



R I D G E

RESEARCH INSTITUTE FOR
DEVELOPMENT, GROWTH
AND ECONOMICS

SINCE 2014



The Kindness of Strangers: Theory and Evidence on Spatial Distance and Giving

James Konow, Leonie Kühl,
Nora Szech

RIDGE - LACEA Working Paper 002

brain

This paper was presented at the 2025 RIDGE May Forum
jointly organized with the LACEA Networks

RIDGE-LACEA Working Papers are not formal publications. They are preliminary versions of research presented at the RIDGE Forum and posted on the RIDGE website with the author's permission. They remain the intellectual property of the authors and may be submitted for publication in academic journals.

July 2025

The Kindness of Strangers: Theory and Evidence on Spatial Distance and Giving*

James Konow^{a,*}, Leonie Kühl and Nora Szech

Abstract

Some people argue on moral grounds for directing charitable giving to where the benefit is greatest, which for most donors means donating to distant beneficiaries, but actual charitable giving contradicts this with most donations going to domestic beneficiaries. The evidence from controlled studies adds to the contradictions: it reveals a mixed set of results showing the giving-distance relationship to be direct, inverse, flat, or various combinations of the three. This paper reports a new theory of the distinctive relationship between giving and spatial distance as well as results on this relationship from four experimental studies. Two studies vary distances between donors and beneficiaries locally, specifically, they include a field experiment involving donations to local refugees and a laboratory experiment with donations to local people in need. Both local studies find a significant inverse relationship between giving and spatial distance. Two other studies involve variations at farther distances and comprise a laboratory experiment with distant beneficiaries and a survey experiment that considers possible confounding factors at those distances. The laboratory experiment does not find a significant effect at larger distances, and further analysis suggests that a confounding factor, viz., beneficiary need, contributes to that fact. The survey experiment indicates the relevance of numerous additional confounding factors in comparisons involving far distances. The experimental results are largely consistent with the predictions of the theory: morally motivated giving is decreasing in spatial distance, *ceteris paribus*, and is decreasing in exposure to displaced persons, decreasing in support for beneficiaries from sources external to the experiment (e.g., government aid), increasing in donor intrinsic generosity, and increasing in beneficiary need. In addition, we find qualified support involving a proxy for the hypothesized mediator between spatial distance and giving, moral salience. Together, these results confirm our focus on local distances to identify the distinctive relationship between giving and spatial distance, indicate the presence of additional factors that confound inferences over far distances, and offer an explanation that can reconcile the conflicting results on the giving-distance relationship in the literature.

KEYWORDS: charitable giving, spatial distance, moral salience

JEL Classification: C91, C93, D64, D91

*This paper is dedicated to Nora Szech, whom we thank for her support, passion and contributions to this project.

We wish to thank the editor, the associate editors, two referees of this journal, Graham Beattie and Prachi Jain for very helpful comments and suggestions on this paper.

^aDistinguished Professor of Economics and Ethics, Loyola Marymount University.

*Corresponding author.

E-mail address: jkonow@lmu.edu

1. Introduction

“(I)f I am walking past a shallow pond and see a child drowning in it, I ought to wade in and pull the child out. ... (This) principle takes ... no account of proximity or distance. It makes no moral difference whether the person I can help is a neighbor’s child ten yards from me or a Bengali whose name I shall never know, ten thousand miles away.” This evocative “pond analogy” of the utilitarian philosopher Peter Singer (1972) still animates readers, including supporters of the recent influential social and philosophical movement called “effective altruism,” who advocate channeling charitable resources to where they can do the most good. This implies that donors from high income countries, who are responsible for the lion’s share of philanthropy, should direct most or all of their contributions to beneficiaries in poor and usually distant countries. Although the moral case for effective altruism seems compelling, many people are persuaded by the opposite argument, reflected in the adage “charity begins at home.” Indeed, actual charitable giving flows mostly to domestic and local beneficiaries, e.g., donations to international charities comprised only 14% of UK charitable giving in 2022 (UK Giving Report 2023) and only 6% of US charitable donations in 2020 (NP Source, 2024). In addition to these conflicting arguments, the evidence from controlled studies produces a mixed set of results on giving-distance relationships that are variously direct, inverse, flat, or different combinations of the three.

This paper presents theory and evidence on the distinctive relationship between spatial distance and charitable giving. It reports the results of four studies that explore such an effect, including the apparently first economics experiments conducted on this topic. The theory is the first, to our knowledge, to formalize a causal basis for a relationship between spatial distance and morally motivated generosity. It is important to improve our understanding of the forces that motivate charity given its significant economic impact: worldwide donations of time and money total an estimated \$2.3 trillion annually or nearly 3% of global GDP (Citi GPS, 2021). Insights into this relationship can inform policy, e.g., whether spatial targeting of resources is more efficient, whether fundraisers should appeal to innate kindness or social approval, and whether they should focus on local or global causes. In addition, such lessons provide material for those normative approaches in philosophy and the social sciences that value input from evidence on popularly shared moral views.

This paper grew out of two research projects that relate to distance and giving, the one theoretical (Konow, 2024) and the other experimental (Kühl and Szech, 2017), which arose independently of one another. The theory was not developed to fit the particular findings of these experiments but rather to reconcile a much broader set of findings, of which the relationship between spatial distance and giving is but one of many examples. The experimental studies, in turn, were not designed as tests of a theory in which variables were selectively collected with that aim in mind, but they do comprise varied design features and collect an unusually rich set of information on subject motives, experiences external to the experiments, and demographics. A serendipitous by-product of this breadth is that the experiments provide a rich source of results that can be brought to bear on the main implications of the theory. The theory, in turn, provides a

simple and coherent guide to the analysis of the experimental results that might otherwise suffer from a curse of abundance. Thus, the two approaches complement one another nicely, and, combined, yield insights into this topic that we believe exceed the sum of their parts.

We draw on Konow (2024), which introduces a theory of moral salience and applies it to unilateral allocation decisions, such as the dictator game. The version here is simplified and formulated for the case of a donor selecting a donation to beneficiaries, who are in need. In this application, a donor's utility is a function of their material utility and their allocative preferences, whereby the latter are a function of their donation amount, intrinsic generosity, beliefs about beneficiary need, and perceptions of beneficiary support from sources external to the experiment (e.g., government assistance). In addition, allocative preferences are weighted by moral salience, which is the perceived importance of taking moral action that depends on the decision context. In the current study, the contextual factor affecting moral salience is spatial distance, and the actions affected are choices about donations to needy individuals. The other variables in the theory draw on lessons from prior studies, which inform the theory and are included in the empirical analysis as controls. Given our focus on distance, it is the one variable consistently manipulated across all studies.

The chief goal of this paper is to study the *distinctive* effect of spatial distance on morally motivated generosity, i.e., holding constant other factors. The main empirical challenge to this goal is the presence of additional forces that vary with both spatial distance and generosity and may confound inferences about the distinctive effect (e.g., expected impact of donations). The following section discusses in greater detail the effects of seven confounds that have surfaced in prior research, and lessons from this work are reflected in both our theory and our experimental designs. Specifically, we focus on novel evidence from our local studies for multiple reasons. First, confounds are evident over the larger distances examined in previous work (section 2) and confirmed in our studies of such distances (sections 7 and 8), whereas they should be absent with small local differences in distances. Second, our model provides a theoretical justification for the local focus (section 3) that is consistent with the results of our local studies (sections 5 and 6).

The empirical component of this paper comprises four studies: three incentivized economics experiments and one survey. The focus of the first two experiments is on local effects of distance on charitable giving, i.e., distances between donors and beneficiaries located in the same city at distances of two miles or less. Study 1 addresses a case of great contemporary economic and social importance, viz., refugees. It is a field experiment where refugees are at a common location, and there is variation in the locations and distances of donors as well as their exposure to the refugees. Study 2 examines another important instance of charitable giving, sheds light on additional predictions of the theory, including on moral salience as a mediator, and offers a test of the robustness of the Study 1 results to various procedural differences. It is a laboratory experiment with donors at a fixed location and charities at different local locations, a set of beneficiaries described more generally as being in need, and a more continuous decision space. Both local studies find significant inverse effects of spatial distance on giving. The second two studies, Studies 3 and 4, examine generosity at greater distances and factors that can confound

inferences. Study 3 is a laboratory experiment, similar in most respects to Study 2, except that distances vary at five levels between 6 miles and 6000 miles. It fails to find a significant main effect of distance on giving but reports a significant confounding variable predicted by theory and analysis consistent with it being a contributing factor to the insignificance of distance. Study 4 is an online survey experiment that explores eight possible confounding issues at longer distances. It finds significant effects of all eight issues that can be expected to impact giving at greater distances, some increasing and some decreasing in distance. Collectively, the results of the four studies tend to substantiate the distinction we make between local and distant giving.

The local focus offers an especially fruitful and important area for research for at least two additional reasons. First, local philanthropy is economically very significant. With an estimated annual value of \$1.75 trillion, volunteering represents by far the largest share of the \$2.3 trillion of worldwide private philanthropy (Citi GPS), and the largest share of volunteering is local (NP Source). Sizeable fractions of monetary donations in the US go to religion (24%), education (14%), and other service organizations (National Philanthropic Trust), which are in large part local, and 66% of small businesses report giving to local charities (Score). Second, there is a gap in the literature on local effects, so this represents an original contribution to the literature on the giving-distance relationship.

Section 2 reviews the literature on the giving-distance relationship and seven possible confounds over longer distances. Section 3 presents the theory of the relationship between spatial distance and morally motivated giving based on moral salience and various control variables. Section 4 is a general description of the designs, procedures, main features of and differences between the four studies. Section 5 presents the results of Study 1, which confirm various theoretically predicted effects. It finds that the odds of making the more generous of two choices in the field decreases with distance from refugees, exposure to refugees, and perceived external support for the needy (e.g., volunteer work and government support), and is increasing in a measure of intrinsic generosity. Section 6 reports the results of Study 2, which finds that the main result of Study 1 on local variation in spatial distance and giving is robust to various procedural differences in the laboratory and adds qualitatively to the evidence consistent with a causal role of moral salience in the giving-distance relationship. Section 7 presents the results of Study 3, which indicates that, as predicted, giving is increasing in perceived beneficiary need. Contrary to the evidence on local effects, though, giving does not vary significantly over longer distances, although further analysis suggests need is a confounding factor that contributes to the insignificance of distance in this case. Section 8 presents Study 4, an online survey that produces results consistent with the suspicion that multiple mediating factors confound inferences about the distinctive effect of distance over far ranges. Section 9 concludes.

2. Background

Numerous prior studies have produced evidence on generosity and spatial distance, although they all involve larger distances and none, to our knowledge, the kinds of proximate comparisons in our local studies. This previous research has generated a wide range of results. The giving-

distance relationship is inverse in the field experiment of DellaVigna, List and Malmendier (2012), who report donors are more generous toward a local charity than an out-of-state one. Similarly, the field experiment of Grimson, Knowles and Stahlmann-Brown (2020) finds that giving is monotonically decreasing in four progressively more distant geographical regions and in Euclidean distance, in general. On the other hand, subjects are more generous toward more distant beneficiaries in the laboratory experiment of Eckel, Grossman and Milano (2007). Other studies suggest no clear pattern of spatial preferences for giving, e.g., subjects are almost exactly equally divided between those who choose local charities and those who choose national and international ones in the laboratory experiment of Brown, Meer and Williams (2017). Still other studies report significant effects of distance on giving within certain ranges of distances but not within others. The laboratory experiment of Bruttel and Ziemann (2023) finds giving falls from local to intermediate distances but not further between intermediate and far distances. The laboratory experiment of Li, Eckel, Grossman and Brown (2011) comes to the opposite conclusion: subjects give more to national charities, but the amounts given to state and local organizations do not differ significantly. Yet another possibility is that the giving-distance relationship is non-monotonic: Eckel, Priday and Wilson (2018) conclude from a laboratory in the field experiment that giving is U-shaped, with donations lower to state charities than to local and national ones. In this section, we discuss seven categories of factors that likely contribute to the ambiguity of the relationship in prior work and are important for us to identify or control in the current project.

First, the expectations of donors for the impact of their donations might vary with spatial distance. Touré-Tillery and Fishbach (2017) find that alumni located closer to their alma mater give more because, the authors conclude, more proximate donors expect their donations to have greater impact. The relationship of impact to spatial distance actually subsumes two effects: cost-effectiveness and beneficiary need. Regarding the former, donors in affluent countries, where most donations originate (as with those in our studies), might believe that the impact of their donations is greater in distant less developed countries for the reasons advanced by the aforementioned effective altruism movement and underscored more recently by Singer (2013): the costs of providing given benefits in distant less developed countries are lower. On the other hand, those same donors might harbor doubts about how much their donations will actually benefit the recipients at distant locations, e.g., donors in affluent countries might suspect corruption and inefficiencies at distant locations of generating lesser benefits to foreign recipients than to local or domestic ones. The experimental evidence on cost effectiveness and distance is mixed, indeed, even on preferences for cost effectiveness, in general. On the latter point, most survey respondents prefer the more effective charity in Cavioli et al. (2020), and, in an incentivized field experiment, Gneezy, Keenan and Gneezy (2014) find that higher overhead costs decrease donations while having third parties cover overhead increases donations. On the other hand, Karlan and Wood (2017) find that information about the effectiveness of a charity does not significantly affect donations in a field experiment. Eckel et al. (2018) attribute the U-

shaped pattern of giving in their aforementioned study to beliefs that the charities at their intermediate distance are less cost effective.

Second, another aspect of impact is variation in beneficiary need with distance. On the one hand, donors in affluent countries might believe that this kind of impact is greater with distant recipients because of the greater need of the latter. This is consistent with the substantially higher generosity of “rich” experimental subjects toward distant beneficiaries in need than toward fellow subjects at the same location, e.g., Cappelen et al. (2013) and Konow (2010). On the other hand, the direction of such an effect might depend on the distances involved. Gallier et al. (2023) conduct a framed field experiment of donations to charities that work to service beneficiary needs, viz., two food banks that are located either in the donors’ home city or in a city 25 km away. If informed of the locations of the two charities, there is a large shift in donations toward the closer one.

Third, philanthropy is usually treated as a public good in economics. Many types of charitable contributions exhibit properties of a local public good, in which case, donors have a self-interested motive for favoring local charities in order to share in the benefits. In fact, Czajkowski et al. (2017) find that willingness to pay for forest management is positively correlated with proximity to forests, and, in an online experiment, Adena and Harke (2022) find that higher local severity of COVID increases local charitable donations but does not significantly affect national or international giving. Local public good concerns might also inform donor appeals, as suggested by donation campaigns of charities, including statements touting causes that “make your community a better place to live” by, among other things, sheltering the homeless and rescuing unwanted animals (America’s Best Local Charities). On the other hand, other evidence seems at odds with this conclusion. In a natural field experiment in Kyrgyzstan, Adena, Hakimov and Huck (2024) report that informing subjects that donating will increase the probability of benefits to their own region does not significantly increase donations.

A fourth potentially mediating force involves social distance, i.e., how close another person is in one’s network of acquaintances. We note that social distance has at times been used in a much broader sense, sometimes including spatial distance, but our usage reflects the more narrow sense that has become increasingly common. Experiments in the laboratory and the field demonstrate that giving is inversely related to social distance, e.g., Brañas-Garza et al. (2012), Goeree et al. (2010), and Leider et al. (2009). Brañas-Garza et al. (2010) show that various measures of integration in a social network affect dictator transfers even after controlling for gender, framing and information about recipient identity. Such giving can be bolstered, not only by social proximity to one’s beneficiary, but also via social image concerns, e.g., Bénabou and Tirole (2006), if the benefactor’s largesse is made known to the beneficiary or to others in the benefactor’s social network (Harbaugh, 1998). If spatial distance is directly related to social distance, as Gitmez and Zarate (2022) find, then it seems likely that giving will be inversely related to spatial distance, since the likelihood falls that farther beneficiaries, whether individuals or organizations, include members of one’s social network. Indeed, this is consistent with Dejean (2020), who finds an inverse relationship between rewards-based crowdfunding and spatial

distance but also reports that this effect is significantly reduced, when social networks are taken into account.

Fifth, it is well-established in psychology and economics that individuals often favor members of their in-group over those in out-groups. Groups are defined or formed based on homophily, and common shared traits include, *inter alia*, race, gender, school or spatial proximity. Nevertheless, effects of in-group favoritism on social preferences can be observed, even when all individuals are anonymous, no member is in one's social network, and group identity is experimentally induced on an unconventional and seemingly inconsequential basis, e.g., see Chen and Li (2009). Consistent with the relevance of this to spatial distance, Ockenfels and Werner (2014) report that anonymous dictator transfers to students at one's own university exceed those to students at a different university in a different city, likely reflecting multiple in-group effects.

Sixth, distance can relate to the so-called identifiable victim effect, which entails two claims. One refers to the tendency to help a specific victim over a larger, more amorphous group of victims. An inverse giving-distance relationship operating through this effect is consistent with the finding of Eckel et al. (2018) that subjects are much more generous toward a local victim, even if anonymous, than to multiple charities at different distances that support various groups. A second claim of this effect is that merely identifying the beneficiary increases kindness toward that beneficiary relative to an unidentified one. In the dictator game of Charness and Gneezy (2008), transfers to recipients are greater, if dictators know the family name of their recipient. In fact, Small and Loewenstein (2003) report that, even under complete anonymity and in the absence of any personalizing information, dictators are more generous toward recipients that "had" been chosen as opposed to recipients who "will" be chosen. A direct giving-distance relationship operating through this effect is consistent with donors, who choose to support a child identified by name and photos in a distant country over donating locally to United Way, which supports multiple causes that are not always conspicuously named.

Finally, greater spatial proximity can be associated with an increased likelihood of exposure to and personal contact with beneficiaries. In some studies, this effect co-mingles with identifiability and suggests the effect might be direct or inverse. For example, presenting dictators with photos of recipients in Burnham (2003) increased transfers, whereas showing photos of handicapped children in a door-to-door charity campaign decreased donations in Isen and Noonberg (1979). But such exposure can have an effect on giving distinct from that of the forces discussed thus far, i.e., even if donor impact is controlled and all parties are anonymous strangers, who are only identified in general terms. This was the case with the study of Eckel, Grossman and Milano (2007), which is also most closely related to our topics of giving, spatial distance and displaced persons. The authors examine the generosity of dictators at two locations toward charities that provide relief to victims of Hurricane Katrina. They find dictators located much closer to the disaster in Texas to be significantly less generous than those located farther away in Minnesota and report evidence that this effect is due to the former group being more negatively impacted by exposure to displaced persons.

These prior results are relevant both to our study designs and to our theory. We seek to identify the distinctive effect of distance on charitable giving. By contrast, the seven categories of factors discussed in this section sometimes covary with distance and giving, but they are effects on giving that manifest in other contexts and are not specific to distance. Moreover, the arguments about and evidence on them indicate that their effects on giving are ambiguous, not only because they potentially conflict with one another but also because, even individually, the directions of most effects are ambiguous. These facts underscore the importance of experimental control or, where precluded, clear measures of the factors that represent confounds. The following section discusses how theory both informs and is informed by these considerations.

3. Theory

We draw on the theory proposed in Konow (2024), which introduces the concept of moral salience and employs it to address unilateral allocation decisions, such as the dictator game. The version presented here is simplified and formulated for application to the case of a donor selecting a donation to persons of need from a continuous choice set. The propositions that follow are formally derived hypotheses about the effects on giving of the main causal variable of interest, spatial distance, and of other categories of variables included as controls based on theory, which, in turn, is informed by previous findings. Specifically, the donor chooses an amount, $x \geq 0$, out of a fixed endowment, $X > 0$, to donate to needy beneficiaries. The donor's material utility, u , is a function of the amount remaining after the donation, i.e., $u(\pi)$, where $\pi \equiv X - x$. We make the standard assumptions that $u_\pi \equiv \partial u / \partial \pi > 0$ and $u_{\pi\pi} \equiv \partial^2 u / \partial \pi^2 \leq 0$, whereby single (respectively, double) subscripts always denote first (respectively, second) derivatives with respect to the subscripted argument. Material utility is the first term on the right-hand side of equation (1), which represents the donor's utility function:

$$(1) \quad U = u(X - x) + \sigma(\delta)h(x + Y - \eta, \gamma).$$

We turn now to the second term of this equation, which is the product of the two other components of utility, moral salience, σ , and allocative preferences, h .

The allocative preferences of the donor, $h(\cdot)$, are a function of the difference between x and the beneficiaries' entitlement, $\eta > 0$, which is a donor's perceived obligation to donate in the experiment (disregard Y for the moment). To clarify, the entitlement is not necessarily (or usually) the actual total need of the beneficiary, since, in any case, the donor in such experiments is not sufficiently endowed to satisfy the total needs of even a single beneficiary. But the claim, based both on prior findings as well as ones to be reported in this study, is that donors feel an obligation in the context of the experiment to alleviate some portion of beneficiary need. In general, one approach to estimating the value of the entitlement uses multiple within-subject decisions (for example, see Konow, 2000), but this method would be time-consuming and impractical to implement in the current studies. Another approach does not require specific estimates of this subjective variable but instead rests on the predicted behavioral effects of variation in a variable that serves as a proxy for the entitlement. We adopt the latter approach and interpret the entitlement in the cases considered here as being based on the perceived needs of

the beneficiaries, since all three experimental studies explicitly portray needy beneficiaries, and in light of behavioral and self-reported evidence that the salient donor motive in such cases is need (e.g., Konow, 2010). Specifically, we later find that, as predicted, donor transfers vary directly with a proxy for donor perceptions of beneficiary needs.

Another variable that may affect donations is the variable Y , which represents donor perceptions of the degree to which support for the needy that is external to the experiment offsets the donor's obligation to donate in the experiment. This can be expected to affect donations, both on a priori grounds as well as based on previous studies, e.g., from lower dictator transfers recipient with larger endowments (e.g., Bolton and Katok, 1998) and decreases in charitable donations with beliefs about greater external support for beneficiaries, e.g., from government emergency services (Eckel et al., 2007). Similar to the case with the entitlement, where need not represent total beneficiary need, this variable is not necessarily equal to the total monetary value of external support for the beneficiary in the experiment but rather the donor's perception of the degree to which such external support offsets the donor's monetary obligation in the experiment. And analogous to the case with the entitlement, we do not seek to estimate its exact value but rather to identify its effects through variation in donations with other variables suggested by theory. Thus, Y is assumed to be inversely related to the donor's belief about the contributions of others or to the donor's own external contributions of time (e.g., volunteering), money or even moral support for aid to the needy, perhaps even for needy persons other than the beneficiary at hand, as those may reduce the donor's perceived obligation to donate in the context of the experiment. Such "crowding out" need not be complete, indeed dictator experiments show that, even when contributions to a recipient from others are quantitative and transparent, the reduction in giving is less than one-for-one. Although the impact of external conditions on experimental decisions is well documented, such influences are not routinely incorporated formally into models. The theory and these studies, though, are particularly well-suited to such analysis. The fact that the beneficiaries are not fellow subjects but rather needy parties outside a laboratory likely draws especial attention to external conditions, since the decision environment is less compartmentalized and the beneficiaries not cohorts of the donors. In addition, the experiment collected a rich set of data on beliefs about external activities and conditions and, therefore, offers a rare opportunity to examine their effects. We assume that h is a continuously differentiable function of $x + Y$ less the entitlement, η , or $y \equiv x + Y - \eta$, and that $h_y \equiv \partial h / \partial y > 0$ and $h_{yy} \equiv \partial^2 h / \partial y^2 < 0$. In addition, it is well documented that the strength of allocative preferences differs across donors, which is captured by the intrinsic generosity parameter, γ (for example, see Fehr and Charness, 2025). Thus, allocative preferences may be written $h(x + Y - \eta, \gamma)$, whereby we assume that $h_{y\gamma} \equiv \partial^2 h / \partial y \partial \gamma > 0$, i.e., the marginal utility of giving is increasing in the generosity parameter. For this, we consider self-reported measures of moral preferences that were elicited in the experimental questionnaire and possible variation in donor generosity with such measures.

The final variable in the proposed utility function is moral salience, which is defined as the

perceived importance of taking moral action that depends on the decision context and is modeled as a weight on moral preferences, $\sigma > 0$. A contextual variable that increases or decreases moral salience is called a *moral measure*, and multiple variables may have such effects, for example, Konow (2024) analyzes, inter alia, the effects of uncertainty and opportunities to give to or take from others on moral salience. We restrict attention here, however, to the two contextual variables addressed in the experiment, viz., spatial distance, which is the primary variable of interest across all studies, and exposure of the donor to beneficiaries, which is addressed in Study 1. Both are predicted to vary inversely with moral salience. An important motivation for moral salience treats it as a perceptual phenomenon similar to visual salience, e.g., consider that the perceived size of an object is decreasing at a decreasing rate in spatial distance to the observer. Similarly, the perceived importance of moral action, such as giving, is hypothesized to decrease at a decreasing rate with the moral measures studied here, which we denote δ . Starting with the interpretation of δ as spatial distance, moral salience is modeled as a twice continuously differentiable function of δ , $\sigma(\delta)$, where $d\sigma/d\delta < 0$ and $d^2\sigma/d\delta^2 > 0$. The sign of the first derivative means that the weight on the donor's allocative preferences decreases, as the spatial distance increases. The second derivative reflects the assumption of diminishing marginal salience, that is, the first increment of spatial distance causes a larger decrease in moral salience than the second, etc. The other moral measure considered here is the exposure of donors to beneficiaries, which is simpler as it is varied at only two levels, denoted δ_l and δ_h .¹

With the model presented in equation (1), we can clarify a few terms used in this paper. First, morally motivated giving refers to giving that depends only on the second term of equation (1) and its parameters, i.e., giving affected by variation in Y , η , γ and σ , including spatial distance, exposure, external support and need. Second, in this model, the *distinctive* effect of spatial distance on giving can only be associated with moral salience, σ , whereas the other variables serve as controls. Other factors that might mediate spatial distance and giving, which are not unique to distance and often are ambiguous in the direction of their effects, are confounds and operate through material utility, Y or η . These include beliefs about beneficiary need or external support, and effects that might be considered (at least partially) self-interested such as material benefits from reciprocity or local public goods as well as less tangible personal concerns such as for social distance and in-group favoritism, which are not explicitly modeled here.

¹ We note several simplifications in this model compared to Konow (2024). First, here we consider only variables that vary inversely moral salience, δ , whereas the model there accommodates variables that vary directly (which also entails slightly stronger assumptions in order to produce additional predictions about the relationship between x and σ). Second, instead of the single term, h , for allocative preferences here, in Konow (2024) they consist of two terms, fairness and altruism, whereby fairness is non-monotonic in y . Here fairness and altruism can be folded into a single term that is positive monotonic in the range of optimal allocations, since within that range $h_y = \frac{u_\pi}{\sigma} > 0$. Third, in Konow (2024) the strength of each of the two terms may vary separately across agents, whereas here such agent heterogeneity is captured by the single parameter γ . Although these other terms and parameters generate additional predictions that are relevant to the topics of that paper, for the current paper, the simpler and weaker assumptions suffice.

Now we turn to some original propositions, not previously formalized, that follow from this simple and tractable model and on which the experiment produces evidence.

Proposition 1. Giving decreases in spatial distance, *ceteris paribus*. Assuming additionally that giving is weakly convex in moral salience, then giving is strictly convex in spatial distance.

Proof. Taking the first order condition,

$$\frac{dU}{dx} = -u_\pi(X - x) + \sigma(\delta)h_y(Y + x - \eta, \gamma) = 0,$$

applying the implicit function theorem to solve for $x(\sigma)$, substituting into the first order condition, and differentiating with respect to σ , we have

$$u_{\pi\pi} \frac{dx}{d\sigma} + h_y + \sigma h_{yy} \frac{dx}{d\sigma} = 0, \text{ or}$$

$$\frac{dx}{d\sigma} = \frac{-h_y}{u_{\pi\pi} + \sigma h_{yy}} > 0.$$

Noting $x(\sigma)$, we can write the composite function $x(\sigma(\delta))$. By the chain rule $\frac{dx}{d\delta} = \frac{dx}{d\sigma} \frac{d\sigma}{d\delta} < 0$, since $\frac{dx}{d\sigma} > 0$ and $\frac{d\sigma}{d\delta} < 0$ by assumption.

Taking the second derivative, we have

$$\frac{d^2x}{d\delta^2} = \frac{d^2x}{d\sigma^2} \left(\frac{d\sigma}{d\delta}\right)^2 + \frac{dx}{d\sigma} \frac{d^2\sigma}{d\delta^2} > 0$$

since, by assumption, $\frac{d^2x}{d\sigma^2} \geq 0$ and $\frac{d^2\sigma}{d\delta^2} > 0$.

Greater spatial distance decreases the weight placed on allocative preferences by moral salience and, therefore, the optimal amount given. This theorem also states a sufficient condition for giving to be convex in distance, which holds due to diminishing marginal salience, $\frac{d^2\sigma}{d\delta^2} > 0$, even if $\frac{d^2x}{d\sigma^2} = 0$. With the binary allocation choices of Study 1, it is straightforward to show that the fraction of more generous choices decreases with spatial distance assuming heterogeneity in γ .

Corollary 1. Assuming exposure to displaced persons increases δ , i.e., from δ_l to δ_h , giving decreases with such exposure since $\sigma(\delta_l) > \sigma(\delta_h)$.

This follows directly from Proposition 1 and is consistent with evidence (e.g., Eckel et al., 2007) that exposure to displaced persons reduces the perceived importance of giving to them.

Proposition 2. Giving is decreasing in support for the needy through means external to the experiment.

Proof. Applying the implicit function theorem to solve for $x(Y)$, substituting into the first order condition, and differentiating with respect to Y , we have

$$u_{\pi\pi} \frac{dx}{dY} + \sigma h_{yy} \frac{dx}{dY} + \sigma h_{yy} = 0, \text{ or}$$

$$\frac{dx}{dY} = \frac{-\sigma h_{yy}}{u_{\pi\pi} + \sigma h_{yy}} < 0.$$

Increasing external support, Y , helps meet the obligation and decreases the optimal transfer, x .

Proposition 3. Giving is increasing in the need of beneficiaries.

Proof. Solving for $x(\eta)$, substituting, and differentiating with respect to η , we have

$$u_{\pi\pi} \frac{dx}{d\eta} + \sigma h_{yy} \frac{dx}{d\eta} - \sigma h_{yy} = 0.$$

$$0 < \frac{dx}{d\eta} = \frac{\sigma h_{yy}}{u_{\pi\pi} + \sigma h_{yy}} \leq 1.$$

Needier beneficiaries correspond to a greater obligation to contribute to meeting their needs and, therefore, higher giving, although by no more than the increase in need.

Proposition 4. Giving is increasing in intrinsic generosity γ .

Proof. Solving for $x(\gamma)$, substituting, and differentiating with respect to γ , we have

$$u_{\pi\pi} \frac{dx}{d\gamma} + \sigma h_{yy} \frac{dx}{d\gamma} - \sigma h_{yy} = 0.$$

$$\frac{dx}{d\gamma} = \frac{-\sigma h_{yy}}{u_{\pi\pi} + \sigma h_{yy}} > 0.$$

Clearly, a subject with a higher marginal utility of giving gives more, *ceteris paribus*.

4. Description of Studies

In this section, we describe the studies and how they relate to the theory and address the confounds. We begin by noting that all four studies share certain common features that are suited to our research goals. First, all studies are double blind, i.e., neither the beneficiaries nor the experimenters were able to associate decisions were specific subjects. Second, the beneficiaries are all strangers, which parallels the case with most charitable donations. Both of these features help rule out subject social image effects or self-interested concerns about repercussions from their choices. Third, all treatments in all studies were conducted between subjects, in particular, each subject was presented with only one of the manipulated distances. This addresses the multiple treatment threat (e.g., associated with order effects) to internal validity (i.e., support for claims about causality).

The most important methodological difference between the four studies is how they address or identify confounding factors discussed in section 2. One aspect of Studies 1 and 2, which involve local distances of 0.2 to 2 miles, is the very narrow and proximate range of distances that provides no obvious or compelling basis for expecting differences in cost effectiveness, beneficiary need, public good benefit to donors, social distance, or in-group membership. By contrast, there are plausible reasons for expecting such differences over the larger distances ranging from 6 to 6000 miles treated in Studies 3 and 4, and these are predicted to confound inferences about the distinctive effect of distance in those studies. Regarding the identifiable victim effect, the number of beneficiaries is held constant within each study, e.g., one in Study 1 and a group in the other studies, and the anonymity of beneficiaries in all studies is designed to maintain their unidentified status. The effect of exposure is carefully controlled in Study 1 in order to isolate its effects, and, otherwise, subjects are not exposed to beneficiaries in any other studies. Finally, as a further justification for focusing on the local studies for evidence of a distance-giving effect, we note that Proposition 1 implies, under the assumption stated there, that giving is convex in distance. This, in turn, implies that larger distance-giving effects can be expected at local distances than far distances due to diminishing marginal salience.

The four studies differ in various respects that contribute in sundry ways to showing the robustness of claims across different experimental methods and/or confirming external validity (i.e., how well lessons from the studies can be expected to apply to other settings). Specifically, section 4.1 below presents an overview of the main design features of each of the four studies and clarifies important differences between them. Section 4.2 provides details about variables from the questionnaire common to the first three studies, i.e., to the three incentivized experiments. As previously stated, the questionnaire offers a rich source for examining possible controls, but we also discuss how the self-reported measures vary in degree of fit to the theoretical variables. The experimental protocols of all studies can be found in Appendix F.

4.1 Overview of main design features

Table 1 summarizes the four studies and illustrates the breadth of design features they bring to bear on this topic. They encompass a field experiment, two laboratory experiments and a survey experiment. The first two studies vary distances within a local range of 0.2 to 2 miles, whereas the second two vary distances that are far, i.e., 6 to 6000 miles (in addition, Study 1 includes a treatment involving a treatment with exposure to beneficiaries).

Table 1.

Summary of design features of four studies.

	Study 1	Study 2	Study 3	Study 4
Experiment type	Field	Laboratory	Laboratory	Survey
Variable(s) manipulated	Local distances, exposure	Local distances	Far distances	Far distances
Decision format	Binary	Menu	Menu	Binary
Subject pool	KIT	KIT	KIT	Online
Beneficiaries	Refugees	Needy	Needy	Needy
Study specific analysis	Exposure: Check, Personal relations; External support: Crises, Military	Moral salience: Responsibility	Need: Poverty rate, GDP per capita	Potential confounding variables

Regarding the decision format, different charities in the field offer potential donors different sets of choices. Our studies approximate the two main types, and a comparison of the first two studies demonstrates the robustness of our main results to these choices. Many charities state a specific contribution amount, e.g., donors may sponsor a child for a fixed monthly donation. Thus, in Study 1, subjects face the choice of contributing one-half of their €15 earnings with beneficiaries or sharing nothing. Apart from its verisimilitude, this format provides an unambiguous indication of subject generosity, i.e., sharing is clearly the generous choice. There was also the practical consideration of simplifying and expediting subject payments, since this experiment was more time-consuming. In other cases, donors face a more extensive set of donation options, either a menu of suggested donation amounts or an open amount. Experimental studies have found that such differences in choice format can impact donations, e.g., Reiley and Samek (2019) and Moon and VanEpps (2023). Thus, Studies 2 and 3 extend choices to a larger

(quasi-continuous) set, viz., 31 possible donation amounts from €0 to €15 in €0.50 increments. Study 4 is a survey asking at which of two locations a given condition is more likely, and the binary choice between a near or far location has a similarly unambiguous interpretation.

The first three studies draw on subjects from the subject pool at the Karlsruhe Institute of Technology (or KIT) in Karlsruhe, Germany, whereas Study 4, which was conducted at a later date, employed an online sample drawn from German participants on Qualtrics. Regarding the identity of the beneficiaries, the degree of specificity involves a trade-off: lack of details about beneficiaries suggests results have greater generality, but a group familiar to donors provides a concrete example that resembles many contexts that potential donors face outside the laboratory. Our studies address both sides of this spectrum while seeking to minimize the risks of excessive generality or specificity. In Study 1, beneficiaries are refugees, a group whose plight is presumably familiar to all potential donors and who represent a case of great practical and contemporary importance in many countries. Although refugees comprise a subset of potential recipients of charity, they are a very large subset: the UN Refugee Agency reports 123 million people are currently forcibly displaced worldwide (UNHCR), and Germany at the time of the study was experiencing its largest surge of refugees in twenty years (World Bank Group). The other studies examine the generality of effects to beneficiaries, who are described quite generally as persons in need.

Finally, the analysis of certain variables is specific to each study.² The Study 1 questionnaire includes four questions to check subject exposure to the refugee camp and whether they followed the designated paths. It also includes a self-reported measure of exposure to refugees outside the experiment, viz., Personal relations, which might, for the same reasons as the Exposure treatment, vary inversely with donations. Proposition 2 states that external support for beneficiaries, Y , is inversely related to experimental donations, and questions about external support specifically for refugees are relevant to Study 1. They tap into support for action at the sources of the refugee crises, which serve as plausible substitutes for the local aid provided through donations in the experiment. One set of questions concerns material support for refugees and asks about the subject's preferred distribution of such support between Germany, the European Union, the countries bordering crisis areas, and the crises areas themselves. We use the last response category, Crises support, as the measure of external material support that most strongly contrasts with local donations and, therefore, represents the clearest substitute. Another question, Military support, asks about the degree of support for military intervention in refugee crises that is chosen for similar reasons while measuring a different type of external support.

In addition to evidence of the predicted behavioral effects of moral salience on local allocation decisions via distance (Proposition 1) and exposure (Corollary 1), Study 2 draws on self-reported evidence on it from subject responses in the questionnaire. Since moral salience is a latent variable, self-reports are proxies that at best approximate the underlying variable. In Konow (2024), subjects are asked “how important you think it is” to take an action that benefits

² For reasons explained in Appendix A, some of these variables were elicited in multiple studies but are only relevant to, and therefore analyzed in, a single study.

another or to refrain from an action that harms another, and possible responses are on a scale of six numbers with each number accompanied by specific wording, e.g., “moderately important” or “extremely important.” In the current study, the closest available proxy is from questions about “How responsible do you see yourself as being toward people” at various distances, and responses are on a seven point scale with wording appearing only at the two end-points, viz., “not at all” and “very.” Since moral responsibility is commonly defined as moral accountability for one’s actions, these responses seem sufficiently close to the hypothesized mechanism of moral importance of one’s actions to be a reasonable proxy for moral salience.

Study 3 offers an opportunity to investigate the theoretical claim of Proposition 3 that donors give more to beneficiaries whom they believe have greater need, η . The questionnaire contains no direct questions about expected beneficiary need, but we address this indirectly through a question asking donors’ beliefs about where the beneficiaries are located, viz., the “city or region.” Then we calculate two proxies for the economic conditions of beneficiaries, the one represents need and uses the Poverty rates and the other is standard of living and uses GDP per capita, both based on subjects’ guesses of beneficiary locations.

Study 4 is a survey consisting of eight questions that address different forces hypothesized to vary with both giving and distance, which, therefore, represent potential confounds. These will be discussed in detail in section 8.

4.2 Details of incentivized experiments

The incentivized experiments (Studies 1, 2 and 3) share many common features. Donors are cast in roles of stakeholders, that is, their donations come out of personal endowments (as opposed to spectators, who allocate impartially as third parties), which has several advantages. This role corresponds to the usual situation with donors in non-experimental settings, it provides a clear measure of willingness to sacrifice, and having personal stakes has been shown to activate moral salience in a way not observed among spectators (see Konow, 2024). Moreover, all subjects participate using pencil and paper, and they make all their allocation decisions, which they are later asked to recall, under double blind conditions.

All subjects are then prompted to complete a post-experimental questionnaire, which contains a lengthy and wide-ranging battery of more than 140 questions. As discussed above, some questions were specific to certain studies, but the incentivized experiments share the vast majority of questions in common. Although most results of the questionnaire are reported in the main text of the paper, there are principled reasons for excluding some from the main analysis, completely apart from the strain on degrees of freedom. We follow general criteria for this exclusion, which, in the interests of transparency, we discuss briefly here and in greater detail in Appendix A. That appendix presents more detailed descriptions of exclusion criteria and the variables excluded. An important criterion is the availability of redundant measures of certain concepts. Apart from the risks of multicollinearity, there usually is a clearly superior measure according to conceptual fit and standard criteria (e.g., wide usage and validation). The appendix reports formal analysis of rejected measures, which confirms that included measures are at least

as appropriate as excluded ones. Other variables are excluded, because of insufficient variation, e.g., nationality (almost all subjects are German) or lack of a theoretical basis for their inclusion.

Table 2 summarizes subject-related variables from the questionnaire that are used in the analysis. The intrinsic generosity of donors, γ , is predicted by Proposition 4 to be directly related to giving. All studies include psychological instruments of pro-sociality that include two possible measures of individual heterogeneity in the strength of this intrinsic motive. At issue are two scales, both of which are widely used in psychology, but whether they predict behavior in these experimental settings and, if so, which is an open question, so we conduct analyses with both. The one is taken from Satow's (2020) version of the Big Five Personality Inventory, which examines personality traits based on five scales. Specifically, we employ the 10-item Agreeableness scale, which elicits self-reports almost entirely about pro-social behavior with questions such as "I help others...", "I always pay attention to being friendly," and "I get along well with others..." The other is taken from Paulus's (2009) version of Davis's Interpersonal Reactivity Index (1980), which targets empathy, broadly construed, rather than personality. Three of these four scales do not relate to pro-sociality, per se (e.g., containing items like "I tend to lose control in emergencies"), but we employ the 4-item Empathic concern scale, which focuses almost exclusively on pro-social feelings for others with questions such as "I often have tender, concerned feelings for people less fortunate than me," and "When I see someone being taken advantage of, I feel kind of protective towards them."

Table 2.

Summary of variables from questionnaire used in the incentivized experiments.

Intrinsic generosity	External support	Latent	Demographic
Agreeableness Empathic concern	Volunteer work (general)	Intelligence Impulsivity Personality: Extroversion Conscientiousness Openness Neuroticism	Age Gender Income Siblings Religiosity Political orientation

Proposition 2 states that external support for beneficiaries, Y , is inversely related to experimental donations. Section 4.1 above addresses possible measures of Y that are specific to the refugees in Study 1. Here we discuss a possible measure of support external to the experiment that is specific to the subject, viz., the degree of subject involvement in general volunteer work. This tests whether there is a reduced sense of obligation to help in the experiment because of having helped others in other contexts, i.e., even when the external support is not necessarily directed at the beneficiaries in the experiment or to groups like them.

We consider two further sets of subject variables, which we include as controls to analyze the robustness of the findings. One set consists of Latent variables, including Intelligence and Impulsivity. For the former, we use the crystallized intelligence test of Schipolowski et al.

(2013). As explained in Appendix A, this is our first choice given its much larger number of items and broader conceptualization of intelligence, but we also report robustness checks in the appendix with the two alternative measures. As a rough measure of time preferences, the main analysis employs Impulsivity, a three-item psychological scale. Appendix A discusses the pros and cons of an alternative measure of time preferences based on a switch-point between a given reward now and future rewards that vary in the size and reports results of regression analysis using that measure that show it yields similar results to Impulsivity. The other Latent variables are all of the remaining Personality variables measured in the questionnaire. Specifically, we consider the four remaining scales of the Big Five Personality Inventory apart from Agreeableness, viz., Extroversion, Conscientiousness, Openness, and Neuroticism.

Other subject-related variables control for Demographic characteristics of the subjects. We should note that the evidence of effects of demographic variables on morality is often mixed or insignificant (e.g., O’Fallon and Butterfield, 2005) and is especially thin on charitable giving. For example, dictator experiments often, although not always, find females to be more generous (Croson and Gneezy, 2009), but Eckel, Priday, and Wilson (2018) report the effect of gender on charitable giving to be insignificant, as well as those of other variables such as religion, education, and income. We examine the robustness of the results to the inclusion of Age, Gender (1 for Male), Income (monthly in Euros), Siblings (1 if any), Religiosity, and Political orientation (the last two elicited on subjective scales), which covers all demographic variables in the questionnaire, after excluding some on general principles. The respective appendices to the studies report the results of balance tests that show that none of the observable variables in any of the four studies differs significantly across treatments at conventional levels and that only two of the total of 48 regression coefficients are significant at the 10% level.

5. Study 1: Field Experiment with Refugees

This section discusses the procedures and design of Study 1 and how that design addresses possible confounds. We then report and analyze its results. A total of 155 subjects were recruited late 2015 from the Karlsruhe Institute of Technology (KIT) using the software ORSEE (Greiner, 2015). As previously stated, subjects faced a simple binary choice between keeping their €15 payment (roughly \$17 at the time) or splitting it equally with the refugees. Average subject earnings including show-up fees of €5 totaled €15.26 for sessions lasting about 90 minutes, and a total of €735 ended up being donated to refugees.

As a field experiment, Study 1 is highest among the three studies in terms of external validity. In prior economics experiments on charity, subjects were either endowed or, in a few cases, had engaged in a real effort task that produced different rewards, e.g., see Vesterlund (2016). In order to participate in Study 1, all subjects walked the same distance from an initial meeting point to the experiment destinations. This feature encourages subjects to view payments, not as house money, but as earned, as is usually the case when people make charitable donations outside an experiment. Moreover, different work requirements would represent a confound for our purposes, so distance walked is held constant across subjects and treatments. Another useful feature of this study is that the donor destinations differ, since they walk to and participate at one

of two different places that are equidistant from the original meeting point, while the identity and location of beneficiaries are held constant.

Table 3.

Summary of treatments in Study 1: field experiment with refugees.

<u>Proximity</u>	<u>Distance</u>	<u>Exposure</u>
camp located 0.2 miles away	camp located 2 miles away	camp located 0.2 miles away
path avoided camp	path avoided camp	path passes by camp
n=55	n=49	n=51

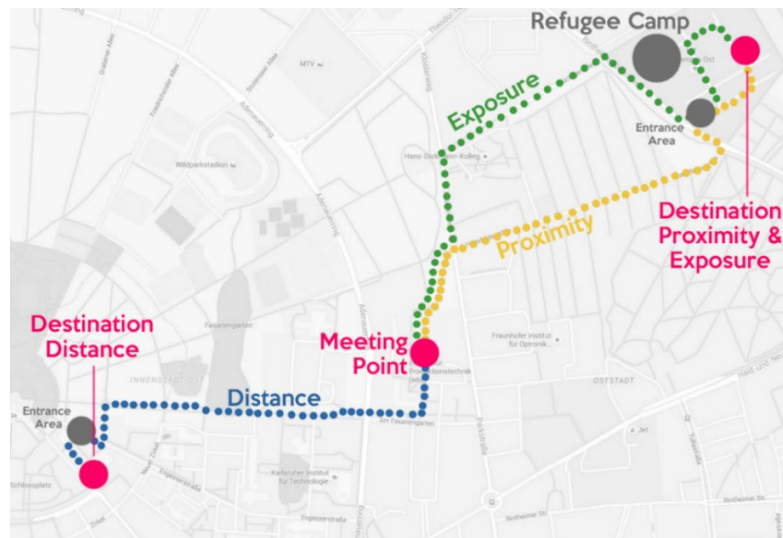


Fig. 1. Map of Study 1 treatments. All participants first registered at the common Meeting Point and then followed different routes to participate at their respective destinations.

Table 3 summarizes the three treatments of the field experiment, and Figure 1 illustrates the routes followed by subjects in each treatment. All subjects registered first at the common meeting point and then walked equal distances to their respective destinations, where they participated in the experiment. In the “Proximity” treatment, donors end up at essentially the same location as the beneficiaries, about 0.2 miles (300 meters) from one another, whereas in the “Distance” treatment they are about 2 miles (3 kilometers) away, although in both cases the donors never see the beneficiaries. Collectively, these features make irrelevant concerns about differences in cost effectiveness, beneficiary need, local public goods, social distance, in-group bias, and identifiable victim effect. In addition to these two treatments, Study 1 includes an “Exposure” treatment that explores the distinct effect of exposure to beneficiaries. This involves the same distance and destination as the Proximity treatment, except the subjects walk by a refugee camp on a slightly different path to their destination. In addition, this set-up is particularly well suited to examine possible tension between generosity in the Proximity treatment and potentially negative reactions to exposure in the eponymous treatment, which, in

prior work, were observed but subject to confounds of distance.

Of course, anytime a treatment variable covaries with location, there is the possibility of unintentionally introducing extraneous factors related to locational differences rather than the targeted treatment variable. This is a risk with many economics experiments, including those that consider the effects of nationality (e.g., Cappelen et al., 2013), culture (e.g., Buchan, Johnson and Croson, 2006) and in-groups-out-groups (e.g., Ruffle and Sosis, 2006). We took great pains, therefore, to ensure that our treatments differed only with respect to the intended variables and believe our design achieves an unusual measure of success in this regard. Specifically, the routes were selected and the destinations were designed so as to keep the experiences of subjects the same across treatments, even with respect to aspects that seemed unlikely to affect allocation decisions. All routes were predominantly in a green environment, involving smaller roads, footpaths and cycle paths on campus or in the immediate vicinity of the campus. All paths passed a few high-rise buildings, the number of intersections was the same, and all routes crossed a busy road exactly once. For all treatments, the destinations were standard seminar rooms in university facilities that were set up with cardboard booths for the experiment. Each room accommodated about 50 subjects and was equipped with standard tables and chairs. For all treatments, payments were prepared and paid anonymously in closed envelopes in adjacent rooms by a third person.

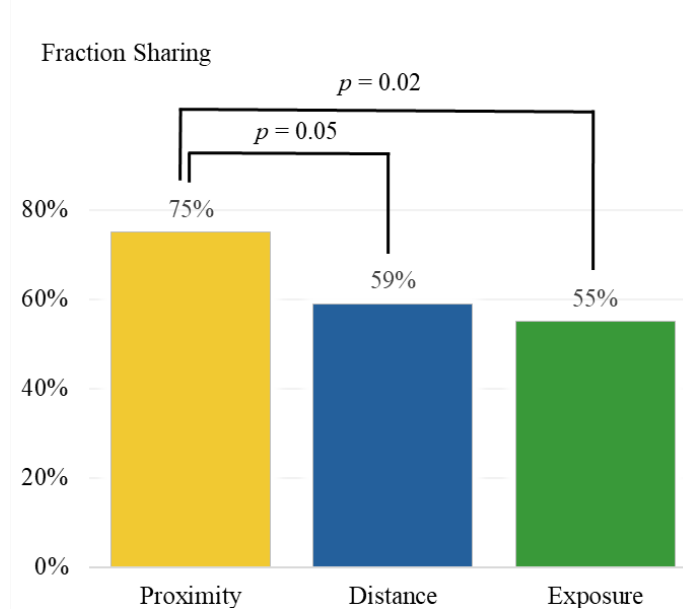


Fig. 2. Fraction sharing with refugees in Study 1. One-sided p-values based on Z-tests of the hypotheses that the Proximity proportion exceeds those of Distance and Exposure, respectively.

The manipulation appears quite effective: the questionnaire asks about exposure to the camp prior to the experiment (roughly the same across treatments at 18%-23%), whether subjects had followed the instructions from the meeting point to the destination (96%-98%), and whether subjects had seen any refugees or the camp, respectively, along the way to the experiment (11% and 9%, respectively, in Proximity, 96% and 92%, respectively, in Exposure, and 4% and 0%, respectively, in Distance). Moreover, 100% of subjects in this study correctly recalled their

allocation decision in the questionnaire, suggesting they were attentive and thoughtful.

Figure 2 summarizes the main treatment effects for Study 1. Consistent with Proposition 1, greater proximity is associated with higher giving: the 75% of subjects in the Proximity treatment that chooses to share their endowment significantly exceeds the 59% of subjects in the Distance treatment that shares, where we apply a one-sided test of differences in proportions given the hypothesis (Z -statistic = 1.677, p -value < 0.05). Consistent with Corollary 1, the share giving in the Proximity treatment significantly exceeds that in the Exposure treatment according to the same test (Z -statistic = 2.120, p -value 0.02). Theory makes no prediction about comparisons between the Distance and Exposure treatments, so we report a two-sided p -value, but, in either case, it appears that exposure vitiates the effect of proximity as the Distance and Exposure shares do not differ significantly (Z -statistic = 0.432, two-sided p -value = 0.67).

Table 4

Logit regression analysis of Study 1 with Donation (coded 1) as the dependent variable.

	(1)	(2)	(3)	(4)	(5)
Distance	-0.703* (0.426)	-1.140** (0.548)	-1.147** (0.552)	-1.519** (0.646)	-1.331** (0.552)
Exposure	-0.878** (0.420)	-1.279** (0.538)	-1.341** (0.559)	-1.591** (0.715)	-1.291** (0.555)
Agreeableness		0.051* (0.028)		0.067** (0.029)	0.057** (0.027)
Empathic concern			0.087 (0.096)		
Volunteer work		-0.209** (0.090)	-0.195** (0.091)	-0.271** (0.112)	-0.221** (0.091)
Personal relations		-0.206** (0.083)	-0.199** (0.084)	-0.214** (0.097)	-0.210** (0.090)
Military support		-0.390*** (0.123)	-0.365*** (0.123)	-0.538*** (0.191)	-0.463*** (0.137)
Crises support		-0.016* (0.009)	-0.016* (0.009)	-0.023** (0.011)	-0.020** (0.009)
Intelligence				0.297*** (0.114)	0.320*** (0.108)
Impulsivity				-0.226** (0.112)	-0.128* (0.078)
Person. + Demog. vars.	No	No	No	Yes	No
Constant	1.075*** (0.311)	2.600* (1.567)	3.824*** (1.481)	3.099 (3.722)	1.281 (1.911)
Observations	155	154	154	152	154
Pseudo R2	0.025	0.175	0.163	0.297	0.247
Log likelihood	-99.438	-83.744	-84.976	-70.331	-76.443

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Coefficients are change in log odds of donation for a one unit change in the independent variables. Robust standard errors in parentheses.

Table 4 presents the results of logit regression analyses in which donation is the binary dependent variable coded 1 for the choice to share with beneficiaries and 0 for choosing to keep the entire payment. The coefficients are the change in the log odds of donation for a one-unit change in the independent variables.³ Specification (1) is consistent with the main treatment effects implied by tests of differences in proportions, including the lower significance of treatment differences according to these two-sided tests of regression analysis compared to the one-sided tests of differences in proportions. Specification (2) adds the variables suggested by theory to affect donations, beginning with Agreeableness as a measure of intrinsic generosity. All variables are the predicted sign, and all but two are significant at the 5% level (p-values are explicitly stated below for the other two). Donation is decreasing in Distance and Exposure, increasing in the measure of pro-social preferences, Agreeableness, although not significant at the 5% level (p-value = 0.07), and decreasing in the measure of external exposure, Personal relations. In addition, Donation is decreasing in the measures of support outside the experiment, i.e., the subject measure Volunteer work and external support for Military involvement, although Crises region support misses significance at the 5% level (p-value = 0.08). Specification (3) is the same as (2) except for replacing Agreeableness with Empathic concern. The results are qualitatively the same as with (2), except that Empathic concern is not significant (p-value = 0.36), so it is dropped from further analysis of this study. Specification (4) is the same as (2) but adds the remaining subject variables as controls, viz., Intelligence, Impulsivity, the four remaining Personality measures and the six Demographic variables. All theory-based variables have the predicted sign, and all are now significant at conventional levels. In addition, two controls are significant at the 5% level: Intelligence indicates more intelligent donors are more generous and Impulsivity that more impulsive donors are less generous. None of the Personality (Extroversion, Conscientiousness, Openness, Neuroticism) or Demographic variables (Age, Gender, Income, Siblings, Religiosity, and Political orientation) is significant (the closest to significance has a p-value of 0.19), so their details are not presented in the table. Finally, specification (5) omits insignificant variables in specification (4) and finds that significant variables in (4) continue to be so in (5) save Impulsivity, which turns insignificant (p-value = 0.10). Finally, Appendix B1 shows means and standard deviations for all variables by treatment, and Appendix B2 reports the results of balance tests that show no observable variables (Age, Gender, Income, Siblings) differ across treatments at conventional levels of significance.

In summary, Study 1 yields significant support for the main claims of the theory: generosity towards refugees is inversely related to spatial distance (Proposition 1) and to exposure (Corollary 1). Additional support for the latter point comes from the inverse relationship of donations to Personal relations with refugees outside the experiment. The positive correlation between donations and Agreeableness is consistent with more pro-social subjects, at least according to this measure, being more generous towards refugees (Proposition 4). Donations in

³ We report these coefficients, since they permit the usual interpretation of directions of effects from signs, viz., positive for direct and negative for inverse relationships, which is not the case with the alternative odds ratios (and which, in our experience, many readers find unintuitive).

the experiment are also inversely related to Volunteer work and Military support, suggesting these external means of support for refugees are substitutes for experimental donations (Proposition 2). Donations are directly related to Intelligence (Impulsivity is marginally inversely related), but no Personality or Demographic variables are significant.

6. Study 2: Laboratory Experiment with Persons in Need

As previously stated, subjects in Study 2 receive the same €15 endowment as subjects in Study 1 but, instead of facing a binary choice, may transfer any amount (in €0.50 increments) to beneficiaries. This helps establish whether lessons from donation appeals offering a binary choice generalize to those involving a minimally constrained menu of choices. The stakes in this experiment are also framed more generally as being “donated to the people in need” rather than to refugees. Previous research has revealed that preferences may differ for particular causes, e.g., Bruttel and Ziemann, and this feature helps address concerns that results from Study 1 are specific to the beneficiaries being refugees. Moreover, subjects may “claim a portion of the €15 as their payment.” Most prior studies of charitable giving frame stakes as subject endowments and find a substantial fraction of subjects willing to take all, as in Study 1. Consistent with evidence on endowment effects (e.g., Korenok, Millner and Razzolini, 2018), this alternative framing might be expected to reduce corner solutions at zero and, perhaps, help better differentiate giving within and across treatments. Study 2 is a more traditional laboratory experiment with all subjects at one location, viz., the Design and Decision Laboratory in Karlsruhe, and with recipients at differing locations, specifically, both studies include the same 0.2-mile and 2-mile distances as Study 1, but Study 2 adds an intermediate 0.6-mile (1 kilometer) treatment. This addition permits examination of whether the evidence is consistent with the monotonic relationship between distance and giving proposed by the theory of moral salience. Questions are also added about views of responsibility towards beneficiaries, which is our proxy for moral salience, and about subject guesses of recipient location. Study 2 was conducted early 2017 with a total of 120 subjects recruited using the software hroot (Bock et al., 2014), and sessions lasted about 60 minutes. Responses in the questionnaire show that 98% of subjects correctly recall their exact allocation amount, indicating they made thoughtful decisions.

The theory of moral salience predicts that generosity decreases at a decreasing rate in our moral measures, but it does not imply that generosity necessarily differs significantly between any two given values of a measure. In the current study, small differences can be expected for two reasons. First, we focus on local distances because of concerns about confounding factors, but then some comparisons involve very small differences in distances, e.g., between 0.2 and 0.6 miles. Second, theory predicts small differences in giving even for large differences in a measure in the higher range of that measure due to diminishing marginal salience. Thus, for results in Study 2, we adopt the method employed in Konow (2024), when three or more values of a moral measure are available, viz., OLS regression analysis. We test three specifications of the relationship of donations to spatial distance: linear in distance, quadratic (distance plus distance squared) and the following linear-log regression

$$(2) \quad \text{donation} = \alpha + \beta \cdot \ln(\delta + 1) + \varepsilon.$$

where δ is distance and $\delta \in \{0.2, 0.6, 2\}$ and we add 1 to δ , which allows the interpretation of α as the estimated donation to a beneficiary at the same exact location as the donor, i.e., when $\delta = 0$ and, therefore, $\ln(\delta + 1) = 0$. Note that theory is agnostic about the exact mathematical relationship, so any of the three specifications might provide a better fit. Proposition 1 states that giving is decreasing in spatial distance, ceteris paribus, and, assuming giving is weakly convex in moral salience, it additionally predicts that giving is convex in distance. Even if the additional convexity assumption is satisfied, though, the linear model might still be a better approximation depending on the degree of convexity and the fit of a specific competing nonlinear function. That said, the linear-log specification has consistently performed better in other analysis: Konow (2024) employs these same three specifications to analyze twelve different studies with three or more values of a moral measure covering seven different effects involving moral salience. All twelve cases yield the same conclusions: giving varies monotonically as predicted with moral measures, even if some pairwise comparisons are not statistically significant. Moreover, the linear-log specification produces the highest F-statistic and at least as high an R-squared compared to the linear and quadratic specifications, a fact that is consistent in all twelve cases, even if the difference in fit is, in some cases, sometimes slight. We come to the exact same conclusions on every one of these points in this study as revealed by the comparison of specifications in Appendix C1, so we report only the linear-log results in the main text. In addition, Appendix C2 contains a graph of the mean donations with 95% confidence intervals for each treatment, and Appendix C4 shows a summary of the means and standard deviations for each treatment of variables used in the analysis.

Table 5
OLS regression analysis of Study 2 with the dependent variable Donation (€).

	(1)	(2)	(3)	(4)
$\ln(\text{Distance}+1)$	-2.628*** (0.999)	-2.723*** (1.005)	-2.197** (0.971)	-1.581 (1.054)
Agreeableness		-0.024 (0.057)		
Empathic concern			0.315** (0.153)	0.070 (0.229)
Volunteer work		-0.240 (0.221)	-0.395* (0.227)	-0.360 (0.244)
Latent + Demog. vars.	No	No	No	Yes
Constant	6.422*** (0.769)	8.576*** (2.953)	3.170 (2.041)	6.422 (6.128)
Observations	120	116	118	112
R-squared	0.049	0.067	0.088	0.228

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

Table 5 presents the results for specifications based on equation (2). Specification (1) shows

that distance has a highly significant negative impact on donations. The next two specifications add variables suggested by theory. As in Study 1, we consider two possible measures of intrinsic generosity: Agreeableness in specification (2) is the wrong sign and insignificant ($p = 0.67$), whereas Empathic concern in specification (3) is the predicted positive sign and significant ($p = 0.04$). This is opposite the case from Study 1, where Agreeableness was significant and Empathic concern insignificant. A possible explanation for differences across studies is that the different types of beneficiaries in the two studies appeal to different pro-social motives that these measures capture. For example, giving to refugees might be based on duties and rules, which are reflected more in the Agreeableness items, whereas giving to people described as being in need might speak more to feelings and emotions, which are prominent in the Empathic concern scale. We believe this is an interesting conjecture in the still evolving literature of the relationship between self-reported measures of moral preferences and the considerable behavioral evidence of individual heterogeneity in their strength of such preferences.

Regarding external support for beneficiaries, as stated in Section 4, we include Volunteer work to reflect a possible reduction in the obligation to help others in a given context (*viz.*, the experiment) because of a possible effect of external support for others generally, even if that support is not directed at the experimental beneficiaries. This variable is the expected sign but is only significant, and then marginally, in specification (3) ($p = 0.08$). The weaker significance here might reflect the somewhat smaller sample size of Study 2 versus Study 1, but another conjecture is related to the identity of the recipients: subjects might consider Volunteer work a less perfect substitute for donations in the case of people in need as opposed to refugees. Finally, specification (4) adds the six latent variables and six demographic variables. All variables of interest fall into insignificance, and only one of the controls is significant at conventional levels: Income is positively correlated with donations ($p = 0.04$). Given this decrease in magnitude and significance, we conducted balance tests. Appendix C5 reports the results of OLS regressions of the observable variables on dummies for treatments, which find that none of these is significantly related to treatments (the most significant has a p -value of 0.36). Given the results of these balance tests and in consideration of the drain of 12 additional variables on degrees of freedom, we conclude that specification (3), which reports a significant effect of distance controlling for variables suggested by theory, is justified.

Additional evidence on the theoretical predictions comes from an analysis of the proposed mechanism of moral salience, which involves analysis of three relationships in the proposed causal chain. The first is the relationship between spatial distance and giving, and the results of both Studies 1 and 2, which find a significant inverse relationship between these variables, are consistent with this first prediction. Table 6 reports the results of regressions that address the two other relationships in this hypothesized causal chain. The second is the inverse relationship posited between distance and the proposed mediator, moral salience. As discussed in Section 4, Study 2 includes additional questions about responsibility that we consider as a self-reported approximation of moral salience. Specifically, donors responded to multiple questions about views of responsibility for others at different distances. We use each donor's response to this

question for the distance corresponding to his or her treatment and call this measure Responsibility. Regression (1) in Table 6 shows Responsibility is significantly inversely related to distance. As illustrated in a graph in Appendix C3, the average Responsibility by treatment is not only monotonically decreasing for each of the three distances in Study 2 but also for five additional distances in Study 3 that are discussed in the following section. Thus, the results across eight distances uniformly support the second proposed relationship.

Table 6
OLS regression analysis of responsibility.

	(1)	(2)	(3)	(4)
Dependent variable	Responsibility	Donation	Donation	Donation
ln(Distance+1)	-0.961** (0.475)			
Responsibility		0.294 (0.217)	0.219 (0.225)	
Mean responsibility				2.240** (0.935)
Empathic concern			0.348** (0.159)	0.315** (0.141)
Volunteer work			-0.379 (0.234)	-0.340 (0.221)
Constant	4.778*** (0.317)	3.761*** (0.969)	0.570 (2.068)	-7.628* (4.308)
Observations	116	116	114	114
R-squared	0.037	0.015	0.062	0.162

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

Finally, the third relationship to consider is between Donation and moral salience. Regression (2) uses the individual level proxy for moral salience, Responsibility, and the sign of its coefficient is as predicted but not significant at conventional levels ($p = 0.18$), and adding the controls in the preferred specification (3) for Donation regressions from Table 6 does not change this fact. Nevertheless, of the three variables hypothesized to be involved in this chain of causality, Responsibility differs in at least three ways. First, Donation and Distance are objective variables that are measured as they are defined, whereas Responsibility is a proxy for, and therefore imprecise measure of, a latent variable, moral salience. Second, Responsibility is not only a proxy but itself likely noisy signal even of the proxy it seeks to measure, viz., actual subject views of responsibility: it is self-reported and based on responses on a seven-point scale with only two named response categories at the end-points. Thus, even if subjects feel the same degree of responsibility at a given distance, Responsibility is likely subject to a high degree of classical measurement error. Third, whereas Distance is experimentally varied, Responsibility is not, making it vulnerable to omitted variable bias. This could diminish the estimated effect, for

example, through risk preferences: some experimental studies have found risk aversion to be directly related to generosity (e.g., Van Koten et al., 2013) and inversely related to responsibility (e.g., Chakravarty et al., 2011), which would reduce the effect size captured by Responsibility.

These three concerns suggest that Responsibility might underestimate the size and significance of the targeted variable, moral salience. One approach to testing this claim is to take a step to reduce one source of noise or bias and observe whether the results change in size and/or significance. A concern, which is at least partially identifiable, is the second one, viz., measurement error in the self-reported instrument used as a measure of the latent variable. To this end, we replace individual reports of Responsibility with the Mean responsibility reported by subjects at each donation level. The motivation for this strategy is simple: if this measurement error is random, then the mean provides a less noisy measure of the true value. Note that this does not address the two other types of challenges with using Responsibility as a measure of moral salience, nor does it produce a noiseless measure, indeed, Appendix C6 illustrates the values of Mean responsibility for each donation level and that they obviously retain considerable noise. Specification (4) in Table 6 reports the results of the same regression as specification (3) but with Mean responsibility replacing Responsibility. The controls are relatively unaffected by the replacement and Mean responsibility is positive and significant. This result is consistent with the third relationship, viz., between Donation and moral salience, that is posited in the causal chain. Note that our claim is not that this analysis proves conclusively that Donation is significantly related to moral salience. Instead, we merely take these results as consistent with the conjecture that error in the measurement of moral salience is a contributing factor to the lack of significance in the estimation using Responsibility, and adjusting for one source of such error casts the test of this third relationship in a more favorable light.

Study 2 shows that the main finding of Study 1, viz., that charitable giving varies inversely with local spatial distance, is robust to numerous procedural differences, including in the decision space (binary or more continuous), the location of the party that is held constant across treatments (beneficiary or donor), and the identity of beneficiaries (refugees or people in need). Both studies provide support for theoretically predicted effects, including intrinsic generosity and external support (marginally significant in Study 2). The addition of a third intermediate distance in Study 2 is consistent with the prediction that giving is monotonically decreasing in spatial distance. Additional evidence consistent with moral salience as a mediator in the giving-distance relationship comes from an analysis of a proxy for moral salience, viz., responsibility. Of the three relationships in the proposed causal chain, the Donation-Distance and Responsibility-Distance results have the predicted signs and are significant. The third, i.e., Donation-Responsibility, has the predicted sign but is not significant, although it is significant using a less noisy measure of responsibility, consistent with the conjecture that measurement error in Responsibility is a contributing factor to its insignificance.

7. Study 3: Laboratory Experiment on Distant Giving

Studies 1 and 2 find significant inverse relationships between spatial distance and two types of charitable giving at the local level, both in terms of main effects and controlling for external

support and subject variables. As previously discussed, however, there are numerous other factors specific to far distances that one might expect to vary with both distance and generosity and, therefore, to confound inferences about the *distinctive* effect of distance on giving in such cases. Study 3 examines this question by carefully replicating Study 2 but with larger distances and with the addition of evidence that can be brought to bear on one potential confounding factor. Specifically, as with Study 2, Study 3 is a laboratory experiment conducted in Karlsruhe, Germany in 2017 with subjects recruited at KIT, the stakes are €15, the beneficiaries are characterized as people in need, there are 40 subjects per treatment (for a total of 200 subjects in the five treatments of Study 3), sessions lasted about 60 minutes, and, with two notable exceptions, the protocol and questionnaire of the two studies are identical.

One difference is that the beneficiaries in Study 2 are located in Karlsruhe at distances of about 0.2, 0.6 and 2 miles, whereas those in Study 3 are located outside Karlsruhe at distances of about 6, 20, 60, 600 and 6000 miles (i.e., 10, 30, 100, 1000 and 10,000 km). The other main difference concerns a statement designed to address subject assumptions about the economic circumstances of the beneficiaries: although there is no reason for differences in these assumptions within Karlsruhe in Study 2, subjects in Study 3 might well expect larger differences in the economic conditions of beneficiaries at distances of up to 6000 miles. The instructions for Study 3 add wording, therefore, aimed at dispelling such beliefs, stating the needy are located “in a city with a standard of living similar to that of Karlsruhe” with a footnote elaborating “according to unemployment rate and (per capita) GDP of the region.” Amounts donated by subjects in Study 3 were, in fact, transmitted to charities in locations approximating the conditions in Karlsruhe in these dimensions (see Appendix F for the list of charities in Studies 2 and 3). In the post-experimental questionnaire, 94.5% of subjects correctly remembered their donations exactly, suggesting a large majority was attentive to their allocation decisions.

Standard of living is one aspect of economic conditions, but another type was discussed in sections 2 and 3 of this paper. Specifically, results of prior studies indicate that, when beneficiary need is salient, subject concern for need forms the basis for the entitlement, and our theory incorporates this consideration into the prediction that giving is increasing in perceived need. Below we consider evidence from Study 3 on distance, different specifications of economic conditions and the practical challenges to accounting for confounding factors over far distances.

Table 7 presents the results of regression analysis of Study 3 with Donation as the dependent variable. Unlike Study 2, specification (1) reports a positive coefficient on Distance, although it is not significant ($p = 0.29$; see Appendix D1 for a graph of mean donations with 95% confidence intervals by treatment). One possibility is that the inverse relationship of giving to distance found for local distances breaks down at far distances, indeed that it is reversed for some reason as giving is higher at all far distances than at 2 miles (see summaries of variables in Appendices C4 and D2). Another possibility is that confounding factors operate at far distances, specifically, ones that cause giving to vary directly with distance and that dominate the distinctive inverse effect of distance on giving. The one potential confound suggested by theory

(Proposition 3) and on which Study 3 can produce evidence is beneficiary need. The aforementioned statement to subjects about similar standards of living at distant locations is an attempt to address different assumptions about economic conditions. Nevertheless, there are reasons for caution in equating standard of living with need. Fortunately, the experimental questionnaire provides a means to examine the relevance of these two concepts. We elaborate on these points below.

Table 7

OLS regression analysis of the incentivized experiment of Study 3 with the dependent variable Donation (€).

	(1)	(2)	(3)
ln(Distance+1)	0.142 (0.133)	-0.126 (0.177)	-0.105 (0.176)
Poverty rate		0.046** (0.022)	0.034** (0.016)
GDP per capita (\$1000)		0.019 (0.020)	
Empathic concern		0.177 (0.142)	
Volunteer work		0.119 (0.160)	
Constant	4.873*** (0.717)	1.057 (2.369)	5.116*** (0.731)
Observations	200	195	196
R-squared	0.005	0.047	0.030

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

Among practical reasons for skepticism about equating standard of living with need, subjects might not notice, fully process or believe the statements about standards of living, in particular, the more detailed description in the footnote. Perhaps most importantly, though, even if subjects notice, understand and believe the statements, claims about equal standards of living do not imply equal beneficiary need at the distant location. For example, even if the beneficiary's location has a similar per capita GDP to that of the donors, that does not necessarily imply that the beneficiaries are equally needy, either in terms of the numbers of persons in need or in the degree of need among those persons. This is especially pertinent given the relatively low income inequality in Germany. For example, in the year the experiment was conducted, the poverty rate in the United States was almost 33% higher than in Germany (19.2% vs. 14.5%), even though the US actually had a per capita GDP almost 20% higher than that of Germany (\$60,322 vs. \$50,457). German subjects might reasonably (and correctly) assume that potential beneficiaries in the US are needier, both in numbers and degree.

Our strategy for addressing this question is to leverage an item in the questionnaire that

elicits donors' beliefs about the city or region where the beneficiaries are located. From these responses, we then calculate proxies for beliefs about the two types of economic conditions.⁴ The one for need is the Poverty rate based on the standard of \$30 per day corresponding to the locations of the guesses they provided, which could only be found at the country level and are, in most cases, based on the World Bank reports for 2017 (or, if not available, the nearest year). In any case, all subject responses to questions within 60 miles or less named a location in Germany, so Figure 3 summarizes these collectively for Germany and then separately for the two remaining distances, 600 miles and 6000 miles, which almost all subjects guessed were outside Germany. In fact, the beneficiaries within 60 miles were all in Germany and beyond 600 miles outside Germany. The measure for standard of living is the per capita GDP in 2017 of the city or region they guess (or country or nearest year, if more precise numbers could not be found). Figure 4 summarizes these (average) values for Karlsruhe, Germany as a whole, locations at 600 miles, and locations at 6000 miles. These figures are consistent with beliefs that are at odds with equal economic conditions among local and distant potential beneficiaries, assuming subjects have some awareness, even if imperfect, of economic conditions at the locations. Specifically, the results suggest subject beliefs that vary monotonically with distance: more distant beneficiaries are expected to experience higher poverty rates and lower per capita GDP (tests of statistical differences are not meaningful, since the distributions of local imputed values for the closest locations are degenerate).

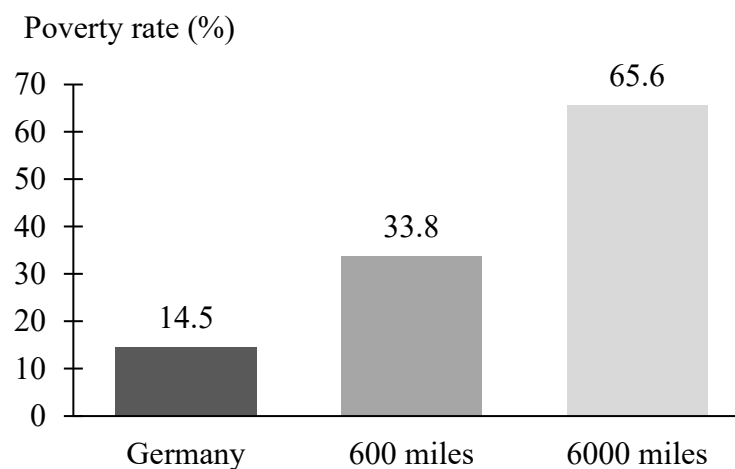


Fig. 3. Average poverty rates around 2017 at locations indicated by subjects based on World Bank poverty rate of \$30 per day.

We consider now whether either (or both) of these measures of the economic conditions of beneficiaries is related to donations. Specification (2) in Table 7 adds these two measures plus

⁴ The questionnaire contains no questions directly addressing subject beliefs about beneficiary need or standard of living. Nevertheless, it is possible that our indirect approach, through its subtlety, actually produces a more honest estimation of such beliefs. For example, it might have seemed awkward or raised suspicions among subjects about our honesty, had we asked about per capita GDP at the beneficiary's location after having previously stated that it is similar.

two other variables suggested by theory to the regression of Donation on Distance. The coefficient on Distance now has the expected negative sign, although it is still not significant ($p = 0.48$). Taking the Poverty rate as a measure of expected beneficiary need, its coefficient is the predicted positive sign and significant at conventional levels ($p = 0.04$). Taking GDP per capita as a measure of the standard of living of beneficiaries, however, it has the wrong sign and is insignificant ($p = 0.35$). These results are consistent with beneficiary need being a motive for subject giving, as predicted by Proposition 3. The lack of significance of per capita GDP, on the other hand, gives credence to the previously discussed concerns about taking general economic conditions at a location as a measure of the economic conditions of beneficiaries. Specification (3) drops insignificant control variables and leads to the same qualitative conclusions about Distance, which now has the predicted negative coefficient but is still insignificant ($p = 0.55$), while the coefficient on Poverty remains positive, as predicted, and significant ($p = 0.04$).

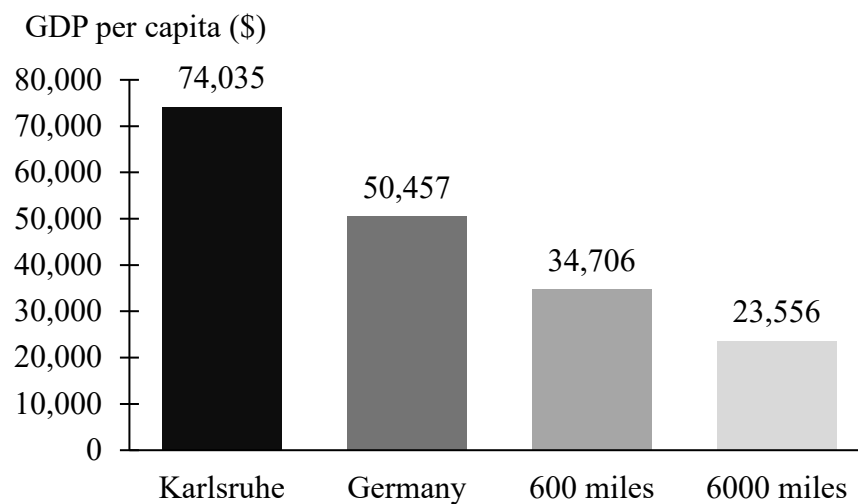


Fig. 4. Average GDP per capita in around 2017 in US dollars at locations indicated by subjects.

Thus, Study 3 finds a direct relationship between beneficiary need and charitable giving that is statistically significant, but the relationship between Donation and Distance is not significant in any specification. Nevertheless, adding our control for need turns the coefficient on Distance from positive to negative, which is consistent with theory and raises the question of whether this addition is responsible for the sign change. In fact, a test of differences in the Distance coefficients between specifications (1) and (3) corroborates that the sign change is due to adding the control for need ($X^2 = 3.8$, $p = 0.05$). Together these findings are consistent with dual claims about the roles of confounding factors at far distances that motivate our primary focus on local distances. Specifically, the changed coefficient signs on Distance are consistent with the predicted role of need as a confound, while the persistent insignificance of Distance is consistent with the presence of additional confounding factors that are still not controlled here. In the following section we report evidence from an exploratory study on additional factors suspected of mediating the relationship between giving and spatial distance and confounding, therefore,

inferences about the distinctive effect of distance over larger distances.

8. Study 4: Survey Experiment on Distant Giving

This section reports the results of an online survey experiment that addresses not only need but also other factors discussed in section 2 that might confound inferences over far distances. Given the number and complexity of these factors, this is intended as an exploratory study that seeks only to provide initial findings aimed at illustrating the importance of this question. We leave further analysis of these issues to future work, given the large number of potential confounds that go beyond the scope of a single paper.

Study 4 is an online survey experiment prepared in Qualtrics and conducted through the online platform Prolific with a sample of 167 German speaking subjects in Germany in late 2024. Subjects were paid a fixed fee of \$4 for completing the survey that lasted, on average, less than 8 minutes, i.e., average compensation was about \$30 per hour. It draws on features of the incentivized experiments in Studies 2 and 3, but respondents do not make decisions in the role of subjects in those experiments. Instead, they evaluate certain differences in the conditions between a local case of Study 2 and a distant version of Study 3. All respondents first read the instructions and decision forms for two studies. One is a version of Study 2 with beneficiaries within Karlsruhe, for concreteness, at a distance of 2 miles. Since the online sample could not necessarily be expected to be aware of the affluence of Karlsruhe as the original local participants presumably were, it contained a truthful statement that “the per capita GDP in Karlsruhe is about 50% above that for Germany as a whole.” The survey respondents also read the instructions and decision form for one of the five treatments of the incentivized Study 3 corresponding to “cities with a similar standard of living” at one of the five distances outside Karlsruhe, viz., 6, 20, 60, 600 and 6000 miles, i.e., the outside location was manipulated between subjects.⁵ After passing comprehension checks, all subjects then read the same eight questions asking where they believe a certain situation or condition is more likely to be the case, e.g., whether the beneficiaries are likely needier within Karlsruhe or outside Karlsruhe at the distance that applied to their treatment. Thus, the eight questions are within subjects whereas the outside distances are varied between subjects. Table 8 presents the full text of the questions (translated into English), and Appendix F contains the complete protocol. In order to keep the answer format objective and cognitively undemanding and the interpretation of results straightforward, respondents face a simple binary choice of the location either “within” or “outside” Karlsruhe.

Two of the questions address beliefs about the beneficiary need and aim to disentangle the

⁵ The footnote about similar unemployment rate and GDP per capita is not included in the survey for several reasons but chiefly because it was challenging to replicate the conditions of the paper and pencil form in an online survey. In the incentivized experiment, the footnote was in small font separate from other instructions at the bottom of the form, which we suspect many subjects overlooked. Online it would be more conspicuous, appearing either with the main instructions or, if at the bottom, near the button subjects click to proceed to the decision. In addition, subjects would view these instructions at least three times, possibly more, since Prolific requires the instructions to appear with the comprehension checks, of which there are two and which are also repeated, if a subject fails on the first try.

two aspects of need mentioned in Study 3. Question 1 asks about the fraction of the population that is needy, and Question 4 is about the degree of need among the beneficiaries. The other questions relate to some of the other potentially confounding factors discussed in section 2 of this paper. Question 2 relates to beliefs about local public goods and where donors themselves are more likely to benefit from their donations. Question 3 relates to beliefs about social distance. Question 5 addresses impact in terms of efficiency of the expected material benefits received by the needy. Question 6 addresses beliefs about exposure to beneficiaries and Question 7 beliefs about conditions likely to trigger in-group favoritism. Question 8 relates to the impact of donations in terms of beliefs about where the charity is more likely to be corrupt and wasteful.

Table 8

Content of questions in the survey experiment Study 4.

No.	Question
1	Where do you think a larger fraction of the population is needy?
2	Where is it more likely that the donations benefit the subjects themselves, e.g., through better public safety?
3	Where is it more likely the subjects know some of the needy persons personally?
4	At what location do you think the poor people are more likely to be needier?
5	Where do you think it more likely that a given donation will bring a greater material benefit to the needy persons?
6	Where is it more likely that the subjects have seen or will see the people who benefit from their donations?
7	Where is it more likely that the beneficiaries include people with whom the donor has something in common, e.g., ethnic identity, educational level, occupation, or other personal traits?
8	In your opinion, where is the likelihood greater that the charity that receives the donations is corrupt and wasteful?

The results of the survey show systematic differences in respondent beliefs about beneficiaries outside Karlsruhe compared to those within. The bars in Figure 5 illustrate the percentage of responses to each question stating that the respective condition applies more for beneficiaries outside the city than within, whereby whiskers indicate 95% confidence intervals. We examine whether a significant majority believes a condition applies more at one location or the other with a two-sided test of differences in proportions, i.e., whether the majority differs significantly from 50%, which is indicated with a horizontal dashed line in Figure 5. In the case of question 1, for instance, 74% of respondents say the fraction of needy is higher at the more distant location than within Karlsruhe, and this percentage differs significantly from one-half (Z-stat 6.326, p-value < 0.01). In question 2, 34% of respondents believe donations benefit donors more, when the beneficiaries are outside the city, or, put differently, a significant majority of 66% believe public good benefits to donors are greater, when the beneficiaries are within the city (Z-stat -4.116, p-value < 0.01). For question 3, 20% of respondents believe donors are more likely to know personally beneficiaries outside the city, which differs significantly from one-half

(Z-stat -7.870 , p-value < 0.01). For question 4, 69% of respondents believe beneficiaries outside the city are more likely to be needier (Z-stat 4.938 , p-value < 0.01). With question 5, 70% of respondents believe beneficiaries outside the city are more likely to benefit materially from donations (Z-stat 5.092 , p-value < 0.01). Given that the donors are located in an affluent country, Germany, a reasonable interpretation of this finding is that donations to distant beneficiaries are more cost-effective, because the latter are located in countries with lower costs of delivering benefits. For question 6, 17% of respondents believe donors are more likely to have seen beneficiaries located outside the city, which is significantly less than one-half (Z-stat -8.641 , p-value < 0.01). In question 7, 25% of respondents believe donors are more likely to have a shared identity with beneficiaries outside the city, which differs significantly from one-half (Z-stat -6.481 , p-value < 0.01). Finally, 61% of respondents to question 8 believe the distant charity is more likely to be corrupt and wasteful, which is a significant majority (Z-stat 2.777 , p-value < 0.01). Appendix E1 summarizes all variables collected, and Appendix E2 shows no significant differences in the four observable variables across treatments. In sum, these results provide evidence of numerous mediating forces that appear to differ over far distances relative to local ones and that have the potential, therefore, to confound inferences about motives for giving over larger distances.

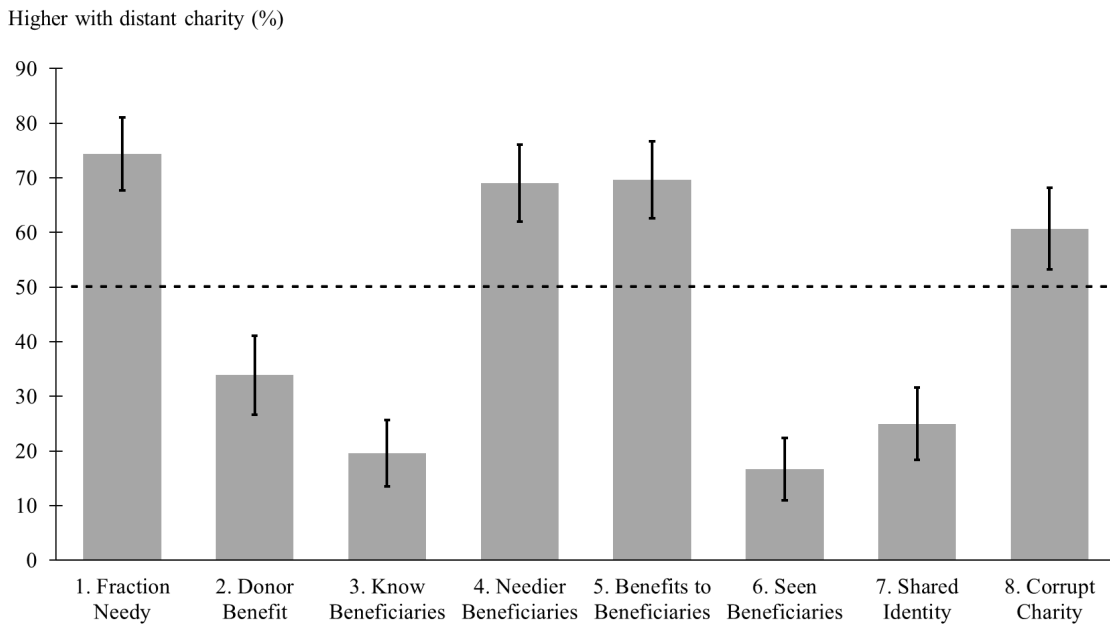


Fig. 5. Results of survey experiment on the percentage of subjects who believe a condition is more likely outside rather than within Karlsruhe.

9. Conclusions

The existing evidence and arguments about the relationship between charitable giving and spatial distance are contradictory. Controlled studies report variously that the relationship is direct, inverse, flat, and different combinations of the three. This paper presents new theoretical and empirical findings that target the distinctive giving-distance relationship and suggest an

explanation for, as well as a means to reconcile, the conflicting findings in the literature. To our knowledge, ours is the first theory to propose a causal force for the distinctive relationship between spatial distance and morally motivated generosity as well as novel economics experiments to target that relationship. The possibility of additional factors that covary with both giving and distance and that risk confounding inferences about the giving-distance relationship informs our theoretical and empirical analysis. Specifically, our empirical strategy leverages the claim that the confounding factors do not plausibly operate over small local distances but rather only over larger distances.

Overall, the results of our four studies are consistent with an approach that differentiates local and far distances based on the presence of confounding factors in the latter. Specifically, the two local studies employ different design features, including a field and a laboratory experiment, but both find significant inverse relationships between charitable giving and spatial distance. Among other findings, giving is inversely related to exposure and external support for beneficiaries, and, using a proxy, there is qualified support for moral salience as the causal force for the inverse giving-distance effect at the local level. A laboratory experiment at far distances does not find a significant giving-distance effect, but further analysis points to beneficiary need as a confounding factor that contributes to that fact. A survey experiment of far distances indicates the relevance of numerous additional confounding factors in such comparisons. Given the large potential number of confounds over far distances, their exact effects on giving are likely complex and context-dependent. This interpretation seems consistent with the conflicting total effects found in previous studies of the giving-distance relationship.

These findings have several potential implications for policies of charitable organizations. They suggest that targeting donors, who are very proximate to beneficiaries, can yield greater donations, *ceteris paribus*. Small distances matter, which is potentially relevant even to charities operating only at the local level. For national and international charities, the picture is more complex because of confounding factors that can covary with distance. Nevertheless, our analysis offers additional lessons that might inform policies of charitable organizations: giving is directly related to the poverty rate (perceived need), inversely related to exposure to displaced persons, and, in some cases, inversely related to support for beneficiaries from other sources.

The varied designs and extensive questionnaire of the incentivized experiments help shed light on possible confounds. The survey experiment suggests multiple factors that likely covary with giving and distance and complicate the task of identifying the distinctive effect over large distances. Future research could attempt to control for additional factors, to test the robustness of the distinctive giving-distance relationship over larger distances, to identify the net effect on giving of distance taking account of all factors, and to identify how the net effect depends on context. The results of this and prior studies suggest a rich and challenging research agenda.

REFERENCES

Adena, M., Hakimov, R., Huck, S., 2024. Charitable giving by the poor: A field experiment in Kyrgyzstan. *Management Science* 70(1), 633-646.

- Adena, M., Harke, J., 2022. COVID-19 and pro-sociality: How do donors respond to local pandemic severity, increased salience, and media coverage? *Experimental Economics* 25, 824-844.
- America's Best Local Charities, 2024. Available at <https://www.bestlocalcharities.org/home/>. Last accessed November 2024.
- Barbier, E.B., Czajkowski, M., Hanley, N., 2017. Is the income elasticity of the willingness to pay for pollution control constant? *Environmental and Resource Economics* 68(3), 663-682.
- Bénabou, R., Tirole, J., 2006. Belief in a just world and redistributive politics. *Quarterly Journal of Economics* 121(2), 1652-1678.
- Bock, O., Baetge, I., Nicklisch, A., 2014. hroot: Hamburg registration and organization online tool. *European Economic Review* 71, 117-120.
- Bolton, G.E., Katok, E., 1998. An experimental test of the crowding out hypothesis: The nature of beneficent behavior. *Journal of Economic Behavior & Organization* 37(3), 315-331.
- Brañas-Garza, P., Cobo-Reyes, R., Espinosa, M.P., Jimenez, N., Kovářík, J., Ponti, G., 2010. Altruism and social integration. *Games and Economic Behavior* 69, 249-257.
- Brañas-Garza, P., Durán, M.A., Espinosa, M.P., 2012. Favouring friends. *Bulletin of Economic Research* 64(2), 172-178.
- Brown, A.L., Meer, J., Williams, J.F., 2017. Social distance and quality ratings in charity choice. *Journal of Behavioral and Experimental Economics* 66, 9-15.
- Bruttel, L., Ziemann, N., 2023. How do people discount over spatial distance? *German Economic Review* 24(1), 33-67.
- Buchan, N.R., Johnson, E.J., Croson, R.T.A., 2006. Let's get personal: An international examination of the influence of communication, culture and social distance on other regrading preferences. *Journal of Economic Behavior & Organization* 60, 373-398.
- Burnham, T.C., 2003. Engineering altruism: A theoretical and experimental investigation of anonymity and gift giving. *Journal of Economic Behavior and Organization* 50(1), 133-144.
- Cappelen, A., Moene, K.O., Sørensen, E.Ø., Tungodden, B., 2013. Needs versus entitlements – an international fairness experiment. *Journal of the European Economic Association* 1(3), 574-598.
- Cavioli, L., Schubert, S., Nemirow, J., 2020. The many obstacles to effective giving. *Judgment and Decision Making* 15(2), 159-172.
- Chakravarty, S., Harrison, Glenn W., Haruvy, E.E., Rutström, E.E., 2011. Are you risk averse or other people's money. *Southern Economic Journal* 77, 901-913.
- Charness, G., Gneezy, U., 2008. What's in a name? Anonymity and social distance in dictator and ultimatum games. *Journal of Economic Behavior and Organization* 68, 29-35.
- Chen, Y., Li, S.X., 2009. Group identity and social preferences. *American Economic Review* 99(1), 431-457.
- Citi GPS, 2021. Philanthropy and the global economy. Available at <https://www.privatebank.citibank.com/newcpb-media/media/documents/insights/Philanthropy-and-global-economy.pdf>. Last accessed

November 2024.

- Croson, R., Gneezy, U., 2009. Gender differences in preferences. *Journal of Economic Literature* 47(2), 448-474.
- Czajkowski, M., Budzinski, W., Campbell, D., Giergiczny, M., Hanley, N., 2017. Spatial heterogeneity of willingness to pay for forest management. *Environmental and Resource Economics* 68, 705-727.
- Davis, M.H., 1980. A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology* 10, 85.
- Dejean, S., 2020. The role of distance and social networks in the geography of crowdfunding: Evidence from France. *Regional Studies* 54(3), 329-339.
- DellaVigna, S., List, J.A., Malmendier, U., 2012. Testing for altruism and social pressure in charitable giving. *Quarterly Journal of Economics* 127(1), 1-56.
- Eckel, C.C., Grossman, P., Milano, A., 2007. Is more information always better? An experimental study of charitable giving and Hurricane Katrina. *Southern Economic Journal*, 388-411.
- Eckel, C.C., Priday, B.A., Wilson, R.K., 2018. Charity begins at home: A lab-in-the-field experiment on charitable giving. *Games* 9(4), 95.
- Fehr, E., Charness, G., 2025. Social preferences: Fundamental characteristics and economic consequences. *Journal of Economic Literature* 63(2), 440-514.
- Gallier, C., Goeschl, T., Kesternich, M., Lohse, J., Reif, C., Römer, D., 2023. Inter-charity competition under spatial differentiation: Sorting, crowding, and spillovers. *Journal of Economic Behavior & Organization* 216, 457-468.
- Gitmez, A.A., Zarate, R.A., 2022. Proximity, similarity, and friendship formation: Theory and evidence. Working paper.
- Gneezy, U., Keenan, E.A., Gneezy, Y., 2014. Avoiding overhead aversion in charity. *Science* 346(6209), 632-635.
- Goeree, J.K., McConnell, M.A., Mitchell, T., Tromp, T., Yariv, L., 2010. The 1/d law of giving. *American Economic Journal: Microeconomics* 2(1), 183-203.
- Greiner, B., 2015. Subject pool recruitment procedures: Organizing experiments with ORSEE. *Journal of the Economic Science Association* 1(1), 114-125.
- Grimson, D., Knowles, S., Stahlmann-Brown, S., 2020. How close to home does charity begin? *Applied Economics* 52(34), 3700-3708.
- Harbaugh, W.T., 1998. The prestige motive for making charitable transfers. *American Economic Review* 88(2), 277-282.
- Isen, A., Noonberg, A., 1979. The effect of photographs of the handicapped on donation to charity: When a thousand words may be too much. *Journal of Applied Social Psychology* 9(5), 426-431.
- Karlan, D., Wood, D.H., 2017. The effect of effectiveness: Donor response to aid effectiveness in a direct mail fundraising experiment. *Journal of Behavioral and Experimental Economics* 66, 1-8.

- Konow, J., 2000. Fair shares: Accountability and cognitive dissonance in allocation decisions. *American Economic Review* 90(4), 1072-1091.
- Konow, J., 2010. Mixed feelings: Theories of and evidence on giving. *Journal of Public Economics* 94(3-4), 279-297.
- Konow, J., 2024. Moral salience and moral context: Reconciling Jekyll and Hyde paradoxes. Working paper.
- Korenok, O., Millner, E.L., Razzolini, L., 2018. Taking aversion. *Journal of Economic Behavior & Organization* 150, 397-403.
- Kovaleva, A., Beierlein, C., Kemper, C., Rammstedt, B., 2012. Eine Kurzskaala zur Messung von Impulsivität nach dem UPPS-Ansatz. Available at <http://nbn-resolving.de/urn:nbn:de:0168-ssoar-312109>. Last accessed November 2024.
- Kühl, L., Szech, N., 2017. Physical distance and human cooperativeness. Working Paper Series in Economics 110, Karlsruhe Institute of Technology (KIT).
- Leider, S., Möbius, M.M., Rosenblat, T., Do, Q.-A., 2009. Directed altruism and enforced reciprocity in social networks. *Quarterly Journal of Economics* 124(4), 1815-1851.
- Li, S.X., Eckel, C.C., Grossman, P.J., Brown, T.L., 2011. Giving to government: Voluntary taxation in the lab. *Journal of Public Economics* 95, 1190-1201.
- Moon, A., VanEpps, E.M., 2023. Giving suggestions: Using quantity requests to increase donations. *Journal of Consumer Research* 50, 190-210.
- National Philanthropic Trust, 2023. Available at <https://www.nptrust.org/philanthropic-resources/charitable-giving-statistics/>.
- NP Source, 2024. Available at <https://nonprofitssource.com/online-giving-statistics/>. Last accessed November 2024.
- Ockenfels, A., Werner, P., 2014. Beliefs and ingroup favoritism. *Journal of Economic Behavior & Organization* 108, 453-462.
- O'Fallon, M., Butterfield, K., 2005. A review of the empirical ethical decision-making literature: 1996–2003. *Journal of Business Ethics* 59(4), 375-413.
- Paulus, C., 2009. Der Saarbrücker Persönlichkeitsfragebogen SPF (IRI) zur Messung von Empathie. ZPID. Available at <http://hdl.handle.net/20.500.11780/3343>.
- Reiley, D., Samek, A., 2019. Round giving: A field experiment on suggested donation amounts in public-television fundraising. *Economic Inquiry* 57(2), 876-889.
- Ruffle, B., Sosis, R., 2006. Cooperation and the in-group-out-group bias: A field test on Israeli kibbutz members and city residents. *Journal of Economic Behavior and Organization* 60(2), 147-163.
- Satow, L., 2020. Big-Five-Persönlichkeitstest (B5T): Test-und Skalendokumentation. ZPID. Available at <https://www.drsatow.de/tests/persoenlichkeitstest/>.
- Score, 2025. Available at <https://www.score.org/resource/infographic/infographic-small-business-charitable-giving-big-impact-local-communities>. Last accessed July 2025.
- Schipolowski, S., Wilhelm, O., Schroeders, U., Kovaleva, A., Kemper, C., Rammstedt, B., 2013. BEFKI GC-K: A short scale for the measurement of crystallized intelligence.

- Singer, P. 1972. Famine, Affluence, and Morality. *Philosophy and Public Affairs* 1(3), 229-243.
- Singer, P. 2013. Heartwarming Causes are Nice, but Let's Give to Charity with Our Heads. *The Washington Post, Opinions*, December 19, 2013.
- Small, D., Loewenstein, G., 2003. Helping a victim or helping the victim: Altruism and identifiability. *Journal of Risk and Uncertainty* 26(1), 5-16.
- Touré-Tillery, M., Fishbach, A., 2017. Too far to help: The effect of perceived distance on the expected impact and likelihood of charitable action. *Journal of Personality and Social Psychology* 112(6), 860-876.
- UK Giving Report, 2023. Charities Aid Foundation. Available at https://www.cafonline.org/docs/default-source/uk-giving-reports/uk_giving_2023.pdf.
- UNHCR, 2025. Refugee Data Finder. Available at <https://www.unhcr.org/refugee-statistics>.
- Van Koten, S., Ortmann, A., Babicky, V., 2013. Fairness in risky environments. *Games* 4, 208-242.
- Vesterlund, L., 2016. Using experimental methods to understand why and how we give to charity. *The Handbook of Experimental Economics*, Volume 2, Princeton University Press.
- World Bank Group. Available at <https://data.worldbank.org/indicator/SM.POP.REFG?locations=DE>.

APPENDICES

APPENDIX A

CRITERIA FOR EXCLUSION FROM MAIN DISCUSSION AND ANALYSIS

Although the paper presents results or analysis of the large majority of variables collected in the studies, certain variables are excluded based on general criteria. In the interests of transparency, this appendix discusses those criteria and how they apply to every excluded variable. First, we note that the study specific analysis in Table 1 includes some variables included in multiple studies but that are meaningful to analyze in only a single study. Specifically, questions about Personal relations with refugees and External support for refugees were included in all incentivized experiments but are analyzed only in the study involving refugees, Study 1. Feelings of Responsibility were elicited in Studies 2 and 3 but are analyzed only in Study 2, since there was no significant donation-distance relationship in need of explaining in Study 3. Finally, Studies 2 and 3 both elicited guesses about beneficiary location, which can be used to form proxies for need, but these are used only in Study 3 for far distances, since all subjects in Study 2 on local distances gave the same location, viz., Karlsruhe.

Now we turn to the set of common questions in the questionnaire beginning with two variables, Intelligence and Impulsivity, for which there are redundant measures that we do not use in the main analysis. We not only discuss the reasons for excluding them but also report the results of regression analysis in which they are included. That analysis is conducted using data from Study 1, since that is the only study in which at least one of these two variables is significant. The main analysis of Study 1 is reported in Table 2, and the preferred specification is

regression (5). As a measure of Intelligence, that regression uses the 12-item crystallized intelligence test or CIT (Schipolowski et al.), which is selected, since two alternatives are based on fewer items and more narrow conceptions of intelligence. The one is a five-item version of Raven's advanced progressive matrices or RAPM (Cattell, 1971), which is focused on visual-spatial intelligence. The other is the cognitive reflection test or CRT (Frederick, 2005), which is based on only three binary items and is more about disposition to reflect than intelligence. The measure of time preferences in the main analysis is Impulsivity, a three-item scale that allows five degrees of intensity for each item and is taken from Kovaleva et al. (2012). There is one alternative, Patience, that identifies a switch-point from preferences for €100 now versus various amounts from €100 to €200 on year from now. Impulsivity is based on multiple response options and multiple items but is more subjective, whereas Patience is a one-dimensional measure effectively consisting of a single binary decision but has the advantage of involving a choice over an objective variable. Thus, there are pros and cons of each and, as discussed below, the evidence also shows no clear winner or important consequences of choosing one or the other.

Table A1 reports the results of regressions that, one-at-a-time, replace measures used in the main analysis with alternatives considered here. Regression (1) is the preferred specification (5) from Table 2 that is repeated for comparison, regression (2) replaces CIT with RAPM, regression (3) replaces CIT and CRT, and regression (4) replaces Impulsivity with Patience. All of the main variables of interest retain their signs and, for the most part, their significance. Distance, Exposure, Volunteer work, and Military support are robustly significant, whereas, depending on the specification, Agreeableness and Crises support slip slightly out of significance at the 5% level. The alternative measures of Intelligence, RAPM and CRT, are not significant at conventional levels. The valence of Patience is opposite that of Impulsivity, so their signs are consistent: more patient, and less impulsive, individuals are more generous. But both measures are marginally significant or insignificant, depending on the specification. Overall, the conclusion is that the results are robust and that the measures employed in the main analysis are justifiable choices for the targeted variables.

Among the questions common to the questionnaires of all three studies, many are excluded from the main analysis because of the absence of clear and compelling grounds for their inclusion based on theory. This includes questions about happiness with one's allocation decision (once at the start and repeated at the end), support for refugees of specific types (from war, politics, hunger, unemployment, etc.), political interest, and final grades in preparatory school (in Germany, Abitur). Some results specific to the field experiments are excluded for similar reasons, including questions about how subjects traveled to the experiment and about a terror attack in Paris the week prior, viz., whether that influenced their decisions (1.7 on a 1=not at all to 7=very much scale) whether they changed their decision for that reason (5% reported yes). Two sets of questions specific to the laboratory experiments (Studies 2 and 3) are not included on the same basis and also because they seem both unsurprising and impossible to relate to a single hypothesized motive: how far subjects subjectively perceive different distances (not surprisingly, farther distances are perceived as farther), and how close subjects feel to

people at different distances (they feel closer to people who are closer).

Table A1

Logit regression analysis of Study 1 with Donation (coded 1) as the dependent variable.

	(1)	(2)	(3)	(4)
Distance	-1.331** (0.552)	-1.168** (0.544)	-1.147** (0.548)	-1.362** (0.559)
Exposure	-1.291** (0.555)	-1.307** (0.547)	-1.171** (0.543)	-1.330** (0.561)
Agreeableness	0.057** (0.027)	0.052* (0.029)	0.057* (0.030)	0.062** (0.028)
Volunteer work	-0.221** (0.091)	-0.218** (0.093)	-0.216** (0.094)	-0.221** (0.091)
Personal relations	-0.210** (0.090)	-0.195** (0.086)	-0.204** (0.084)	-0.216** (0.087)
Military support	-0.463*** (0.137)	-0.413*** (0.123)	-0.411*** (0.119)	-0.466*** (0.138)
Crises support	-0.020** (0.009)	-0.018* (0.010)	-0.016* (0.009)	-0.021** (0.010)
Intelligence (CIT)	0.320*** (0.108)			0.334*** (0.107)
Impulsivity	-0.128 (0.078)	-0.145* (0.077)	-0.144* (0.074)	
Intelligence (RAPM)		-0.083 (0.166)		
Intelligence (CRT)			0.319 (0.195)	
Patience				0.017* (0.009)
Constant	1.281 (1.911)	4.271** (1.799)	2.908 (1.829)	-2.319 (2.403)
Observations	154	154	154	153
Pseudo R2	0.247	0.192	0.203	0.250
Log likelihood	-76.443	-82.001	-80.914	-75.324

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Coefficients are change in log odds of donation for a one unit change in the independent variables. Robust standard errors in parentheses.

Additional questions common to all questionnaires are excluded for other reasons. Questions about specific types of contact with refugees, including as family members, as guests, or in volunteer activities, have theoretically ambiguous effects, since they might reflect favorable dispositions toward them or prime negative feelings associated with closer exposure, and questions about sympathy for and information about refugees are similarly difficult to connect unambiguously based on theory. Other questions are excluded due to almost no variation in

responses, including nationality (almost all German), student/work status (nearly all students), and completion of preparatory school (almost all Abitur). Another question that asks which political party subjects would vote for, were elections held today, is excluded given challenges to coding this meaningfully and the availability of the more straightforward question about political orientation question that is included in the main analysis. Finally, at the end of the questionnaire subjects are asked whether they would change their initial allocation choice and, if so, how, which is excluded because of potentially being impacted by having completed the very lengthy questionnaire.

APPENDIX B

STUDY 1 ADDITIONAL RESULTS AND ANALYSIS

B1. SUMMARY OF RESULTS

	Proximity		Distance		Exposure	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Donation (1=donate)	0.745	0.440	0.592	0.497	0.549	0.503
Agreeableness	51.291	7.571	50.633	6.717	50.471	7.492
Empathic concern	13.255	2.750	13.510	2.337	14.255	2.143
Volunteer work	4.436	2.201	3.980	2.376	3.824	2.161
Personal relations	2.745	2.171	2.959	2.291	2.882	2.251
Military support	4.418	1.761	4.250	1.851	4.098	1.758
Crises support	41.545	20.466	34.306	21.338	40.902	22.465
Intelligence	8.273	2.207	8.755	2.117	8.275	1.991
Impulsivity	8.636	2.280	8.469	2.631	8.627	2.498
Extraversion	48.509	10.780	48.122	10.126	47.588	8.675
Conscientiousness	46.309	7.330	43.122	7.839	40.980	7.463
Openness	48.691	8.196	50.000	7.086	48.549	7.910
Neuroticism	37.691	10.607	37.163	9.726	38.059	9.290
Age	21.333	2.570	22.000	3.215	21.843	2.866
Male	0.582	0.498	0.653	0.481	0.529	0.504
Siblings (Y=1, N=0)	0.800	0.404	0.918	0.277	0.863	0.348
Income (€/month)	408.818	209.307	389.149	174.569	353.510	252.980
Religious	3.545	2.167	3.245	1.953	3.549	1.942
Political orientation	3.745	1.250	3.367	1.253	3.412	1.117

B2. BALANCE TESTS

OLS regression analysis of observable variables Age, Male (dummy equal to 1), Income (monthly in Euros) and Siblings (dummy equal to 1 if subject has any siblings) on dummies for Distance and Exposure in Study 1 with Proximity the omitted category.

	(1)	(2)	(3)	(4)
Dependent variable	Age	Male	Income	Siblings
Distance treatment	0.667 (0.577)	0.071 (0.096)	-19.699 (38.013)	0.118* (0.067)
Exposure treatment	0.510 (0.532)	-0.052 (0.097)	-55.308 (45.305)	0.063 (0.073)
Constant	21.33*** (0.350)	0.582*** (0.067)	408.818*** (28.243)	0.800*** (0.054)
Observations	154	155	153	155
R-squared	0.010	0.010	0.012	0.019

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

APPENDIX C

STUDY 2 ADDITIONAL RESULTS AND ANALYSIS

C1. ALTERNATIVE SPECIFICATIONS OF REGRESSIONS ON DISTANCE

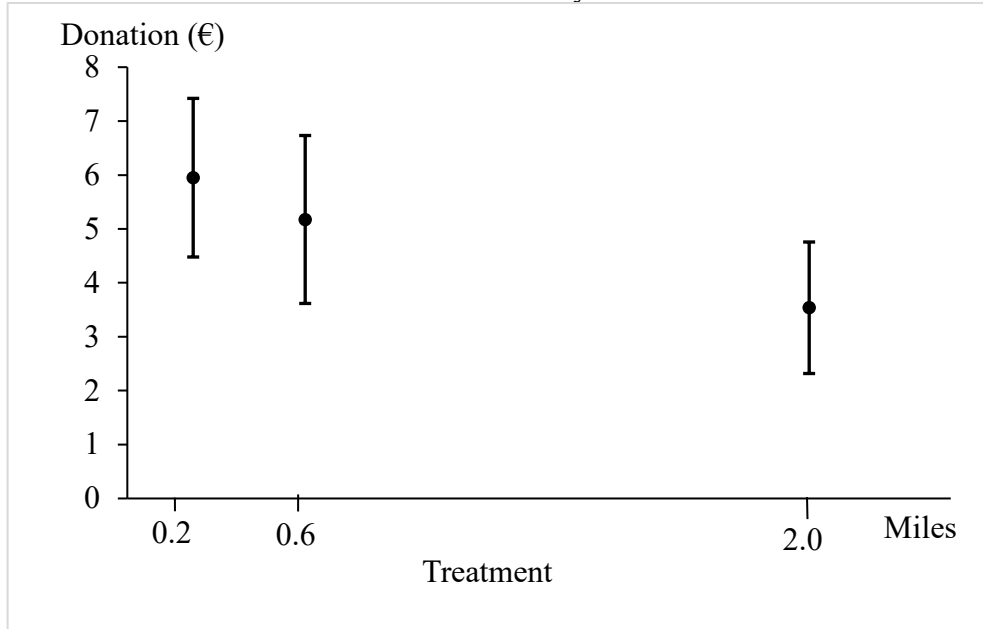
OLS regression analysis of Study 2 with the dependent variable Donation (€).

	(1)	(2)	(3)	(4)
$\ln(\text{Distance}+1)$	-2.628*** (0.999)			
Distance		-1.296*** (0.493)	-2.279 (4.062)	
Distance squared			0.427 (1.745)	
Constant	6.422*** (0.769)	6.097*** (0.671)	6.389*** (1.348)	
Observations	120	120	120	
R-squared	0.049	0.048	0.049	
F-statistic	6.92	6.90	3.44	

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

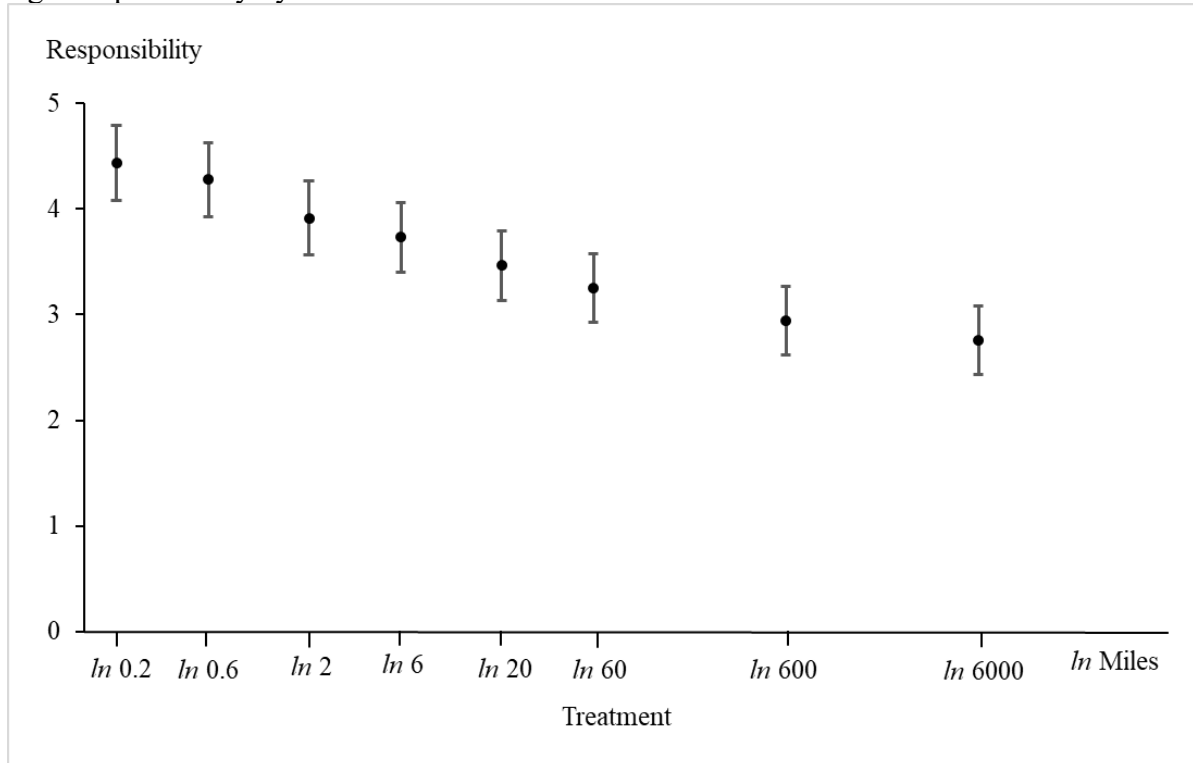
C2. GRAPH OF DONATIONS

Mean donations for three treatments of Study 2 with 95% confidence intervals.



C3. GRAPH OF RESPONSIBILITY BY TREATMENT

Average Responsibility by treatment for Studies 2 and 3 with 95% confidence intervals.



The log scale is used for distance for ease of presentation.

C4. SUMMARY OF RESULTS

	0.2 Miles		0.6 Miles		2 Miles	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Donation (€)	5.950	4.659	5.175	4.932	3.538	3.862
Agreeableness	51.184	8.100	51.053	7.341	51.400	7.844
Empathic concern	14.590	2.291	12.923	2.507	13.600	2.836
Volunteer work	3.775	2.166	3.525	2.112	3.650	2.007
Personal relations	3.775	2.224	3.325	2.303	3.100	2.426
Military support	3.225	1.459	3.625	1.612	3.625	1.750
Crises support	37.000	22.865	30.025	20.427	40.375	24.321
Intelligence	8.763	1.808	7.605	2.510	8.475	1.881
Impulsivity	9.125	2.322	8.308	1.866	8.700	3.148
Extraversion	48.350	8.934	44.711	10.981	48.625	8.640
Conscientiousness	42.950	9.134	47.205	6.732	43.775	10.207
Openness	48.250	6.507	44.949	6.943	50.225	7.741
Neuroticism	40.225	10.762	36.795	11.487	36.300	10.530
Age	22.625	4.866	22.300	2.902	22.675	2.973
Male	0.525	0.506	0.625	0.490	0.600	0.496
Siblings (Y=1, N=0)	0.925	0.267	0.925	0.267	0.925	0.267
Income (€/month)	430.513	450.000	385.375	246.065	358.500	195.298
Religious	3.325	1.886	3.125	1.856	2.950	2.037
Political orientation	3.100	1.355	3.564	1.465	3.450	1.197
Responsibility	4.135	1.798	4.974	1.630	3.525	2.038

C5. BALANCE TESTS

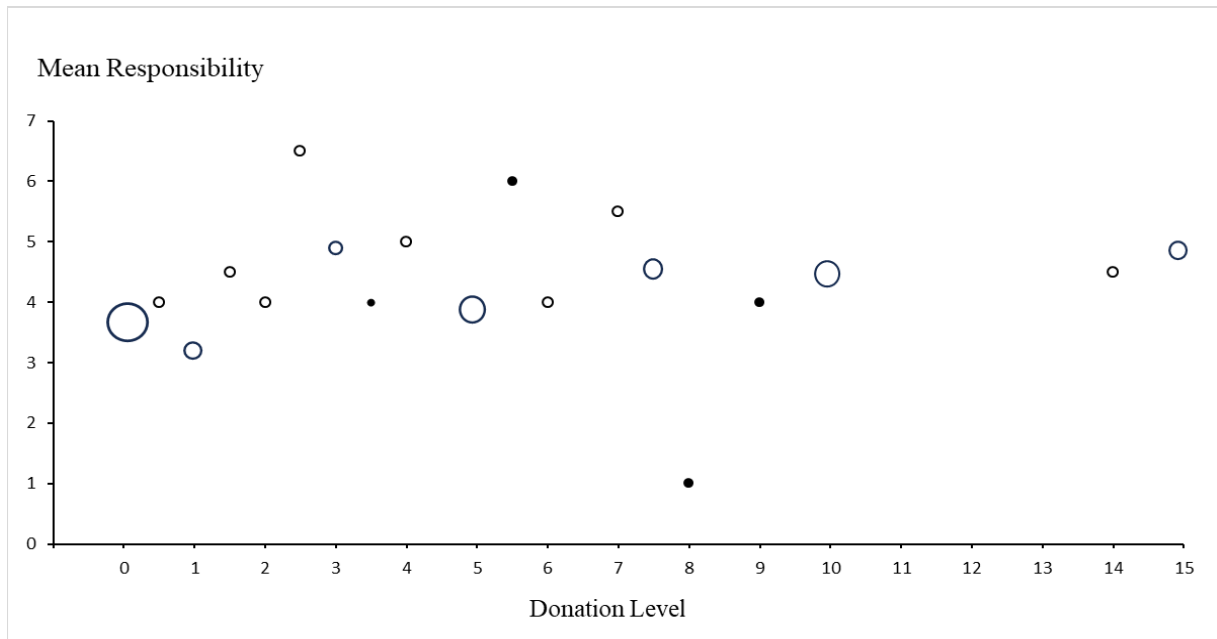
OLS regression analysis of observable variables Age, Male (dummy equal to 1), Income (monthly in Euros) and Siblings (dummy equal to 1 if subject has any siblings) on dummies for 0.6 Mile and 2 Mile treatments in Study 2 with 0.2 Mile the omitted category.

	(1)	(2)	(3)	(4)
Dependent variable	Age	Male	Income	Siblings
Dummy 0.6 mile treatment	-0.325 (0.896)	0.100 (0.111)	-45.138 (81.878)	0.000 (0.060)
Dummy 2 mile treatment	0.050 (0.902)	0.075 (0.112)	-72.013 (78.382)	0.000 (0.060)
Constant	22.63*** (0.769)	0.525*** (0.080)	430.513*** (72.042)	0.925*** (0.042)
Observations	120	120	119	120
R-squared	0.002	0.007	0.009	0.000

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

C6. MEAN RESPONSIBILITY

Mean responsibility by donation level for Study 2.

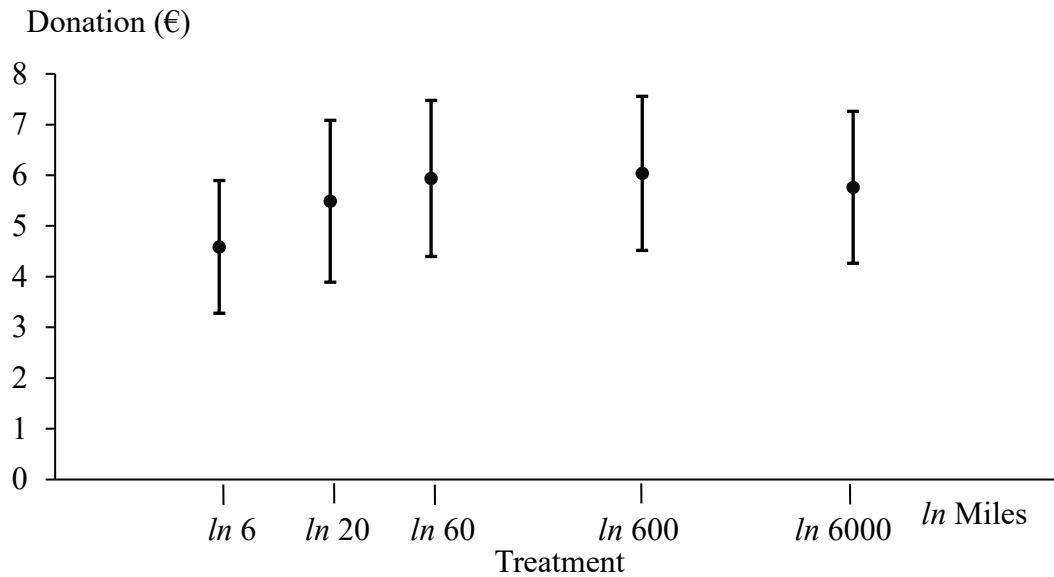


Note: Circle size is in proportion to number of subjects making a given donation amount.

APPENDIX D
STUDY 3 ADDITIONAL RESULTS AND ANALYSIS

D1. GRAPH OF DONATIONS

Mean donations for five treatments of Study 3 with 95% confidence intervals.



Note: Given the large magnitude of differences in distances in this study, the scale of the horizontal axis is the natural log of miles for the sake of presentation.

D2. SUMMARY OF RESULTS

	6 Miles		20 Miles		60 Miles		600 Miles		6000 Miles	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Donation (€)	4.588	4.143	5.488	5.053	5.938	4.873	6.038	4.810	5.763	4.670
Agreeableness	50.200	5.689	50.125	6.642	52.750	6.372	54.803	5.633	52.282	6.057
Empathic concern	13.425	2.024	13.600	2.790	14.000	2.124	14.051	2.492	14.275	2.641
Volunteer work	3.300	2.115	3.300	2.015	4.026	2.084	4.250	2.193	3.821	1.998
Personal relations	3.075	2.411	2.500	2.051	3.231	2.158	2.625	2.168	3.744	2.161
Military support	3.750	1.515	3.600	1.566	3.513	1.620	3.513	1.652	4.026	1.551
Crises support	33.875	23.493	38.025	24.871	37.513	21.257	38.550	21.424	38.282	22.126
Intelligence	8.526	2.140	8.718	2.259	8.450	1.600	9.308	1.608	9.000	2.000
Impulsivity	8.725	2.353	8.050	2.459	8.500	2.298	8.050	2.396	9.300	2.604
Extraversion	45.800	8.077	46.125	10.581	47.950	10.330	47.432	7.841	48.000	8.259
Conscientiousness	44.250	6.872	45.975	9.903	45.350	9.763	45.250	7.768	42.538	8.908
Openness	47.564	6.581	49.375	7.354	50.175	7.331	51.150	7.138	50.921	8.625
Neuroticism	38.975	10.616	40.075	13.112	39.700	11.214	39.775	10.599	41.744	12.028
Age	22.675	2.485	21.923	2.579	22.256	2.583	22.225	2.607	22.231	2.288
Male	0.625	0.490	0.462	0.505	0.487	0.506	0.500	0.506	0.590	0.498
Siblings (Y=1, N=0)	0.950	0.221	0.821	0.389	0.949	0.223	0.850	0.362	0.923	0.270
Income (€/month)	360.750	205.281	430.475	225.757	429.872	267.111	378.462	121.926	391.842	250.921
Religious	3.250	2.273	3.436	1.984	3.513	2.063	3.400	1.932	3.051	1.946
Political orientation	3.564	1.071	3.325	1.207	3.105	1.060	3.538	1.189	3.718	1.191
Responsibility	3.564	1.483	3.718	1.746	4.538	1.484	3.725	1.485	3.897	1.789

D3. BALANCE TESTS

OLS regression analysis of observable variables Age, Male (dummy equal to 1), Income (monthly in Euros) and Siblings (dummy equal to 1 if subject has any siblings) on dummies for 20, 60, 600 and 6000 Miles treatments in Study 3 with 6 Miles the omitted category.

	(1)	(2)	(3)	(4)
Dependent variable	Age	Male	Income	Siblings
Dummy 20 mile treatment	-0.752 (0.570)	-0.163 (0.112)	69.724 (48.937)	-0.129* (0.071)
Dummy 60 mile treatment	-0.419 (0.570)	-0.138 (0.112)	69.122 (53.703)	-0.001 (0.050)
Dummy 600 mile treatment	-0.450 (0.569)	-0.125 (0.111)	17.712 (37.889)	-0.100 (0.067)
Dummy 6000 mile treatment	-0.444 (0.537)	-0.035 (0.111)	31.092 (52.061)	-0.027 (0.056)
Constant	22.675*** (0.393)	0.625*** (0.078)	360.750*** (32.471)	0.950*** (0.035)
Observations	197	197	194	197
R-squared	0.009	0.016	0.016	0.031

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

APPENDIX E

STUDY 4 ADDITIONAL ANALYSIS

E1. SUMMARY OF RESULTS

	6 miles		20 miles		60 miles		600 miles		6000 miles	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Question 1	0.694444	0.467177	0.545455	0.50565	0.65625	0.482559	0.909091	0.291937	0.911765	0.287902
Question 2	0.388889	0.494413	0.212121	0.415149	0.28125	0.456803	0.393939	0.496198	0.411765	0.499554
Question 3	0.166667	0.377965	0.151515	0.36411	0.3125	0.470929	0.181818	0.391675	0.176471	0.386953
Question 4	0.611111	0.494413	0.545455	0.50565	0.59375	0.498991	0.848485	0.36411	0.852941	0.359491
Question 5	0.611111	0.494413	0.666667	0.478714	0.625	0.491869	0.727273	0.452267	0.852941	0.359491
Question 6	0.194444	0.401387	0.060606	0.242306	0.21875	0.420013	0.151515	0.36411	0.205882	0.410426
Question 7	0.305556	0.467177	0.242424	0.435194	0.34375	0.482559	0.181818	0.391675	0.176471	0.386953
Question 8	0.555556	0.503953	0.454546	0.50565	0.4375	0.504016	0.757576	0.435194	0.823529	0.386953
Age	30.88889	9.111305	33.48485	11.10496	34.21875	13.64465	33.33333	8.161138	32.44118	8.839276
Male	0.694444	0.467177	0.636364	0.488504	0.6875	0.470929	0.727273	0.452267	0.676471	0.474858
Employed	0.638889	0.487136	0.515152	0.507519	0.5625	0.504016	0.636364	0.488504	0.558824	0.503995
Income	2583.444	2052.99	3591.455	7607.064	2453.688	2058.156	2774.636	2426.597	2993.824	2990.623

E2. BALANCE TESTS

OLS regression analysis of observable variables Age, Male (dummy equal to 1), Income (monthly in Euros) and Employed (dummy equal to 1) on dummies for 20, 60, 600 and 6000 Miles treatments in Study 4 with 6 Miles the omitted category.

	(1)	(2)	(3)	(4)
Dependent variable	Age	Male	Income	Employed
Dummy 20 mile treatment	2.596 (2.459)	-0.058 (0.115)	1008.010 (1367.442)	-0.124 (0.120)
Dummy 60 mile treatment	3.330 (2.850)	-0.007 (0.114)	-129.757 (499.488)	-0.076 (0.121)
Dummy 600 mile treatment	2.444 (2.080)	0.033 (0.111)	191.192 (543.739)	-0.003 (0.118)
Dummy 6000 mile treatment	1.552 (2.147)	-0.018 (0.113)	410.379 (616.819)	-0.080 (0.119)
Constant	30.889*** (1.520)	0.694*** (0.078)	2583.444*** (342.515)	0.639*** (0.081)
Observations	168	168	168	168
R-squared	0.013	0.004	0.01	0.010

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors in parentheses.

APPENDIX F EXPERIMENTAL PROTOCOLS

Study 1

General Instructions for Proximity and Exposure Treatments

Welcome to this Study!

Thank you for participating in an economic study at the Karlsruhe Institute of Technology (KIT).

As in all economic studies at KIT, all circumstances described in the following are true. Your decisions will be implemented exactly as described.

All your data and decisions will be handled confidentially and anonymously.

We would ask you to keep quiet during the study. If you have questions, please indicate by raising your hand briefly. Your questions will then be answered at your cubicle.

Here, please fill in your participant ID.

Participant-ID: _____

You will now take an important decision, which determines your **decision based payment**. You will get to choose between two options.

In case you do not take a decision, no option will be implemented and there will be **no** decision based payment. The payment from your decision will then be **0 €**.

You will take your decision on this form. Your decision will be treated **confidentially and anonymously**. The form is to be handed in in a sealed envelope.

When the experiment ends, you will receive your **payment in a sealed envelope, which will be submitted to you at your cubicle**.

The person who will submit the sealed envelope to you at your cubicle does **not know your decision** and does not know the amount of your payment.

----- (page break) -----

You decide about the division of 15 €.

You can either share the 15 € with refugees, or keep the entire amount. The money donated will benefit refugees at Campus East, in approx. 300 m distance.

Please make your decision now!

7.50 € for refugees at Campus East, 7.50 € for me	☐	☐	0 € for refugees at Campus East, 15 € for me
--	-----------------------	-----------------------	---

----- (page break) -----

Please put this form now back into the envelope and seal it.

Then, please **indicate by raising your hand** briefly.

Please remain quiet. The envelopes will be collected when all participants have finished.

General Instructions for Distance Treatment

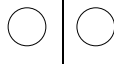
Instructions were identical except for the different distance indicated in the middle part:

You decide about the division of 15 €.

You can either share the 15 € with refugees, or keep the entire amount. The money donated will benefit refugees at Campus East, in approx. 3 km distance.

Please make your decision now!

7.50 € for refugees at Campus East,
7.50 € for me



0 € for refugees at Campus East,
15 € for me

Instructions for getting to the destinations: Maps and Directions

In order to get from the meeting point (HSaF) to the study's premises, participants followed different routes as depicted in figure 1. Participants were guided to salient points at the respective campus (gate areas) and then followed paper signs for the last meters. Instructions for the respective routes were as follows.

Exposure treatment

Welcome and thank you for supporting our research by participating in this study!

This study is an **investigation of KIT**. The study will take place in the premises of **KIT Campus East**. To reach the location on foot will take you about 15 minutes. Simply for getting to Campus East, you will receive a reimbursement of **5 €**. Additionally, you will **earn more money** depending on your decisions within the study.

On the following page, you will find a map with directions from the lecture hall at Fasanengarten (HSaF) to Campus East. **Please exactly follow these directions** so that the study can start in time. All further information about the study you will receive in our premises at Campus East.

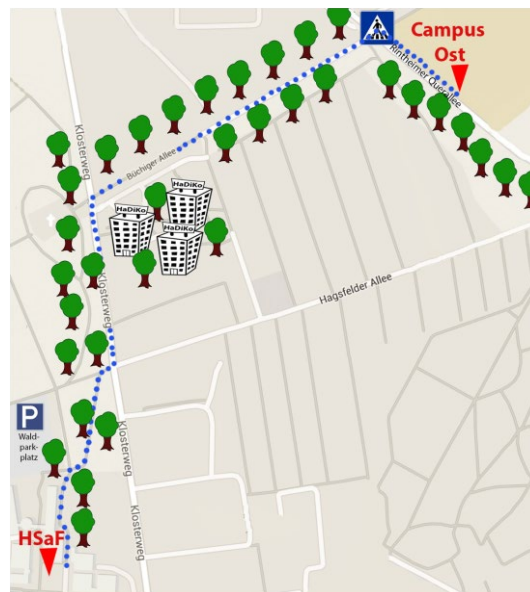


Fig. S9. Map in the Exposure treatment.

- From the **lecture hall at Fasanengarten (HSaF)**, walk **north**. You will reach a small track. On this track, keep right until you reach the street **Klosterweg**.
- Follow **Klosterweg in a northward direction**, on your right, you will soon see the students' residence Hans-Dickmann-Kolleg (**HaDiKo**).

- **Passing the HaDiKo turn right into Büchiger Allee.** This is no road but **only a walkway and cycle track.**
- Follow Büchiger Allee until it crosses **Rintheimer Querallee.** Cross Rintheimer Querallee via the traffic island in the middle of the road **to the sidewalk of Rintheimer Querallee** on the other side.
- You are now on a walkway, please dismount in case you are riding a bike. Follow this sidewalk to the right.
- Stay on the sidewalk until **on your left the entrance to Campus East** appears.
- Pass the entrance and, in case you came by bike, lock it in the gate area. **From now on, follow the signs** saying “to the scientific study” until you reach the premises of the study.

Proximity treatment

The beginning of the instructions was identical to the Exposure instructions up to the point where the specific route/map becomes relevant. Map and directions were as follows.

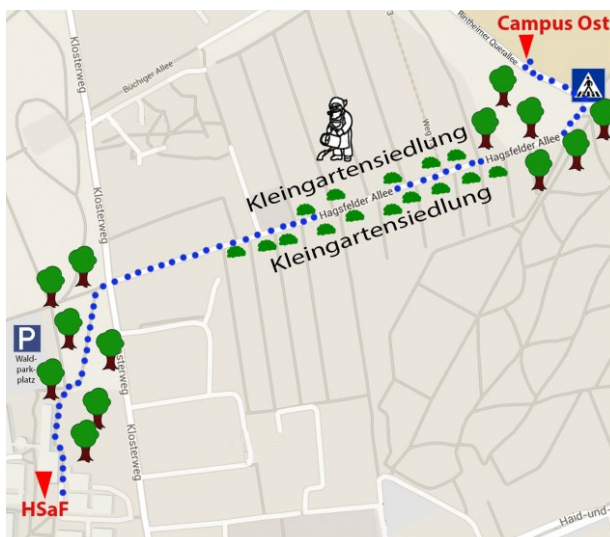


Fig. S10. Map in the Proximity treatment.

- From the **lecture hall at Fasanengarten (HSAF)**, walk **north**. You will reach a small track. On this track, keep right until you reach the street **Klosterweg**.
- Cross Klosterweg right there, so that you reach **Hagsfelder Allee**.
- Follow Hagsfelder Allee. To your right and to your left, you will soon see **garden plots** [in German “Kleingartensiedlung”].
- The end of Hagsfelder Allee is surrounded by trees, before it crosses **Rintheimer Querallee**.
- **Cross Rintheimer Querallee** via the traffic island in the middle of the road **to the sidewalk of Rintheimer Querallee** on the other side.
- You are now on a walkway, please dismount in case you are riding a bike. Follow this sidewalk to the left.
- Stay on the sidewalk until **on your right the entrance to Campus East** appears.
- Pass the entrance and, in case you came by bike, lock it in the gate area. From now on, follow the signs saying “to the scientific study” until you reach the premises of the study.

Distance treatment

The beginning of the instructions was identical to Exposure and Proximity except that “Campus East” was replaced by “Campus South”. Map and directions were as follows.

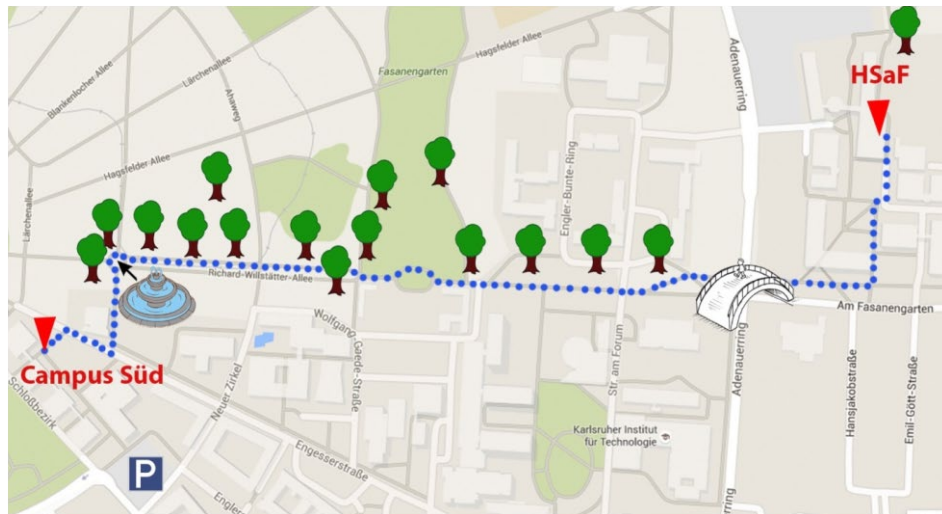


Fig. S11. Map in the Distance treatment.

- From the **lecture hall at Fasanengarten (HSaF)**, walk **south**. You will reach a walkway. Stay on this way until you reach a walkway parallel to the road Am Fasanengarten.
- Turn right and take the **pedestrian bridge**.
- Follow this way and keep straight on (following **Richard-Willstätter-Allee**).
- After some meters, there will be a big grassed area on your right. Stay on Richard-Willstätter-Allee until you reach a big fountain.
- After the **Fountain**, turn left and follow the walkway until you reach **Engesserstraße**.
- Now turn right into Engesserstraße and at the first opportunity, turn again to the left.
- Keep on walking some more meters until a stairway of a building at **Campus South** appears in front of you.
- Lock your bike to the bicycle rack near the stairway in case you came by bike. **From now on, follow the signs** saying "to the scientific study", until you reach the premises of the study.

Study 2

Welcome to this Study!

Thank you for participating in an economic study at the Karlsruhe Institute of Technology (KIT).

As in all economic studies at KIT, all circumstances described in the following are true. Your decisions will be implemented exactly as described.

All your data and decisions will be handled confidentially and anonymously.

We would ask you to keep quiet during the study. If you have questions, please indicate by using the signs in the back of your cubicle. Your questions will then be answered at your cubicle as soon as possible.

You will now take an important decision, which determines your **payment**. You will get to choose between different options. In case you do not take a decision, the first option will be implemented and your payment will be 0 €.

You will take your decision on your answer sheet. Your decision will be treated **confidentially and anonymously**. The form is to be handed in in a sealed envelope.

When the experiment ends, you will receive your **payment in a sealed envelope, which will be submitted to you at your cubicle**.

The person who will submit the sealed envelope to you at your cubicle does **not know your decision** and does not know the amount of your payment.

----- (page break) -----

Here, please fill in your participant ID.

Participant-ID: _____

Within the scope of this experiment, 15 € shall be donated to benefit people in need in approx. 0.2 mi distance.

You have the possibility to claim a portion of the 15 € as your payment. In case you decide to do so, this portion will be deducted from the 15 € and you will receive the money at the end of the study.

The remaining money will benefit people in need in approx. 0.2 mi distance.

Please take your decision on the back side of this sheet.

----- (page break) -----

Please indicate, which option is to be implemented.

Your decision (one tick)	Your payment	Payment for people in need in approx. 0.2 mi distance
☐	0,00 €	15,00 € - 0,00 € = 15,00 €
☐	0,50 €	15,00 € - 0,50 € = 14,50 €
☐	1,00 €	15,00 € - 1,00 € = 14,00 €
☐	1,50 €	15,00 € - 1,50 € = 13,50 €
...	...	...
☐	14,50 €	15,00 € - 14,50 € = 0,50 €
☐	15,00 €	15,00 € - 15,00 € = 0,00 €

Please put the completed form back into the envelope and then indicate with the signs in the back of your cubicle that you are done. The envelopes will be collected as soon as all participants have finished. Afterwards you will be asked to answer a few questions anonymously.

Study 3

Welcome to this Study!

Thank you for participating in an economic study at the Karlsruhe Institute of Technology (KIT).

As in all economic studies at KIT, all circumstances described in the following are true. Your decisions will be implemented exactly as described.

All your data and decisions will be handled confidentially and anonymously.

We would ask you to keep quiet during the study. If you have questions, please indicate by using the signs in the back of your cubicle. Your questions will then be answered at your cubicle as soon as possible.

You will now take an important decision, which determines your **payment**. You will get to choose between different options. In case you do not take a decision, the first option will be implemented and your payment will be 0 €.

You will take your decision on your answer sheet. Your decision will be treated **confidentially and anonymously**. The form is to be handed in in a sealed envelope.

When the experiment ends, you will receive your **payment in a sealed envelope, which will be submitted to you at your cubicle**.

The person who will submit the sealed envelope to you at your cubicle does **not know your decision** and does not know the amount of your payment.

----- (page break) -----

Here, please fill in your participant ID.

Participant-ID: _____

Within the scope of this experiment, 15 € shall be donated to benefit people in need in a city with comparable prosperity like Karlsruhe* in approx. 6,000 mi distance.

You have the possibility to claim a portion of the 15 € as your payment. In case you decide to do so, this portion will be deducted from the 15 € and you will receive the money at the end of the study.

The remaining money will benefit people in need in a city with comparable prosperity like Karlsruhe* in approx. 6,000 mi distance.

Please make your decision on the back side of this sheet.

---- (footnote) ----

* according to unemployment rate and GDP per capita of the respective region

----- (page break) -----

Please indicate, which option is to be implemented.

Your decision (one tick)	Your payment	Payment for people in need in approx. 6,000 mi distance
☐	0,00 €	15,00 € - 0,00 € = 15,00 €
☐	0,50 €	15,00 € - 0,50 € = 14,50 €
☐	1,00 €	15,00 € - 1,00 € = 14,00 €
☐	1,50 €	15,00 € - 1,50 € = 13,50 €
...	...	...
☐	14,50 €	15,00 € - 14,50 € = 0,50 €
☐	15,00 €	15,00 € - 15,00 € = 0,00 €

Please put the completed form back into the envelope and then indicate with the signs in the back of your cubicle that you are done. The envelopes will be collected as soon as all participants have finished. Afterwards you will be asked to answer a few questions anonymously.

List of Charities in Studies 2 and 3

Distance	Location	Charity	Alternative charity/location
0.2 mi	Karlsruhe, Germany	Heimstiftung Karlsruhe: Wohngruppe Adler	Heimstiftung Karlsruhe: Anlaufstelle IGLU
0.6 mi	Karlsruhe, Germany	Heimstiftung Karlsruhe: Augartenstraße	Sybelcentrum: Kinder- und Jugendhilfen
2 mi	Karlsruhe, Germany	Beiertheimer Tafel	Durlacher Tafel
6 mi	Wörth, Germany	Wörther Tafel	Ettlingen, Germany
20 mi	Baden-Baden, Germany	Baden-Badener Tafel	Landau, Germany
60 mi	Freiburg, Germany	Freiburger Tafel	Mainz, Germany
600 mi	Edinburgh, UK	Edinburgh Food Project	Oslo, Norway
6,000 mi	Phoenix, USA	St. Mary's Foodbank	Toyohashi, Japan

Alternative charities were prepared for two reasons: in the case that donations to the first charity were no longer possible (e.g., because the charity no longer existed), and to rule out the argument that subjects could have accurately guessed the charity and rationally based their donations on such beliefs.

Study 4

Instructions

The following economics experiment was conducted in a university laboratory in Karlsruhe with real subjects who made real decisions about the distribution of money between themselves and some people in need.

There were different treatments of the experiment that were presented to different subjects. You will read two abbreviated descriptions of two treatments: in one, the needy people also live in Karlsruhe, and in the other, the needy people live outside of Karlsruhe.

The average per capita income in Karlsruhe is about 50% higher than the average per capita income in Germany as a whole.

Please read both versions of the experimental instructions below carefully, because to participate in the study, you must answer questions about them correctly. After answering the questions correctly, you will complete a questionnaire in which you assess the situations of the subjects and the needy people.

Experimental Instructions

Thank you for your participation in the economics experiment.

As in all economics experiments, all of the following scenarios are true. Your decisions will be implemented exactly as described.

You are about to make an important decision that will determine your payment. You will be able to choose from several options. You will make your decision on your decision form. Your decision will be treated confidentially and anonymously. Your decision form and your payment will be transferred in sealed envelopes.

NOTE: Below is the description for Treatment 1, in which the needy individuals were located WITHIN Karlsruhe.

Your Decision

As part of this study, €15 will be donated to help those in need located approximately 2 miles away.

You have the option to claim a portion of the €15 as your payment. If you choose to do so, this portion will be deducted from the €15 and paid to you in cash at the end of the study.

The remaining money will be used to help those in need located approximately 2 miles away.

Please make your decision below!

NOTE: Below are the decision forms that the participants saw. You do not make a decision here. This is only to show you the format of the form.

Decision Form

Please check the option you wish to be implemented.

Ihre Entscheidung (ein Kreuz)	Ihre Auszahlung	Auszahlung für Bedürftige
☐	0,00 €	15,00 € - 0,00 € = 15,00 €
☐	0,50 €	15,00 € - 0,50 € = 14,50 €
☐	1,00 €	15,00 € - 1,00 € = 14,00 €
☐	1,50 €	15,00 € - 1,50 € = 13,50 €
☐	2,00 €	15,00 € - 2,00 € = 13,00 €
☐	2,50 €	15,00 € - 2,50 € = 12,50 €
☐	3,00 €	15,00 € - 3,00 € = 12,00 €
☐	3,50 €	15,00 € - 3,50 € = 11,50 €
☐	4,00 €	15,00 € - 4,00 € = 11,00 €
☐	4,50 €	15,00 € - 4,50 € = 10,50 €
☐	5,00 €	15,00 € - 5,00 € = 10,00 €
☐	5,50 €	15,00 € - 5,50 € = 9,50 €
☐	6,00 €	15,00 € - 6,00 € = 9,00 €
☐	6,50 €	15,00 € - 6,50 € = 8,50 €
☐	7,00 €	15,00 € - 7,00 € = 8,00 €
☐	7,50 €	15,00 € - 7,50 € = 7,50 €
☐	8,00 €	15,00 € - 8,00 € = 7,00 €
☐	8,50 €	15,00 € - 8,50 € = 6,50 €
☐	9,00 €	15,00 € - 9,00 € = 6,00 €
☐	9,50 €	15,00 € - 9,50 € = 5,50 €
☐	10,00 €	15,00 € - 10,00 € = 5,00 €
☐	10,50 €	15,00 € - 10,50 € = 4,50 €
☐	11,00 €	15,00 € - 11,00 € = 4,00 €
☐	11,50 €	15,00 € - 11,50 € = 3,50 €
☐	12,00 €	15,00 € - 12,00 € = 3,00 €
☐	12,50 €	15,00 € - 12,50 € = 2,50 €
☐	13,00 €	15,00 € - 13,00 € = 2,00 €
☐	13,50 €	15,00 € - 13,50 € = 1,50 €
☐	14,00 €	15,00 € - 14,00 € = 1,00 €
☐	14,50 €	15,00 € - 14,50 € = 0,50 €
☐	15,00 €	15,00 € - 15,00 € = 0,00 €

NOTE: Below is the description for Treatment 2, where the needy were located OUTSIDE Karlsruhe.

Your Decision

For this study, €15 will be donated to help people in need in a city with a similar level of prosperity to Karlsruhe, approximately 6/20/60/600/6000 miles away (stated as km in original).

You have the option to claim a portion of the €15 as your payment. If you choose to do so, this portion will be deducted from the €15 and paid to you in cash at the end of the study.

The remaining money will help people in need in a city located approximately 6/20/60/600/6000 miles away.

Please make your decision below!

NOTE: The decision form here is the same as for Treatment 1, which you have already seen.

Before completing the questionnaire, you must first correctly answer two questions about the instructions above.

(Below are the comprehension checks.)

Question 1

Which of the following statements is an accurate description of the experiment, based on the instructions you just read? You have two chances to answer this question correctly.

The subject is given €15, and they can then decide how much they want to give to those in need. If the subject claims €3, those in need receive €17.
Those in need are told who the subject is.
If the subject claims €0, those in need receive €15. (correct response)
The subject's payment is €0 and does not depend on how much the needy receive.

(If they answer this incorrectly, they get the following message.)

Your answer is incorrect. You have one more attempt to answer this question correctly.. Below you will find the instruction for Question 1 again.

(If they answer this question incorrectly a second time, they are informed that their participation is discontinued.

If they answer correctly, whether on the first or second try, then they are immediately directed to the following.)

You have answered Question 1 correctly. Please now answer the following question. Below you will find the instructions for Question 2.

Question 2

Consider Treatment 2 of the experiment, where the needy individuals are located outside of Karlsruhe. Approximately how far are the needy individuals from the subject?

6 miles (6 mile treatment)

20 miles (20 mile treatment)
60 miles (60 mile treatment)
600 miles (600 mile treatment)
6000 miles (6000 mile treatment)

(They get equivalent messages to those above, depending on whether they answered correctly or incorrectly. If they answer correctly, whether on the first or second try, then they are immediately directed to the following.)

You have now answered both questions correctly and may proceed to the questionnaire.

Questionnaire

Please now read the following eight questions and answer them carefully. Each question concerns the differences between a donation for those in need within Karlsruhe in the first treatment versus a donation for those in need outside of Karlsruhe in the second treatment.

Question 1

Where do you think a larger fraction of the population is needy?

Within Karlsruhe

Outside of Karlsruhe

Question 2

Where is it more likely that the donations benefit the subjects themselves, e.g., through better public safety?

Within Karlsruhe

Outside of Karlsruhe

Question 3

Where is it more likely the subjects know some of the needy persons personally?

Within Karlsruhe

Outside of Karlsruhe

Question 4

At what location do you think the poor people are more likely to be needier?

Within Karlsruhe

Outside of Karlsruhe

Question 5

Where do you think it more likely that a given donation will bring a greater material benefit to the needy persons?

Within Karlsruhe

Outside of Karlsruhe

Question 6

Where is it more likely that the subjects have seen or will see the people who benefit from their donations?

Within Karlsruhe

Outside of Karlsruhe

Question 7

Where is it more likely that the beneficiaries include people with whom the donor has something in common, e.g., ethnic identity, educational level, occupation, or other personal traits?

Within Karlsruhe

Outside of Karlsruhe

Question 8

In your opinion, where is the likelihood greater that the charity that receives the donations is corrupt and wasteful?

Within Karlsruhe

Outside of Karlsruhe

Final Questions

Please answer the following questions and click on the arrow to proceed to your payment.

What is your age?

_____ years

What is your gender

Male

Female

Neither

Which activity currently applies to you?

Please select the activity that occupies most of your time.

Student

In other training
Employee
Self-employed
Looking for work
Other

What is your monthly gross income, on average?

_____ €

Thank you for your participation!