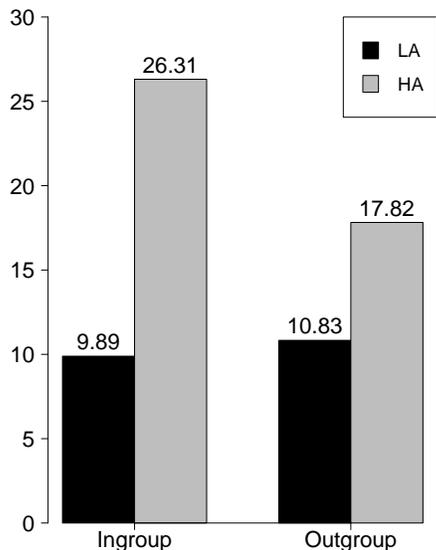
### 3.2 Results

Unlike Experiment 1, Mood did not correlate with the amount of money participants were willing to donate ( $r = -.006$ ,  $p = .93$ ). Therefore, it will not be considered as a covariate variable in the following analysis.

We ran a loglinear analysis to test the Yes/No responses (whether participants wanted to donate or not) by Group and Anchor variables. The three-way interaction model was significant ( $\chi^2(1) = 9.01$ ,  $p = .003$ ). Separate chi-square test for ingroup and outgroup showed that, when the reference group was German, fewer participants decided to make a donation in the HA condition than in the LA condition ( $\chi^2 = 11.22$ ,  $p = .001$ ), but when the reference group was Italian, the HA and LA conditions did not differ ( $\chi^2 = .45$ ,  $p = .51$ ; see Figure 2). Furthermore, most of the participants in the LA-I and HA-I conditions decided to make a donation (87.8% in the LA-I condition versus 91.8% in the HA-I condition) therefore replicating the results found in Experiment 1.

To test the role of anchors and group on donation amount, we ran a two (Anchor: low vs. high)  $\times$  two (Group: ingroup vs. outgroup) analysis of variance with the amount of the donation as the dependent variable. As in Experiment 1, we included participants who did not want to make a donation, setting their donation amount

Figure 3: Average willingness to donate in the four conditions of Experiment 2.



to zero. This analysis showed a main effect of Anchor,  $F(1,197) = 22.33, p < .001, \eta_p^2 = .10$  (see Figure 3). The group variable was not significant,  $F(1,197) = 1.81, p = .18$ , whereas there was an almost significant two-tailed interaction between the Anchor and Group factors,  $F(1,197) = 2.91, p = .09; \eta_p^2 = .02$ . (This is of course significant one tailed, and our hypothesis is reasonably considered to be one tailed.)

Participants donated significantly more in the HA condition than in the LA condition. We ran planned contrast effects to investigate the interaction between Anchor and Group. The results showed that, both in the ingroup and in the outgroup conditions, participants donated more money when presented with a high donation rather than a low donation: respectively,  $t(197) = 4.53, p < .001, d = .65$  for participants presented with average donations made by ingroup members and  $t(197) = 2.15, p = .03, d = .31$  for participants presented with average donations made by outgroup members. We did not find a significant difference between the two conditions in which participants were presented with the low anchor, whereas there was a difference between the two conditions in which participants were presented with the high anchor: respectively,  $t(197) = .26, p = .80, d = .04$  when participants were presented with a low anchor and  $t(197) = 2.15, p = .03, d = .31$  when participants were presented with a high anchor.

We ran a second analysis of variance to test the effect of Anchor and Group on affective reactions. The results showed a significant interaction effect between the independent variables,  $F(1,197) = 6.87; p = .009; \eta_p^2 = .034$ . Both main effects of Anchor and Group were not significant: respectively,  $F(1,197) = .001; p = .97$  for the An-

chor factor and  $F(1,197) = .50; p = .48$  for the Group factor. Planned contrast effects showed that affective reactions were higher for the HA-I than HA-O condition ( $t(197) = 2.34, p = .02, d = .33$ ). Differences between the two conditions in which participants are presented with high and low average donations made by ingroup members and outgroup members were in the opposite direction (see Table 1).

As in Experiment 1, we conducted an analysis of variance to explore if there were differences in familiarity with brain-injury diseases across conditions. Neither the Anchor nor the Group factors showed a significant effect: respectively,  $F(1,197) = .08; p = .78$  for the Anchor and  $F(1,197) = .86; p = .35$  for the Group. The interaction was also insignificant;  $F(1,197) = 2.43; p = .12$  (see Table 1).

Finally, we ran an analysis of variance to test if the perceived importance of others' donations was influenced by the experimental conditions (Anchor and/or Group). The results showed only a significant effect of the Anchor variable ( $F(1,195) = 13.00; p < .001; \eta_p^2 = .06$ ), revealing that participants in the HA condition considered others' donation decisions less important compared to the LA. Also, we ran an additional analysis of variance to assess how realistic participants considered others' donations and found the same result as in Experiment 1 ( $M_{LA} = 3.81; SD_{LA} = 1.69$  and  $M_{HA} = 2.40; SD_{HA} = 1.37$ ): others' donations were considered more realistic in the LA condition compared to the HA condition ( $F(1,194) = 23.93; p < .001; \eta_p^2 = .11$ ; see Table 1). There was no significant effect either for the main effect of Group or for the interaction between Anchor and Group.

### 3.3 Discussion

In Experiment 2 we found that, in the LA condition, willingness to donate was similar whether the average donation was described as that of an ingroup or an outgroup. However, in the HA condition, participants were more likely to make a donation ("Yes" responses) and also reported higher donation amounts when the average donation referred to ingroup members rather than outgroup members. Even though participants found the high anchor overall less important and less realistic than the low anchor, the social pressure to conform to others behavior was higher in the ingroup than in the outgroup condition. Consistent, participants reported higher affective reaction in the HA-I condition than in the HA-O condition.

We cannot compare the results for affective reactions with those from Experiment 1 because Experiment 2 did not include a condition without the anchor; therefore it is impossible to say whether the presence of the anchor (either high or low) reduced participants affective reactions or not compared to a condition in which the anchor is not present. Still, we replicated the result showing that af-

Table 1: Average responses and standard deviations for the affective reactions, familiarity with brain injury diseases, and perception of anchors in Experiment 2.

	Ingroup				Outgroup			
	Low anchor		High anchor		Low anchor		High anchor	
	(LA-I)		(HA-I)		(LA-O)		(HA-O)	
	M	SD	M	SD	M	SD	M	SD
Affective reactions	3.83	1.09	4.23	1.15	4.13	0.96	3.71	1.2
Familiarity with brain injury diseases	1.94	1.33	2.18	1.41	2.06	1.53	1.71	1.03
Importance of others donation decision	3.73	1.81	3.29	1.96	3.94	2.00	2.43	1.84
Realism of others donation decision	3.92	1.69	2.80	1.40	3.90	1.49	2.87	1.55

fective reactions were not affected by whether the anchor was high or low.

A possible problem with Experiment 2 is that we decided to use an African needy child as the target of the charity scenario to avoid her belonging to either the ingroup or the outgroup. It is possible that, in Experiment 2, the results found for the outgroup were influenced by the fact that, compared to the participants, the target of the charity scenario was part of an outgroup as well. Because of this confounding, we decided to replicate the second experiment asking participants to help an Italian child, as we did in Experiment 1.

## 4 Experiment 3

Experiment 3 manipulated the same variables and has the same hypothesis as Experiment 2, but this time the target of the charity scenario was an Italian needy child. Furthermore, given the different financial situation between Italy and Germany we measured participant's perceived wealth of the reference group. Participants were all Italians. Half of them were presented with an Italian reference group, whereas the other half was presented with a German reference group.

### 4.1 Method

#### 4.1.1 Participants and design

147 students from the University of Padova (mean age  $M = 23.5$ ,  $SD = 4.65$ ; 111 females) completed a paper questionnaire during class hours. They were randomly assigned to one of the four experimental conditions: 36 in the Low Anchor-Ingroup condition (LA-I), 38 in the High Anchor-Ingroup condition (HA-I), 35 in the Low Anchor-Outgroup condition (LA-O), and 38 in the High Anchor-Outgroup condition (HA-O).

#### 4.1.2 Materials and procedure

Materials used in Experiment 3 were same as in the previous experiment except that the needy child was Italian. In addition, we asked participants to rate how rich they perceived the reference group in a scale from 1 (*not at all*) to 7 (*very much*). Mood and happiness showed a significant correlation ( $r = .56$ ,  $p < .001$ ) so they were averaged together (Mood) and affective reactions showed a good reliability (Cronbach's alpha equal to .79).

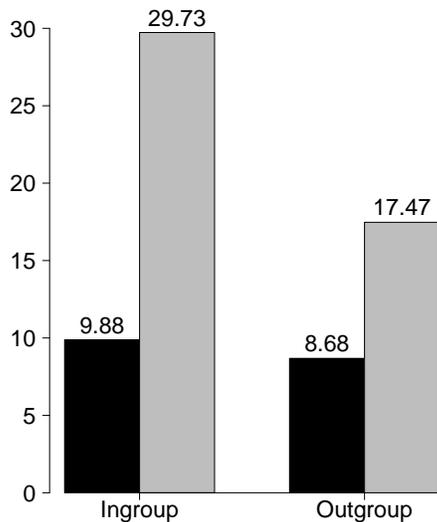
### 4.2 Results

Mood was significantly correlated with the donation amount ( $r = .19$ ,  $p = .02$ ) therefore we added it as a covariate in the following analysis.

A loglinear analysis of the Yes/No responses (whether participants wanted to donate or not) by Anchor and Group variables showed that only the main effect was significant ( $\chi^2(7) = 131.21$ ,  $p > .001$ ); most participants said that they were willing to donate to the charity cause ( $z = -8.08$ ,  $p > .001$ ). Two-way and three-way interactions models were not significant, respectively  $\chi^2(4) = .31$ ,  $p = .99$  for the two-way interactions and  $\chi^2(1) = .00$ ,  $p = .98$  for the three-way interaction.

An analysis of variance with Anchor and Group as independent factors, Mood as a covariate, and donation amount as a dependent variable showed a main effect of Anchor ( $F(1,144) = 37.53$ ,  $p < .001$ ,  $\eta^2_p = .21$ ) and a significant effect of Group ( $F(1,144) = 5.16$ ,  $p < .03$ ,  $\eta^2_p = .04$ ) indicating that participants donated more in the HA and in the ingroup condition. Furthermore, there was an almost significant two-tailed interaction (again, significant one tailed) between Anchor and Group ( $F(1,144) = 3.45$ ,  $p = .065$ ,  $\eta^2_p = .024$ ). Participants were willing to donate about the same amount of money in the LA conditions ( $M = 9.61$  and  $SD = 5.11$  for the ingroup,  $M = 8.19$  and  $SD = 6.29$  for the outgroup) and more money for the

Figure 4: Average willingness to donate in the four conditions of Experiment 3.



ingroup ( $M = 28.95$  and  $SD = 23.75$ ) than the outgroup ( $M = 17.47$  and  $SD = 12.56$ ) in the HA condition (see Figure 4). Once again, as in previous experiments, we included participants who did not want to make a donation, setting their donation amount to zero.

Planned contrasts showed that all contrasts were significant except LA-I vs. LA-O ( $t(144) = -.42, p = .67$ ). For LA-I vs. HA-I ( $t(144) = -5.86, p < .001, d = .98$ ; for HA-O vs. LA-O,  $t(144) = 2.72, p = .01, d = .45$ ; and for HA-O vs. HA-I ( $t(144) = -3.61, p < .001, d = .60$ ).

An analysis of variance with affective reactions as a dependent variable, Mood as a covariate, Anchor and Group as independent factors showed only a main effect of the Group variable ( $F(1,144) = 4.99, p < .023, \eta^2_p = .01$ ) describing that affective reactions were higher for the ingroup conditions ( $M = 4.43$  and  $SD = 1.02$ ) compared to the outgroup conditions ( $M = 4.06$  and  $SD = 1.16$ ). As in Experiment 2, the Familiarity variable was not significantly different through the experimental conditions. Furthermore, participants found other's behavior more important in the LA condition compared to the HA condition ( $F(1,143) = 3.88, p = .05, \eta^2_p = .03$ ) and they found other's behavior more realistic in the LA condition compared to the HA condition ( $F(1,143) = 6.63, p = .01, \eta^2_p = .05$ ).

Finally, German citizens were perceived as significantly richer than Italians ( $t(141) = -3.77, p < .01$ ), but, when this variable was included as a covariate, it did not influence either the donation decision ( $F(1,140) = .81, p = .37$ ) or the affective reactions ( $F(1,140) = 2.22, p = .14$ ).

## 5 General discussion

The present findings are consistent with the literature on the anchoring effect (Epley & Gilovich, 2006; Tversky & Kahneman, 1974): when people are given a high anchor, they are willing to donate more compared to a condition in which they are given a low anchor or no anchor. Furthermore, we found that the low anchor did not make a significant difference compared to a condition in which no anchor was presented. In Experiment 1, participants donated, on average, €22.13 in the LA condition and €19.46 in the NA condition. Although this difference was not significant, participants experienced lower affective reactions in the LA condition (and in the HA condition) compared to the NA condition. We argue that this could be related to the limited attentional resources that people have (Broadbent & Broadbent, 1987; Conway, 1996; Raymond et al., 1992). Information about others' donations might become more relevant when deciding the worth of contributing to a social cause; therefore, while focusing on others' behavior, participants pay less attention to the target of their helping action and subsequently feel emotionally less involved. Additionally, the anchor can be used as feedback on the correct donation amount, therefore reducing the need to attend to one's affective reactions, which are often used as information on how much to donate (Kogut & Ritov, 2005a, b; Dickert et al., 2011).

Although it is difficult to tell whether participants were influenced by the anchor in the LA condition or simply respected their baseline donations, we can conclude that, in the HA condition, participants made a significantly larger donation compared to the NA condition; therefore, we can consider this manipulation effective at increasing willingness to donate. In addition, donations in the HA condition were much lower than the anchor, but higher in the LA condition. In Experiment 1, the average donation amount was €58 less than the high anchor (€90), in Experiment 2, it was about €48 less than the high anchor (€70) and, in Experiment 3, participants donated on average about €46 less than the high anchor (€70). At the same time, in all three experiments, donations in the LA condition exceeded what other people had reportedly donated, probably because it was quite a low amount of money (€10). From Experiment 1 we also know that donations in the LA condition were not significantly different from donations in the NA condition, therefore this could have made easier for the participants to give a sum larger than the low anchor. Consistent with these results, and despite the effect found for the willingness to donate, participants indicated that the anchor was less realistic in the HA condition compared to the LA condition, and, in Experiment 2 and 3, participants reported that they perceived the importance of others' donations less in the HA

condition than the LA condition. Despite being considered less realistic, the high anchor had an effect on how much participants were willing to donate, and this result is consistent with previous research showing that even extremely implausible anchor values produce a strong assimilation effect (Strack & Mussweiler, 1997).

Additionally, in Experiment 2 and 3, consistent with our hypothesis, we found that participants in the HA-O condition donated less money than participants in the HA-I condition. As described in the hypothesis section, when the reference donation is low (€10) it is closer to the no-anchor average donation and it is easier to match independently from the reference group, but when the reference donation is high (€70) and the decision is presumably more difficult, participants' donations are higher in the ingroup condition. The anchors used in our experiments were not irrelevant numbers, but were presented as average donations made by other people, which means that they should be considered in light of social-comparison motivations. If we consider the anchor as information that generated social pressure, it is reasonable to find that people conformed more to the behavior of members of their group than with the behavior of members of an outgroup (Deutsch & Gerard, 1955; Lewis, Langan, & Hollander, 1972). Beside this, participants reported less intense affective reactions toward the victim in the HA-O condition than in the HA-I condition (Experiment 2) and lower affective reaction overall for the outgroup than ingroup (Experiment 3). Since in Experiment 2 and 3 we presented the anchor in all conditions and each participant saw exactly the same amount of information, we cannot consider the limited attentional resources as an explanation to these results. We suggest that the difference in the affective reactions experienced when presented with an ingroup versus an outgroup should depend on a retrospective justification that participants apply to their donation decision when the group variable is added. Cameron & Payne (2011) found that, when people consider the request to be in an amount which is too large for them to help, they regulate their emotions in order to avoid a cognitive-emotional conflict.

A limitation of our work is related to the actual financial situation of Italy and Germany, which could have confounded our results. Strack and Mussweiler (1997) showed that the direction in which the anchors influence the judgments depends on whether target and context stimuli are similar. The authors found that, when the target and stimuli are identical, participants' judgments are assimilated toward the anchors. However, when the context and target stimuli are not identical, anchoring might lead to contrast. In Experiment 3, we replicated most of the results of Experiment 2 with an Italian target as a needy child. We discovered that Germans were perceived as richer than Italians, but this variable did not influence

either the donation amount or the affective reactions toward the victim.

Finally, looking to previous models that investigated how others' behavior influences a donor's contribution, it is possible to conclude that our findings are more supportive of complement models than substantive models (Bernheim, 1994; Croson, 2007; Shang & Croson, 2009; Sugden, 1984; Vesterlund, 2003). Consistent with complement models, participants showed a tendency to conform to the behavior of others and to use this information as a reference point to decide how much money should be donated, rather than simply reducing their contributions. In the HA condition, they donated much less than the anchor, but still more than in the LA and NA conditions. We believe this is a reasonable result, especially in a situation in which people are asked to answer an open-ended question about how much they are willing to donate. It is likely that people find it difficult to establish how much it is worth to contribute to a specific social cause. Therefore, they need a reference point or some kind of information that can help them make sense of the situation. In most cases, the lack of more reliable information leads people to use their own affective reactions as an indicator of how much they should donate (Batson et al., 1989; Kogut & Ritov, 2005a, 2005b; Dickert et al., 2011). By knowing how much others donate, potential donors have a more concrete piece of information at their disposal and can simply conform to it.

Future studies should try to understand why people did not conform more to the high anchors and should investigate whether in the HA condition participants experienced a conflict between how much they are willing to donate and how much others are reported to have given. It would be important to investigate how people regulate this conflict. Possibly, individuals downplay the importance of their contribution when they are unable to match others' donations. Although we measured how important the anchor was for participants, we do not have data on participants' evaluation of the importance of their own donation. Future research should focus on manipulating these variables in a real fundraising context as well as testing whether anchors unrelated to other people's behavior can influence donations, or whether responses are further changed when different types of contributions are requested (for instance: money, time and effort).

Nevertheless, the present experiments allowed us to understand how people react when they are informed how much other people donate to a specific cause, particularly when anchors refer to the behavior of members of an ingroup or outgroup. When people are presented with high anchors, they are more likely to conform to the anchor and increase rather than reduce their donations. This behavior is particularly evident when the high anchor refers to the behavior of ingroup members.

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