Working Paper

The better is the enemy of the good

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Abstract

In standard economic theory, information helps agents optimize. But providing agents with information about the benefits of an action often fails to encourage that action. This paper proposes a far-reaching behavioral explanation: information may make salient that the benefits of taking an action could be improved and agents may see the potential for improvement as a reason to avoid the action. In an experiment, making more salient how a donation could be improved significantly decreases giving. Self-serving motives dramatically magnify the effect, suggesting why information may be particularly ineffective at encouraging privately costly actions with social or future benefits.

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1 Introduction

Providing decision-makers with information about the benefits of an action often proves ineffective at encouraging that action. Indeed, the ineffectiveness of informational interventions has contributed to the rising importance and application of non-informational interventions, like those proposed in Nudge (Thaler and Sunstein, 2009) and being promoted and implemented by policy-oriented groups around the world. In this paper, we propose, demonstrate, and explore a behavioral phenomenon that may contribute to why information fails to encourage desired behaviors.[1]

We begin with the observation that information about the benefits of an action may also make salient what the action does not achieve and propose that individuals may place undue weight on the latter. Consequently, information about the benefits of an action may highlight the action's limitations, trigger a desire for the action to be better, and thus prevent the action from being deemed good enough. Following the common aphorism, we call this phenomenon the better being the enemy of the good. We further suggest that if an action is costly, such that individuals are motivated to find a reason to avoid it, this effect may be exacerbated.[2] That is, we hypothesize that individuals may desire to *let* the better be the enemy of the good. For instance, an agent may focus on the shortcomings of a particular retirement plan, diet, exercise regime, educational investment, or new technology and let those shortcomings impede its adoption.

This paper examines whether the better is indeed the enemy of the good, and tests whether this behavioral phenomenon is more relevant in the presence of self-serving motives. We conduct this examination in the context of charitable giving. One significant advantage of this setting is that it allows us to randomly vary whether self-serving motives are present by varying whether a giving decision involves private costs. In an online study with nearly sixteen hundred participants, we find that making slightly more salient what a giving opportunity does not achieve makes participants significantly less likely to take advantage of a giving opportunity. This effect is dramatically amplified when the giving opportunity is costly to the agent and so self-serving motives may discourage participants from giving.

In particular, each participant in our study makes forty-eight binary decisions between various charitable giving bundles and a fixed outside option. When a bundle is chosen, a subset of Make-A-Wish Foundation state chapters receives a donation.[3] When participants are randomly assigned to our *charity-charity treatment*, the fixed outside option also involves money going to a charity. When participants are randomly assigned to our *charity-self treatment*, the fixed outside option instead involves money going to the participant. Consequently, participants in the charity-self

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[1]While we offer a behavioral explanation for the failure of information to encourage actions, we recognize that there are non-behavioral reasons as well. For example, even if individuals process information in a standard, Bayesian way, they may still not be convinced by information simply because they are not marginal given the information being provided (see, Coffman, Featherstone and Kessler (2017)).

[2]Indeed, when faced with choosing between actions that favor competing ethical principles, Barak-Corren et al. (2017) find that individuals are more likely to favor no action.

[3]The Make-A-Wish Foundation is a 501(c)(3) charitable organization that organizes and funds "wishes" for children with life-threatening medical conditions.

treatment (and only these participants) have a motive to adopt self-serving views about a bundle since choosing the bundle has a private cost.

In our experiment, information about a bundle always details the complete set of donations made when the bundle is chosen — for instance, participants may see a bundle in which state chapters A, B, C, and D each receive a donation of d. We increase the salience of what is not achieved in a bundle by "adding a zero" to it. In this case, information about a bundle also highlights a donation that does not occur — for instance, by also listing that state chapter E receives no donation. Since state chapters not included in the bundle are known to receive no donation, adding a zero to a bundle provides no information about the set of donations that are made (or not made) when a bundle is chosen. This point is reinforced by the fact that the subset of state chapters receiving donations varies across the forty-eight bundles that participants face. Adding a zero to a bundle only serves to increase the salience of a donation that does not occur and thus how a bundle could have been better.

Our first finding confirms that there is an impact of making salient how a bundle could have been better. In the charity-charity treatment, bundles are significantly less likely to be chosen when a zero is added. This effect is meaningful; for example, the impact of adding a zero to a bundle has a larger effect than adding a donation to a bundle and thereby increasing the total amount donated by 33%. Our second finding documents that self-serving motives dramatically amplify this effect. Adding a zero to a bundle decreases participants' willingness to choose that bundle by 2.5 to 4 times as much in the charity-self treatment as in the charity-charity treatment. That is, we find that the better is the enemy of the good, particularly when agents have a self-serving motive to let it be. Additional findings show that the degree to which participants engage in this kind of self-serving behavior relates to their underlying prosocial tendencies and show that a desire for consistency may constrain such self-serving behavior.[4]

To further explore our results and their robustness, we run three additional versions of our experiment and document that our results persist when we help participants process information, when we change the outside options, and among participants who have the option to avoid information but choose to learn it anyway. These additional results highlight the extent to which the better is the enemy of the good and the extent to which individuals exploit the better as an excuse to avoid the good.

Our first finding, that adding a zero to a bundle makes it less appealing, even in the absence of self-serving motives, relates to a broad set of literature on how individuals process information. We provide evidence of a behavioral phenomenon that cannot easily be rationalized by existing theories, but models in economics that are related in spirit include those that incorporate saliency effects (Bordalo, Gennaioli and Shleifer, 2012, 2013), proportional thinking (Cunningham, 2013), focusing (Kőszegi and Szeidl, 2013), and relative thinking (Bushong, Rabin and Schwartzstein,

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[4]See Section 3.1.2 for a discussion of literature related to these findings.

2017).[5] Related framing effects, found mostly in the psychology literature, also demonstrate how additional information may taint the attractiveness of an option. These include the "more is less" phenomenon (Hsee, 1998; List, 2002; Leszczyc, Pracejus and Shen, 2008), the "denominator effect" (Baron, 1997; Jenni and Loewenstein, 1997; Fetherstonhaugh et al., 1997), and the finding that patience increases when the opportunity cost to choosing money today (i.e., not receiving money in the future) is highlighted (Magen, Dweck and Gross, 2008; Read, Olivola and Hardisty, 2016). Unlike this earlier work, however, our experiment shuts down a variety of channels that may drive the previous results. The bundles in our experiment are clear and certain, so adding a zero to a bundle cannot change beliefs about bundle quality or serve as reminder about the value of the benefits included in or excluded from a bundle.[6] In addition, our findings persist over forty-eight decisions, even as participants gain experience with the decision environment and have evaluated dozens of bundles, which contrasts with the previous literature of mostly one-shot decisions.

Our second finding, that agents adopt a more negative response to adding a zero when they have a self-serving reason to do so, speaks to how individuals may exploit information to justify selfish behavior. In this way, our paper relates to and extends a large literature on self-serving responses to information. In previous work, uncertainty is a key element around which self-serving responses to payoff information arise. Dana, Weber and Kuang (2007) document how individuals avoid information that would resolve payoff uncertainty to take advantage of the "moral wiggle room."[7] Haisley and Weber (2010) document how individuals develop self-serving responses to ambiguous payoff information, while Exley (2015) documents how individuals develop self-serving responses to risky payoff information. Based on the extant literature, one might believe that agents would not exhibit a self-serving response to payoff information that was unavoidable and free of any uncertainty. Our results prove otherwise. Individuals develop self-serving responses to payoff information that is simple, certain, and unavoidable.[8]

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[5]For empirical work on saliency, see, for instance, Chetty, Looney and Kroft (2009), Finkelstein (2009), and Taubinsky and Rees-Jones (2016). For a discussion of saliency in the psychology literature, see Fiske and Taylor (2013).

[6]In previous work, adding a low-value good to a bundle of unknown value may serve as a signal for overall bundle quality. For example, adding chipped plates to a bundle of china as in the hypothetical choices of Hsee (1998) may lead to an inference that the china is particularly fragile or that the non-chipped plates have other defects. Similarly, adding sports cards of lower quality to a bundle of cards as in List (2002), might lead inexperienced agents to assume that other cards in a bundle are at the "low-end" rather than at the "high-end" of their professional ratings and thus that the bundle has a lower value — indeed the "more is less" phenomenon observed in List (2002) is dramatically muted among experienced sports card dealers who may be able to better assess the value of the underlying bundle. See Leszczyc, Pracejus and Shen (2008) for a related discussion and additional evidence that the "more is less" phenomenon depends on the uncertainty of the underlying bundle.

[7]For additional literature on information avoidance, see a review in Golman, Hagmann and Loewenstein (2017) or additional work such as Larson and Capra (2009), Nyborg (2011), Bartling, Engl and Weber (2014), Conrads and Irlenbusch (2013), Feiler (2014), Grossman (2014), van der Weele (2014) and Grossman and van der Weele (2016). For further evidence on the avoidance of giving opportunities themselves, see Broberg, Ellingsen and Johannesson (2007), Oberholzer-Gee and Eichenberger (2008), Jacobsen et al. (2011), DellaVigna, List and Malmendier (2012), Lazear, Malmendier and Weber (2012), Kamdar et al. (2015), Trachtman et al. (2015), Andreoni, Rao and Trachtman (2016), and Lin, Schaumberg and Reich (2016). Or, for the avoidance of "moral tests" more broadly, see Miller and Monin (2016).

[8]That our results also persist among individuals who have the option to avoid information but choose to fully

Taken together, our findings demonstrate that making salient what an action does not achieve has an undue weight on decision making. This behavioral phenomenon may help explain why providing information about the benefits of an action often fails to encourage decision makers to take the action, particularly when the action has a private cost. As further discussed in the conclusion, we see rationalizing these findings as an interesting challenge for future work.

The rest of the paper proceeds as follows. Section 2 describes the experimental design. Section 3 describes the experimental results. Section 4 concludes.

2 Design

We conduct four versions of our study. The main version is the *info-amounts* version. We also run three additional versions: the *info-amounts-sum*, *info-choice*, and *info-amounts-150* versions. Within each version, participants are randomly assigned to the *charity-charity treatment* or to the *charity-self treatment*. Appendix Table A.1 provides a summary of the differences across study versions and treatments.

In both treatments of all versions, participants' main decisions involve forty-eight binary choices between various charitable giving bundles and a constant outside option. Choosing a bundle results in donations to a subset of Make-A-Wish Foundation state chapters. In the charity-charity treatment, choosing the outside option also benefits a charity. In the charity-self treatment, choosing the outside option instead benefits oneself. Self-serving motives are therefore only relevant in the charity-self treatment.

Section 2.1 details the outside options, Section 2.2 details the bundles, and Section 2.3 details the information that participants receive and are required to view about the bundles. Section 2.4 describes the implementation procedure and data.

2.1 The outside options

In both treatments of all versions, participants begin the study by completing a "normalization" price list that elicits an X value such that participants are indifferent between X cents for themselves and 150 cents for the Make-A-Wish Foundation national chapter. In particular, on each row of a thirty-one row price list, participants must decide between two payment options. The first payment option involves 150 cents being given to the national chapter of Make-A-Wish Foundation. The second payment option involves $5 * (r - 1)$ cents being given to the participants on the rth row. If a participant switches from choosing the first payment option on the rth to the second payment

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reveal it suggests that the "flexibility" often needed to produce self-serving responses to information is not necessary to generate our results. In a survey paper, Gino, Norton and Weber (2016) discuss how "[i]ndividuals' flexibility and creativity in how they acquire, attend to, and process information" facilitates motivated reasoning. For instance, such flexibility may arise from uncertainty or subjectivity around which set of actions is "fair," appropriate, or plausibly justified (Snyder et al., 1979; Babcock et al., 1995; Hsee, 1996; Konow, 2000; Shalvi et al., 2011; Shalvi, Eldar and Bereby-Meyer, 2012; Gino and Ariely, 2012; Gino, Ayal and Ariely, 2013; Gneezy, Keenan and Gneezy, 2014; Di Tella et al., 2015; Pittarello et al., 2015; Danilov and Saccardo, 2016; Exley, 2016; Schwardman and van der Weele, 2016) or due to the existence of intermediaries, others, or nature who are seemingly responsible (Hamman, Loewenstein and Weber, 2010; Linardi and McConnell, 2011; Coffman, 2011; Bartling and Fischbacher, 2012; Andreoni and Bernheim, 2009; Falk and Szech, 2013).

option on the $(r+1)^{th}$ row, then that participant is indifferent between 150 cents for the national chapter and X cents for themselves, where $5*(r-1) \leq X \leq 5*r$.

In three of the versions of our study — our main *info-amounts* version as well as the *info-amounts-sum* and *info-choice* versions — we use estimates of X to ensure that participants in both treatments similarly value their outside option. In particular, the outside options for participants equal:

- 150 cents for the Make-A-Wish Foundation national chapter if they are randomly assigned to the charity-charity treatment, and

- X cents for themselves if they are randomly assigned to the charity-self treatment.

When the lower bound of a participant's X value does not equal 0, we estimate a participant's X value as its lower bound. That is, we set $X = 5*(r-1)$ cents. This ensures that participants should weakly prefer the outside option in the charity-charity treatment to the outside option in the charity-self treatment. Consequently, our estimate of the extent to which self-serving motives push participants towards choosing their outside option in the charity-self treatment will be a lower bound.[9] When the lower bound of a participant's X value equals 0, we instead assume the upper bound of their indifference range so that $X = 5$ cents. As explained in Section 2.4, this occurs less than 20% of the time and our results are robust to the exclusion or inclusion of such participants.

By contrast, in the *info-amounts-150* version of our study, instead of making the outside options comparable in terms of valuations, we make the outside options comparable in terms of nominal amounts. We also change the charity in the outside option to be more distinct from the charities in the bundle. In particular, the outside options for participants equal:

- 150 cents for the American Red Cross if they are randomly assigned to the charity-charity treatment, and

- 150 cents for themselves if they are randomly assigned to the charity-self treatment.

As we will discuss in Section 3, this version allows us to confirm that the difference in behavior we observe between the treatments is not due to our normalization procedure or the similarity of the outside option to the bundles in the other versions.

2.2 The bundles

Participants make forty-eight decisions between their outside option and their charitable giving bundles. While a participant's outside option does not change across the forty-eight decisions (as detailed in the previous Section 2.1), the bundles do change across the forty-eight decisions. The

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[9]We see the normalization procedure as a valuable methodological contribution to laboratory work to make treatments with different outside options comparable, and we have used variants of it in our other work (Exley, 2015, 2016; Exley and Kessler, 2017). Eliciting participant-specific X values also serves as a useful measure of participants' prosocial tendencies for considering heterogeneous treatment effects.

forty-eight bundles a participant faces, however, are the same for all participants in our experiment (i.e., they do not vary by treatment or version of the study).

Each bundle is constructed by randomly selecting j Make-A-Wish Foundation state chapters.[10] From the j state chapters in a bundle, i are then randomly selected to receive a donation. An *i/j-bundle* therefore involves i state chapters receiving a donation of d cents and $j - i$ state chapters receiving no donation. Any state chapter not included in a bundle is also known not to receive a donation.

In the thirty-six "main bundles," the i state chapters receiving a donation are given d cents for some randomly selected $d \in \{51, 52, 53, 54, 55, 56, 57, 58, 59\}$. While d is held constant within a bundle, d is randomly selected and thus varies across bundles. There are three sets of main bundles.

1. There are twelve "baseline" *i/4-bundles*. Each column within the top panel of Table 1 describes one of baseline bundles by noting whether the first, second, third and/or fourth state chapter receives a donation of d cents.

2. There are twelve *i/5-bundles* that are constructed by "adding a zero" to each of the baseline bundles. As shown in the middle panel of Table 1, these *i/5-bundles* are constructed by adding a fifth state chapter that receives no donation to each of the *i/4-bundles*.

3. There are twelve *(i+1)/5-bundles* that are constructed by "improving" each of the baseline bundles. As shown in the bottom panel of Table 1, these *(i+1)/5-bundles* are constructed by adding a fifth state chapter that receives a donation to each of the *i/4-bundles*.

Given that the *i/5-bundles* and *(i+1)/5-bundles* are constructed by adding a fifth state chapter (that either receives no donation or a donation) to the *i/4-bundles*, note that there are effectively twelve underlying bundle "types" that are identical in terms of which of the first four state chapter receive or do not receive a donation. These bundle types are noted in the last row of Table 1. By later including bundle type fixed effects in our regression analyses, we can therefore cleanly capture the impact of adding a zero to a bundle (making salient what donations do not occur or how the bundle could have been better) and compare it to improving a bundle by adding a donation to it.

Note that the thirty-six main bundles involve twenty-four bundles with five state chapters and twelve bundles with four state chapters. To balance the number of bundles of each size and to provide data to test secondary hypotheses, we construct an additional twelve bundles with four state chapters, which are described in Table 2. Decisions involving these additional bundles are excluded from our main analysis but allow for an additional robustness check and provide additional results as detailed in Section 3.1.2.

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[10]Some states have several regional Make-A-Wish Foundation state chapters, while some states share a chapter. Our IRB approval was limited to only a subset of Make-A-Wish Foundation chapters. Given these constraints, for each bundle we randomly drew from a list of 28 states that we matched with corresponding Make-A-Wish Foundation chapters. This list included Alaska, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Michigan, Missouri, Nebraska, Nevada, New Hampshire, New York, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin.

Table 1: Donation amounts given to each state chapter in main bundles

	$i = 4$				$i = 3$				$i = 2$			
i/4-bundles												
1st state chapter	d	d	d	d	0	d	d	d	0	d	d	0
2nd state chapter	d	d	d	d	d	0	d	d	0	0	d	d
3rd state chapter	d	d	d	d	d	d	0	d	d	0	0	d
4th state chapter	d	d	d	d	d	d	d	0	d	d	0	0
i/5-bundles												
1st-4th state chapters					same as in *i/4-bundles*							
5th state chapter	0	0	0	0	0	0	0	0	0	0	0	0
(i+1)/5-bundles												
1st-4th state chapters					same as in *i/4-bundles*							
5th state chapter	d	d	d	d	d	d	d	d	d	d	d	d
Underlying bundle type:	1	2	3	4	5	6	7	8	9	10	11	12

Each column within the top, middle, or bottom panel indicates how much each state chapter receives for a given bundle. In the *i/5-bundles* and *(i+1)/5-bundles*, the first four state chapters receive the same amounts as in the corresponding *i/4-bundle*. 0 indicates that the corresponding state chapter does not receive a donation, and d indicates that the corresponding state chapter receives d cents where d is randomly selected on the participant-bundle level such that $d \in \{51, 52, 53, 54, 55, 56, 57, 58, 59\}$.

Table 2: Donation amounts given to each state chapter in additional bundles

	$i = 4^{\mathbf{L}}$				$i = 3^{\mathbf{L}}$				$i = 1$			
i/4-bundles												
1st state chapter	d^L	d^L	d^L	d^L	0	d^L	d^L	d^L	d	0	0	0
2nd state chapter	d^L	d^L	d^L	d^L	d^L	0	d^L	d^L	0	d	0	0
3rd state chapter	d^L	d^L	d^L	d^L	d^L	d^L	0	d^L	0	0	d	0
4th state chapter	d^L	d^L	d^L	d^L	d^L	d^L	d^L	0	0	0	0	d
Underlying bundle type:	13	14	15	16	17	18	19	20	21	22	23	24

Each column indicates how much each state chapter receives for a given bundle. 0 indicates that the corresponding state chapter does not receive a donation, d^L indicates that the corresponding state chapter receives d^L cents where d^L is randomly selected on the participant-bundle level such that $d^L \in \{30, 31, 32, 33, 34, 35, 36, 37, 38\}$, and d indicates that the corresponding state chapter receives d cents where d is randomly selected on the participant-bundle level such that $d \in \{51, 52, 53, 54, 55, 56, 57, 58, 59\}$.

2.3   Information about the bundles

While the bundles participants face do not change across versions of the study, the information they are given and the information they are required to view varies across the four versions of the study. In particular, imagine participants are faced with the *3/4-bundle* shown in Figure 1. They can immediately read that this bundle involves 54 cents being given to the Louisiana state chapter. Indeed, the donation amount for the first state chapter in a bundle is always revealed by default. Participants can also reveal the donation amounts for the remaining three state chapters by clicking on each header. As shown in Appendix Figure A.1, clicking on the second header for this bundle

would reveal that it involves no donation for the Washington state chapter. As shown in Appendix Figures A.2 and A.3, clicking on the third and fourth headers would reveal that the bundle involves 54 cents being given to the North Carolina and to the Georgia state chapters, respectively.

In our main study version — the *info-amounts* version — participants are required to reveal exactly how much each state chapter in a bundle receives prior to deciding between a bundle and their outside option. This is also the case for the *info-amounts-sum* version and for the *info-amounts-150* version. As explained in Section 2.1, the *info-amounts-150* version only differs from the *info-amounts* version in terms of its outside options. The *info-amounts-sum* version, meanwhile, examines the impact of requiring participants to view more information. In addition to being required to learn exactly how much money is given to each highlighted state chapter by clicking on the corresponding headers exactly as in the *info-amounts* version, participants in the *info-amounts-sum* version are additionally informed of the sum of donations given to all the state chapters in the bundle. For instance, if participants face the bundle shown in Figure 1, the question appearing above this bundle would also include the information about the sum of the donations in the bundle, as shown in Figure 2.

By contrast, the *info-choice* version considers a relaxation of what information participants are required to view. Participants in the *info-choice* version still must view the donation amount given to the first state chapter, since it is revealed by default, but they are not required to reveal the donation amounts for the remaining state chapters. For each of the other state chapters in a bundle, they can choose whether or not to click to learn its donation amount.

Figure 1: Example of Initially Revealed Information about a *3/4* Bundle

Figure 2: Example of question faced by participants in the charity-charity treatment according to their information version

(a) The *info-amounts* and *info-choice* versions (and *info-amounts-150* with a change in outside option)

(b) The *info-amounts-sum* version

2.4 Implementation and Data

From October 10-13, 2016, we advertised a 25-minute academic study on Amazon Mechanical Turk. From a recruited 1,200 participants, four participants failed to complete the study, resulting in a sample of 1,196. Each participant was randomly assigned to one of six experimental conditions resulting from our {*charity-self treatment*, *charity-charity treatment*} X {*info-amounts version*, *info-amounts-sum version*, *info-choice version*} design. The number of subjects in each version and treatment is shown in Table A.1.

On March 13, 2017, we advertised a 25-minute academic study on Amazon Mechanical Turk. All recruited participants completed the study, resulting in a sample of 400. A study restriction ensured that none of these participants had previously completed any version of our experiment. Each participant was randomly assigned to one of two experimental conditions resulting from our {*charity-self treatment*, *charity-charity treatment*} X {*info-amounts-150 version*} design.

Each participant received $4 for completing the study. One of their randomly selected decisions was also implemented for payment and thus resulted in an additional payment for the participant or a donation to corresponding Make-A-Wish Foundation chapter(s) or the American Red Cross.[11]

Before participants complete the normalization price list or the subsequent forty-eight binary choices, they consent to participate in the study, learn about the payment procedure, and must correctly answer several comprehension questions.

Decisions from the normalization price list imply a range for participant's X values such that they are indifferent between 150 cents for the national chapter and X cents for themselves. Figure 3 shows the distribution of X values, assuming the lower bound of the implied indifference range, for all participants in the experiment.[12] Figure 3 and the remainder of this analysis, unless otherwise noted,

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[11]This could involve one of the 31 rows in the normalization price list, or one of the subsequent forty-eight binary choices.

[12]See Appendix Figure A.4 for these distributions separately by version of the experiment.

only report on data from our "main sample." Our main sample excludes the 19% of participants with estimated X values with a lower bound of 0. Since evidence in support of excuse-driven responses to information is strongest among the more selfish participants in our study — that is, participants with lower X values — we view this as the most conservative approach. As expected, however, our results are robust to including these participants in our "full sample."

Figure 3: Distribution of X values
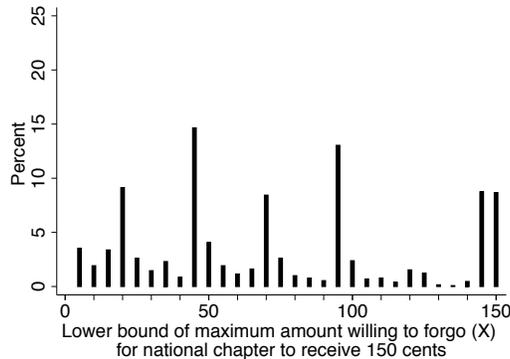
Data include the 1,304 participants from our main sample.

After participants complete the normalization price list, the order in which they make their forty-eight binary decisions varies. Half of the participants in each treatment of each version are randomly selected to face twenty-four decisions involving bundles with four state chapters and then twenty-four decisions involving bundles with five state chapters. The other half of participants face twenty-four decisions involving bundles with five state chapters and then face twenty-four decisions involving bundles with four state chapters. Within the block of decisions involving four or five state chapters, the order in which participants face decisions with particular bundles randomly varies on the participant-level.

After all decisions are made, participants complete a short follow-up demographic survey. 50% of participants are female, the median age is 33 years old, and the median educational attainment is an Associate's Degree. There are not significant differences in the observable characteristics across charity-self treatment and charity-charity treatment in any of the four study versions. The results from these participants' decisions are discussed in the next section.

3   Results

Section 3.1 presents the results from the main version of our experiment, the *info-amounts* version. Our first finding is that adding a zero to a bundle (i.e., adding a state chapter that receives no donation) decreases the likelihood that the bundle is chosen. Our second finding is that this decrease is significantly larger in the charity-self treatment when choosing the bundle comes at a private cost to participants. These findings suggest that the better is the enemy of the good and

that it is a particularly powerful enemy when there is a self-serving motive to avoid the good. To explore the robustness of these findings, we then analyze the three additional versions of our study (as detailed in Section 2).

First, we examine whether the need to aggregate information serves as a barrier to participants' processing information. This hypothesis is worth testing since previous research has shown that non-standard responses to information often reflect individuals failing to understand or failing to effectively process information.[13] While we view adding a zero as unlikely to produce a barrier to effectively processing information, such an effect could arise if participants inaccurately estimate that a bundle with an additional zero involves less in donations (rather than, say, explicitly summing the donations going to the state chapters). Section 3.2 shows that our findings persist in the *info-amounts-sum* version in which participants in both treatments are additionally provided with the sum of donations made to state chapters in each bundle, suggesting that such miscalculations cannot be driving the negative response to adding a zero or the fact that the effect is so much larger in the charity-self treatment.

Second, we examine whether a lack of attention or a low value placed on information about a bundle contributes to participants' negative response to adding a zero. Section 3.3 presents results from the *info-choice* version where participants can choose to passively avoid or actively acquire information about how much each state chapter receives as a donation in a bundle. These results show that our findings persist (and are indeed stronger) among individuals who choose to acquire all of the available information and thus appear to value and to pay attention to the information.

Third, we examine whether our findings persist when the outside options are not determined through a normalization procedure and do not involve the Make-A-Wish Foundation. While adding a zero should not affect choices regardless of the outside option, this version aims to placate concerns that some feature of the normalization or the similarity between the bundle and the outside option in the charity-charity treatment is responsible for our differential results between our charity-charity and charity-self treatments. Section 3.4 presents results from the *info-amounts-150* version where the outside option in the charity-charity treatment involves a 150-cent donation for the American Red Cross and the outside option in the charity-self treatment involves a 150-cent bonus payment for participants. Note that relative to the other version of the experiment, in this version the outside options are still comparable across treatments but they are now comparable in terms of nominal amounts rather than valuations.[14] This version demonstrates that the results persist even when the normalization procedure is not used. Despite censoring concerns becoming more relevant due to many people never giving in the charity-self treatment — not surprising given that nearly all

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[13]Simplifying information correspondingly proves to be a powerful approach to "improving" individuals' decision-making (for a review, see Madrian (2014); for recent evidence, see Enke and Zimmermann (Forthcoming)).

[14]In the *info-amounts*, *info-amounts-sum* and *info-choice* versions, outside options are comparable in terms of valuations because of the normalization procedure that elicits X values such that participants are indifferent between 150 cents for the national chapter (the outside option in the charity-charity treatment) and X cents for themselves (the outside option in the charity-self treatment). In the *info-amounts-150* version, the outside options are both 150 cents and so are comparable in terms of nominal amounts.

participants value 150 cents for themselves more than 150 cents for a charity, which motivated the normalization in the first place — our findings remain strong.

When we present results from our main *info-amounts* version in Section 3.1, we start with decisions from the thirty-six main bundles (see Table 1), show that our findings persist when we also include decisions from the twelve additional bundles (see Table 2), and then report on secondary results based on all forty-eight bundles. In Sections 3.2, 3.3, and 3.4, we focus on the decisions involving the thirty-six main bundles and reference our Appendix that shows the results are also robust to including the twelve additional bundles. Section 3.5 compares our findings across all four versions of the experiment to draw additional conclusions.

3.1   Results from the *Info-Amounts* version

Recall that participants in the *info-amounts* version face forty-eight decisions between various *i/j-bundles* and their outside option of either 150 cents for the national chapter (if in the charity-charity treatment) or X cents for themselves (if in the charity-self treatment). Before making a decision between a particular *i/j-bundle* and their outside option, the participant is required to learn exactly how much money will be donated to each state chapter if the bundle is chosen. Information about an *i/j-bundle* reveals that each of the i state chapters receives a donation of d cents, and if $i < j$, that each of the $j - i$ state chapters receives no donation. Any state chapter not included in a bundle is known to receive no donation. From the information that participants see, they can therefore directly sum the total amount of money donated to state chapters if a bundle is chosen.

As we will show below, many participants in the charity-charity treatment appear to use a decision rule that involves choosing the bundle if the sum of donations to state chapters in the bundle exceeds the 150 cents that is donated to the national chapter in the outside option. Consequently, we find it useful to define a bundle as a "large donation bundle" if it contains more than 150 cents in donations to state chapters and as a "small donation bundle" if it contains less than 150 cents in donations to state chapters. Note that to the extent participants in the charity-charity treatment feel compelled to choose large donation bundles over their outside option, participants in the charity-self treatment — absent excuse-driven motives — should feel weakly *more* compelled to choose large donation bundles over their outside option since the normalization task implies participants weakly prefer a 150-cent donation for the national chapter to X cents for themselves.

3.1.1   Results involving main bundles in *Info-Amounts* version

Figure 4 shows how often bundles are chosen separately for: the twelve "baseline" *i/4-bundles*; the twelve *i/5-bundles* that are constructed by "adding a zero" (i.e., by adding a state chapter that receives no donation) to each of the *i/4-bundles*; and the twelve *(i+1)/5-bundles* that are constructed by "improving the bundle" (i.e., by adding a state chapter that receives a donation) to each of the *i/4-bundles*. Within each set of twelve bundles, the order of the bundles aligns with the underlying bundle type depicted in Table 1. Table 3 further shows the regression results that correspond with the decisions in Figure 4 by reporting results from the following linear probability

model:

$$
\begin{aligned}
P(\textit{choose bundle}) \; = \; & \beta_1(^+0) + \beta_2(^+1) \\
& + \left[\beta_3 \, \textit{charity-self} + \beta_4(^+0)\,\textit{charity-self} + \beta_5(^+1)\,\textit{charity-self} \right] \\
& + \sum_{k=1}^{12} \gamma_k b^k + \epsilon
\end{aligned}
\tag{1}
$$

where $(^+0)$ is an indicator for an *i/5-bundle*, $(^+1)$ is an indicator for an *(i+1)/5-bundle*, *charity-self* is an indicator for charity-self treatment, and b^k are fixed effects for bundle type k as described in Table 1. Note that the inclusion of bundle fixed effects b^k holds constant a participant's willingness to choose a particular baseline *i/4-bundle* — thus allowing the coefficient estimate on $(^+0)$ to cleanly capture the impact of adding a zero to create an *i/5-bundle* and the coefficient estimate on $(^+1)$ to cleanly capture the impact of improving a bundle to create an *(i+1)/5-bundle*.

When we add a zero to a baseline *i/4-bundle* to create an *i/5-bundle*, the additional information highlighting a fifth state chapter that receives no donation is payoff irrelevant. Absent information about a particular state chapter receiving no donation, the exclusion of that state chapter from a bundle implies that it receives no donation. Consequently, participants should be equally willing to choose *i/4-bundles* and *i/5-bundles*. This proves not to be the case.

As shown in Panel A of Figure 4, in the charity-charity treatment, the rate of choosing *i/5-bundles* always falls below the rate of choosing *i/4-bundles*. Indeed, the coefficient estimate on $(^+0)$ in Column 1 of Table 3 shows that adding a zero significantly decreases participants' willingness to choose a bundle by 4 percentage points. Columns 2 and 3 confirm that this result holds when a zero is added to a large donation bundle and when a zero is added to a small donation bundle. That is, our first finding can be summarized as follows.

> **Result 1A:** Adding a zero to a bundle in the charity-charity treatment significantly decreases participants' willingness to choose a bundle by 4 percentage points (from 0.58 to 0.54, a 7% decrease).

Two pieces of evidence suggest that Result 1A does not follow from participants failing to pay attention to the donation amounts in a bundle. First, when examining participants' decisions involving the twelve baseline *i/4-bundles* in Panel A of Figure 4, participants appear to adhere to the following decision rule: choose whichever option maximizes the amount going to charity. The large majority of participants choose large donation bundles (chosen approximately 80% of the time) but not small donation bundles (chosen approximately 20% of the time). Second, participants act as if they adhere to a donation-maximization decision rule even when it requires them to pay attention to the addition of a fifth state chapter. Improving a small donation baseline bundle by adding a fifth state chapter that receives a donation significantly increases participants' willingness to choose it by 52 percentage points (see the coefficient estimate on $(^+1)$ in Column 3).

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In other words, the results from the charity-charity treatment show that participants pay attention to the donation amounts in the bundle. Bundles are dramatically more likely to be chosen when they involve a sum of donations to state chapters that exceeds the 150-cent donation of the outside option, even when the addition of a fifth state chapter that receives a donation is pivotal to that sum exceeding 150 cents. *More is not less.* However, participants' attention is not limited to payoff-relevant information — their decisions also respond to adding a zero even though it is payoff-irrelevant information. Making salient what a bundle does not achieve by adding a fifth state chapter that receives no donation appears to detract from the attractiveness of the bundle. *The better is the enemy of the good.*

What about the charity-self treatment? As shown in Panel B of Figure 4, in the charity-self treatment, the rate of choosing *i/5-bundles* noticeably and consistently falls below the rate of choosing *i/4-bundles*. The coefficient estimate on $(^+0)$ in Column 4 in Table 3 shows that adding a zero significantly decreases participants' willingness to choose a bundle by 10 percentage points. This effect is large; it is directionally larger than the coefficient estimate on $(^+1)$, the effect of adding a state chapter that receives a donation to a bundle, which on average increases total donations made by a bundle by over 33%. Columns 5 and 6 confirm this negative impact remains significant when a zero is added to a large donation bundle and when a zero is added to a small donation bundle. That is, Result 1B follows:

> **Result 1B:** Adding a zero to a bundle in the charity-self treatment significantly decreases participants' willingness to choose a bundle by 10 percentage points (from 0.45 to 0.35, a 22% decrease).

As with Result 1A, it does not appear that Result 1B follows from participants' failing to pay attention to the donation amounts in a bundle. Within any set of the main bundles (i.e., the *i/4-bundles*, the *i/5-bundles*, or the *(i+1)/5-bundles*), participants are more likely to choose bundles with more donations. Improving a baseline *i/4-bundle* by adding a fifth state chapter that receives a donation to create an *(i+1)/5-bundle* also increases participants' willingness to choose a bundle in the charity-self treatment.

Columns 7-9 in in Table 3 facilitate a comparison between Results 1A and 1B. In particular, the coefficient estimates on *charity-self**$(^+0)$ indicate the extent to which the better is differentially likely to prevent the good when self-serving motives are relevant in the charity-self treatment versus when self-serving motives are not relevant in the charity-charity treatment. Column 7 documents a large difference: the negative impact of adding a zero is 2.5 times as large in the charity-self treatment than in the charity-charity treatment. Result 2 follows:

> **Result 2:** Adding a zero to a bundle results in a 6 percentage point larger decrease in the charity-self treatment than in the charity-charity treatment (a 10 percentage point decrease versus a 4 percentage point decrease).

Columns 8 and 9 additionally show that this finding is related to bundle type. The more-negative response to adding a zero in the charity-self treatment as compared to the charity-charity treatment only arises when a zero is added to a large donation bundle (and not when a zero is added to a small donation bundle). This evidence is consistent with individuals letting the better be the enemy of the good precisely when — absent an excuse — they may feel compelled to choose the bundle at a cost to themselves (i.e., when the bundle gives over 150 cents to state chapters).[15]

Columns 7-9 of Table 3 identify two additional findings that are also consistent with participants exploiting the addition of a zero as an excuse not to choose a bundle in the charity-self treatment. First, the coefficient estimates on *charity-self* show that, as a level effect, participants are less likely to choose a large donation bundle (see Column 8) — but not less likely to choose a small donation bundle (see Column 9) — in the charity-self treatment than in the charity-charity treatment. That is, as with the more negative response to adding a zero in the charity-self treatment, the level decrease in willingness to choose bundles in the charity-self treatment relative to the charity-charity treatment is driven by cases where participants may otherwise feel compelled to choose the bundle and thus may be particularly keen to develop excuses to instead choose the outside option that benefits themselves.[16] Second, the coefficient estimates on *charity-self* *($^+$1) show that while participants in the charity-self treatment respond relatively less positively to improving a small donation bundle (see Column 9), they respond relatively more positively to improving a large donation bundle (see Column 8). That is, participants in the charity-self treatment do not merely respond negatively to any additional information about a bundle.

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[15]Note that this evidence rules out most non-excuse-driven framing or processing explanations for a differential impact of adding a zero in the charity-charity and charity-self treatments, which would struggle to explain why such a differential impact depends on a bundle's donation amount.

[16]As noted above, this finding arises despite the fact that the normalization procedure implies that participants in the charity-self treatment should be weakly less likely to choose their outside option, since participants weakly prefer 150 cents for the national chapter (the outside option in the charity-charity treatment) to X cents for themselves (the outside option in the charity-self treatment). The finding is, however, consistent with underlying excuse-driven behavior. This result is further discussed when motivating the results in Column 2 of Table 4, which show that our results are robust to, and if anything strengthened by, considering a sample that does not generate this level difference in willingness to choose bundles across the charity-charity treatment and charity-self treatment.

Figure 4: In the *info-amounts* version, fraction choosing to give via a main bundle
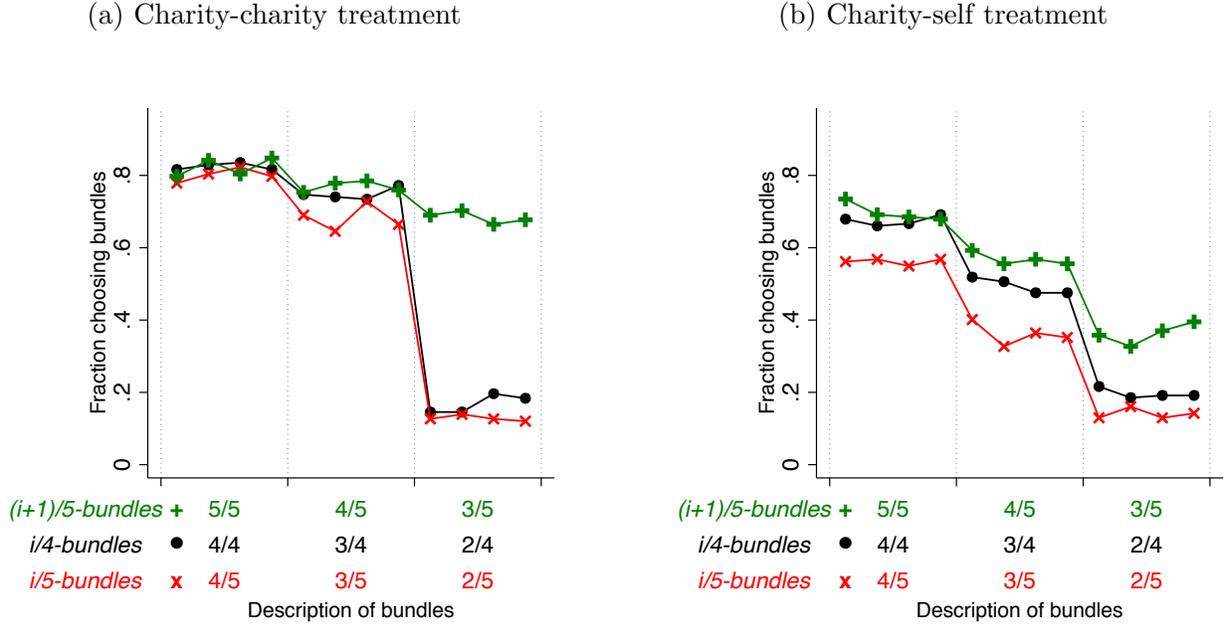
(a) Charity-charity treatment

(b) Charity-self treatment

• ≡ *i/4-bundles*; **x** ≡ *i/5-bundles*; and **+** ≡ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from the 320 participants in our main sample from the *info-amounts* version for a total of 11,520 observations.

Table 3: In the *info-amounts* version, regression of choosing a main bundle

	Charity-charity treatment			Charity-self treatment			Both treatments		
Given donation	–	large	small	–	large	small	–	large	small
in *i/4-bundle* is	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
($^{+}$0)	-0.04***	-0.05**	-0.04**	-0.10***	-0.12***	-0.06***	-0.04***	-0.05**	-0.04**
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
($^{+}$1)	0.18***	0.01	0.52***	0.09***	0.05***	0.17***	0.18***	0.01	0.52***
	(0.02)	(0.02)	(0.04)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.04)
charity-self							-0.13***	-0.20***	0.03
							(0.03)	(0.04)	(0.04)
charity-self*($^{+}$0)							-0.06***	-0.08***	-0.02
							(0.02)	(0.03)	(0.02)
charity-self*($^{+}$1)							-0.09***	0.04*	-0.35***
							(0.02)	(0.02)	(0.05)
Observations	5688	3792	1896	5832	3888	1944	11520	7680	3840
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. ($^{+}$**0**) is an indicator for an *i/5-bundle*. ($^{+}$**1**) is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from participants in our main sample in the *info-amounts* version.

3.1.2 Results involving all bundles in *Info-Amounts* version

An alternative way to explore the extent to which the better is the enemy of the good is to examine how participants respond to the number of zeros (i.e., state chapters that do not receive a donation) in a bundle. That is, we can simply examine how, given i state chapters receiving a donation in a bundle, participants respond to an increase in the number of $j - i$ state chapters that do not receive a donation. In no longer restricting our analyses to examining the impact of adding a zero to or improving a baseline *i/4-bundle*, this approach allows us to consider all forty-eight bundles (i.e., the thirty-six main bundle plus the twelve additional bundles). This approach also facilitates: (i) robustness checks, (ii) the consideration of heterogeneous effects, and (iii) the examination of limits to excuse-driven behavior.

To begin, Figure 5 graphically displays how often participants choose a bundle, and Table 4 shows the corresponding regression results from the following linear probability model:

$$P(choose\ bundle)\ = \beta_1 charity\text{-}self + \beta_2 \#\ zeros + \beta_3 charity\text{-}self * \#\ zeros \qquad (2)$$

$$+ \sum_{k=1}^{4} \gamma_k i^k + \epsilon$$

where *charity-self* is indicator for charity-self treatment, $\#\ zeros$ counts the number of no donations in a bundle, and i^k are fixed effects for number of donations i in a bundle (which equal 1 when $i = k$). While the inclusion of the donation fixed effects i^k allows us to hold constant the number of donations when we consider the impact of increasing the number of zeros (i.e., the coefficient estimates on $\#\ zeros$), we further control for the overall donation amount by separately considering participants' decisions involving large donation bundles and small donation bundles.[17]

Panel A of Figure 5 and Panel A of Table 4 show that additional zeros in large donation bundles are clearly more detrimental in the charity-self treatment than in the charity-charity treatment.[18] The regression results in Column 1 of Panel A of Table 4 indeed confirms that while an additional zero reduces participants' willingness to choose a bundle by 3 percentage points in the charity-charity treatment, this reduction is four times larger — an additional 9 percentage points for a total of 12 percentage points — in the charity-self treatment.

To provide additional robustness checks, Columns 2 and 3 of Panel A of Table 4 show that the more negative response to zeros in the charity-self treatment persists with a more and less restricted sample, respectively. The more restricted sample in Column 2 involves the "interior" sample that only includes participants who choose the bundle at least once and choose their outside

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[17]While the impact of adding a zero in this specification is clearly not as well identified as that in our previous analyses involving Equation 1, we view this is as an informative exercise that allows us to explore other findings, such as whether there are 0, 1 or 2 zeros as opposed to only the impact of an additional zero to a bundle.

[18]From the main bundles (see Table 1), this includes all of the *3/4-bundles*, *3/5-bundles*, *4/4-bundles*, *4/5-bundles* and *5/5-bundles* that involve 3-5 state chapters receiving 51-59 cents. From the additional bundles (see Table 2), this also includes the subset of *4/4-bundles* where 4 state chapters receive 38 cents.

option at least once.[19] Note that the level difference in the willingness to choose bundles across the two treatments does not persist among the participants included in the interior sample. To the extent the level difference reflects uniform excuses (i.e., excuses that apply to all bundles) to avoid ever choosing the bundle in the charity-self treatment, it is therefore interesting to note that our excuse-driven channel of interest — the better being the enemy of the good by responding more negatively to additional zeros — appears to persist on top of such uniform excuses.[20] The less restricted, and indeed unrestricted, sample in Column 3 shows that the results are also robust to including all responses, including participants with estimated X values that result from censored indifference ranges.

To consider the role of heterogeneity, Columns 4-6 of Panel A of Table 4 examine whether our results differ among participants with different levels of selfishness, as measured by their X value (i.e., how willing a participant is to give up money for a 150-cent donation to the national chapter). Column 4 restricts the data to "more selfish" participants with below median or median X values, while Column 5 restricts the data to "less selfish" participants with above median X values. As shown by the coefficient estimates on *charity-self*, the overall willingness to choose bundles does not significantly differ across the treatments among the less selfish participants but is significantly lower in the charity-self treatment than in the charity-charity treatment among the more selfish participants. Column 6 confirms that this difference is statistically significant. That is, the extent to which participants may use uniform excuses to avoid choosing the bundles in the charity-self treatment appears greater among the more selfish participants. These results contribute to prior work showing that individuals who have behaved less prosocially in the past are more likely to engage in excuse-driven behavior.[21] Interestingly, however, the extent to which participants let the better be the enemy of the good as an excuse not to choose the bundles in the charity-self treatment does not appear to differ across the two types of participants: the coefficient estimates on *charity-self**($^+$0) is −10 percentage points among the less-selfish participants and −8 percentage points among the more-selfish participants.

To consider whether limits to excuse-driven behavior arise, Panel B of Figure 5 and Panel B of Table 4 shows how often participants choose small donation bundles.[22] For small donation bundles,

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[19]Always choosing the bundle is rare: it accounts for 3% of participants in the charity-charity treatment and 4% of participants in the charity-self treatment. Never choosing the bundle is more common: it accounts for 6% of the participants in the charity-charity treatment and 20% of participants in the charity-self treatment.

[20]The development of uniform excuses may arise from, for instance, overweighting a dislike of state chapters relative to the national chapter or overweighting a dislike of the inherent inequity involved in bundles given that only a subset of state chapters receive a donation. Alternatively, another channel for uniform excuse-driven behavior in the charity-self treatment may arise from participants accumulating "moral credits" from their giving decisions in the normalization price list and thus feeling that they can behave more selfishly when subsequently faced with the opportunity to give via bundles in the charity-self treatment (Merritt, Effron and Monin, 2010).

[21]See Exley (2015), Exley (2016), and Exley and Petrie (2016).

[22]From the main bundles (see Table 1), this includes all of the *2/4-bundles* and *2/5-bundles* that involve 2 state chapters receiving 51-59 cents. From the additional bundles (see Table 2), this also includes all of the *1/4-bundles* that involve 1 state chapter receiving 51-59 cents, all of the *3/4-bundles* that 3 state chapters receiving 30-38, and the subset of *4/4-bundles* where 4 state chapters receive 30-37 cents.

the demand for excuses may be diminished if participants do not feel compelled to choose the bundle in the first place. Two main patterns of results follow. First, a significant, albeit perhaps muted, role for excuses persists with a more negative response to zeros in the charity-self treatment than in the charity-charity treatment (see also the coefficient estimates on $(^{+}0)$ in Columns 1-3).[23] Second, evidence consistent with the limits of excuse-driven behavior emerges. Unlike with the apparent use of additional zeros as an excuse not to choose a bundle, there is no evidence of participants in the charity-self treatment exploiting small total donation amounts as excuses not to choose a bundle. In fact, participants are more willing to choose small donation bundles in the charity-self treatment than in the charity-charity treatment (see also the coefficient estimates on *charity-self* in Columns 1-3). Consistent with this finding reflecting a limit to excuse-driven behavior, Columns 4 and 5 further show that this finding only persists among the population that is more likely to value their self-perceptions and thus potentially feel constrained in their decision-making: the less-selfish, as opposed to more-selfish, participants. Column 6 also confirms that the difference in the extent to which this limit persists across the types of participants is statistically significant.[24] Less selfish individuals who rationalize not giving when more zeros are included in a bundle may struggle to also rationalize not giving when the donation amount is lower but there are fewer or no zeros.

Figure 5: In *info-amounts* version, fraction choosing to give via a bundle
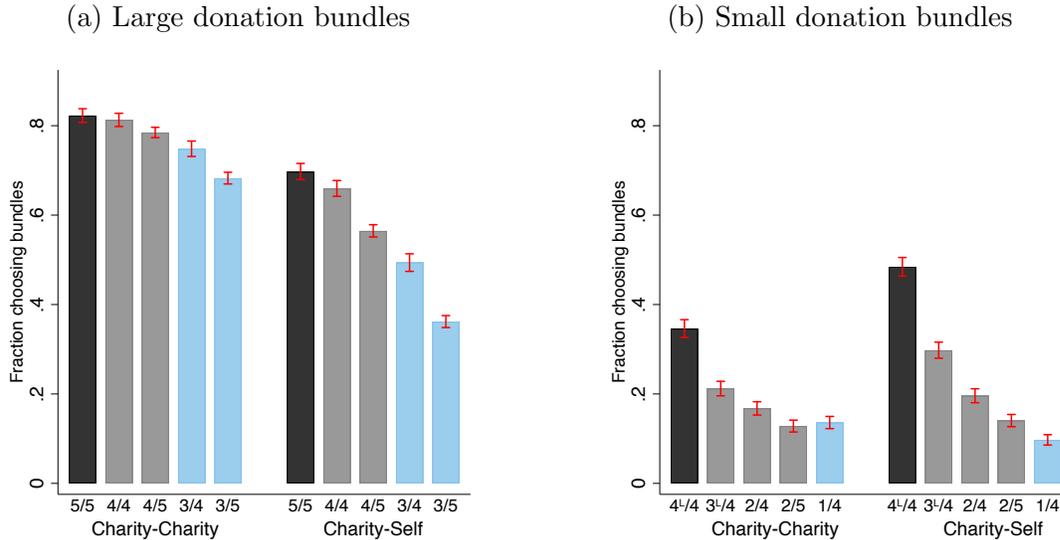
(a) Large donation bundles   (b) Small donation bundles

Data include all decisions from the 320 participants in our main sample from the *info-amounts* conditions for a total of 15,360 observations. The bars are shaded to be similar in total donation amounts. Error bars show +/- one standard error.

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[23]Given potential floor effects, it is unclear as to whether this less negative response to zeros is in fact muted.

[24]That individuals may desire to maintain consistency in their decision-making is similar in spirit to the literature that documents how selfish behavior decreases when it requires inconsistent behavior (Babcock et al., 1995; Konow, 2000; Haisley and Weber, 2010; Gneezy et al., 2012, 2016) and the literature on a desire for consistency more generally (for recent evidence, see Falk and Zimmermann (Forthcoming)). It also echoes the finding in Lin, Zlatev and Miller (2016), where the removal of an excuse causes individuals to subsequently engage in more prosocial behavior.

Table 4: In the *info-amounts* version, regression of choosing a bundle

Sample:	main	interior	full	main less-selfish	main more-selfish	main
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Among large donation bundles						
charity-self	-0.14***	-0.03	-0.20***	-0.03	-0.32***	-0.03
	(0.04)	(0.03)	(0.04)	(0.05)	(0.07)	(0.05)
# zeros	-0.03**	-0.03*	-0.04***	-0.02	-0.06***	-0.02
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
charity-self# zeros*	-0.09***	-0.13***	-0.07***	-0.10***	-0.08**	-0.10***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)
more-selfish						0.11**
						(0.05)
*charity-self*more-selfish*						-0.29***
						(0.09)
*# zeros*more-selfish*						-0.03
						(0.03)
charity-self# zeros*more-selfish*						0.01
						(0.04)
Observations	9095	7621	11202	5591	3504	9095
Number of Donations (i) FEs	yes	yes	yes	yes	yes	yes
Panel B: Among small donation bundles						
charity-self	0.14***	0.23***	0.10**	0.22***	-0.01	0.22***
	(0.05)	(0.05)	(0.04)	(0.06)	(0.07)	(0.06)
# zeros	-0.07***	-0.08***	-0.07***	-0.07***	-0.07***	-0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
charity-self# zeros*	-0.05***	-0.08***	-0.04***	-0.08***	0.00	-0.08***
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
more-selfish						-0.02
						(0.06)
*charity-self*more-selfish*						-0.23**
						(0.09)
*# zeros*more-selfish*						-0.01
						(0.02)
charity-self# zeros*more-selfish*						0.09***
						(0.03)
Observations	6265	5243	7710	3865	2400	6265
Number of Donations (i) FEs	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. ***# zeros*** counts the number of zeros (i.e., state chapters not receiving a donation), in a bundle. ***more-selfish*** is an indicator for participants with X values below the median who are thus "more selfish." Donation FEs include fixed effects for the number of donations included in a bundle. Data in Panel A/B includes decisions involving bundles with more than/less than 150 cents in donations from the *info-amounts* version. Data is restricted to participants with estimated X values that do not include a zero lower bound in the main sample, is restricted to participants with estimated X values that do not include a zero lower bound who choose the bundle at least once and choose their outside option at least once during the course of the study in the interior sample, and is unrestricted in the full sample.

3.2 Results from *Info-Amounts-Sum* version

We have suggested that adding a zero to a bundle affects choices by making salient how a bundle could have been better. Alternatively, it is possible that adding a zero makes a bundle less attractive because participants inaccurately estimate that a bundle with more zeros involves less money being donated to state chapters. It is further possible that the more negative responses to adding a zero in the charity-self treatment, relative to in the charity-charity treatment, reflects participants being motivated to make such inaccurate estimates.[25]

To examine whether our findings are driven by such unintentional or intentional miscalculations, participants in the *info-amounts-sum* version face identical procedures to participants in the *info-amounts* version, except for one change: in the *info-amounts-sum* version, participants are directly informed of the sum of donations made in each bundle, thereby eliminating such a miscalculation channel to affect behavior. Our results remain strong and significant absent this channel. Figure 6 and Table 5 document nearly identical patterns of results in the *info-amounts-sum* version as we saw in the *info-amounts* version. Adding a zero to a main bundle significantly decreases participants' willingness to choose a bundle by 3 percentage points in the charity-charity treatment and by 9 percentage points in the charity-self treatment. Negative responses to zeros persist even when miscalculations — whether motivated are not — are no longer possible.

Similar findings persist when also including the twelve additional bundles, as shown in Panel A of Appendix Figure A.5. Moreover, Panel B of Appendix Figure A.5 provides evidence consistent with the previously-discussed limits to self-serving behavior: participants in the charity-self treatment, appearing less responsive to the total donation amounts, are more likely to choose low-donation bundles than participants in the charity-charity treatment.

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[25]For instance, participants who desire excuses not to choose a bundle in the charity-self treatment may be particularly keen to latch onto a state chapter receiving no donation as evidence that the bundle likely involves a lower total donation amount. They may avoid adding up the donations to each state chapter in the bundle in order to maintain the flexibility needed to justify choosing their outside options that benefits themselves.

Figure 6: In the *info-amounts-sum* version, fraction choosing to give via a main bundle
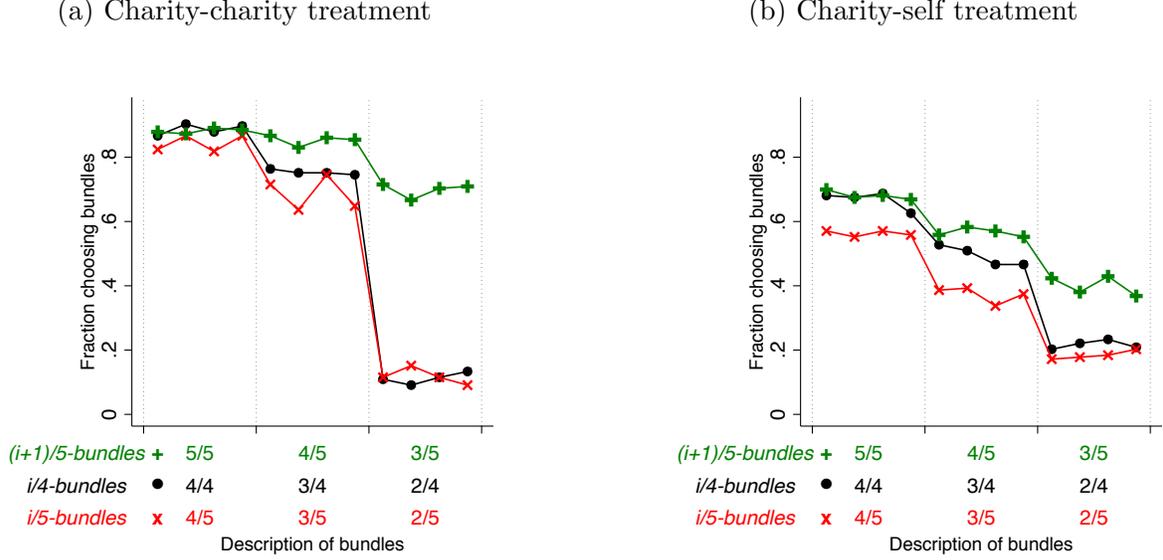
(a) Charity-charity treatment

(b) Charity-self treatment

● ≡ *i/4-bundles*; **x** ≡ *i/5-bundles*; and **+** ≡ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from the 328 participants in our main sample from the *info-amounts-sum* version for a total of 11,808 observations.

Table 5: In the *info-amounts-sum* version, regression of choosing a main bundle

Given donation in *i/4-bundle* is	Charity-charity treatment			Charity-self treatment			Both treatments		
	–	large	small	–	large	small	–	large	small
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(⁺0)	-0.03***	-0.05***	0.01	-0.09***	-0.11***	-0.03**	-0.03***	-0.05***	0.01
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)
(⁺1)	0.23***	0.05***	0.59***	0.09***	0.04***	0.18***	0.23***	0.05***	0.59***
	(0.01)	(0.01)	(0.03)	(0.01)	(0.02)	(0.03)	(0.01)	(0.01)	(0.03)
charity-self							-0.13***	-0.24***	0.10***
							(0.03)	(0.04)	(0.03)
charity-self*(⁺0)							-0.05***	-0.06**	-0.04*
							(0.02)	(0.02)	(0.02)
charity-self*(⁺1)							-0.14***	-0.00	-0.40***
							(0.02)	(0.02)	(0.05)
Observations	5940	3960	1980	5868	3912	1956	11808	7872	3936
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. (⁺**0**) is an indicator for an *i/5-bundle*. (⁺**1**) is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from participants in our main sample in the *info-amounts -sum* version.

3.3 Results from *Info-Choice* version

Results from the *info-amounts-sum* version provide evidence against our findings being driven by participants incorrectly aggregating the information about a bundle. In this section we further investigate whether our findings reflect participants placing little attention or value on the information. In particular, we conduct a version of our study that allows us to observe how interested participants are in the information about a bundle. In the *info-choice* version, information about the first state chapter (i.e., whether the state chapter receives a donation and how much they receive) is revealed by default. Information about all other state chapters, however, is hidden by default and only revealed if participants make an active decision to reveal it.

Participants do not always fully reveal information about a bundle. On average, participants in the charity-charity treatment fully reveal the donation going to each state chapter in only 51% of decisions. Consistent with motivated information avoidance, participants in the charity-self treatment fully reveal information at an even lower rate: the donation going to each state chapter is fully revealed in only 35% of decisions. Appendix Figure A.6 and Appendix Table A.2 confirm that this 16 percentage point difference is statistically significant and that this difference stays relatively constant across the thirty-six main bundles (although participants are less likely to fully reveal bundles with five state chapters than four state chapters).[26]

Given that many participants choose not to become fully informed about a bundle when given the option, it is theoretically possible that our results are driven by the subset of participants who do not pay attention to the information or place little value on it. Instead, we find the opposite. Figure 7 and Table 6 show that our findings persist when restricting to the cases in which participants choose to fully reveal the information and so we expect participants value the information and are paying attention to it. In the charity-charity treatment, adding a zero reduces these participants' willingness to choose a bundle by 7 percentage points. In charity-self treatment, adding a zero reduces these participants' willingness to choose a bundle by 14 percentage points.[27] Appendix Figure A.7 further shows that our findings persist when also including the twelve additional bundles and provides strong evidence for the previously-discussed limits to excuse-driven behavior.

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[26]Columns 4-6 of Appendix Table A.2 document similar evidence for information avoidance when we instead consider how much information is revealed. Columns 3 and 6 Appendix Table A.2 also highlight that our more-selfish participants are directionally, but not significantly, more likely to avoid information about a bundle. While this in some ways contrasts with the finding in Nyborg (2011) that more prosocial individuals may be more likely to avoid information, a main heterogeneous finding discussed in Section 3.1.2 that our less selfish participants appear most constrained in their excuse-driven behavior is consistent with the idea in Nyborg (2011).

[27]Appendix Figure A.8 and Appendix Table A.3 also document some evidence for the better preventing the good when pooling across decisions where information is and is not fully revealed. While adding a zero does not significantly influence decisions in the charity-charity treatment, it reduces the likelihood with which a bundle is chosen by six percentage points in the charity-self treatment. By contrast, and in part by definition, Appendix Figure A.9 and Appendix Table A.4 show that our findings do not persist among decisions where information is not fully revealed. We only observe that participants in the charity-charity treatment, but not in the charity-self treatment, are more likely to choose bundles with five as opposed to four state chapters. This may reflect participants in the charity-charity treatment inferring that bundles with five state chapters involve more in total donations than those with four state chapters, while participants in the charity-self treatment are motivated not to make such an inference.

Figure 7: In the *info-choice* version, among decisions where all information about a bundle is revealed, fraction choosing to give via a main bundle
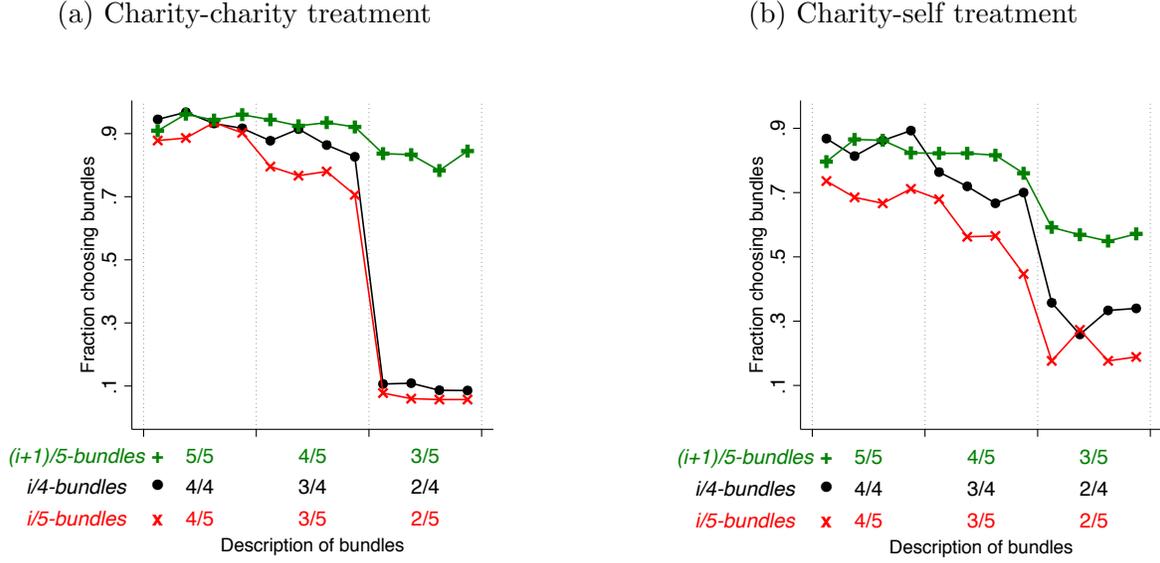
(a) Charity-charity treatment

(b) Charity-self treatment

$\bullet \equiv$ *i/4-bundles*; $\mathbf{x} \equiv$ *i/5-bundles*; and $+ \equiv$ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from the 250 participants in our main sample from the *info-choice* version for a total of 5,261 observations.

Table 6: In the *info-choice* version, when information is fully revealed, regressions of choosing a main bundle

Given donation in *i/4-bundle* is	Charity-charity treatment			Charity-self treatment			Both treatments		
	–	large	small	–	large	small	–	large	small
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$(^+0)$	-0.07***	-0.08***	-0.03**	-0.14***	-0.15***	-0.12**	-0.07***	-0.08***	-0.03**
	(0.01)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)	(0.01)	(0.02)	(0.02)
$(^+1)$	0.29***	0.03**	0.73***	0.11***	0.03	0.25***	0.29***	0.03**	0.73***
	(0.02)	(0.02)	(0.04)	(0.03)	(0.03)	(0.06)	(0.02)	(0.02)	(0.04)
charity-self							-0.00	-0.12***	0.22***
							(0.04)	(0.04)	(0.06)
charity-self*$(^+0)$							-0.07**	-0.08*	-0.08*
							(0.03)	(0.04)	(0.05)
charity-self*$(^+1)$							-0.18***	0.00	-0.48***
							(0.04)	(0.04)	(0.08)
Observations	3367	2135	1232	1894	1253	641	5261	3388	1873
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. $(^+\mathbf{0})$ is an indicator for an *i/5-bundle*. $(^+\mathbf{1})$ is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles about which all information is revealed from participants in our main sample in the *info-choice* version.

3.4 Results from the *Info-Amounts-150* version

Across the charity-charity treatment and the charity-self treatment, participants face the same bundles but their outside options differ between the two treatments. In the first three versions of our experiment, the normalization procedure ensures these outside options are comparable in valuations across the treatments since it elicits X values such that participants are indifferent between 150 cents for the national chapter and X for themselves. Like the 150-cent outside option in the charity-charity treatment, the X-cent outside option in the charity-self treatment involves a fixed amount that, for a given participant, does not change across their forty-eight decisions in the study.

In taking these steps to ensure the outside options are similarly valued across the treatments, participants should be similarly motivated — absent excuses — to carefully consider their decisions between the bundles and their outside options. An alternative approach, however, is to make the outside options comparable in terms of their nominal amounts instead of valuations. We consider this approach in the *info-amounts-150* version where the outside options involve 150 cents for the American Red Cross in the charity-charity treatment and 150 cents for the participant in the charity-self treatment. Note that the beneficiary of the outside option is also now distinct from the beneficiary of the bundles in both treatments, which is arguably less so in the previous charity-charity treatments where all options benefit some chapter(s) of the Make-A-Wish Foundation. Thus, in addition to participants facing the exact same bundles across the two treatments, participants in the *info-amounts-150* version face outside options with nominally identical amounts of money *not* benefiting the Make-A-Wish Foundation.

Figure 8 and Table 7 confirm that our findings persist in the *info-amounts-150* version. Adding a zero to a main bundle significantly decreases participants' willingness to choose the bundle by 2 percentage points in the charity-charity treatment and by 6 percentage points in the charity-self treatment. Appendix Figure A.10 shows that our findings persist when also adding in the twelve additional bundles.[28]

It is worth noting, however, that evidence in support of our findings in the *info-amounts-150* version is likely muted by censoring concerns, since we do not employ the normalization procedure to ensure participants similarly value their outside options across the two treatments in *info-amounts-150* version. Indeed, while only 13% of participants in the charity-self treatment of the *info-amounts* version choose their outside option in all thirty-six decisions involving main bundles, this rate doubles to 26% in the charity-self treatment of the *info-amounts-150* version.[29] Interestingly, our results get dramatically stronger when we restrict our analysis to participants for whom censoring concerns are the least likely — that is, participants in the interior sample who choose a bundle

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[28]The one exception is that, as one may expect given the censoring that appears to push participants away from choosing the bundles in the charity-self treatment, Panel B of Figure A.10 does not find evidence for the limits of self-serving behavior as seen in the other three study versions.

[29]This data are from the main sample and thus participants with estimated X values that do not include a zero lower bound. If one instead considers the full sample of participants, the percentages increase to 16% in the *info-amounts* version and 29% in the *info-amounts-150* version.

at least once and their outside option at least once during the course of the study. Figure A.11 and Table A.5 show that adding a zero to a main bundle still significantly decreases participants' willingness to choose the bundle by 2 percentage points in the charity-charity treatment and now decreases participants' willingness to choose the bundle by 11 percentage points in the charity-self treatment. Appendix Figure A.12 similarly shows stronger evidence in support of our findings when also considering the twelve additional bundles.[30]

Several takeaways follow from the findings in the *info-amounts-150* version. First, the benefits of normalizing stakes when individuals make decisions involving money for themselves versus money for charity is clear. Absent normalizing stakes, censoring concerns are pervasive and thus may generate inaccurate conclusions about participants' relative sensitivity to small changes in the decision environment. Second, differences across our two treatments are not driven by the outside option involving a particular nominal amount. Our findings persist when the outside options in both treatments involve 150 cents. Third, differences across our two treatments are not driven the fact that the Make-A-Wish Foundation receives donation in both the bundle and the outside option of the charity-charity treatment — our findings persist in the charity-charity treatment even when the bundle benefits the Make-A-Wish Foundation state chapters but the outside option benefits the American Red Cross.[31]

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[30]Panel B of Figure A.12 further shows that once the effect of censoring are mitigated, evidence for the limits of self-serving behavior re-emerges.

[31]It is worth noting that we do not seek to separate our findings from the highly related hypothesis that differences across our treatments may reflect a fundamental difference between decisions with and without a self-other tradeoff. For instance, one might argue that there is an increased "difficulty" when making decisions between money-for-self and money-for-other that provides the flexibility needed for excuse-driven behavior to arise. Our position is that self-serving behavior designed to keep money for oneself cannot be cleanly separated from other explanations for why decisions with self-other tradeoffs are different from decisions without such a tradeoff.

Figure 8: In the *info-amounts-150* version, fraction choosing to give via a main bundle

(a) Charity-charity treatment

(b) Charity-self treatment
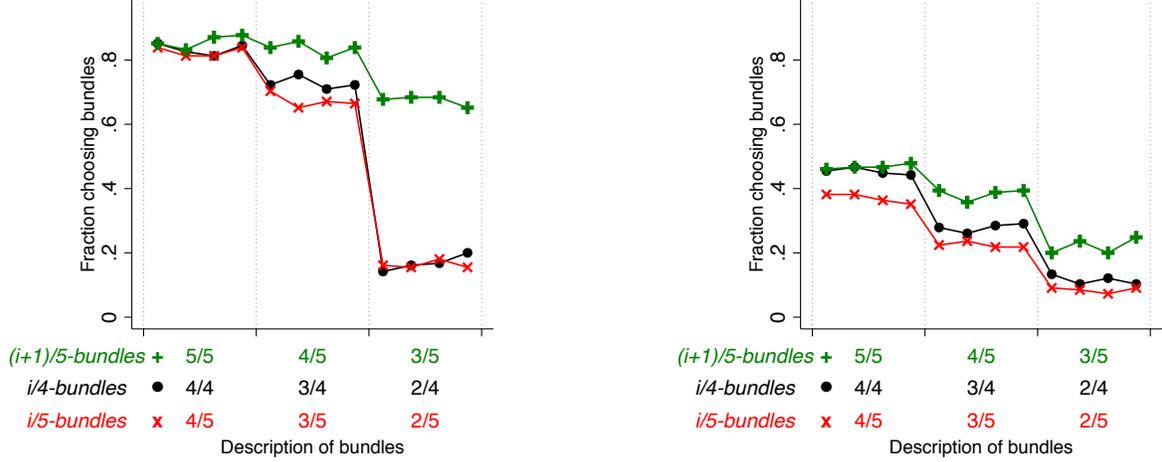
● ≡ *i/4-bundles*; **x** ≡ *i/5-bundles*; and **+** ≡ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from from the 320 participants with accurately estimated X in the *info-amounts-150* version for a total of 11,520 observations.

Table 7: In the *info-amounts-150* version, regression of choosing a main bundle

Given donation in *i/4-bundle* is	Charity-charity treatment			Charity-self treatment			Both treatments		
	–	large	small	–	large	small	–	large	small
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$(^+0)$	-0.02**	-0.03**	-0.00	-0.06***	-0.07***	-0.03***	-0.02**	-0.03**	-0.00
	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
$(^+1)$	0.21***	0.07***	0.51***	0.08***	0.06***	0.11***	0.21***	0.07***	0.51***
	(0.02)	(0.02)	(0.04)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.04)
charity-self							-0.29***	-0.41***	-0.05
							(0.03)	(0.04)	(0.03)
charity-self*$(^+0)$							-0.03**	-0.04*	-0.03
							(0.02)	(0.02)	(0.02)
charity-self*$(^+1)$							-0.14***	-0.01	-0.40***
							(0.02)	(0.02)	(0.05)
Observations	5580	3720	1860	5940	3960	1980	11520	7680	3840
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. $(^+\mathbf{0})$ is an indicator for an *i/5-bundle*. $(^+\mathbf{1})$ is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from participants in our main sample in the *info-amounts-150* version.

3.5 Comparison of results across different versions

As seen in Sections 3.1 - 3.4, across all four versions of the study we find that adding a zero decreases the likelihood of choosing a bundle and that this effect is dramatically larger in the charity-self treatment when there is a self-serving motive to avoid choosing the bundle. Here, we provide additional results based on comparing the likelihood of choosing the bundle across the four versions of the study.

Table 8 presents regression results pooling decisions on the main bundles across all study versions. Not surprisingly, our main findings on the effect of adding a zero and adding a donation persist in the pooled sample. The coefficients on *info-amounts-sum*, *info-amounts-150*, and *info-choice* reflect differences between those versions of the study and the *info-amounts* version in the likelihood of choosing the bundle. Relative to the *info-amounts* version, there are no significant differences in the *info-amounts-sum* version in either treatment. However, there are significant difference when comparing to the other two versions to *info-amounts*.

First, participants' willingness to choose a bundle in the charity-self treatment is significantly lower in the *info-amounts-150* version than in the *info-amounts* version. As discussed in Section 3.4, this likely arises from the fact that we do not normalize participants' outside option in the *info-amounts-150* version and participants are more likely to choose the outside option when it is 150 cents for themselves than when it is some X for themselves that is weakly less than 150 cents. That *info-amounts-150* is not significantly different from *info-amounts* in the charity-charity treatment reveals that participants value 150 cents to the American Red Cross approximately the same as 150 cents to the Make-A-Wish Foundation national chapter.

Second, participants' willingness to choose a bundle differs between the charity-self treatments of the *info-choice* and *info-amounts* versions. In particular, when the underlying bundle is a large donation bundle (Columns 2, 5, and 8 of Table Table 8), participants' willingness to choose a bundle is significantly lower in the *info-choice* version than in the *info-amounts* version. By contrast, when the underlying bundle is a small donation bundle (Columns 3, 6, and 9 of Table Table 8), participants are, if anything, more willing to choose a bundle in the *info-choice* version than in the *info-amounts* version, although this finding is less robust. Note that these patterns are consistent with information avoidance. Since information can be avoided in the *info-choice* version, participants may be less responsive to a bundle's donation amounts and thus choose small donation bundles "too much" and large donation bundles "too little."

Figure 9 shows how often participants are willing to choose a bundle — including the main and additional bundles — in each study version and treatment. Panel A shows results from the large donation bundles and shows clear evidence of excuse-driven behavior. For each study version, participants are less willing to choose large donation bundles when the outside option benefits themselves in the charity-self treatment as opposed to when the outside option does not benefit themselves in the charity-charity treatment. Panel B shows results from the small donation bundles and further highlights evidence of the limits to excuse-driven behavior. In all versions except for

the *info-amounts-150* (which has a lower level of choosing the bundle for reasons described above), participants in the charity-self treatment are more likely to choose the bundle than participants in the charity-charity treatment. This suggests that the focus on the number of zeros as an excuse prevents participants from using overall donation amount as an excuse not to choose a bundle and leads participants in the charity-self treatment to be more likely to choose small donation bundles.

Figure 9: Across study versions, fraction choosing to give via bundles

(a) Large donation bundles   (b) Small donation bundles
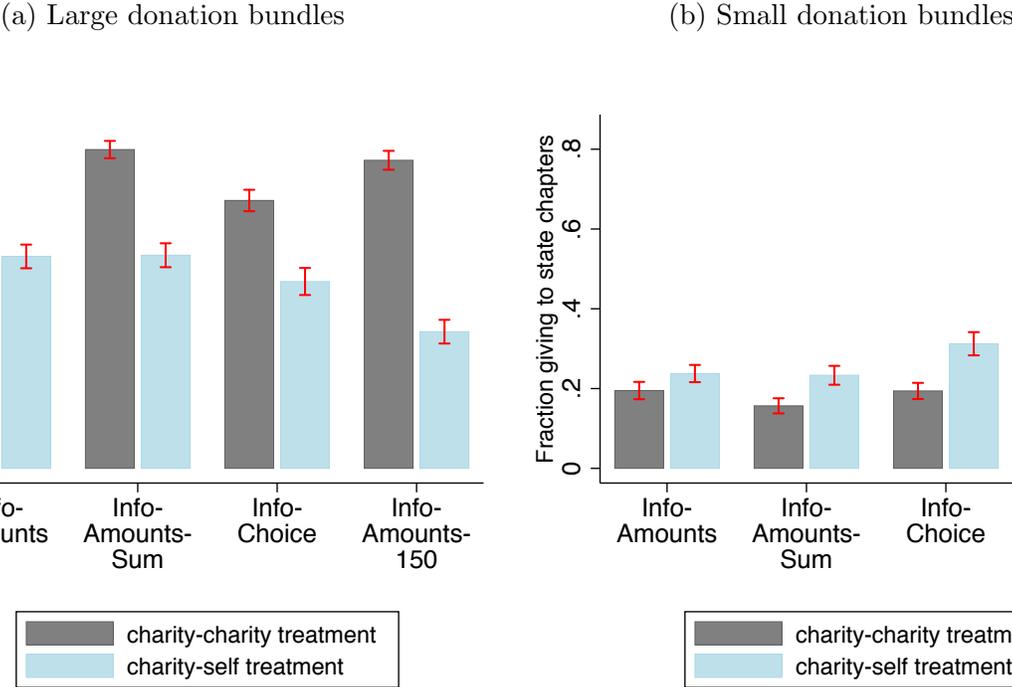
Data include all decisions from the 1,304 participants in our main sample from the *info-amounts* version, the *info-amounts-sum* version, the *info-choice* version, and the *info-amounts-150* version for a total of 46,944 observations. Error bars show plus or minus one standard error.

Table 8: Across all study versions, regression of choosing a main bundle

Given donation in $i/4$-bundle is	Charity-charity treatment			Charity-self treatment			Both treatments		
	–	large	small	–	large	small	–	large	small
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$(^+0)$	-0.03***	-0.03***	-0.01	-0.08***	-0.09***	-0.04***	-0.03***	-0.03***	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
$(^+1)$	0.20***	0.04***	0.51***	0.07***	0.04***	0.14***	0.20***	0.04***	0.51***
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
charity-self							-0.12***	-0.19***	0.04
							(0.03)	(0.04)	(0.03)
charity-self*$(^+0)$							-0.05***	-0.06***	-0.03**
							(0.01)	(0.01)	(0.01)
charity-self*$(^+1)$							-0.12***	-0.00	-0.37***
							(0.01)	(0.01)	(0.02)
info-amounts-sum	0.02	0.04	-0.02	0.01	-0.00	0.03	0.02	0.04	-0.02
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)
info-amounts-150	0.01	0.02	0.01	-0.16***	-0.20***	-0.09***	0.01	0.02	0.01
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
info-choice	-0.06**	-0.09**	-0.00	-0.02	-0.08*	0.09**	-0.06**	-0.09**	-0.00
	(0.03)	(0.04)	(0.03)	(0.04)	(0.05)	(0.04)	(0.03)	(0.04)	(0.03)
charity-self*info-amounts-sum							-0.01	-0.05	0.05
							(0.05)	(0.05)	(0.04)
charity-self*info-amounts-150							-0.18***	-0.21***	-0.10**
							(0.05)	(0.06)	(0.04)
charity-self*info-choice							0.04	0.01	0.09**
							(0.05)	(0.06)	(0.05)
Observations	23868	15912	7956	23076	15384	7692	46944	31296	15648
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. $(^+0)$ is an indicator for an $i/5$-bundle. $(^+1)$ is an indicator for an $(i+1)/5$-bundle. **charity-self** is an indicator for participants in the charity-self treatment. **info-xxx** is an indicator for participants in the info-xxx version. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from participants in our main sample in the info-amounts version, the info-amounts-sum version, the info-amounts-150 version, or the info-choice version.

4 Conclusion

Information often fails to encourage individuals to take actions with social or future benefits. Our paper highlights a new, and potentially pervasive, behavioral phenomenon that may contribute to why information is often ineffective at encouraging such behavior. We find that information can make salient what an action does not achieve and, because the better is the enemy of the good, lead agents to avoid taking it.

In particular, we observe that making salient how a charitable giving bundle could have been better — by adding a zero (i.e., an additional state chapter that receives no donation) to it — decreases participants' willingness to choose the bundle. We find that this decrease is 2.5 to 4 times larger when self-serving motives are present. In other words, we find that the better is the enemy of the good, particularly when avoiding the good is self-serving. Our findings persist: in the *info-amounts-sum* version in which we help agents "process" information by showing the sum of total donations in the bundle; among agents who could avoid information but choose to fully reveal it in the *info-choice* version; and in the *info-amounts-150* version when outside options are comparable on a nominal, rather than a valuation, perspective. Previous research has shown that self-serving responses to information may arise when payoff information is subjective, uncertain, or easily avoided. We show that individuals' ability to respond to payoff information in a self-serving way extends beyond these settings to cases when information is complete, certain, and unavoidable. This suggests that self-serving information processing may be active across an even wider set of domains than previously considered.

From a policy perspective, our results highlight why providing information may be ineffective, particularly when trying to encourage privately costly actions with social or future benefits for which self-serving motives may be present.[32] Our results suggest that policy makers should care both about the content of information they provide and whether the framing of the information makes salient the limitations of an action or how it might be better. The effective altruism movement indeed recognizes this tension; while trying to encourage donors "to make the greatest impact possible" and thus highlighting ways in which giving opportunities could be better, they also urge donors "not to let the perfect be the enemy of the good."[33] In addition, our finding that individuals' self-serving motives appear to be constrained by consistency may help policymakers design effective information interventions. For instance, policymakers might ask individuals to convey the set of shortcomings that have prevented them from taking a costly action in the past and then present individuals with an option absent those shortcomings.[34]

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[32]For instance, our phenomenon may help to explain why providing individuals with information about caloric content of unhealthy foods often proves ineffective (Elbel et al., 2009; Swartz, Braxton and Viera, 2011), why patients fail to take their prescribed mediation after being told by their doctor to do so (Osterberg and Blaschke, 2005), why encouraging more giving via effectiveness information proves difficult (Karlan and Wood, 2017), why individuals who know about the value of gym attendance often fail to go (DellaVigna and Malmendier, 2006), etc.

[33]https://www.thelifeyoucansave.org/About-Us.

[34]In the context of charitable giving, this could involve third-party organizations — such as Charity Navigator, GiveWell, GreatNonprofits, or The Life You Can Save — establishing why an individual does not respond to par-

From a modeling perspective, our results on self-serving behavior and its constraints speak to existing behavioral models of self-signaling, self-deception, and motivated beliefs (see Bénabou and Tirole (2016) for a review and discussion).[35] Our evidence on constraints to self-serving behavior is consistent with signaling models that incorporate excuses. But our evidence on individuals being able to use payoff-irrelevant information to generate excuses poses a challenge to these models. The response to payoff-irrelevant information suggests some form of narrow framing such that agents respond differently to a state chapter receiving no donations inside and outside of the bundle. One reason that adding a zero may decrease donations is that individuals narrowly focus on a subset of outcomes (like the state chapters in a bundle) and put more weight on the information that is least favorable. Such behavior may be exacerbated when self-serving motives to avoid taking a costly action are present. This approach can also nest the self-serving behavior that arises in the case of ambiguity or risk, which may involve putting more weight on the least favorable states of the world. An alternative reason that adding a zero may decrease donation is that individuals care explicitly about the distribution of donations to the salient state chapters (like those in a bundle) and dislike when the bundle involves more inequity.[36] Again, such attitudes may be exacerbated in the presence of self-serving motives. We see the extension of behavioral models to rationalize our results as a valuable direction for future work.

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ticular appeals and then providing person-specific recommendations about how to give. A similar approach could be implemented in other contexts where advisors often play a role, such as when choosing savings plans, medical or exercise regimes, or educational investments. Indeed, prior literature has documented that prosocial behavior can be encouraged by removing previously-used excuses (Lin, Zlatev and Miller, 2016) and requiring individuals to assess information before self-serving motives are relevant (Gneezy et al., 2016). More generally, there is a large literature on how joint evaluations, as opposed to separate evaluations, counter biases by encouraging more consistency in decision-making (see Bazerman, Loewenstein and White (1992), and, for more recent work, see Bohnet and Bazerman (2016)).

[35]See also Bénabou and Tirole (2006), Grossman (2015), and Grossman and van der Weele (2016).

[36]See Exley and Kessler (2017) for a demonstration in which agents indeed narrowly frame their inequity aversion. For additional evidence on how individuals narrowly frame their decisions, see, for instance, Barberis, Huang and Thaler (2006), Rabin and Weizsäcker (2009), and Imas (2016).

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Appendixes

A   Appendix

Table A.1: Summary of Study Versions

Study version	Charity-charity treatment *outside option; number of participants*	Charity-self treatment *outside option; number of participants*	Information *about donations in a bundle*
Info-amounts	150 cents for national chapter; 191 participants	X cents for participants; 203 participants	required to reveal all donation amounts
Info-amounts-sum	150 cents for national chapter; 202 participants	X cents for participants; 195 participants	required to reveal all donation amounts and informed of total donation amount
Info-choice	150 cents for national chapter; 215 participants	X cents for participants; 190 participants	not required to reveal all donations amounts
Info-amounts-150	150 cents for American Red Cross; 200 participants	150 cents for participants; 200 participants	required to reveal all donation amounts

See Section 2.1 for how X cents is estimated on the participant-level so that each participant is indifferent between 150 cents for the national chapter and X cents for themselves.

Figure A.1: Example of revealed information about a *3/4-bundle* after clicking second header

Figure A.2: Example of revealed information about a *3/4-bundle* after clicking third header

If you choose to give to Make A-Wish Foundation state chapters, the Louisiana chapter will receive:

If you choose to give to Make A-Wish Foundation state chapters, the Washington chapter will receive:

If you choose to give to Make A-Wish Foundation state chapters, the North Carolina chapter will receive:

54 cents

If you choose to give to Make A-Wish Foundation state chapters, the Georgia chapter will receive:

Figure A.3: Example of revealed information about a *3/4-bundle* after clicking fourth header

If you choose to give to Make A-Wish Foundation state chapters, the Louisiana chapter will receive:

If you choose to give to Make A-Wish Foundation state chapters, the Washington chapter will receive:

If you choose to give to Make A-Wish Foundation state chapters, the North Carolina chapter will receive:

If you choose to give to Make A-Wish Foundation state chapters, the Georgia chapter will receive:
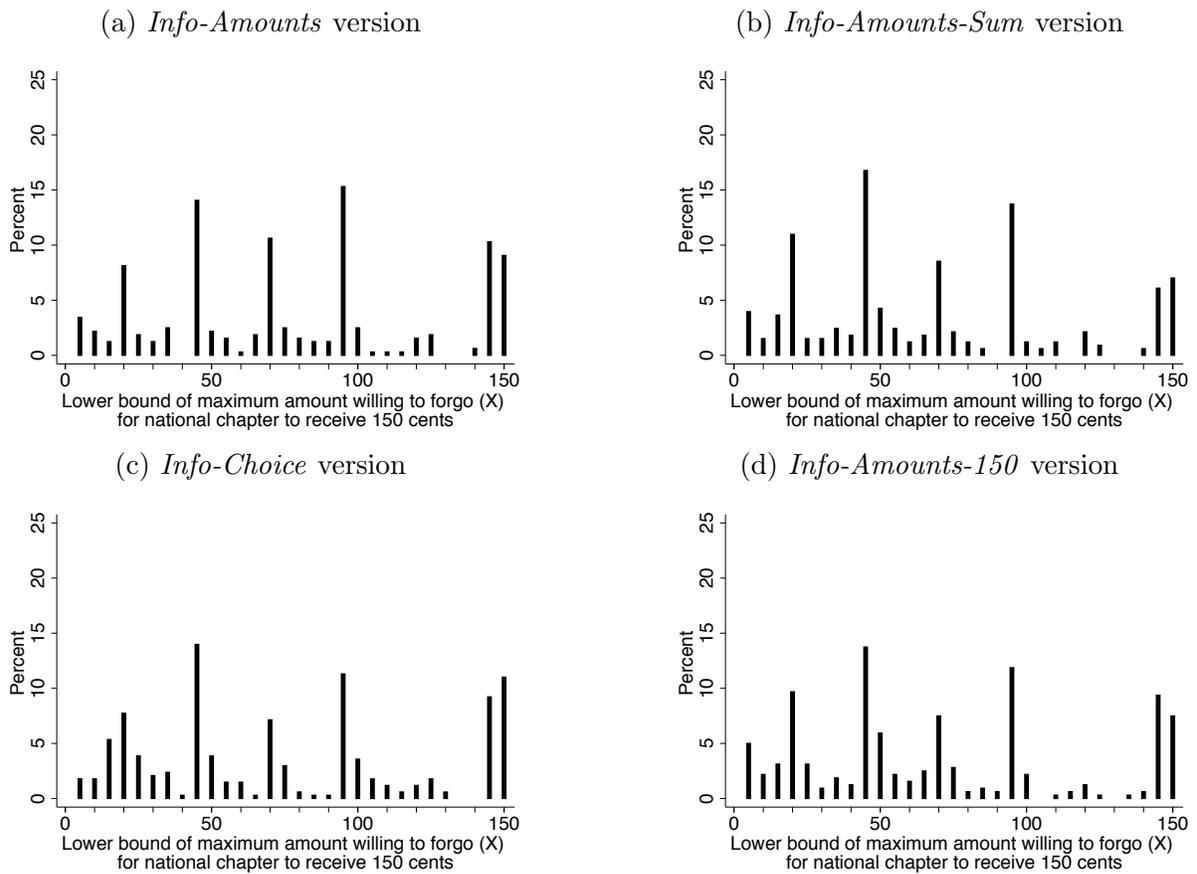
54 cents

Figure A.4: Distribution of X values

(a) *Info-Amounts* version

(b) *Info-Amounts-Sum* version

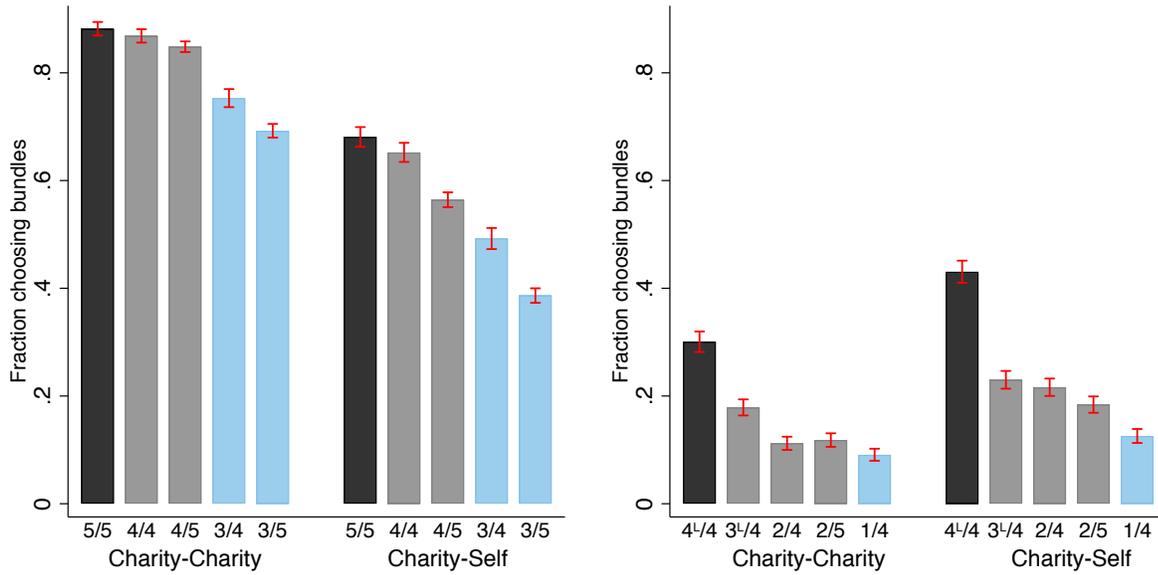(c) *Info-Choice* version

(d) *Info-Amounts-150* version

Data include the 1,304 participants in our main sample from any of the experimental conditions.

Figure A.5: In *info-amounts-sum* version, fraction choosing to give via a bundle
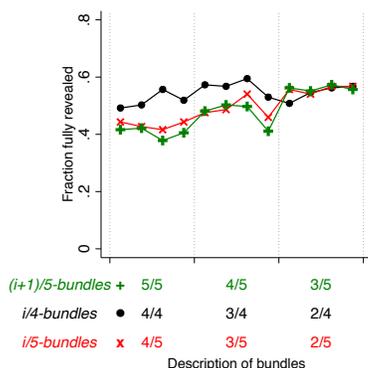
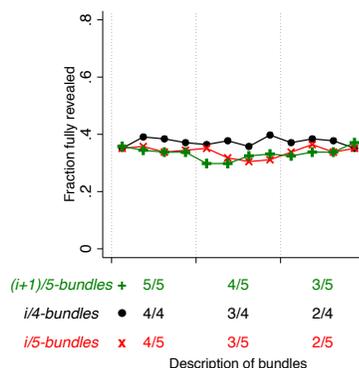(a) Large donation bundles

(b) Small donation bundles

Data include all decisions from the 328 participants in our main sample from the *info-amounts-sum* version for a total of 15,744 observations. Error bars show plus or minus one standard error.

Figure A.6: In the *info-choice* version, fraction choosing to fully reveal information

(a) Charity-charity treatment
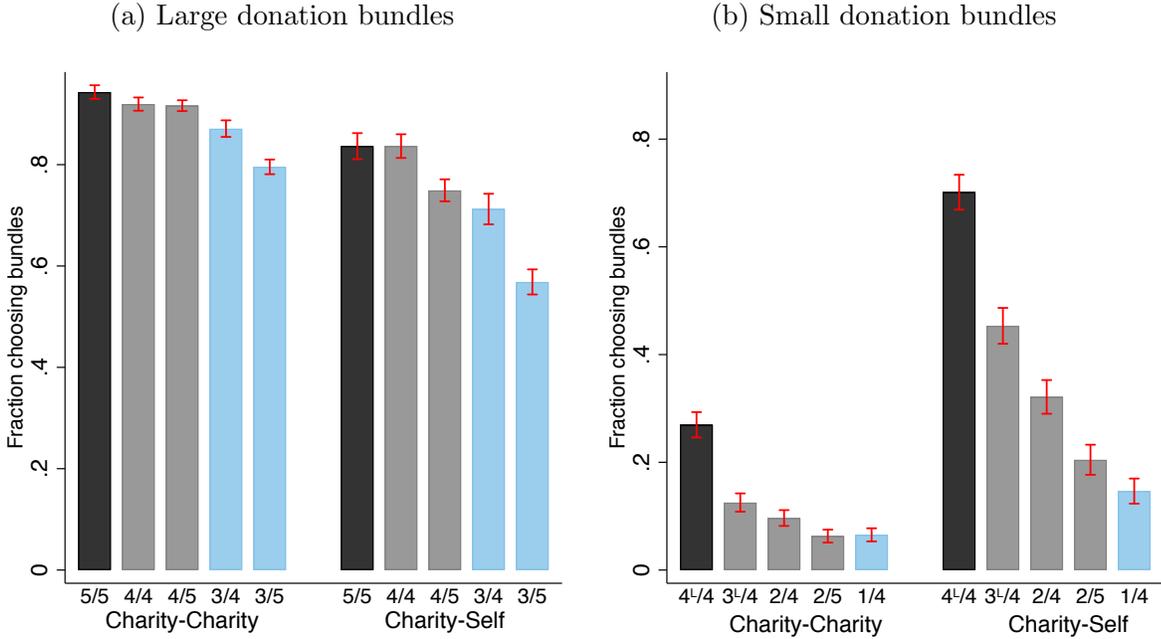
(b) Charity-self treatment

• ≡ *i/4-bundles*; **x** ≡ *i/5-bundles*; and **+** ≡ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from the 336 participants in our main sample from the *info-choice* version for a total of 12,096 observations.

Table A.2: In the *info-choice* version, regressions of information acquisition

	Fully revealed information			Amount of revealed information		
	(1)	(2)	(3)	(4)	(5)	(6)
charity-self	-0.16***	-0.17***	-0.11*	-0.67***	-0.55***	-0.34
	(0.04)	(0.05)	(0.06)	(0.16)	(0.14)	(0.21)
($^{+}$0)		-0.05***	-0.05***		0.51***	0.51***
		(0.02)	(0.02)		(0.05)	(0.05)
($^{+}$1)		-0.06***	-0.06***		0.49***	0.49***
		(0.01)	(0.01)		(0.05)	(0.05)
charity-self*($^{+}$0)		0.02	0.02		-0.20**	-0.20**
		(0.02)	(0.02)		(0.08)	(0.08)
charity-self*($^{+}$1)		0.02	0.02		-0.18**	-0.18**
		(0.02)	(0.02)		(0.08)	(0.08)
more-selfish			0.03			0.05
			(0.06)			(0.23)
charity-self*more-selfish			-0.12			-0.43
			(0.09)			(0.33)
Observations	12096	12096	12096	12096	12096	12096
Bundle FEs	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from ordinary least square regressions of whether some information is fully revealed (in Columns 1-3), and the number of state chapters with information that is revealed (Columns 4-6). **charity-self** is an indicator for participants in the charity-self treatment. **more-selfish** is an indicator for participants with X values below the median and thus being "more selfish." Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from participants in our main sample in the *info-choice* version.

Figure A.7: In *info-choice* version, when information is fully revealed, fraction choosing to give via a bundle

(a) Large donation bundles

(b) Small donation bundles

Data include all decisions from the 261 participants in our main sample from the *info-choice* version for a total of 7,148 observations. Error bars show plus or minus one standard error.

Figure A.8: In the *info-choice* version, fraction choosing to give via a main bundle

(a) Charity-charity treatment
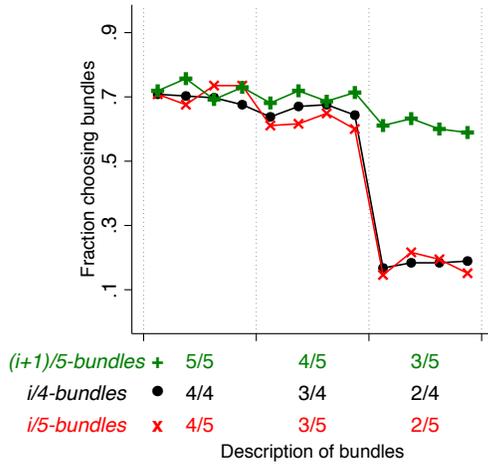
(b) Charity-self treatment
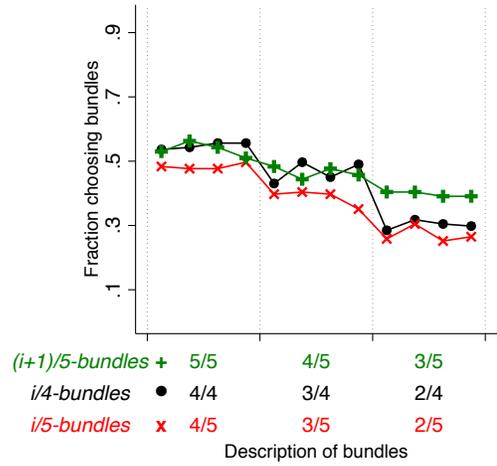
$\bullet \equiv$ *i/4-bundles*; $\mathbf{x} \equiv$ *i/5-bundles*; and $+ \equiv$ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from the 336 participants in our main sample from the *info-choice* version for a total of 12,096 observations.

Table A.3: In the *info-choice* version, regression of choosing a main bundle

Given donation in *i/4-bundle* is	Charity-charity treatment			Charity-self treatment			Both treatments		
	–	large	small	–	large	small	–	large	small
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$(^{+}0)$	-0.01	-0.01	-0.00	-0.06***	-0.07***	-0.03*	-0.01	-0.01	-0.00
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
$(^{+}1)$	0.17***	0.04**	0.43***	0.03**	-0.01	0.10***	0.17***	0.04**	0.43***
	(0.02)	(0.02)	(0.04)	(0.01)	(0.01)	(0.03)	(0.02)	(0.02)	(0.04)
charity-self							-0.07*	-0.17***	0.12***
							(0.04)	(0.05)	(0.04)
charity-self*$(^{+}0)$							-0.05***	-0.06***	-0.03
							(0.02)	(0.02)	(0.03)
charity-self*$(^{+}1)$							-0.14***	-0.04**	-0.33***
							(0.02)	(0.02)	(0.05)
Observations	6660	4440	2220	5436	3624	1812	12096	8064	4032
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. $(^{+}\mathbf{0})$ is an indicator for an *i/5-bundle*. $(^{+}\mathbf{1})$ is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from participants in our main sample in the *info-choice* version.
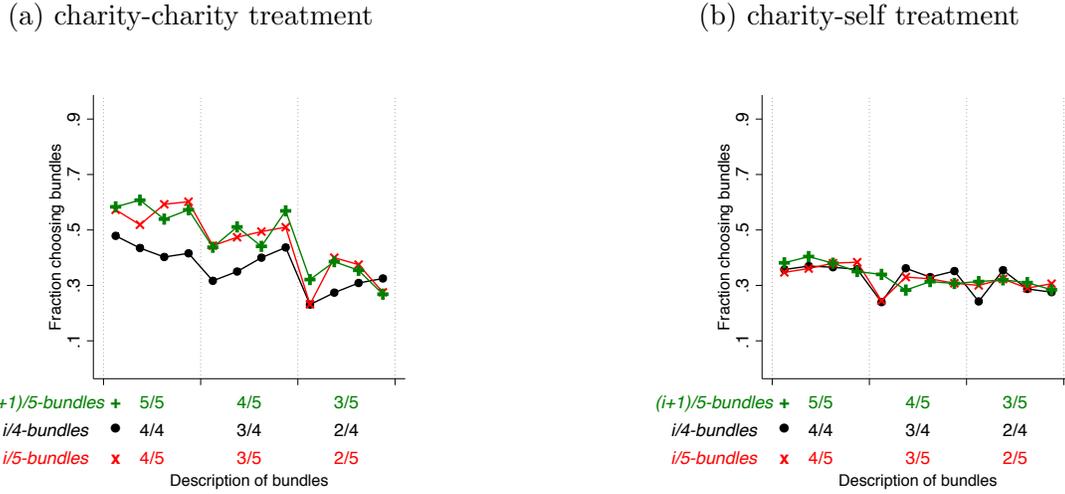
Figure A.9: In the *info-choice* version, when information is not fully revealed, fraction choosing to give via a main bundle
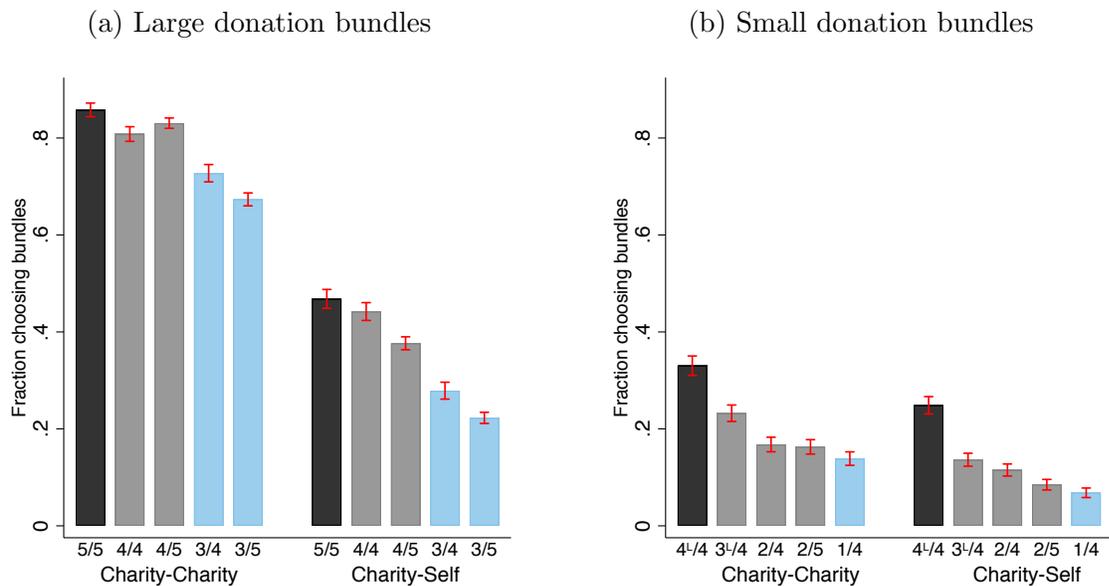
(a) charity-charity treatment   (b) charity-self treatment

$\bullet \equiv$ *i/4-bundles*; $\mathbf{x} \equiv$ *i/5-bundles*; and $+ \equiv$ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving main bundles about which information is not fully revealed from the 269 participants in our main sample in the *info-choice* version for a total of 6,835 observations.

Table A.4: In the *info-choice* version, when information is not fully revealed, regression of choosing a main bundle

| Given donation in *i/4-bundle* is	Charity-charity treatment			Charity-self treatment			Both treatments		
	–	large	small	–	large	small	–	large	small
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$(^{+}0)$	0.09***	0.12***	0.04	0.00	-0.01	0.02	0.10***	0.12***	0.04
	(0.03)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.04)
$(^{+}1)$	0.10***	0.13***	0.05	0.01	0.00	0.02	0.11***	0.13***	0.05
	(0.03)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.04)
charity-self							-0.04	-0.06	0.01
							(0.06)	(0.06)	(0.05)
charity-self*$(^{+}0)$							-0.10***	-0.13***	-0.02
							(0.03)	(0.04)	(0.04)
charity-self*$(^{+}1)$							-0.10***	-0.13***	-0.03
							(0.03)	(0.04)	(0.04)
Observations	3293	2305	988	3542	2371	1171	6835	4676	2159
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. $(^{+}\mathbf{0})$ is an indicator for an *i/5-bundle*. $(^{+}\mathbf{1})$ is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles about which information is not fully revealed from participants in our main sample in the *info-choice* version.

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Figure A.10: In *info-amounts-150* version, fraction choosing to give via a bundle

(a) Large donation bundles

(b) Small donation bundles

Data include all decisions from the 320 participants in our main sample from the *info-amounts-150* version for a total of 15,360 observations. Error bars show plus or minus one standard error.

Figure A.11: In the *info-amounts-150* version, among the interior sample, fraction choosing to give via a main bundle

<div style="display:flex">

(a) Charity-charity treatment

(b) Charity-self treatment

</div>
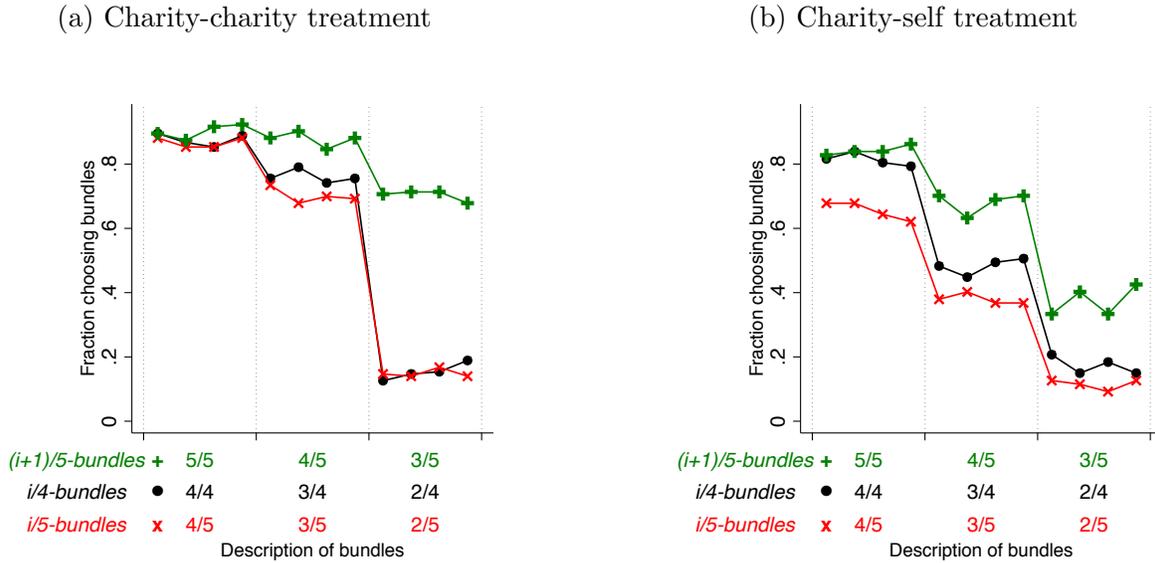
$\bullet \equiv$ *i/4-bundles*; $\mathbf{x} \equiv$ *i/5-bundles*; and $+ \equiv$ *(i+1)/5-bundles*. The order of bundles within a set aligns with the underlying bundle type depicted in Table 1. Data include decisions involving the main bundles from from the 230 participants with accurately estimated X in the *info-amounts-150* version for a total of 8,280 observations.

Table A.5: In the *info-amounts-150* version, among the interior sample, regression of choosing a main bundle

	Charity-charity treatment			Charity-self treatment			Both treatments		
Given donation in *i/4-bundle* is	– (1)	large (2)	small (3)	– (4)	large (5)	small (6)	– (7)	large (8)	small (9)
$(^{+}0)$	-0.02**	-0.03**	-0.01	-0.11***	-0.13***	-0.06***	-0.02**	-0.03**	-0.01
	(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)	(0.01)	(0.02)
$(^{+}1)$	0.23***	0.07***	0.55***	0.14***	0.11***	0.20***	0.23***	0.07***	0.55***
	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)
charity-self							-0.11***	-0.17***	0.02
							(0.03)	(0.04)	(0.04)
charity-self$*(^{+}0)$							-0.08***	-0.10***	-0.05*
							(0.02)	(0.03)	(0.03)
charity-self$*(^{+}1)$							-0.09***	0.04	-0.35***
							(0.02)	(0.03)	(0.06)
Observations	5148	3432	1716	3132	2088	1044	8280	5520	2760
Bundle FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. The results are from a linear probability model of likelihood to choose a bundle. ***charity-self*** is an indicator for participants in the charity-self treatment. $(^{+}\mathbf{0})$ is an indicator for an *i/5-bundle*. $(^{+}\mathbf{1})$ is an indicator for an *(i+1)/5-bundle*. Bundle FEs include fixed effects for the underlying bundle type depicted in Table 1. Data include decisions involving main bundles from the participants in our main sample who choose the bundle at least once and choose their outside option at least once during the course of the study in the *info-amounts-150* version.

Figure A.12: In *info-amounts-150* version, among the interior sample, fraction choosing to give via a bundle

(a) Large donation bundles

(b) Small donation bundles
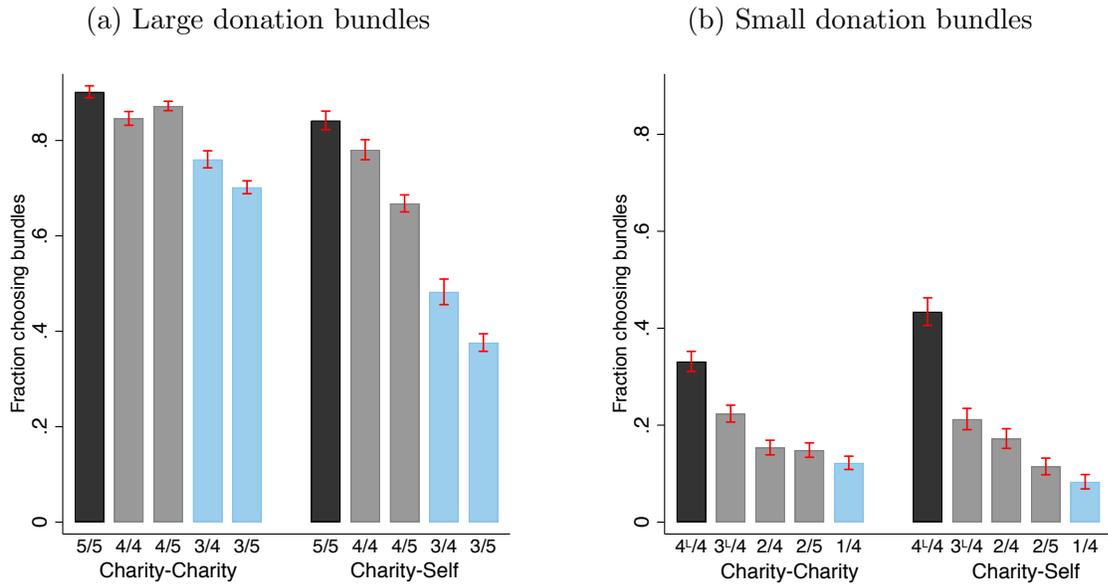
Data include all decisions from the 230 participants in our main sample who choose the bundle at least once and choose their outside option at least once during the course of the study in the *info-amounts-150* version for a total of 11,040 observations. Error bars show plus or minus one standard error.