Maimonides' Ladder: States of Mutual Knowledge and the Perception of Charitability

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Abstract

Why do people esteem anonymous charitable giving? We connect normative theories
of charitability (captured in Maimonides' Ladder of Charity) with evolutionary
theories of partner choice to test predictions on how attributions of charitability are
affected by states of knowledge: whether the identity of the donor or of the
beneficiary is revealed to the other. Consistent with the theories, in Experiments 1-2
participants judged a double-blind gift as more charitable than one to a revealed
beneficiary, which in turn was judged as more charitable than one from a revealed
donor. We also found one exception: Participants judged a donor who revealed only
himself as slightly *less*, rather than more, charitable than one who revealed both
identities. Experiment 3 explains the exception as a reaction to the donor's perceived
sense of superiority and disinterest in a social relationship. Experiment 4 found that
donors were judged as more charitable when the gift was shared knowledge (each
aware of the other's identity, but unsure of the other's awareness) than when it was
common knowledge (awareness of awareness). Experiment 5, which titrated
anonymity against donation size, found that not even a hundredfold larger gift could
compensate for the disapproval elicited by a donor revealing his identity. Experiments
6-7 showed that participants' judgments of charitability flip depending on whose
perspective they take: observers disapprove of donations that they would make as
donors and would prefer as beneficiaries. Together, these experiments provide insight
into why people care about *how* a donor gives, not just how much.

Keywords: Charity; partner choice; reciprocity; common knowledge

People tend to judge donors who give anonymously as more charitable and generous than those who give publicly. This conventional wisdom is the basis for an episode of the television comedy *Curb Your Enthusiasm* in which Larry David donates money for a hospital wing that is named after him and is chagrined to find that his rival, Ted Danson, donated money for the other wing anonymously while his identity leaked out, paradoxically reaping him the reputational advantages of both the gift and the anonymity. In experiments (Critcher & Dunning, 2011; Lin-Healy & Small, 2013; Newman & Cain, 2014) and in real life, people often criticize donors who seek too much credit for their beneficence, as seen in the outrage directed at two philanthropists who rescinded a $3 million gift to a zoo because the plaque showing their names was too small (Dunlap, 1997).

The perceived merit of anonymous gifts is more than an abstract issue of normative ethical judgment. In modern times, charitable institutions are increasingly charged with solving some of the world's most complex humanitarian problems, including hunger, disease, natural disasters, economic development, and political instability. A society's collective choices about which gifts to praise, reward, and encourage can affect the flow of resources to these urgent problems. For instance, Dan Pallotta organized fund-raising events like AIDSRides and Breast Cancer-3-Days that raised $305 million for charities. But his companies collapsed after complaints that they earned a profit. Pallotta said, wistfully, "People continue to die as a result … This we call morality" (Pallotta, 2009).

Why do people care so much about a donor's anonymity, recognition, or ulterior benefits? None of this has anything to do with how much a donation improves beneficiaries' well-being. Why not embrace donors' desires for recognition as a win-win opportunity to increase charitable giving?

A Ladder of Charity

Deepening the puzzle is the fact that people not only distinguish anonymous from public gifts, but also appear to make finer distinctions based on the mutual knowledge of the donor and beneficiary. A famous example comes from the 12th-century Jewish philosopher Maimonides who laid out a ladder of charitable giving (*tzedakah,* literally "righteousness"). Maimonides put double-blind gifts high on the ladder and common-knowledge gifts near the bottom, interspersed with other rungs based on the donor's motivation and the recipient's benefit over the long term. The Ladder, from most to least charitable, is laid out as follows:

1. A donation that enables the beneficiary to escape the need for charity altogether (e.g., giving a gift or interest-free loan to start a business).
2. A double-blind donation (e.g., secretly leaving a gift in a courtyard where the poor can privately retrieve it without revealing themselves).
3. An anonymous donation to a known beneficiary (e.g., leaving a gift on their doorstep).
4. A revealed donation to an unknown beneficiary (e.g., the donor walks and drops money behind them for beneficiaries to pick up unseen).
5. A public donation that is given spontaneously (e.g., giving money in person).
6. A public donation that is solicited (e.g., granting a request for money).
7. A willing but inadequate donation.

8. A grudging donation, motivated by pity or guilt.

Maimonides discussed two key factors behind the Ladder (Maimonides, 1170-1180): 1) doing good deeds for their own sake rather than for praise or rewards, and 2) minimizing the embarrassment felt by the beneficiary. To illustrate doing charity for its own sake, Maimonides discussed an example in which donors left gifts for the needy in a secret chamber of a temple where beneficiaries could retrieve them in secrecy. To illustrate minimizing embarrassment, Maimonides discussed an example in which sages wrapped coins in a scarf slung over their back so that the poor could pick them out without feeling embarrassed.

From Maimonides's time to the present, the knowledge and motivation of the donor have figured prominently in normative theories of the inherent morality of charitable giving. In a 2018 article entitled "True generosity involve more than just giving," for example, the philosopher Christian Miller appears to be channeling his medieval predecessor by arguing that "virtues such as generosity are complicated. They involve more than just outward behaviour. A person's underlying thoughts, feelings and motives matter, too. If those aren't in good shape, then one cannot qualify as a generous person" (Miller, 2018a; see also Miller, 2018b). Yet Miller is aware of the unresolved paradox that these inner feelings, however salient they are to our moral judgements, do not actually feed the hungry or heal the sick, and notes, "Generosity is a neglected virtue in academic research in general, and perhaps most of all in philosophy. There have been very few articles on generosity in mainstream philosophy journals since 1975."

His observation is true of mainstream psychology as well. Here we attempt to fill this gap by examining whether laypeople really do order different kinds of charitable giving in a hierarchy of states of knowledge like Maimonides' ladder, which we take as the best articulated explication of non-utilitarian factors in ascriptions of charitability. Though we make no normative claims about which acts *truly* deserve to be called charitable or righteous, we seek to explain people's *intuitions* about charitability using evolutionary theories of partner choice and cooperation, which are the most explicit modern scientific explanations of the psychology of generosity.

Reciprocity, Partner Choice, and Judgments of Charity

To an evolutionary biologist, charitable donations are a kind of *altruistic behavior,* defined as instances in which one organism pays a cost to benefit another (Hamilton, 1996; Trivers, 1971, 1985; Wilson, 1975). Altruism poses an evolutionary challenge because the only way it can reliably evolve is if altruistic organisms gain more than they lose over the long run in expected reproductive success (Dawkins, 1976; Williams, 1966).

Evolutionary researchers have provided several explanations of how such behaviors can evolve. Here we focus on two: direct and indirect reciprocity. In direct reciprocity, two cooperative partners can each benefit by exchanging favors, such as grooming each other, alternating child care, or trading surplus goods, e.g., wool for milk (Trivers, 1971). In indirect reciprocity, an individual gains by cooperating because it enhances his or her reputation, which brings favors from others in the

future (Hardy & Van Vugt, 2006; Nowak & Sigmund, 2005; Wu, Balliet, & Van Lange, 2016).

The benefit of reputation only begs the question of why a person should esteem a donor based on his generosity to *other* people, rather than his generosity to the esteemer himself or herself. An explanation comes from the theory of partner choice. When individuals engage in long-term reciprocity, this creates a kind of market in which people compete for the best cooperative partners (Baumard, André, & Sperber, 2013; Barclay, 2016; Noë & Hammerstein, 1995; Trivers, 1971). Among a set of potential cooperators in a community who all would allow nonzero net profits, some are more generous than others and hence make more profitable partners. That is, partners vary in how small a profit they are willing to settle for in an exchange, and also whether they are willing to incur occasional losses to cement the relationship over the long term (Trivers, 1971). In the search for good partners, inaccurate assessments of a partner's disposition can lead to inefficiencies, such as sharing precious resources with someone who reciprocates the bare minimum that makes the cooperation mutually profitable (a phenomenon Trivers called "subtle cheating.").

Partner choice is a fundamental problem in social life and may have shaped our judgments of altruism, leading people to judge as most charitable those who deliver the largest benefits and require the least in return. In the case of charity, the anonymity of a gift provides specific information about the donor's *disposition* for generosity: Since anonymous donors provide benefits with little expectation of favors in return, they show a generous disposition that makes them desirable and profitable cooperative partners. Of course, public donors have also displayed generosity, but since they could gain reputation and future favors, it is less clear if they would be as generous if they had less to gain themselves.

The theory of partner choice is closely related to the classic problem of attribution from social psychology (Kelley, 1967; Gilbert & Malone, 1995). When people observe how other individuals behave, they attribute the behavior in varying degrees to the actor's underlying disposition, to the external circumstances, or to an interaction between them. Partner choice theory predicts that this process will be particularly engaged when observers learn of actors giving resources to others, which will prompt them to assess the donor's underlying generous disposition in order to evaluate them as a potential cooperative partner. (Note that this presupposes that there indeed is such a thing as an across-the-board charitable disposition, a "main effect" of character which generalizes over beneficiaries, as opposed to acts of generosity being determined completely by the situation or by unique donor X beneficiary interactions.) The idea that charitability is an attribution problem predicts that people will prioritize certain *kinds* of cues when attributing a disposition of charitability to a donor. *How* a donor gives is a particularly informative cue, potentially even more informative than the amount of the gift, since it indicates the dispositions that prompted the donor to give. Good "judges of character," as we call them, could use their mental state reasoning to attribute dispositional generosity more accurately, and in turn would be better able to choose the most rewarding partners.

In short, judgments of charitability might be shaped by psychological systems for choosing the best cooperative partners (Curry & Chesters, 2012; Tooby & Cosmides, 1996; Trivers, 1971). This theory predicts that people are equipped with

cognitive systems for detecting and keeping track of information that indicates a disposition for generosity, including the way a donor gives. We note that the evolutionary analysis of cooperation goes beyond an economic or rational-actor analysis of which preferences result in the greatest expected utility to the observer or beneficiary. Such a theory predicts that people should lack strong feelings about the charitability of strangers and celebrities, from whom they have no chance of ever receiving favors, and that they should judge acts of charity in terms of their objective benefits, namely the increase in the beneficiary's well-being. Evolutionary theories are based on the assumption that our cognitive and emotional faculties evolved in small-scale societies in which personal favor-trading was essential to fitness and any known individual could be met in a face-to-face encounter (Krasnow, Delton Tooby, and Cosmides, 2013) This is consistent with the observation that humans today are obsessed with judging character, including that of people they have no chance of ever meeting, and including contexts in which the character is irrelevant to the actor's stated goals, such as in philanthropy. In particular, they should approve of donors' identities being revealed, since that incentivizes them and other donors to donate more, maximizing the benefit to the needy. The evolutionary analysis of partner choice can explain this anomaly, which motivates (and, as we shall see, is confirmed by) these studies, namely that judgments of charitable acts are driven not by the benefit enjoyed by the recipient but on the perception of the donor's motives and character.

The Partner Choice Hypothesis

We hypothesize that people's judgments about a donor's charitability indeed fall into a hierarchy of levels, as Maimonides suggested, because our intuitions of righteousness are related to assessments of ideal cooperative partners according to the logic of evolutionary theories of cooperation. Specifically, a subset of the rungs of the Ladder of Charity (those based on states of knowledge, the focus of this paper) may be related to the theory of partner choice as follows:

> *Rung 2: Anonymous donor, unknown beneficiary*. Double-blind giving is the most diagnostic evidence of dispositional generosity, since the donor has removed the possibility of receiving return favors altogether.

> *Rung 3: Anonymous donor, known beneficiary*. If the donor knows the beneficiary but not vice versa (e.g., a gift left on a doorstep), this relieves the beneficiary of an obligation to reciprocate directly. Furthermore, the donor forgoes any reputational benefit that might facilitate indirect reciprocation from third parties. However, unlike Rung 2, such a donor could potentially reveal himself or herself to the beneficiary later to try to call in a favor. This vulnerability may be experienced by the beneficiary in negative emotions like guilt, obligation, and, if made public, lowliness or shame.

> *Rung 4: Public donor, unknown beneficiary*. Such a donor (e.g., one who carries coins in a backpack for the poor to pick out) cannot obligate the beneficiary to reciprocate directly, although the beneficiary could volunteer to do so. Importantly, the beneficiary could tell others about the donor's good deed and improve his or her reputation, leading to indirect reciprocity from others. The possibility of receiving both direct and indirect reciprocity makes

this donor seem less charitable than a donor on Rung 3, who can benefit only from direct reciprocity.

Level 4: Public donor, known beneficiary. When the donor and beneficiary know each other, as when one places money into the other's hand, this creates an obligation for the beneficiary to pay back the donor should the donor need help in the future.[1] This is because the donation is *common knowledge*: the donor and beneficiary know each other's identities, they both know that they both know this, and so forth, ad infinitum, a knowledge state that enables social coordination and has been shown to have many psychological effects (see e.g., Chwe, 2001, Thomas et al., 2014; Thomas et al., 2016). In addition to the possibility of direct reciprocity, the donor may improve his or her reputation and thus receive benefits from indirect reciprocity.

In sum, the more that donors can expect to receive favors in return through direct or indirect reciprocity, the less charitable they will appear, since the donors' gift becomes less diagnostic of their underlying disposition for altruism. This evolutionary analysis could explain why the manner of a gift affects our judgments even when it is irrelevant to the welfare of beneficiaries.

The Current Studies

In all the studies, we present participants with a donation scenario and ask them to judge the charitability of donors who choose to conceal their own identity, the beneficiary's identity, or both. Experiments 1-4 use these methods to test whether people's judgments follow the order of the four rungs in the Ladder that differ in states of knowledge in ways that are identified as relevant by the partner choice hypothesis, and how they vary according to shared and common knowledge. Across the experiments, we also examine personal and impersonal contexts and cases where a donor has possible motives for direct and indirect reciprocity, addressing the affective considerations that went into distinctions among other levels (such as Rungs 7 and 8). In Experiment 5 we quantify how much more money a revealed donor has to give than a double-blind donor in order to be judged as equally charitable. And in Experiments 6 and 7 we test how judgments of charitability differ based on participants' role and perspective in the interaction.

Experiment 1: The Giving Hierarchy in Impersonal Charity

Experiment 1 investigates the role of levels of mutual knowledge in how people judge a donor in a typical modern context for charity: helping unknown victims from a distance. Participants read that donors could choose among four ways to give: double-blind anonymous, receiving a photo of the beneficiary, sending a photo of themselves to the beneficiary, or exchanging photos with the beneficiary. These knowledge states correspond to descending rungs of Maimonides' ladder, and of ulterior motives for altruism according to the partner choice hypothesis. If the

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[1] As in the opening scene of *The Godfather,* in which Vito Corleone says to a supplicant, "Someday, and that day may never come, I'll call upon you to do a service for me. But until that day, accept this justice as a gift on my daughter's wedding day."

ladder reflects attributions of charitability, people should judge the respective donors as most to least charitable accordingly.

Methods

In all experiments, we recruited participants from the United States through Amazon's Mechanical Turk (MTurk), the online labor crowdsourcing platform, to complete a survey for a small payment (for characteristics of MTurk participants, see Crump et al., 2013). In all experiments, sample sizes were chosen in advance to provide at least enough power (.8) to detect medium effect sizes in comparisons between means or percentages.

Before data collection began we decided to exclude all participants who gave incorrect responses to any of a set of comprehension questions (provided in the Appendix). Previous research found that excluding participants in online studies who failed comprehension checks can reduce noise in responses due to inattention (Thomas & Clifford, 2017). In Experiment 1, 39 participants failed at least one comprehension question, yielding a final sample of $n = 358$[2].

Participants read about how four different donors decided to give money after receiving an advertisement:

A group of people all receive a letter from a charity company, asking them to make a $50 donation. The letter explains that their donation will go towards helping a poor family of hurricane victims in the local community. The company offers each person the following four donation choices:
(1) They can donate anonymously, such that the family will never know who the donor is, and the donor will never know who the family is.
(2) The donor receives an envelope containing a photo of the family they are donating to, and will thus know who the family is; but, the family will never know who the donor is.
(3) The family receives an envelope containing a photo of the donor, and will thus know who the donor is; but, the donor will never know who the family is.
(4) Both the donor and the family receive an envelope containing both a photo of the donor and a photo of the family. In other words, the donor will know who the family is and the family will know who the donor is, and both the donor and the family will know that they each know who the other is.

Participants then read about four donors (Joe, Brian, Mike, and Charles) who each chose a different option from these four ways of giving. The four donors and their respective decisions were presented on separate pages in a random order. These within-subject conditions, in sum, are: (1) a Double-Blind donation (Maimonides' Level 2), (2) Receive Photo; that is, anonymous donor, known beneficiary (Level 3), (3) Send Photo; that is, known donor and unknown beneficiary (Level 4), and (4) Exchange Photos, that is, common knowledge (Levels 5 and lower).

For each donor, participants rated: (1) how charitable they thought the donor was, (2) the donor's likelihood of donating again, (3) the beneficiary's gratitude, and (4) the beneficiary's embarrassment about receiving the charity (the questions were

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[2] Due to a technical error, we did not collect demographics for Experiments 1-4.

always presented in the same order). For example: *How genuinely charitable do you think [agent's name] is? (0 = Very selfish, 100 = Very charitable).* Finally, participants answered four multiple-choice comprehension questions and were asked to provide basic demographic information. We focus the analysis on the two items about the donor because these items address the main hypotheses derived from the evolutionary models of cooperation.

Data analysis. In this and subsequent experiments, our main analysis consists of planned comparisons between adjacent levels of the charitability ladder, which we interpret as a single independent variable consisting of four levels of increasingly valid cues of dispositional generosity relevant to partner choice. Specifically, we compare Double-Blind vs. Receive Photo, Receive Photo vs. Send Photo, and Send Photo vs. Exchange Photos. This approach follows previous research that compared levels of mutual knowledge (e.g., Thomas et al., 2014; Thomas et al., 2016).

We note that the experiment could also be construed as having a 2 X 2 design: Anonymous vs. Known Donor X Anonymous vs. Known Beneficiary. However, because altruism is fundamentally a binary relation, as is a state of mutual knowledge, this factoring does not naturally map onto the hypotheses being tested. Specifically, the common knowledge generated by exchanging photos is different in kind from the conjunction of two states of private knowledge that occurs when each person knows the other but neither knows the other knows. That is, common knowledge is not an additive combination of private knowledge for multiple individuals, the state called *shared knowledge.* Thomas et al. (2014) show that this key conceptual distinction from game theory and philosophy is registered in people's mental state reasoning and strongly affects their social interactions. Experiment 4 in this paper specifically focuses on the effects of this difference on attributions of charitability.

Results and Discussion

Means, standard deviations, and inferential statistics for all conditions in Experiments 1-4 are presented in Table 1.

Charitability. Participants rated the donor who gave double-blind as more charitable than the donor who received the beneficiary's photo. They rated the donor who received the beneficiary's photo as more charitable than the donor who sent his photo. However, they rated the donor who sent his photo as *less* charitable than the donor who exchanged photos (see Figure 1 and Table 1)—an exception to the ordering of the charitability ladder, which the participants otherwise followed.

Likelihood of donating again. Participants rated the donor who gave double-blind as more likely to donate again than the donor who received the beneficiary's photo. They rated the donor who received the beneficiary's photo as more likely to donate again than the donor who sent his photo. However, paralleling the charitability ratings, they rated the donor who sent his photo as *less* likely to donate again than the donor who exchanged photos (see Figure 1 and Table 1). Once again, these results follow the ordering of the charitability ladder with the exception that exchanging photos and thereby generating common knowledge was perceived as more charitable than the donor sending his photo and thereby revealing his identity unilaterally.

For this experiment and Experiments 2 and 4, we report data on ratings of the beneficiary's gratitude and embarrassment in the Appendix.

Table 1. Ratings of donor charitability and likelihood of donating again, Experiments 1-5

	Charitability				Likelihood of Donating Again			
	M	*SD*	*t*	*d*	*M*	*SD*	*t*	*d*
E1 Impersonal Charity								
Double-blind	86.5	15.4	8.0***	.60	80.0	19.0	4.2***	.32
Receive Photo	79.3	17.7	9.6***	.72	76.3	17.8	8.1***	.61
Send Photo	67.7	22.8	6.1 ᵃ***	.46	66.9	22.2	4.6 ᵃ***	.35
Exchange Photos	73.9	20.1			71.6	20.2		
E2 Personal Charity								
Double-blind	89.5	13.5	8.9***	.72	86.0	16.0	8.1***	.66
Receive Photo	82.7	17.1	11.1***	.90	79.1	17.5	11.1***	.90
Send Photo	69.6	22.6	2.5 ᵃ**	.21	65.6	23.4	2.0 ᵃ*	.16
Exchange Photos	72.0	21.1			67.5	21.9		
E3 Relationship & Status								
Double-blind	90.1	14.6	3.2***	.55	82.0	19.7	1.6	.27
Receive Photo	81.8	15.3	4.7***	.80	77.1	17.7	2.6**	.44
Send Photo	67.9	19.5	0.0	.01	68.5	21.0	1.5	.24
Exchange Photos	67.6	22.6			62.9	25.1		
E4 Shared Knowledge vs. Common Knowledge								
Double-blind	88.0	14.1	2.7**	.50	83.1	15.7	1.9*	.37
Optional Photos	80.3	16.6	2.6**	.47	77.0	17.7	2.4**	.44
Exchange Photos	71.3	21.6			68.2	21.9		

Note. The *t*-statistics and effect sizes are from the tests comparing each condition with the one below it (hence the fourth row is empty for each experiment). The tests were paired comparisons for Experiments 1 and 2, and independent-sample t-tests for Experiments 3-4. Sample sizes for the tests were *n* = 358 and 307 for Experiments 1 and 2, respectively; Experiment 3: 64, 76, 66, 86; Experiment 4: 54, 66, 61.
ᵃ Indicates that the difference is in the opposite direction from the charitability ladder.
* *p* < .05, ** *p* < .01, *** *p* < .001.

These results confirm that evaluations of a donor's charitability depend on the state of knowledge that the donor opts for when making a donation. Donors who gave double-blind were rated as more charitable than donors who received a photo, who in turn were rated as much more charitable than donors who sent their photo. In general, a donor forfeited the greatest impression of charitability by sending a photo. This is consistent with the hypothesis that a donor who reveals his or her identity comes across as motivated, at least in part, by reputation.

However, donors who opted to send their photos but not receive one from the beneficiary were seen as slightly *less* charitable than those who exchanged photos, violating the order of the charitability hierarchy. The unexpected finding that exchanging photos did not reduce the donor's perceived charitability, as it might have if common knowledge obligated the beneficiary to reciprocate, suggests that some

psychological factor in addition to direct and indirect reciprocity affects attributions of charitability. We will explore this factor in subsequent experiments.
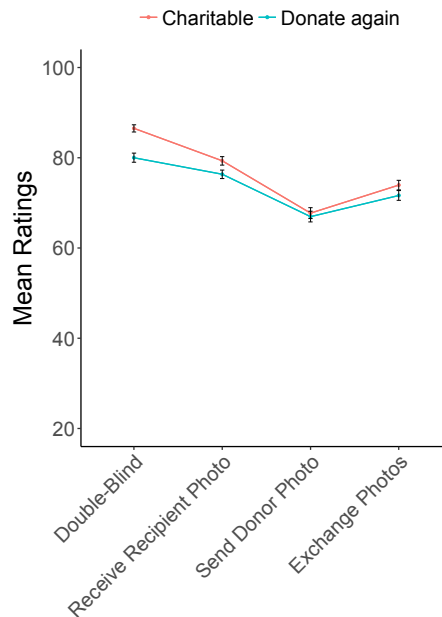

Figure 1. Mean ratings of the donor's charitability and likelihood of donating again in Experiment 1. Error bars are standard errors.

Experiment 2: Personal Context

Experiment 1 presented scenarios involving donations to strangers. Yet such scenarios, which depend on a formal institution mediating the donation, is a far cry from the face-to-face communities of our ancestral ecology. Such a discrepancy may explain the divergence between our results and the predictions laid out by the partner choice hierarchy (Hagen & Hammerstein, 2006; Krasnow et al., 2013). Experiment 2 investigated charitable donations in a more personal context, in which the donor and beneficiary live in the same community and know each other. An observer might be more sensitive to a donor's potential motives for direct and indirect reciprocity when the donor gives to people with whom he or she regularly interacts in a local community, because the donor will have more opportunities to receive: (i) an exchange of favors from the people he helps (direct reciprocity), and (ii) favors from third parties in the community who have heard of the donor's good reputation (indirect reciprocity). If so, exchanging photos should especially be seen as obligating the beneficiary to repay the favor, and observers may now judge that the donor's motives are mostly driven by reciprocity, bringing their judgments into complete, rather than partial, alignment with the charitability ladder and the partner choice hypothesis.

Methods

After excluding 80 participants who made errors on the comprehension questions, we end up with a sample of 307 participants. The procedure was the same

as in Experiment 1 except for the following changes. The vignette described a personal setting in which everyone in the community already knew everyone else:

> *Ashborne is a small town where everyone knows each other. During one year, a dozen of the houses were seriously flooded. A townsperson started collecting donations to help the families who were affected, and because all the families know each other, he offered donors several ways to give:...*

We further clarified that "In all cases, the family is also informed about which option their donor has chosen," (but not the donor's identity, unless the donor chose to reveal it). In addition to the questions asked in Experiment 1 (donor charitability, donor's likelihood of donating again, beneficiary gratitude, and beneficiary embarrassment), we added two questions at the end about the donor's motivations by direct and indirect reciprocity, respectively: *How much do you think* [name] *was motivated to give by a desire to improve his reputation with the family? How much do you think* [name] *was motivated to give by a desire to improve his reputation with the broader community*?" Finally, we added a comprehension item about the personal context, specifically whether the community was a big city, medium-sized town, or small town.

Results and Discussion

The patterns of ratings of charitability and likelihood of donating again were similar to those in Experiment 1, in which the context was impersonal (Figure 2, Table 1). We again found that judgments of charitability followed the ordering of the charitability ladder except that participants did not judge the donor who exchanged photos as less charitable than the donor who only sent their own photo, even in this more personal context.
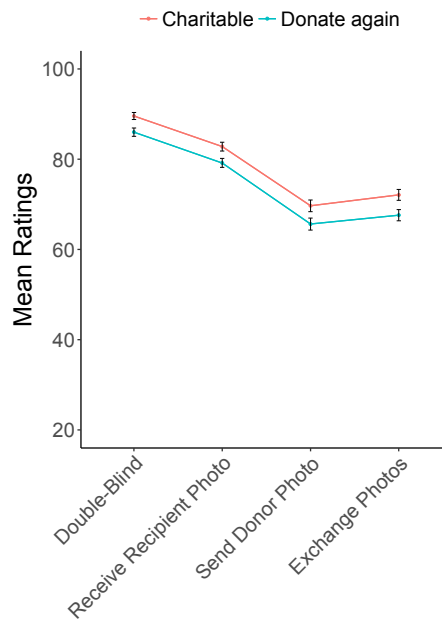

Figure 2. Mean ratings of the donor's charitability and likelihood of donating again in Experiment 2. Error bars are standard errors.

Perception of motives. In this experiment, however, ratings of whether the donor was motivated by a desire to improve his reputation with the family and the broader community *did* correspond to all four levels of the charitability ladder (Figure 3, Appendix Table S2). Possible explanations for this discrepancy will be tested in Experiment 3.
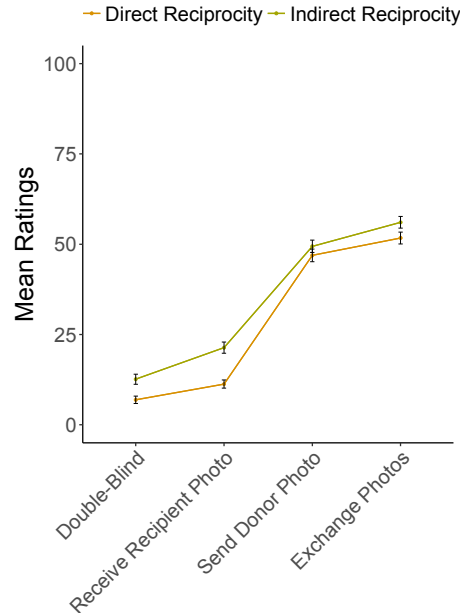

Figure 3. Mean ratings of the extent to which the donor was motivated by direct and indirect reciprocity in Experiment 2. Error bars are standard errors.

Follow-up Experiments 2a and 2b

In a pair of supplements to Experiment 2, which we call Experiments 2a and 2b (see Appendix for full details), we use the same scenarios while adding that the donor had a potential motive for direct reciprocity (E2a) or indirect reciprocity (E2b). In the direct reciprocity case, the donor needed a favor from the beneficiary; in the indirect reciprocity case, he needed a favor from the beneficiary's friends. In addition, these studies had a between-subject design. We tested whether, in light of explicitly stated self-serving motives, participants judged exchanging photos as less charitable than sending a photo, as predicted by the charitability ladder.

Figure 4 shows the main results. Judgments of charitability followed the same pattern as in Experiment 2 with the exception that participants judged giving with the donor's photo or with an exchange photos as considerably less charitable. Most relevant here, participants continued to judge the donor who sent a photo as similar in charitability to the donor who exchanged photos, rather than as less charitable.
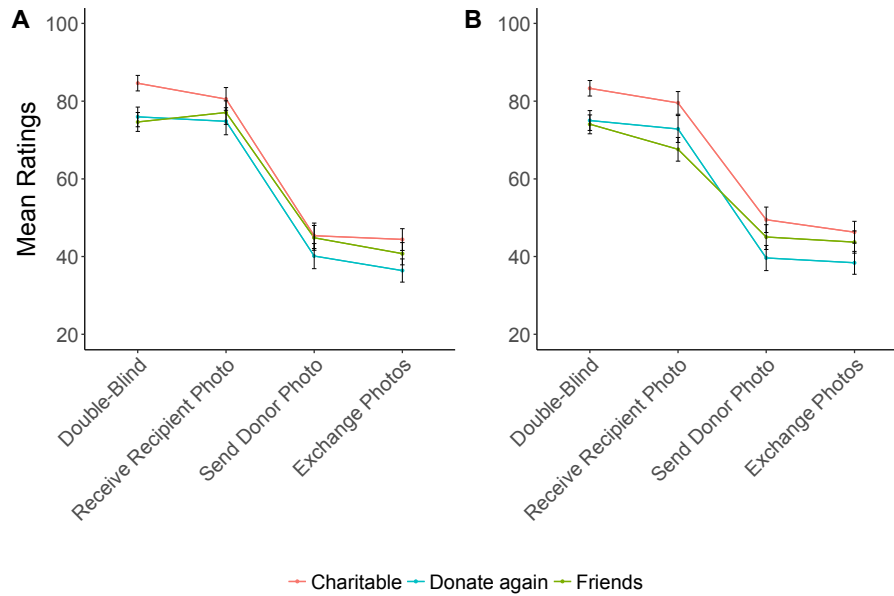
Figure 4. Mean ratings of the donor's charitability, likelihood of donating again, and desirability as a friend in **A.** Experiment 2a (direct reciprocity) and **B.** Experiment 2b (indirect reciprocity). Error bars are standard errors.

Experiment 3: What Revealed Identities Say About Relationship and Status

In Experiments 1 (impersonal context) and 2 (personal context), contrary to the ordering of the charitability ladder and the corresponding considerations from partner choice theory, participants judged a donor who gave money with common knowledge as no less charitable than a donor who revealed only his own identity. Experiments 2a and 2b, which made the potential motives for direct or indirect reciprocation explicit, also found no reduction in charitability for giving with common knowledge. This experiment explores this divergence from what would seem like a natural ranking based on states of mutual knowledge. We suggest that when people assess charitability, they do not just estimate the gross probability of acts of reciprocation, whether they be direct or indirect; they also assess the nature of the social *relationship* that provides the context of the reciprocation.

Presumably, a donor who remains hidden (i.e., in the Double-Blind and Receive Photo conditions) is modest about his charitability and thus maximally charitable, whereas a donor who divulges his identity might have a self-serving reputational motive. When that donor also seeks to know the beneficiary (by exchanging photos), his motive may be even more self-serving (by knowing who he can tap for a favor later), but it could also have a more benign interpretation: that he is interested in entering into an ongoing and symmetrical social relationship. This relationship could take the form of a communal bond that serves as a context for spontaneous and unstinting exchange (as when Vito Corleone chided his beseecher, "We've known own each other for many years, but this is the first time you came to me for help. I can't remember the last time that you invited me to your house for a cup of coffee."). The idea that people can perceive favors not just as opening moves in a series of exchanges but as invitations to consummate an ongoing relationship is

consistent with the common anthropological findings that people in many cultures use gifts to form and cement relationships (van Baal, 1975), and that they distinguish communal relationships with spontaneous sharing from equality-matching relationships with calculated quid pro quo reciprocity (Fiske, 1992). Perhaps this possibility can offset the seemingly self-serving nature of a common-knowledge donation, with its implicit demand for reciprocation. Thus, the first hypothesis we test is whether observers infer that a donor who generates common knowledge by exchanging photos is seeking to initiate an ongoing cooperative relationship with the beneficiary.

A related hypothesis is that evaluators judge that donors who reveal only their own identities see themselves as higher in status than their beneficiaries, making their gift a mere costly signal of status with all its perquisites, like any other conspicuous flaunting of wealth, with no concern (indeed, perhaps even contempt) for the well-being of the beneficiaries. In contrast, a donor who exchanges photos may be seen as signaling that he sees himself as equal in status to the beneficiary, and that the gift was offered out of sheer beneficence, with no ulterior motive for dominance.

Either or both of these factors could explain why a donor whose gift is common knowledge is not judged worse than one who only reveals his identity. Here we test whether participants do in fact make these inferences, with a focus on the contrast between a donor exchanging photos (common knowledge) and unilaterally revealing his identity.

Methods

After excluding 82 participants who made comprehension errors, we arrived at a final sample of 292. The procedure was the same as in Experiment 2, with its personal context, except that the design was between-subjects, and there were two additional questions about the protagonists' relationship and status, both rated on a 100-point scale: *Do you think that Brian would be interested in meeting the family and getting to know them in the future? (Definitely not interested - Definitely interested); Do you think that Brian sees himself as equal in status to the family, or as higher in status? (Definitely higher in status - Definitely equal in status).*

Results and Discussion

Charitability **and** *likelihood of donating again* showed similar patterns of ratings to the previous studies (Figure 5 and Table 1): no lower with common knowledge than with a revealed donor, failing to conform to the ladder ordering, though in this case not reversing it outright.

Initiating a relationship. Perceptions of whether the donor was interested in initiating a relationship zigzagged across the levels: Donors who received the beneficiary's photo or exchanged photos were viewed as most interested in initiating a relationship with the beneficiary (Figure 6, Table 2). This pattern, qualitatively different from what we have seen so far, suggests that a different psychological mechanism is in play than the reciprocity calculations that have driven the other ratings. And it may help explain the main surprise in those ratings: that participants did not judge exchanging photos as less charitable than sending a photo: if

15

participants inferred that a photo-exchanging donor was interested in a long-term social relationship with the beneficiary, it could have offset the negative inference that the donor was selfishly motivated by reciprocity, adding up (either across raters or across conflicting interpretations by each rater) to a more neutral evaluation of the donor's charitability. A post hoc comparison reveals that the donor who exchanged photos was also viewed as more interested in getting to know the beneficiary than the donor who only received the beneficiary's photo, presumably because establishing common knowledge shows greater willingness to strike up a relationship, $t(160) = 2.41$, $p = .017$, $d = 0.38$.

If this analysis is correct, these considerations should be specific to the conditions in which the donor reveals himself by sending or exchanging photos, since only in these conditions can the donation be interpreted in either of the two ways, reciprocity-seeking or relationship-initiating. Indeed, this was the case: judgments of relationship intentions and charitability were significantly positively correlated when the donor sent his photo or exchanged photos, but not when the donor was double-blind or received the beneficiary's photo: double-blind, $r(62) = -.02$, $p = .896$; receive beneficiary photo, $r(74) = .06$, $p = .617$; send donor photo, $r(64) = .41$, $p < .001$; Exchange Photos, $r(84) = .65$, $p < .001$.

Status relative to beneficiary. Perceptions of whether the donor felt equal in status to the beneficiary followed the order of the charitability ladder with a familiar exception: donors who exchanged photos were rated as acting more equal in status to their beneficiaries than donors who sent a photo (Figure 5, Table 2). These results may further explain why giving with common knowledge is viewed as no less charitable than giving with one's identity revealed: although the photo-exchanging donor may seek future favors, he at least seems more egalitarian than one who would seem to be lording his advantage over the beneficiary by only sending his photo.

We also looked at correlations across participants between judgments of charitability and judgments of status for each of the conditions: Double-Blind, $r(62) = 0.24$, $p = .060$; Receive Photo, $r(74) = 0.11$, $p = .354$; Send Photo, $r(64) = 0.27$, $p = .028$; Exchange Photos, $r(84) = 0.33$, $p = .002$. In the key conditions when the donor's identity was revealed, participants who thought the donor felt more equal to the beneficiary also judged the donor as more charitable.

Taken together, the results suggest that when a donor reveals only his own identity, observers perceive that the donor projects his superiority over the beneficiary. In contrast, a donor who exchanges photos conveys a more egalitarian disposition toward beneficiaries and possibly a willingness to initiate an ongoing communal relationship with them. This may explain the main exception in charitability ratings from the charitability ladder, in which donations with common knowledge are seen as equally or more charitable than donations with the donor's identity revealed.

One way to make this finding more intuitive is to think back to Maimonides' own example of a donation in which the donor is known to the beneficiary but not vice-versa: a well-off man carrying coins in a scarf behind his back for the poor to pick out. Though the donor cannot be accused of trying to secure a debt with the beneficiary, we still perceive such an action as haughty, high-handed, or demeaning,

16

compared with the more socially (if not financially) egalitarian gesture of placing the money into the beneficiary's hand.

Thus, judgments of charitability are driven not by the size of the gift alone, nor by the state of mutual knowledge (and hence opportunity for reciprocity) alone, but also by the status imbalance and the donor's interest in initiating a communal relationship. This suggests that charitability is attributed relative to the context of distinct relationship types involving status and personal intimacy.
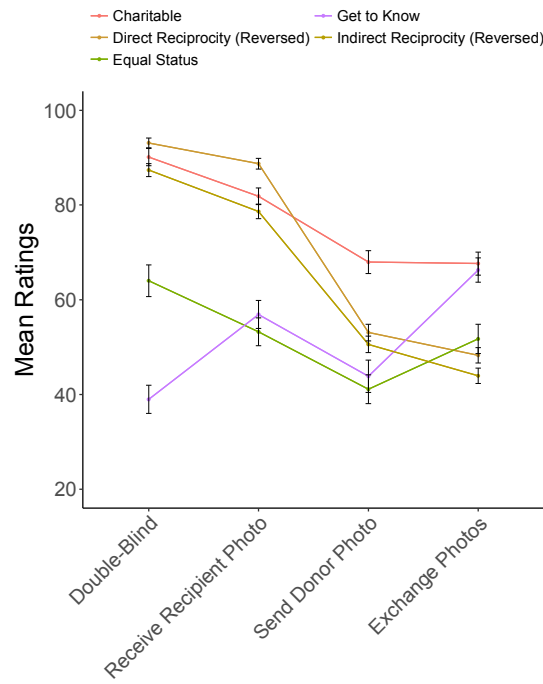

Figure 5. Mean ratings of the donor's charitability, interest in a relationship, and perceived relative status in Experiment 3. We have also juxtaposed the perceived motives for direct and indirect reciprocity from Experiment 2 (personal context) — reverse-coded so that higher values indicate *less* motives for reciprocity — in order to illustrate how the various factors unveiled in Experiments 1-3 add up to produce favorable charitability judgments. Since likelihood of donating again mirrored charitability, we have omitted it from this already complicated plot. Error bars are standard errors.

Table 2. Ratings of donor interest in initiating a relationship and perceived status relative to the beneficiary, Experiment 3.

	Initiating Relationship				Status Relative to Beneficiary			
	M	*SD*	*t*	*d*	*M*	*SD*	*t*	*d*
Double-blind	38.9	23.7	4.2***	.72	64.0	26.8	2.4*	.41
Receive Photo	56.8	25.6	2.9**	.49	53.2	25.5	2.8**	.48
Send Photo	43.8	27.6	5.3***	.88	41.1	24.5	2.4*	.39
Exchange Photos	66.2	23.8			51.7	28.5		

Note. The independent-sample *t*-statistics and effect sizes are from the tests comparing each condition with the one below it (hence the fourth row is empty for

each experiment). Sample sizes for each of the conditions were: 64, 76, 66, 86. * $p <$ .05, ** $p < .01$, *** $p < .001$.

Experiment 4: Common Knowledge Versus Shared Knowledge

Theories of common knowledge emphasize its logical difference from shared knowledge, which is any state of mutual knowledge that falls short of common knowledge (Chwe, 2001; Clark & Marshall, 1981; Clark, 1996; Rubinstein, 1989; Schelling, 1960; Smith, 1982). Pinker (2007), Lee & Pinker (2010), and Thomas et al. (2014) propose that people are sensitive to this distinction whenever they must coordinate their behavior with each other. Common knowledge ratifies an understanding that each will behave in a way that works to their joint benefit, including conforming to the expectations in stable relationships such as intimates, friends, neighbors, superordinate and subordinate, or trading partners. States of understanding short of common knowledge allow for uncertainty or deniability, and thus enable breaches of these expectations.

Here we test whether common knowledge is also potent in attributions of charitability, as is suggested by the fact that four out of the eight rungs in Maimonides's Ladder are differentiated by states of mutual knowledge. Theoretically, a donor who gives with shared knowledge has imposed less of an obligation on the recipient to reciprocate, compared to a donor who gives with common knowledge. This is because with shared knowledge the donor and beneficiary are uncertain about whether they know each other, which creates ambiguity about the beneficiary's indebtedness to the donor. If observers are sensitive to this distinction, they should judge donors who give with only shared knowledge as more charitable than donors who give with common knowledge.

Methods

After excluding 55 of 236 MTurk participants who made comprehension errors, we ended up with a sample of 181. The procedure and scenario were adapted from Experiment 2 in a between-subject design in which the donor was described as having chosen to give money in one of three ways:

> *1) ANONYMOUS - They can donate anonymously, such that the family will never know who the donor is, and the donor will never know who the family is.*
> *2) KNOW EACH OTHER - Both the donor and the family receive an envelope containing both a photo of the donor and a photo of the family. In other words, the donor knows who the family is and the family knows who the donor is, and both the family and the donor know this.*
> *3) OPTIONAL KNOW EACH OTHER - The donor and the family give their photos to the townsperson. The donor chooses whether or not to receive the family's photo from the townsperson. Likewise, the family chooses whether or not to receive the donor's photo. The townsperson will keep these choices confidential so neither will know if the other side received their photo.*

The third alternative is a new one that represents shared knowledge, as opposed to the common knowledge created by exchanging photos directly. After being informed of the donor's options, participants read which alternative he in fact chose. For the donor

who chose number 3, we further clarified how this created shared knowledge as follows:

> *Mike donated $50 to the family, and chose option (3). That is, both he and the family gave their photos to the townsperson, and then they got to choose whether to see the other's photo.*
>
> *As it happened, both Mike and the family ended up asking the townsperson to show them the other's photo, and the townsperson kept their choices confidential. Therefore, both sides know who the other is, but they don't know that the other side knows this.*

Results

We conducted two planned comparisons: Double-Blind vs. Optional Photos, and Optional Photos vs. Exchange Photos. For judgments of charitability we found that donors who gave double-blind were rated as more charitable than donors who gave with shared knowledge, who in turn were rated as more charitable than donors who gave with common knowledge (Figure 6, Table 1). We found a similar pattern for ratings of likelihood of donating again. This pattern is consistent with the hypothesis that common knowledge, in contrast to mere shared knowledge, can ratify a reciprocity relationship, with its reciprocal obligation on the part of the recipient. This in turn reduces the attributed generosity of a donor and hence his desirability as a cooperation partner.

We conclude that ascriptions of charitability are cognitively sophisticated. With both shared knowledge and common knowledge, the donor and recipient knew each other's identities. The critical difference was that in the common knowledge condition they also knew that they both knew this, whereas in the shared knowledge condition they didn't. Participant's charitability judgments picked up on this abstract distinction.
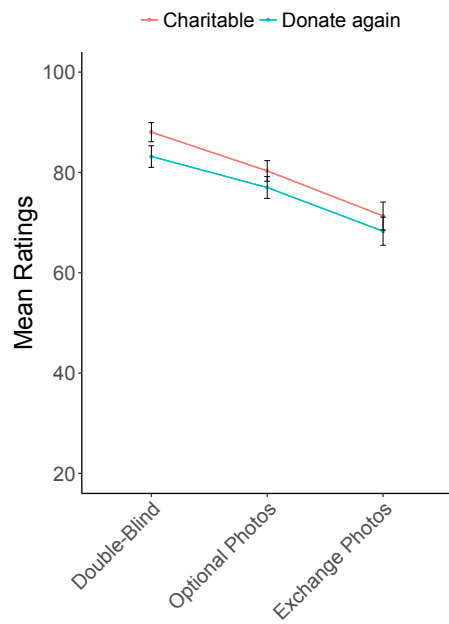
Figure 6. Mean ratings of the donor's charitability and likelihood of donating again in Experiment 4. Error bars are standard errors.

Experiment 5: The Price of Reputation

In Experiment 5, we quantify how much participants weigh a donor's anonymity, which does not materially affect a beneficiary's well-being, relative to the amount of the donation, which does. Specifically, we asked them to compare the charitability of a donor who gave a double-blind donation of $10,000 with another who revealed his identity while donating a specific amount, which varied between participants. This titration method allowed us to zero in on the switch point at which a revealed donor's gift is large enough to equal or exceed the charitability of a double-blind donor. We varied the amount of the revealed donation first in broad increments (e.g., 1x, 2x, 3x), and, after finding a switch point between 1x and 2x, we then varied the revealed donation in finer increments that afforded higher resolution near the switch point (e.g., $12k, $14k, etc.).

We conduct separate titrations for three kinds of revealed donor: ones who send a photo, exchange photos, or deliver the gift in person. Technically, the latter two do not differ in level of knowledge: both are common knowledge. But according to Pinker (2007) and Thomas et al. (2016), people generally perceive common knowledge through salient cues rather than by thinking through the levels of mutual knowledge, and face-to-face contact is a particularly powerful common-knowledge generator.

Methods

In the Send Photo condition, we excluded 172 MTurk participants who made comprehension errors (the questions are included in the Appendix), yielding a final sample of 555 (M_{age} = 38; 46% female). In the Exchange Photos condition, we excluded 184 participants, yielding a final sample of 530 (M_{age} = 20; 54% female). In the In-Person condition, we excluded 167, yielding a final sample of 475 (M_{age} = 38; 61% female).

Participants read about two donors, one who made a double-blind donation ($10,000), and another who revealed his identity while donating a specific amount, which varied in between-subject conditions (specified below). In three separate titrations, we compared the double-blind donor to a donor who sent a photo, exchanged photos, or gave in person.

In the Send Photo condition, participants read:

Ashborne is small town where everyone knows each other. During one year, a few dozen families in a poor neighborhood are affected by a severe flood and become homeless. It costs $1000 per family to provide temporary food and shelter for a month while their homes are being repaired.

The local newspaper has asked the citizens of Ashborne to please help by mailing $1000 checks to the local municipality, who will then distribute

these donations to the homeless families without revealing who these beneficiaries are.

One donor decides to help anonymously by sending 10 envelopes with no return address containing $1000 each.

A second donor sends [X] envelopes containing $1000 each to [X] families, and the envelopes also include the donor's business card with his name and a photo of himself.

Participants then answered a forced-choice question:

Who do you think is a more charitable person? The donor who gives 10 donations of $1000 anonymously, or the donor who gives [X] donations of $1000 sent with the donor's business card.

The Exchange Photos condition was introduced as follows: "Donors can drop off the checks at the shelter either by giving them to the shelter Director to distribute to a family or by requesting to share photos with each beneficiary, which means that both the donor and beneficiary receive an envelope with each other's photos." Then, it said that the second donor in fact chose this second option.

The In-Person condition was introduced in the same except that the second option was described as follows: "…or by handing them directly to the family in person." Then, it said that the second donor had chosen this option. See the Appendix for the full vignettes and comprehension questions.

Results and Discussion

Table 3 and Figure 7 show the results. For the donor who sent his photo, we found, surprisingly, that there was *no* amount he could give to make himself appear as charitable as a double-blind donor — not even 100 times as much money. Participants' evaluations thus showed a striking insensitivity to magnitude (Fetherstonhaugh et al., 1997). To ensure that this extreme finding was not due to the materials being biased to suggest a crass commercial motive, we ran three follow-up studies in which we specified that he had the same income and assets as the double-blind donor and that he revealed his identity without using a business card (which could imply a direct solicitation). The pattern or ratings was the same (Appendix).

With the donor who exchanged photos, participants started to consistently favor him when he gave roughly four times as much money as the double-blind donor.

With the donor who gave in person, participants began to consistently favor him when he gave twice as much as the double-blind donor.

Finally, we compared perceptions of altruistic traits across the conditions. Participants generally viewed the donor who sent a photo as less charitable than the donor who exchanged photos or who gave in person (Figure 7). For instance, if we focus on revealed donors who gave twice as much as the anonymous donor, we see

that participants judged the one who sent his photo unfavorably compared to the one who exchanged photos ($p = .008$, Fisher exact test) or who gave in person ($p < .001$, Fisher exact test). This violation of the ordering of the charitability ladder, with common knowledge not being judged as least charitable, is consistent with the previous experiments.
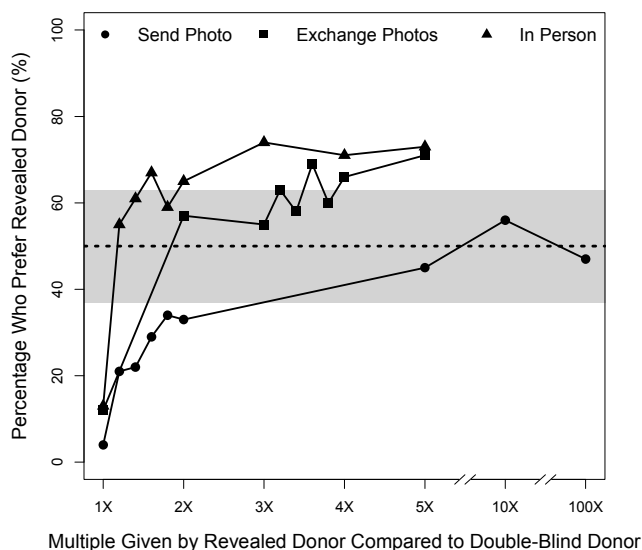

Figure 7. Titration results for Experiment 5. The x-axis shows the multiple by which the revealed donor's gift exceeded the double-blind donor's gift of $10,000. The shaded region indicates an approximate range for values that do not significantly differ from 50%, such that values below it indicate significant preference for the double-blind donor, and values above it indicate significant preference for the revealed donor. See Table 3 for exact significance levels.

Table 3. Proportion who chose the revealed donor as more charitable than the double-blind donor who gave $10,000.

Send Photo				Exchange Photos				In Person			
Donation	*n*	*%*	*p*	Donation	*n*	*%*	*p*	Donation	*n*	*%*	*p*
10,000	68	4	< .001	10,000	68	12	< .001	10,000	60	13	< .001
12,000	63	21	< .001	20,000	63	57	.314	12,000	62	55	.526
14,000	60	22	< .001	30,000	60	55	.519	14,000	51	61	.161
16,000	62	29	.001	32,000	62	63	.056	16,000	57	67	.016
18,000	62	34	.015	34,000	53	58	.272	18,000	61	59	.200
20,000	66	33	.009	36,000	59	69	.004	20,000	57	65	.033
50,000	53	45	.583	38,000	60	60	.155	30,000	58	74	<.001
100,000	59	56	.435	40,000	53	66	.027	40,000	69	71	<.001
1000,000	62	47	.704	50,000	52	71	.003	50,000	56	73	<.001

Note. *Donation* refers to the dollar amount given by the revealed donor. The double-blind donor always gave $10,000. *p*-values are derived from a two-tailed binomial test of whether the observed percentage differed from 50%.

Experiment 6: The Beneficiary's Perspective

The previous experiments examined participants' judgments from the perspective of an impartial third-person observer. We now look at how participants view charity from the perspective of the beneficiary. Our previous results show that an observer's judgments of charitability diverges from what is materially best for the beneficiary. Beneficiaries, whose first priority is not choosing among partners but improving their lives, may see things different, and prefer to receive more money than less money, while caring less about how the gift was given. We examine this question by asking participants to put themselves in the shoes of the beneficiary and to indicate whether they preferred to receive a small gift from a double-blind donor or a larger gift from a donor who includes his photo with the check. Participants also judged which donor was more charitable. We compared these decisions to a control condition in which participants took the role of an observer, as they had in the previous experiments.

Methods

After excluding 42 participants who made comprehension errors (using the same items as in Experiment 5), we ended up with a sample of 114 (M_{age} = 37; 51% female). Participants were assigned to the Observer or Beneficiary condition, and they read a vignette in which their town was hit by a flood (similar to Experiment 5). In the Observer condition, they chose which donor was more charitable: one who gives $10,000 double-blind or one who gives $20,000 with their photo.

In the Beneficiary condition, participants read:

> *Imagine that you are a member of one of the families affected by the flood and are currently staying at the emergency shelter. The Director tells you that there have been a number of donations and you can choose between two of them. One donation is for $10,000 and is anonymous, and the other donation is for $20,000 and includes the donor's photo. Which donation would you choose to receive?*

After making this choice, participants also answered which donor they thought was more charitable.

Results and Discussion

As in Experiment 5, participants who took the Observer's perspective were divided about who was more charitable, 48% picking the revealed donor who gave $20,000 with the photo, a proportion that did not differ from 50% (p = .90, binomial test). In contrast, among participants who took the Beneficiary's perspective, 85% (p < .001) chose the larger donation from the revealed donor, and a slight majority (65%, p = .036) said that he was the more charitable.

Imagined Beneficiaries were significantly more likely than Observers to choose the larger gift from the revealed donor over the smaller gift from the anonymous one (p < .001, Fisher exact test), and marginally (p = 0.089) more likely to judge him as more charitable.

Overall, these results confirm that observers are more concerned about whether a donor has a generous disposition, whereas beneficiaries are more concerned about the amount of the donation. The results also show a hypocrisy revealed by previous research on altruism (Batson et al., 1999; Batson & Thompson, 2001): the same people prefer to receive a gift from a revealed donor who gives more money, but when they are not affected by the gift they judge the revealed donor as less charitable.

Experiment 7: The Donor's Perspective

We now look at how participants view charity when they take the perspective of the donor, who of course has a different set of interests from observers and beneficiaries. Presumably, a donor prefers to give in a way that promotes his or reputation, increasing the chance that the good deed will be reciprocated. Hence, we test whether a participant taking the donor's perspective is more likely to favor giving with a photo than a participant taking the observer's perspective, holding the amount of the gift constant.

Since the scenario is hypothetical, a participant could easily (without cost) exaggerate their own generosity by saying that they would give in the most altruistic way possible (e.g., Batson et al., 1999; Batson & Thompson, 2001). Hence, we modified the scenario from Experiment 6 to provide a cover for promoting one's reputation. Most important, we added a third option for giving that was intended to be even less generous; this option added a restriction on the gift such that the spending was controlled and monitored by the donor. We also used a larger donation of $45,000, presuming that donors would feel more entitled to reveal their identities for very large amounts. Given these features, held constant across conditions, we tested whether participants taking a donor's perspective would be more likely to give money with a photo compared to participants taking the observer perspective who judge which gift is more charitable.

Methods

After excluding 22 participants who made comprehension errors (see the Appendix for comprehension questions), we ended up with a sample of 138 ($M_{age} = 55$; 39% female). In the Donor condition, participants imagined themselves as donors and they chose whether to give $45,000 double-blind or with a photo. The scenario began with the same flood disaster as before, and then continued:

The director offers donors three ways to give: (1) by including a photo of themselves in a note from the director to the family, (2) anonymously, in which case the director must cash the check himself and give it to the family, so that they don't know who the donor is, or (3) by adding a restriction on the donation so that it can only be spent on certain expenses, which must be confirmed by receipts that the family mails to the donor.

Imagine that you are a resident of Ashborne who earns $50,000 per year and has $50,000 in a savings account. You have decided to give $45,000, and after thinking about the options, you have narrowed down your choices to either

donating double-blind or with a photo. How would you donate?" ($45,000 double-blind, $45,000 with a photo).

In the Observer condition, everything was the same, except that the last paragraph only asked participants which donor they thought was more charitable.

Results and Discussion

Similar to previous experiments, participants who took an Observer perspective preferred the anonymous donor to a revealed donor who gave the same amount: only 9% said the revealed donor was more charitable, which was significantly less than 50% ($p < .001$, binomial test). Among participants who took the Donor perspective, 29% said they would choose to give with a photo, also significantly less than 50% ($p < .001$), but a significantly greater proportion than among Observers ($p = .005$, Fisher's exact test).

As in Experiment 6, these results show a certain hypocrisy (Batson et al., 1999; Batson & Thompson, 2001): people demand more pure altruism in those whom they judge than in themselves when put in the same role.

General Discussion

We began by asking why people are so impressed by anonymous charitable giving when anonymity makes no difference to the welfare of the beneficiaries, noting that the preference is so pervasive that it manifests itself both in popular culture and in philosophical analyses, from Maimonides in the 12th Century to those in the present. Drawing on partner choice theory, we hypothesized that people's judgments of charity are attuned to cues of a donor's generous disposition, including the way the donor reveals his or her identity. These cues affect people's attributions of a generous or selfish disposition to the donor, a disposition which is thought to generalize across beneficiaries and situations (Kelley, 1967; Gilbert & Malone, 1995) and thus give the observers a reason to seek out generous donors. This allowed us to explain the ordering of four of the levels in Maimonides' ladder of giving from most to least charitable (the donor gives double-blind, reveals the beneficiary but not himself, reveals himself but not the beneficiary, and generates common knowledge of each other's identities). We proposed that these levels decrease in perceived charitability because the donor creates more opportunities and obligations for receiving future favors in return, making him appear less dispositionally charitable and thus less desirable as a cooperation partner.

Experiments 1-2 found that participants' judgments largely followed this hierarchy, supporting the partner choice account, with a notable exception: they did not judge a donor who gave with common knowledge as less charitable than a donor who only revealed himself. We hypothesized that while common knowledge may add an obligation for the beneficiary to repay the gift, it could also signal a desire for a symmetrical relationship of communal sharing without quid pro quo obligations or differences in status or authority, like a friendship. Experiment 3 tested this conjecture and confirmed that a donor who exchanged photos rather than sent one unilaterally was perceived as more interested in an ongoing relationship and as more likely to

view the beneficiary as a social equal. These positive inferences may have partially offset the negative inference that the donor wished to call in a favor in the future.

Experiment 4 tested a finer-grained prediction from the partner choice account by leveraging the distinction between common knowledge and shared knowledge (Thomas et al., 2014): while common knowledge cements an obligation to repay, lesser levels of shared knowledge allow deniability of the obligation. This predicts that participants will see a donor as more generous when he gives with shared knowledge (the donor and beneficiary know who each other are, but they do not know that other one knows this) than when the donor gives with common knowledge. That is what we found: When the donor gave the beneficiary the option of finding out who gave the gift, leaving the donor uncertain whether the beneficiary did so, participants judged him as more charitable than when the two simply exchanged photos. In both cases, the donor knew who the recipient was and vice versa, but only in the common knowledge condition did both parties also know that they each knew this.

Experiment 5 aimed to quantify the difference in charitability between an anonymous donation and several forms of revealed donations, using a titration method to find the switch point at which a revealed donor's gift is judged as more charitable than a double-blind gift. Surprisingly, we found that when donors send a photo (a blatant signal of the beneficiary's indebtedness), there is *no* greater amount of money (even 100 times as much) that they can give to make them appear more charitable than a double-blind donor. In contrast, when donors give while exchanging photos or in person, they can potentially appear more charitable than the double-blind donor, provided they give roughly four times and twice as much money, respectively.

Finally, Experiments 6-7 tested additional predictions of the partner choice account based on the perspective of the one doing the judging (assessed by asking participants to imagine themselves in the shoes of one of the parties in a charitable act). The Ladder of Charity, and its interpretation within the theory of partner choice, applies to an observer evaluating a donor's dispositional charitability. The theory implies that beneficiaries and donors should see things differently: a beneficiary should be more concerned with the amount of the gift; a donor with promoting his reputation. Experiment 6 confirmed that imagined beneficiaries preferred a large revealed gift to a small anonymous one, but observers judged the small anonymous one to be more charitable. Experiment 7 confirmed that more imagined donors opted to reveal their identities with a photo than the proportion deemed charitable by observers. The results underscore how the incongruent goals of observers, beneficiaries, and donors affect their judgments of charitability: observers may deprecate the very sorts of gifts that beneficiaries prefer. The divergence can also lead to a certain hypocrisy, where people's judgments of others as donors diverges from how the same people prefer to give when they are in the donor's shoes.

Partner choice and mental state reasoning

These experiments could provide insight into the coevolution of partner choice and mental state reasoning in the human lineage. We humans have sophisticated abilities for mental state reasoning that allow us to keep track of different people's beliefs and desires, including recursive beliefs about others' beliefs (e.g., reviewed in Frith & Frith, 2003). As humans evolved these abilities, they could put them to use in

choosing the best partners in the implicit cooperation marketplace. A skilled mentalizer who observes an act of giving can go beyond a donor's mere behavior and decipher the donor's underlying motives and thus his or her disposition for unstinting generosity. Indeed, we saw that people in our experiments were sensitive not only to clear cues to disposition such as a willingness to give double-blind, but also took into account subtle details such as whether the gift was shared knowledge or common knowledge.

Relevance to Charitable Organizations

Many donors to charity want to be acknowledged for their gifts. Objectively, this does not diminish the good they can do, especially if this motive can be leveraged to do even more good. Donors who anticipate praise may be likelier to donate now and in the future, and may donate more generously. Hence charitable organizations face the challenge of satisfying this desire while ensuring that donors do not, ironically, end up being viewed as uncharitable, which could ultimately reduce donations.

The current experiments suggest that at least one approach already employed by charitable organizations may achieve this goal. Many charitable organizations ask big donors to go on tours in which they become personally involved with the beneficiaries. These tours may satisfy at least some of the evolved psychological criteria for being involved directly with beneficiaries and the community. The tours may signal that the donors are not just motivated by a concern with their reputations, that they are not asserting a higher status than the beneficiaries, and that they are genuinely interested in establishing relationships with those in need. (We note that even the world's largest charity driven by rigorous evaluation of efficacy, the Bill and Melinda Gates Foundation, often features photographs of the eponymous donors mingling with beneficiaries in the developing world.) More generally, we hope that empirical studies and theoretical analyses of the evolved psychology of altruism can inform, and be informed by, the best practices in institutional charitable giving.

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