Self-Reliance Norms as a Constraint on Prosocial Behavior

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Abstract

We investigate how altruism depends on whether potential beneficiaries have costly opportunities to help themselves. Using laboratory experiments where initial effort is equalized, we vary whether disadvantaged individuals can take costly action to improve their outcomes. We find that giving rates are significantly lower when recipients have self-help opportunities, even when exercising those opportunities requires additional effort. This effect is driven by adherence to self-reliance norms and operates through fairness perceptions. Similar patterns emerge for taking behavior. Our findings reveal a "hidden cost of opportunity": expanding options for disadvantaged individuals may reduce their welfare by crowding out altruistic assistance.

Keywords— Social norms, self reliance, prosocial behavior, giving, experiment

1 Introduction

Understanding the nature and scope of altruistic behavior is crucial for explaining myriad types of economic interactions, from individual-level acts of prosociality, to aggregate-level support for redistribution policies. One important avenue for research on altruism has been mapping out the ways in which this tendency is conditional. For example, an intense subject of study has been how altruism is conditionally stronger towards those who are more socially similar to the giver, in terms of social group membership or social distance (e.g., Tajfel and Turner, 1979; Hoffman et al., 1996; Goette et al., 2006; Bernhard et al., 2006; Chen and Li, 2009; Enke et al., 2022; Cappelen et al., 2022). Another example is how willingness to re-distribute is meritocratic, i.e., conditional on whether income inequality arises from luck versus effort: People are less likely to re-distribute if those with lower earnings worked less hard than those with high earnings (see, e.g., Almås et al., 2020; Cappelen et al., 2022).

This paper seeks to shed light on how altruism depends on another fundamental, situational factor: Whether the potential beneficiary has an *opportunity to help themselves*, where this means having the option to take a costly action that generates a positive surplus for oneself. As an illustrative thought experiment, suppose a wealthy individual with a full-time job is trying to decide whether to support a policy that will raise taxes on the wealthy and benefit low-income people who also work full-time jobs. In this context, the situational factor we study is whether or not the typical low income individual has access to a costly opportunity to help themselves, e.g., work nights to earn more money. Since initial effort levels are arguably the same for wealthy and poor in this scenario, and taking on work in the evenings entails even more effort, standard notions of meritocracy would suggest the presence of this option is irrelevant for the decision to support redistribution.

We test the hypothesis, however, that altruism tends to be reduced by perceptions that disadvantaged individuals have costly opportunities to help themselves, ceteris paribus. If true, this would be important because it points to a novel explanatory factor for when altruism will be stronger or weaker, with distinct predictions for behavior compared to existing accounts of human prosociality, in a wide range of situations. The underlying mechanisms are also different, e.g., beliefs about the causes of existing endowments are not cental in the same way as meritocracy, but rather beliefs about opportunities for self-help, with different implications for the types of information interventions that might affect behavior. It also raises the possibility of a "hidden cost of opportunity," in the sense that adding an opportunity for a group of disadvantaged individuals could reduce their welfare, because it crowds out altruistic help from others in society.

Our hypothesis is inspired by suggestive evidence from various sources that there exists a norm of "self-reliance" that may, in certain circumstances, act as a constraint on altruism, and generate a hidden cost of opportunity. This norm proscribes that individuals should help themselves rather than depend on the help of others, and as a corollary, that those who have the opportunity are less deserving of help. One suggestive piece of evidence comes from the General Social Survey in the US, which in 1993 measured views on the importance of different issues. As shown in Figure 1, "being self-sufficient and not having to rely on others," was ranked as more important than being financially secure, or having a fulfilling job, or having children. Various political movements have also emphasized notions of self-reliance, e.g., in the "vigorous virtues" of Thatcherism in the United Kingdom. Psychologists have also identified disdain for those who are not self-reliant as a component of social norms, e.g., norms related to masculinity (e.g., Levant et al., 2007;).

We develop a simple model to capture the idea that opportunity for self-help makes an individual be seen as less-deserving of altruistic help. In the model, social preferences place a greater weight on helping, the lower is the perceived utility level of the potential beneficiary. The perceived utility level, however, is based on the level that the beneficiary could have attained if they had helped themselves. If an individual has an opportunity to add to their utility through costly self-help, this reduces the utility benefit of an altruist to give them help.

We investigate our research question using laboratory experiments, which allow controlling initial effort conditions, and exogenously varying the presence of a costly opportunity for disadvantaged individuals to help themselves. Our main experiments involve pairs of subjects, A and B, exerting the same amount of effort on a task, but receiving unequal payments, $1 and $9, respectively. In one condition, denoted *helpless treatment*, A can do nothing, and B can decide whether or not to give $4 to A. In another treatment, denoted *opportunity treatment*, A can do an extra amount of work to get $4; if they do not work, B can decide whether or not to give $4.

We find four main sets of results. First, rates of giving by B are significantly lower in the *opportunity treatment* than in the *helpless treatment*. Second, the treatment difference is driven by individuals who agree with a norm of self-reliance, as captured by a self-reliance inventory, which includes a modified version of the GSS question on self-reliance, as well as items from scales developed in psychology. Third, we show the treatments affect views on the fairness of not giving, with not giving being viewed as less unfair when A has an opportunity for self help, and these fairness views mediate the link between adherence to a self-reliance norm and the treatment effect on giving. Fourth, we provide evidence on external validity of the self-reliance norm identified in the experiments, showing that support for government redistribution policies is sensitive to the framing in terms of opportunity for self-help, as is self-reported willingness to be altruistic in a range of real-world vignettes.

In an extension of our main experiment, we test whether self-reliance norms can matter in another broad class of situations, where altruism takes the form of not exploiting or taking from the vulnerable. This test is particularly relevant given previous evidence that refraining from taking can be governed by different norms than giving (e.g., Krupka and Weber, 2013), with taking viewed as less acceptable than not giving. In this version of the experiment, which we denote the taking frame, A and B exert the same effort on a task, and receive equal payments of \$5 each. In the "Helpless-taking" condition, the A player can do nothing, and the B player decides whether or not to take \$4 from A. d. In the "Opportunity-taking" condition, the A player has the option to "pay the cost," which is \$3, and leaves the remaining \$2 safe from B; B decides whether or not to take \$4 in the case that A does not pay the cost.

In the taking frame, we find very similar results to the main experiments. B players are significantly more likely to take in Opportunity-taking than Helpless-taking. The treatment effect is stronger for those who agree with the self-reliance inventory. Thus, self-reliance norms can mean that individuals feel justified in exploiting others, if the others could have protected themselves but chose not to. There is again the potential for a hidden cost of opportunity, in that introducing a protection technology can actually make the vulnerable worse off.

Our paper contributes to a growing literature on the economic impact of social norms. Early research on social preferences established the core idea that many individuals care about fairness and developed formal models (e.g., Rabin, 1992; Fehr and Schmidt, 1999; Falk and Fischbacher, 2006), but more recent work has begun to explore how such concerns vary in complicated ways with contextual factors. A leading explanation for such variation is that social preferences are informed by social norms, or rules, which specify what is fair and unfair depending on the situation (e.g., List, 2007; Krupka and Weber, 2013). Much work remains to be done, however, in mapping out the terrain of social norms and understanding how this influences economic behavior. Our study makes a contribution by showing the economic importance of a norm of self-reliance.

Our findings are also relevant for a literature on understanding support for redistribution. One key insight of this literature has been documenting the presence of alternative fairness views, e.g., egalitarian, meritocratic, and libertarian (e.g., Cappelen et al., 2007). With meritocratic views, beliefs about the role of effort versus luck in determining income are crucial for whether people are perceived as deserving help. Our paper identifies a distinct fairness view, self-reliance, in which individuals are perceived as less deserving if they have an opportunity to help themselves. This self-reliance view can also interact with beliefs, but with beliefs about the presence of opportunity, rather than the role of luck versus effort.

This paper also adds to a previous literature on how situational factors can crowd out or limit prosocial behavior. One focus has been on how introducing financial incentives, or limiting an actor's choice set, can undermine prosocial motivations of the actor (Gneezy and Rustichini, 2000; Falk and Kosfeld, 2006). These results have implications of institutional design, highlighting the need to consider potential hidden costs. Our study is complementary by showing how expanding the choice set of an agent can reduce prosocial behavior towards that agent. Our findings also have implications for design, flagging how circumstances or deliberate interventions that increase opportunity can potentially have a hidden cost.

[1]The set of items in the value survey changes over time; the self-sufficiency item was included in 1993 only and the figure shows all items included in that year (in same order). Full question: "I'm going to read you a list of some things that different people value. Some people say these things are very important to them. Other people say they are not so important. Please tell me how important each thing is to YOU PERSONALLY, using the responses on this card (HAND CARD TO RESPONDENT). How about being financially secure? Is it one of the most important values you hold, very important, somewhat important, not too important, or not at all important?"

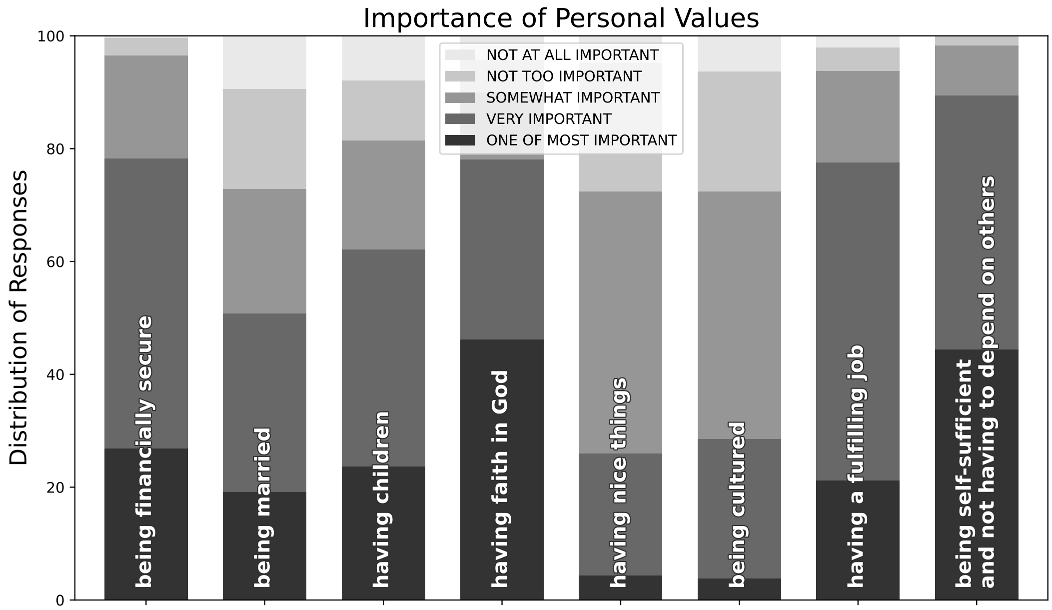

Figure 1: Data from 1993 General Social Survey (GSS)[1], National Opinion Research Center (NORC), University of Chicago.

2 Theoretical Framework

This section presents a simple formal notion of self-reliance concerns to generate unambiguous predictions in different settings and to pin down our experimental hypotheses. We model self-reliance concerns as a portable extension of existing models (Rabin, 2013). In this spirit, we will formulate utility and equilibrium with respect to a generic other-regarding utility function $u_i : \Pi \to \mathbb{R}$ where $\Pi = \Pi_1 \times \cdots \times \Pi_n$ is the set of material payoff profiles. For our main comparative static (Proposition 1; two-player games), the only assumption we impose is that this utility function is strictly increasing in *own* payoff. That is, there is no restriction on how utility depends on *others'* payoffs. Hence, our experimental predictions hold for several established models of other-regarding preferences (when augmented with self-reliance concerns), such as inequity aversion (Fehr and Schmidt, 1999) and social welfare equilibrium (Charness and Rabin, 2002).

2.1 Definitions and Equilibrium

Throughout the paper, we assume that preferences are complete, transitive, and continuous, such that they admit a utility representation (Debreu, 1959). We start by formulating self-reliance concerns and the corresponding Nash equilibrium for games in strategic form. The extension to sequential games and subgame perfect Nash equilibrium (SPNE) is straightforward. For games with incomplete information, we add that the self-reliance outcome (defined below) is type-specific.[2]

Let $I = \{1, \ldots, n\}$ be the finite set of players and A_i the finite set of pure strategies for each player $i \in I$. The set of pure strategy profiles is $A = A_1 \times \cdots \times A_n$. Let S_i denote the mixed strategies of Player i, which is the set of all probability distributions over A_i. The set of mixed strategy profiles is then $S = S_1 \times \cdots \times S_n$.

It will be useful to distinguish between material payoffs and (other-regarding) utility (see Charness and Rabin, 2002). Let $\pi_i : A \to \mathbb{R}$ denote Player i's material payoff function, which assigns a real number to each profile of pure strategies. Material payoffs are any payoffs that affect a player directly such as direct monetary transfers and cost of effort.[3] As is usual, we extend the payoff function to mixed strategies, $\pi_i : S \to \mathbb{R}$, where it denotes expected utility.[4] We can summarize the material game as $\Gamma^m = \langle I, (A_i)_{i \in I}, (\pi_i)_{i \in I} \rangle$.

To define the real game, where players care about others and potentially self-reliance, we need to formulate their utility function. We model self-reliance concerns as a limit on prosocial behavior, where a player helps others but only up to the point they cannot help themselves. To determine whether, or to which degree, others can help themselves, a player imagines how others would fare in a fully selfish world—the material game—where everyone had to make do with their own skills, opportunities, and endowments, and where everyone correctly expected no help from others. The worst-case outcome for a player in the material game—which we call her *self-reliance outcome*—serves as the key input for the utility function with self-reliance concerns.

Definition 1 (Self-reliance Outcome)**.** Let $\mathcal{E}(\Gamma^m)$ be the set of Nash equilibria of the material game, that is, $\mathcal{E}(\Gamma^m) = \{s \in S \,|\, s_i \in \arg\max_{s_i \in S_i} \pi_i(s_i, s_{-i}), \forall i \in I\}$. Let $\mathcal{P}_i(\Gamma^m) = \{\pi_i(a) \mid a \in A,\ \exists s \in \mathcal{E}(\Gamma^m) \text{ with } s(a) > 0\}$ be the set of material payoffs Player i can receive in any such equilibrium.[5] The *self-reliance outcome* $\pi_i^{\circledast}(\Gamma^m)$ of Player i is the lowest material payoff

[2]In the spirit of our framework, where players' counterfactual outcomes are key for evaluating their desert, we consider each type separately, with potentially different deservingness.

[3]That is, they are not derived from other players' payoffs or utility.

[4]To distinguish both, we will use $\pi_i(s)$ when the extension to mixed strategies is used (expected utility) and $\pi_i(a)$ when referring to a payoff from the basic material payoff function (deterministic).

[5]It is important to note that the set $\mathcal{P}_i(\Gamma^m)$ does not contain not expected payoffs $\pi_i(s)$ (expected utility) but "actual" payoffs $\pi_i(a)$ that can materialize in equilibrium. In sequential games, these are payoffs associated with end nodes on any equilibrium path.

she can receive in any equilibrium of the material game: $\pi_i^{\circledast}(\Gamma^m) \equiv \min \mathcal{P}_i(\Gamma^m)$.[6]

Note that the self-reliance outcome is unique for each player (per use of minimum function) and exists in any game (by virtue of existence of a Nash equilibrium). We can therefore think of the vector of self-reliance outcomes $\pi^{\circledast} = (\pi_1^{\circledast}, \ldots, \pi_n^{\circledast})$ as a constant of a given game. We can now define the utility function with self-reliance concerns.

Definition 2 (Self-reliant-other-regarding Utility (**SO-Utility**))**.** Let $u_i : \Pi \to \mathbb{R}$ be an other-regarding utility function, where $\Pi = \Pi_1 \times \cdots \times \Pi_n$ is the product payoff space in the material game. Let $v_i = (v_i(\pi_1), \ldots, v_i(\pi_n)) : \Pi \to \Pi$ be Player i's payoff view, where $v_i(\pi_j)$ is the identity for her own payoff, $\pi_j \mapsto \pi_j, j = i$, and a censored version of other players' payoffs, $\pi_j \mapsto \max(\pi_j, \pi_j^{\circledast}), j \neq i$, where the censoring point $\pi_j^{\circledast}$ is Player j's self-reliance outcome. The *self-reliant-other-regarding utility* of Player i is given by the composition $u_i^{\circledast}(\pi) \equiv (u_i \circ v_i)(\pi) = u_i(v_i(\pi)) : \Pi \to \mathbb{R}$.

By considering the censored version of others' payoffs, a player only cares about others to the extent that they do not not fall short of their respective self-reliance outcomes. That is, a player with self-reliance concerns does not derive any additional (dis)utility from others' outcomes below their respective self-reliance outcomes. In the extreme, an altruistic player with self-reliance concerns can behave fully indifferent toward another player if that other player could have achieved sufficiently high payoffs in equilibrium with selfish play. Any values below the other's self-reliance outcome derive the same (dis)utility. Hence, when comparing allocations that differ only with respect to others' payoffs below their respective self-reliance outcomes, a player with self-reliance concerns acts similar to a selfish person—these differences have no (additional) impact on her utility and hence do not change her behavior further. In contrast, when facing player who would struggle in a fully selfish world, a player with self-reliance concerns acts in the same way as a player without self-reliance concerns (as long as the other player's self-reliance outcome is sufficiently low).

We can now summarize the real game—the game with actual players and preferences—in $\Gamma^r = \langle I, (A_i)_{i \in I}, (u_i^{\circledast}(a))_{i \in I} \rangle$. Given the SO-utility of each player, a *self-reliant-other-regarding equilibrium* (SOE) of material game Γ^m is simply a strategy profile $(s_1, \ldots, s_n)$ that corresponds to a Nash equilibrium of the real game Γ^r:[7]

[6]For applications to infinite games where the minimum may not exist, the self-reliance outcome is the greatest lower bound $\pi_i^{\circledast}(\Gamma^m) \equiv \inf \mathcal{P}_i(\Gamma^m)$.

[7]Since both utility functions in Definition 2 are functions of material payoffs, $u_i : \Pi \to \mathbb{R}$, and

Definition 3 (Self-reliant-other-regarding Equilibrium (**SOE**))**.** A strategy profile s is a *self-reliant-other-regarding equilibrium* if $s_i \in \arg\max u_i^{\circledast}(s_i, s_{-i})$ for all $i \in I$, where $u_i^{\circledast}(\cdot)$ is Player i's self-reliant-other-regarding utility function.

We note that existence of a SOE is guaranteed by standard fixed-point arguments since the only non-standard element in Γ^r is the utility function $u_i^{\circledast}$, which is well-defined, i.e., it assigns a unique real value to each element of the space of action profiles A (see Appendix A.1 for more detail).[8]

2.2 Application to Two-Player Games

The comparative statics are simple and largely follows directly from the definitions above. For the sake of completeness, we will nevertheless formulate them carefully.

Our experiments, and the remainder of this paper, will focus on two-player games. To derive the basic prediction in this context, we make two weak assumptions. Both assumptions pertain to the generic other-regarding utility function $u_i(\pi_i, \pi_j)$ entering Definition 2, that is, the function that is the basis for the extension with self-reliance concerns (e.g., Fehr and Schmidt, 1999). First, we assume that this function is strictly increasing in own outcome, i.e.,

$$u_i(\pi_i', \pi_j) > u_i(\pi_i, \pi_j), \text{ for all } (\pi_i', \pi_j), (\pi_i, \pi_j) \in \Pi \text{ with } \pi_i' > \pi_i. \tag{1}$$

Since the realm of this paper is prosocial behavior, we further assume that, at least for a subset of the payoff space, the utility function is increasing in the payoff of the other player:

$$u_i(\pi_i, \pi_j') > u_i(\pi_i, \pi_j), \text{ for some } (\pi_i, \pi_j'), (\pi_i, \pi_j) \in \Pi \text{ with } \pi_j' > \pi_j. \tag{2}$$

We do not impose strong monotonicity of players' preferences with respect to other players' payoffs as we wish to consider preferences where the decision maker acts prosocially only for a subset of the outcome space (such as Fehr and Schmidt, 1999).

material payoffs are functions of actions, $\pi_i : A \to \mathbb{R}$, such that $\pi = (\pi_1, \dots, \pi_n) : A \to \mathbb{R}$ we can rewrite them as functions of actions, and apply the usual extension to mixed strategies. We use $u_i^{\circledast}(a)$ to refer to the mapping $u_i^{\circledast} : A \to \mathbb{R}$ and $u_i^{\circledast}(s)$ to refer to the mapping $u_i^{\circledast} : S \to \mathbb{R}$.

[8]Definition 2 takes a well defined utility function as input, which is satisfied for all other-regarding utility functions and examples considered in this paper.

2.2.1 Basic Comparative Statics

As stated above, each player's self-reliance outcome is unique and constant for a given game and, hence, we are interested in comparative statics between games. For the sake of exposition, we will briefly ignore details of the game when considering a range of self-reliance outcomes that may arise in different settings.

Consider a decision maker with social preferences who decides whether give to another player. Let π_s denote the material payoff to the self and π_o the payoff to the other player.[9] Consider, two points in the material payoff space, "Giving", $G = (\pi_s, \pi_o')$, and "Not giving", $\overline{G} = (\pi_s', \pi_o)$, where $\pi_s' > \pi_s$ and $\pi_o' > \pi_o$, such that the recipient's payoff is higher at G than $\overline{G}$, at a cost to the decision maker.[10] Suppose the game is such that the decision maker prefers to give. The basic prediction is that a for sufficiently large increase of the recipient's self-reliance outcome, a decision maker with self-reliance concerns will switch from giving to not giving.

Proposition 1 (Preference Reversal)**.** For any $(\pi_s, \pi_o'), (\pi_s', \pi_o) \in \mathbb{R}^2$, with $\pi_s' > \pi_s$, $\pi_o' > \pi_o$, and $u(\pi_s, \pi_o') > u(\pi_s', \pi_o)$, it holds **(i)** $u^{\circledast}(\pi_s, \pi_o') > u^{\circledast}(\pi_s', \pi_o), \forall \pi_o^{\circledast} \leq \pi_o$ and **(ii)** there exists a threshold $\pi_o^{\tau} \in (\pi_o, \pi_o')$ such that $u^{\circledast}(\pi_s, \pi_o') < u^{\circledast}(\pi_s', \pi_o)$ for all $\pi_o^{\circledast} > \pi_o^{\tau}$.

The first part of the proposition states that whenever a decision maker without self-reliance concerns gives, the same decision maker with self-reliance concerns will also give, as long as the other player's self-reliance outcome is sufficiently low. This is simply due to absence of censoring when the self-reliance outcome is below the outcomes under consideration. The second part states that a sufficiently large increase in the other player's self-reliance outcome yields a persistent preference reversal, beyond which the the decision maker with self-reliance concerns refrains from helping.

Proof. Part (i) of Proposition 1 follows directly from the definition of self-reliant-other-regarding utility (2) and $\pi_o' > \pi_o$. For part (ii), we first note that the players with self-reliance concerns do not give for any $\pi_o^{\circledast} \geq \pi_o'$, since here $u^{\circledast}(G) = u(\pi_s, \pi_o^{\circledast})$ and $u^{\circledast}(\overline{G}) = u(\pi_s', \pi_o^{\circledast})$, such that strong monotonicity in own payoff (1) and $\pi_s' > \pi_s$ imply $u^{\circledast}(G) >$

[9] Preferences are assumed to be symmetric throughout the paper, i.e., preferences and self-reliance concerns can potentially be exactly the same for all players. We focus on one player here for the sake of exposition.

[10] Since the basic comparative statics below holds for any such points in the outcome space it also holds for any such points on a budget line.

$u^{\circledast}(\overline{G})$. Now, continuity of $\succsim$ imply existence of at least one $\pi_o^{\tau} \in (\pi_o, \pi_o')$ such that $u(\pi_s', \pi_o) = u(\pi_s, \pi_o^{\tau})$ and hence, for $\pi_o^{\circledast} = \pi_o^{\tau}$, $u^{\circledast}(G) = u^{\circledast}(\overline{G})$.[11] In case of a unique point of indifference, continuity implies $u^{\circledast}(\overline{G}) \geq u^{\circledast}(G) \Leftrightarrow \pi_o^{\circledast} \geq \pi_o^{\tau}$.[12] In case of several points of indifference, the threshold in Proposition 1 is the one with the largest value for the other's payoff, i.e., $\pi_o^{\tau} = \max\{\pi_o \mid \pi_o \in (\pi_o, \pi_o') \text{ and } u^{\circledast}(\pi_s', \pi_o) = u^{\circledast}(\pi_s, \pi_o')\}$, where, again, continuity implies $u^{\circledast}(G) < u^{\circledast}(\overline{G})$ for all $\pi_o^{\circledast} > \pi_o^{\tau}$.[13] □

[11] To establish this directly: For $\pi_o^{\circledast} \in (\pi_o, \pi_o')$ we have $u^{\circledast}(G) = u(\pi_s, \pi_o')$ and $u^{\circledast}(\overline{G}) = u(\pi_s', \pi_o^{\circledast})$. We show that there is a $\pi^{\tau} \in (\pi_o, \pi_o)$, such that $u(\pi_s, \pi_o') = u(\pi_s', \pi_o^{\tau})$. Suppose not, i.e., for all points in the open interval $L := \{(\pi_s', \pi_o) \mid \pi_o \in (\pi_o, \pi_o')\}$ we have either (a) $l \succ G, \forall l \in L$ or (b) $l \prec G, \forall l \in L$ (by completeness; continuity of $\succsim$ rules out preference reversals without an indifference point). In case (a), $G \succ \overline{G}$ and continuity of $\succsim$ imply $\exists \epsilon > 0$ such that $G \succ (\pi_s', \pi_o + \epsilon)$; but $(\pi_s', \pi_o + \epsilon) \in L$, which contradicts (a). For case (b), strong monotonicity (1) implies $(\pi_s', \pi_o') \succ (\pi_s, \pi_o') = G$ and by continuity of $\succsim$, $\exists \epsilon > 0$ such that $(\pi_s', \pi_o' - \epsilon) \succ G$; but $(\pi_s', \pi_o' - \epsilon) \in L$, which contradicts (b). □

[12] These are models where the decision maker switches at most once between treating others' payoffs as a good and as a bad (or vice versa) and monotonic on each side of the switch point (Kerschbamer's 2015 y-monotonicity).

[13] Without further restrictions on how another player's outcome π_o enters other-regarding utility $u(\pi_s, \pi_o)$ decision makers with self-reliance concerns might switch several times between giving and not giving in the interval (π_o, π_o^{τ}). However, the switch point is unique for all models considered in this paper.

2.2.2 Example with pure altruism

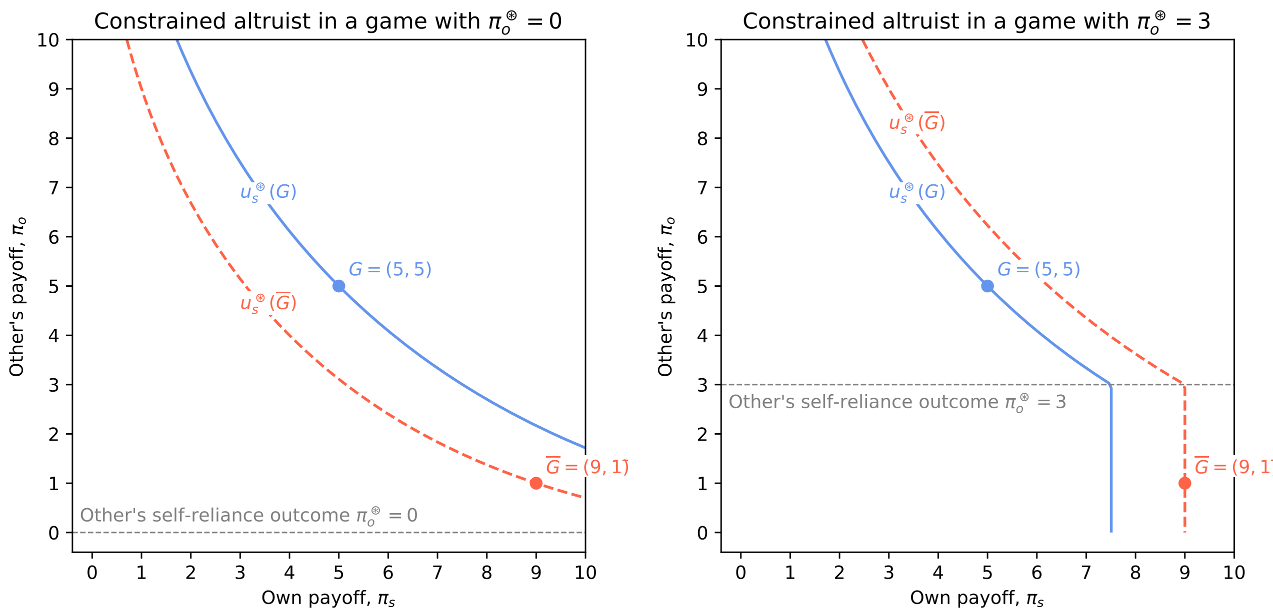

Figure 2: Preference reversal for a self-reliance concerned altruist with utility function $u(\pi_s, \boldsymbol{v}(\pi_o)) = (a\pi_s^{\rho} + (1-a)\max(\pi_o, \pi_o^{\circledast})^{\rho})^{1/\rho}, a = \rho = 0.5$ (CES w.r.t. payoff view $\boldsymbol{v}(\pi_o)$; set $v(\pi_o) = \pi_o$ for Andreoni and Miller, 2002). The left panel shows a game with a self-reliance outcome of $\pi_o^{\circledast} = 0$, where preferences coincide with pure altruism (cf. Becker, 1974; Andreoni, 1989; Andreoni and Miller, 2002), and $G \succ^{\circledast} \overline{G}$. The right panel shows a game with $\pi_o^{\circledast} = 3$, where indifference curves are kinked and vertical (selfish) for all $\pi_o \leq \pi_o^{\circledast}$, and $G \prec^{\circledast} \overline{G}$.

Figure 2 illustrates the comparative statics for an altruist (Becker, 1974) with self-reliance concerns. The decision maker chooses between giving $G = (5,5)$ and not giving $\overline{G} = (9,1)$. The left panel shows the decision maker's indifference curves for a game in which the recipient has a low self-reliance outcome ($\pi_o^{\circledast} = 0$). Here, the altruist with self-reliance concerns is indistinguishable from a regular altruist (without self-reliance concerns) and, given her preferences, chooses to give.

The right panel shows the same decision making problem except that the game is such that the recipient's self-reliance payoff is higher ($\pi_o^{\circledast} = 3$). Here, the altruist with self-reliance concerns acts differently than a regular altruist. While her indifference curve for giving is the same as in the other game, her indifference curve for not giving is on a higher level since she does not fully internalize the recipient's low payoff of 1 when not giving; her utility is the same as if the recipient received her self-reliance payoff of 3.

2.2.3 Example with Fehr and Schmidt (1999) preferences

To illustrate that social preferences other than pure altruism can be accommodated and to use a tractable linear form for the remainder of the paper, consider Fehr and Schmidt (1999) inequity aversion (FS henceforth) and the two games in Figure 3.

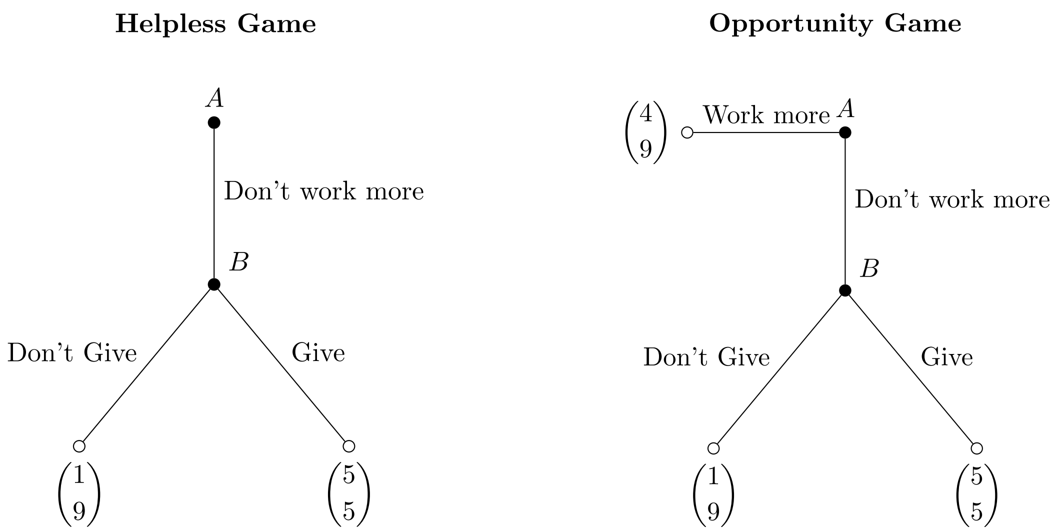

Figure 3: Helpless game (left) and Opportunity game (right).

For context, suppose both players, A and B worked the same amount but B received a higher pay than A by chance, namely 9 and 1, respectively. In both games, B chooses between giving $G = (5, 5)$ and not giving $\overline{G} = (9, 1)$, as in the previous example.

The left panel shows the "helpless game" where A has no choice (a dictator game). A B player with regular FS-preferences would choose to give as long as $\beta > 1/2$. An otherwise identical B player with self-reliance concerns would act the same way in this game since A's self-reliance payoff—A's lowest payoff in any equilibrium with selfish play—is $\pi_A^{\circledast} = 1$ and hence not relevant when incorporating self-reliance concerns into B's thinking (no censoring of A's outcome at any end node).

In the "opportunity game" in the right panel, A can choose to work more such that her final payoff is 4 (after subtracting cost of effort). The behavior of a B player with regular FS-preferences is the same in both games, and she gives as long as $\beta > 1/2$. In contrast, the behavior of a B player with self-reliance concerns can differ in the opportunity game. Since A would choose to work more in equilibrium with selfish play (the material game), A's self-reliance payoff is $\pi_A^{\circledast} = 4$. B players with self-reliance concerns take A's opportunity into account and act as if A's payoff is at least 4 at any end node (censored from below with A's self-reliance payoff). Consequently, a B player with FS-preferences and self-reliance concerns gives only if $\beta > 4/5$.

3 Experiment 1: Giving

3.1 Experiment Design

The experiment was preregistered at AsPredicted. The experiment consisted of two treatments, the *opportunity treatment* and the *helpless treatment*. Each participant participated in only one treatment.

The *helpless* treatment was as follows. First, participants earned money through a real-effort task. The task was to count the number of ones in tables with ones and zeros (see Abeler et al., 2011). There was no penalty for wrong answers and all participants had to complete five tables correctly to move on.[14]

After the counting tasks, participants were randomly assigned to either role A or role B, with half of the participants in each role. Each participant in role A was randomly matched to a participant in role B to form a pair. Participants in role A earned \$1 for the five counting tasks and participants in role B earned \$9 for the five counting tasks.

Next, the B-player could chose to give to their matched A-player. If the B-player decided not to give, then the final counting task earnings were unchanged, i.e., the A and B player received \$1 and \$9, respectively. If the B-player decided to give, then \$4 were added to A's earnings and a cost of giving was subtracted from B's earnings. The cost of giving could be \$0, \$1, \$2, \$3, or \$4, and the B-player made a choice for each possible cost of giving, knowing that one of the costs would be randomly selected at the end of the experiment and their respective choice carried out (strategy method).

The *opportunity treatment* differed from the helpless treatment in the following key way: After completing the counting tasks and learning their player role, the A-player could earn

[14] One participant progressed very slowly through all parts of the experiment and required intense coaching for the comprehension questions. We ultimately decided to advance them to the next stage during the counting task to not jeopardize the subsequent session. At that time, the participant and their designated matching partner were the only participants left in the cubicles and were thus able to identify each other as part of the same matching group (the designated matching partner was held on the waiting screen and showed clear signs of frustration). We excluded this matching group from the data; the main results are the same when including the group.

$4 more by doing three more counting tasks. If the A-player chose to do more counting tasks, the final earnings were $5 for the A-player and $9 for the B-player. The A-player knew that if they chose not to do more counting tasks, then the B-player's choice would determine the final earnings.

An important aspect of our design is that merit cannot explain differences in prosocial behavior (within or between treatments). The instructions made clear that all participants, both A and B players, solved the same number of tasks and that participant roles (and matching) are random. To minimize scope for misconceptions, these design aspects (i) were covered by the comprehension questions, (ii) reiterated on the screen where participants learned their player role, and (iii) included as a reminder at the top of the decision screen.

Questionnaire: After the main decision stage, subjects in both treatments answered a questionnaire. The following questions were answered by subjects in both treatments:

- Fairness judgment of choosing not to give (when the cost is $1)
- Inventory measuring agreement about the importance of self-reliance
- Vignettes that present real-life scenarios and vary whether there is an opportunity for self-help.
- Demographic questions including age, gender, state of residence, academic degree, employment, and political party identification.

Participants in the *Opportunity* treatment answered the following, additional questions:

- Guess the fraction of A players who choose to do the extra work.
- Three questions regarding different possible justifications for not giving to A.
- Questions about support for several real-word policies.

Finally, all participants completed a demographics questionnaire, which included age, gender, state of residence, academic degree, employment, and political party identification.[15]

At the end of the experiment, participants learned about the choice of their matched participant (if applicable), and their total earnings from the experiment.

3.2 Procedures

The experiment was run at the Pittsburgh Experimental Economics Laboratory (PEEL) in Fall 2024. Participants were recruited from the undergraduate student population of the

[15]As expected per randomized treatment assignment, there are no significant differences in these variables between treatments.

University of Pittsburgh. Each session had only one treatment and each participant participated in only one session.

The preregistration specified a target sample size of 55 B-players per treatment. We run ten sessions in total with 114 participants in the helpless and 120 participants in the opportunity treatment (57 and 60 B-players, respectively). We preregistered the exclusion of B-players whose giving choices are not weakly decreasing in the cost of giving; accordingly, ten B players were excluded from the data.[16] The final data set included 107 and 117 participants (50 and 57 B-players) in the helpless and opportunity treatment, respectively.

The experiment was programmed with oTree (Chen et al., 2016). The instructions for the experiment were shown to the participants on their computer screen and an audio file was played to read them aloud. Next, participants went through comprehension questions and the counting task started once all participants had answered them correctly. Participants received a show-up payment of $8. The average duration of the sessions was 34 minutes and average earnings were $14.79.

3.3 Results

In this section we present the results from our main experiments. We begin by analyzing the treatment effect on giving choices by B players, our primary outcome variable. We then investigate whether an underlying mechanism for the treatment effect on giving is B-player agreement with a norm of self-reliance, and whether this is mediated by views on how the opportunity for self-help affects the fairness of not giving. Lastly, we explore external validity by asking about the relevance of a norm of self-reliance for supporting various real-world polices, as well as evaluation of real-world vignettes.

3.3.1 Giving choices

Figure 4 shows the main result, on how the presence of an opportunity for self-help for A affects the giving choices of B. The left panel shows that giving rates are significantly higher in the helpless treatment than in the opportunity treatment: B-players give in 57% of the

[16] Per preregistration, seven and three B-players with non-monotonic choices were removed from the helpless and opportunity treatment, respectively. All main results are the same when including these players. We also preregistered the use of Grubbs' (1950) test to exclude participants who are outliers in terms of the comprehension-test error count. However, the test did not yield any significant outliers.

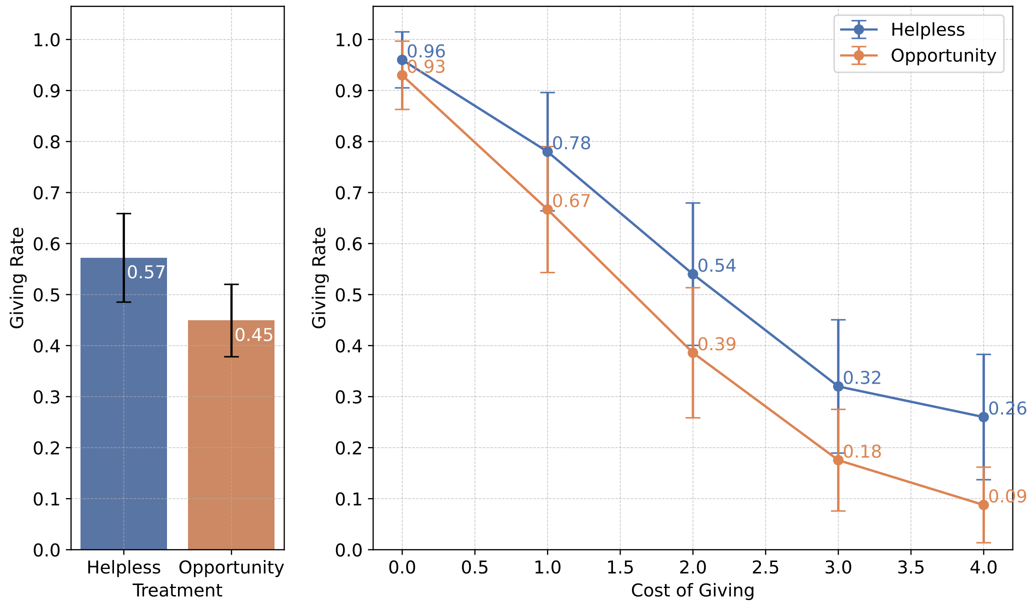

Figure 4: Giving by treatment and cost of giving. Bars represent 95% confidence intervals (individual averages in left panel).

cases when the A-player had no opportunity and in 45% of the cases when the A-player could have helped themselves ($p = 0.044$; rank-sum test).[17]

The right panel shows that this is highly robust across different costs of giving: Giving rates tend to be higher in the helpless treatment than in the opportunity treatment for each cost of giving.[18] Furthermore, the treatment difference in giving tends to increase in the cost of giving. While the vast majority of B-players in both treatments add $4 to A's earnings when it is free of charge (96% and 93% give in the helpless and opportunity treatment, respectively), the treatment difference is larger and statistically significant when the B-player bears the full cost of $4. Here, 26% of B-players give in the helpless treatment but only 9% do so in the opportunity treatment ($p = 0.021$; Fisher's exact test).

3.3.2 The relevance of norms of self-reliance

We included two sets of questions relating to self-reliance. The first questionnaire was taken from the General Social Survey (GSS) and measured the personal importance of self-reliance

[17] Rank-sum test of individual giving rates between treatments (according to preregistration).

[18] This pattern also holds when including the B-players with giving choices that are non-monotonic or increasing in the cost of giving.

relative to other "things that different people value" (such as "being financially secure" and "having children"). The second set of questions measured agreement with self-reliance as a norm. It combined items from several existing inventories.[19] All six items were phrased in general, non-personal terms and four items included explicit normative language ("One should...").[20]

We use a simple sum to aggregate the responses of the self-reliance norm questionnaire (all questions were answered on the same 7-point Likert scale; we normalize the sum to lie between 0 and 1).[21] We first note that there is no significant treatment difference in the score ($p = 0.122$, rank-sum test).[22]

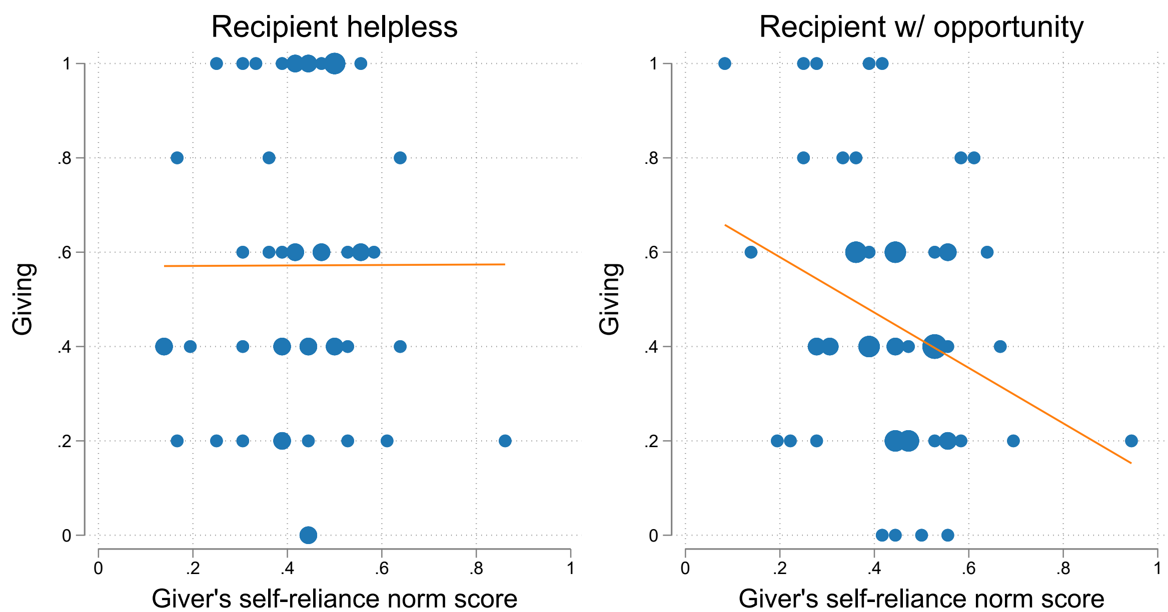

Figure 5: Relationship between individual propensity to give and giver's self-reliance norm score in the helpless treatment (left panel) and opportunity treatment (right panel). Lines are OLS.

[19]Specifically, these were (i) the self-reliance item from the GSS (1993), adapted to the common agreement scale, (ii) an item related to "asking for help" taken from the *Self-Reliance* subscale of the *Conformity to Masculine Norms Inventory* (CMNI; Mahalik et al., 2003; Parent and Moradi, 2009), and (ii) four items from the *Extreme Self-Reliance* subscale of the *Male Role Norms Inventory-Revised* (MRNI-R; Levant et al., 2007, 2010), all rephrased to be gender-neutral. All items were answered on a 7-point Likert scale from *Strongly Disagree* (0) to *Strongly Agree* (6).

[20]In contrast, the Self-Reliance Value questionnaire stated, 'Please tell us how important each thing is to YOU PERSONALLY.'

[21]The results based on the first principal component are qualitatively the same.

[22]The average treatment difference in the norm score is 0.03, i.e., 0.21 points on the original 7-point Likert scale. A Kolmogorov–Smirnov test yields $p = 0.236$.

Figure 5 shows that there is no significant relationship between B's self-reliance norm score and their giving rate in the helpless treatment ($p = 0.988$; left panel). In contrast, in the opportunity treatment (right panel), there is a strong negative relationship between B's self-reliance norm score and their giving rate ($p = 0.017$).[23] This pattern suggests that the self-reliance norm might be driving the treatment effect. In the opportunity treatment, the estimated giving rate starts out at the flat level in the helpless treatment, but sharply decreases with increasing values of B's self-reliance norm score. That is, B-players who strongly disagree with the self-reliance norm do not change their giving behavior depending on whether the A-player could have helped themselves. However, the more the B-players agree with the self-reliance norm, the stronger their response to A's opportunity. For B-players who agree with the self-reliance norm most strongly, the treatment difference is about twice as high as the average unconditional treatment difference.

On average, the predicted treatment difference in giving conditional on the self-reliance norm score (0.13 when comparing the gap in predicted lines between left and right panel) is well in line with the actual (unconditional) treatment difference of 0.12 (see left panel of Figure 4 above). We provide a more rigorous, regression-based analysis in the appendix (See Table 8).

As another way to investigate whether the treatment effect on giving reflects a norm of self-reliance, we directly asked B-players in the opportunity treatment to rate their agreement with the following statements:[24]

- "It is ok for B not to give to A, because A could have gotten more money on their own by working more." (*Self-reliance opportunity*)
- "It bothers me if A does not work, because it exploits my good nature." (*Exploitation*)
- "Participant A should have done the extra work because the right thing to do is to be self-reliant and not rely on other people." (*Self-reliance norm*)

B-players tended to agree with statement 1 (self-reliance opportunity) and, more specifically, statement 3 (self-reliance norm) on average (average scores are 3.2 and 3.3, respectively) but responses are not significantly different from the neutral stance (3) in either

[23]The relationship in the opportunity treatment is not only statistically significant but also economically meaningful. A one-standard-deviation increase in the norm score corresponds to a 8.7 percentage point decrease in the rate of giving (close to 1/3 s.d.)—or a \$0.43 reduction in the average cost B is willing to bear to increase A's payoff by \$4.

[24]Participants answered on a 7-point Likert scale ranging from *Strongly Disagree* (0), over *Disagree* (1), *Slightly Disagree* (2), *Neither Agree nor Disagree* (3), *Slightly Agree* (4), *Agree* (5), to *Strongly Agree* (6).

case ($p = 0.499$ and $p = 0.292$, t-tests).[25] Participants tended to disagree with the second statement (exploitation) suggesting that it is of secondary importance in our setting (average score of 2.5; $p = 0.036$). This is further supported by comparisons on the individual level. Compared to the exploitation statement, subjects more often than not express stronger agreement with the self-reliance-opportunity statement ($p = 0.016$) and the self-reliance-norm statement ($p = 0.003$).[26] Taken together, our findings are consistent with a norm of self-reliance circumscribing altruistic behavior.

3.3.3 Fairness judgments

To investigate whether a norm of self-reliance shapes views on the fairness of refraining from giving, we elicited fairness views. All participants responded to the question *"How unfair is it for B not to give \$4 to A, when the cost of giving is \$1?"* on a 11-point Likert scale ranging from 0 (*completely unfair*) over 5 (*neither fair nor unfair*) to 10 (*completely fair*).

In both treatments, the majority of participants judged the act of not giving at a cost of \$1 as unfair (signed-rank tests against the neutral rating yield $p < 0.001$ in both treatments). This finding is in line with the previous observation that the majority of B-players in each treatment choose to give at a cost of \$1 (see right panel of Figure 4).

Importantly, fairness judgments differ significantly by treatment. The average rating is 2.8 in the helpless treatment and close to one point higher (3.7) in the opportunity treatment ($p = 0.013$, rank-sum test). That is, providing opportunity for A reduces perceived unfairness when B chooses not to give. This finding is in line with the general tendency of less giving in the opportunity treatment when compared to the no-opportunity treatment and consistent with the theoretical framework.[27,28]

[25] Signed-rank tests yield qualitatively the same results in all cases in this section.

[26] There is no significant difference in agreement between the self-reliance-opportunity and self-reliance-norm agreement ($p = 0.756$).

[27] We assume that the fairness utility, here FS disutility from inequality, captures, at least to some extent, participants' fairness ratings. In the helpless treatment, players' subjective self-reliance view coincides with the objective game (for any level of self-reliance concerns) and hence FS utility is the same, with or without self-reliance concerns. In the opportunity treatment, B's subjective self-reliance view differs from the objective game by a larger payoff for A at the end node (not work; not give) and hence FS utility from this end node is higher than in the helpless treatment (through lower disutility from being ahead) as long as B has self-reliance concerns.

[28] While the direction of the treatment difference is the same for both A and B players, it is larger and statistically significant only for B-players. However, the interaction effect is not significant and hence, inference about role specific treatment effects of fairness perceptions remains unclear. Note, that a larger treatment effect for B players is not at at odds with our framework. In the giving game,

Finally, the data show that B's fairness ratings are significantly related to their propensity to give when the cost is $1 (see Table 9 in the appendix).[29] The less unfair B's choice of not giving is perceived by a B player, the more less likely they are to give.

The above findings show that A's opportunity to work causally affects fairness views and that B's individual fairness views are related to their propensity to give (marginally significant for the opportunity treatment and significant for the pooled treatment data; note that we collected data on fairness judgments only for a $1 cost of giving). At the same time, there is no significant treatment effect on individual agreement with self-reliance norms (distributions very similar between treatments) and individual self-reliance norm agreement can explain behavior in the opportunity treatment but not in the no-opportunity treatment. These findings suggest that the self reliance norm questionnaire successfully captures an individual characteristic that is comparatively immalleable, i.e., exogenous for our purposes; while individual fairness ratings are clearly endogenous.

A natural question is whether the effect of individual norm agreement on giving in the opportunity treatment is partially mediated by fairness views. While the experiment was not designed to answer this question (i.a., fairness perceptions were measured at a cost of $1 only), we note that there is a strong and significant relationship between B's norm score and their fairness view in the opportunity treatment but not in the helpless treatment (see Table 1).

Table 2 below provides further indications that the effect of agreement with self-reliance norm on giving in the opportunity treatment might indeed be partially mediated by fairness views. However, the results are not robust and hold only for the specification presented below; hence, more data is needed to assess this relationship. Table 2 focuses on the cost of giving of $1, as it was used to elicit fairness views and, accordingly, the cost for which we found a significant relationship between fairness view and giving (see above). Table 2 further focuses on a specific value on the fairness scale by using and indicator variable for B players who state that not giving at a cost of $1 is completely fair (the maximum value on the fairness scale).

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it is only the B-player, but not the A-player, whose self-reliant view differs from the real game with objective payoffs. Accordingly, only B-players' fairness judgments should respond to the treatment manipulation (as long as FS-utility captures, at least to some extent, participants' fairness ratings).

[29] The fairness question was asked specifically in context of a $1 cost of giving. There is no significant relationship between the fairness ratings and any other cost of giving (or for the aggregate data over all costs of giving). There is no significant relationship when considering each treatment in isolation; the effect sizes are relatively similar between treatments.

Table 1: OLS of B's fairness view on agreement with self-reliance norm.

	B's fairness view of not giving when cost is $1		
	(1) Helpless	(2) Opportunity	(3) All
Self-reliance norm score	-0.608	6.248**	-0.608
	(2.100)	(2.403)	(2.438)
Agency			-1.582
			(1.480)
Agency $\times$ norm score			6.856**
			(3.264)
Constant	2.558***	0.976	2.558**
	(0.936)	(1.111)	(1.087)
N	50	57	107
$R2$	0.002	0.109	0.147

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Ordered probits yield qualitatively the same results.

Columns (1)-(3) reiterate previous findings in the present context. Column (1) shows the effect of self-reliance norm agreement on giving at a cost of $1, which is slightly larger but only marginally significant when compared to the estimate using the full data (cf. Table 8 above). Column (2) shows that individual agreement with self-reliance norm is a significant predictor of seeing not giving in the presence of opportunity as "completely fair" (cf. Table 2 above). Column (3) shows that the latter is a significant predictor of giving (cf. Table 9). Finally, column (4) shows that adding both predictors of giving, agreement with self-reliance norm and perceiving not giving as completely fair, yields a significant coefficient for the latter only. Moreover, the estimated coefficient on norm agreement is less than half than its estimate when not including fairness perception as a control (column 1) while the standard error on the estimate remains very similar. In sum, these findings suggest that in the opportunity treatment, stronger agreement with the self-reliance norm increases the chance that not giving is perceived as fair, which in turn reduces giving.

3.3.4 Support for redistribution policy and norm of self-reliance

To explore the external validity of the notion of self-reliance identified in our laboratory experiments, we presented subjects with a series of questions about their support for gov-

Table 2: Effect of agreement with self-reliance norm on giving at cost of $1 partially mediated by fairness perception.

	Data: B player in opportunity treatment.			
	(1) Give at $c = 1$	(2) Completely fair	(3) Give at $c = 1$	(4) Give at $c = 1$
Self-reliance norm score	-0.730*	0.645**		-0.291
	(0.426)	(0.248)		(0.419)
Completely fair			-0.731***	-0.681***
			(0.202)	(0.215)
Constant	0.987***	-0.195*	0.731***	0.854***
	(0.197)	(0.115)	(0.060)	(0.187)
N	57	57	57	57
$R2$	0.051	0.110	0.192	0.199

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. "Completely fair" is a dummy variable indicating maximum value on the self-reliance norm agreement scale.

ernement redistributive policy. All participants stated their support for a redistributive government policy under three conditions that differed in the level of opportunity the recipient has to help themselves. Specifically, participants were asked:

> *How much do you support a government policy of giving money to individuals who are born into poverty, in the following cases:*
>
> 1. *If the person is completely unable to rise out of poverty, for example because they are disabled and cannot work.*
> 2. *If the person is able to rise out of poverty but only by working very hard, for example by having two full-time jobs for many years.*
> 3. *If the person is able to rise out of poverty and can do so with a normal amount of work, for example by having one full time job.*

Participants answered on a 7-point Likert scale that ranged from *Completely against giving money* (0) over *Neither against nor in favor of giving money* (3) to *Completely in favor of giving money* (6).[30]

The first condition resembles our helpless treatment since the hypothetical recipient is completely unable to help themselves. The remaining conditions relate to our opportunity

[30] Intermediate categories were labeled (1) *Against . . .* , (2) *Slightly against . . .* , (4) *Slightly in favor of . . .* , and (5) *In favor of giving money*.

treatment. In the second condition, the recipient can help themselves but only under great hardship. In the third condition, the recipient can help themselves without (extraordinary) hardship. For a shorthand reference, we will denote the three conditions as *no opportunity*, *low opportunity*, and *normal opportunity*, respectively.

We turn to participants' support for government redistribution under three conditions regarding the recipient's opportunity to help themselves, namely *no opportunity*, *low opportunity*, and *normal opportunity*.

We first note that the distribution of responses does not differ between our two main treatments, i.e., the helpless-giving and the opportunity-giving treatments.[31]

Our first observation shows the significance of recipient opportunity for respondents' support for redistribution policy. In the *no opportunity* condition, 96% of all participants are in favor of the redistribution policy.[32] In contrast, in the *normal opportunity* condition, the majority of participants is no longer in favor of giving money (i.e., against or indifferent). Specifically, 39% of the participants are in favor, 20% are neither against nor in favor, and 41% are against the redistribution policy. The distribution in the *low opportunity* condition lies between the other two, as expected.[33,34]

Table 3 shows the changes on the individual level for the full response scale (regardless of their initial level of support). When moving from *no opportunity* to *low opportunity* (first row), most participants become less supportive for the redistribution policy. The same holds when moving from *low opportunity* to *normal opportunity* (second row) and, consequently, overall (when moving from no to normal opportunity; bottom row). The greater shift in the second row when compared to the first row suggests that participants see the low opportunity condition as closer to no opportunity than to normal opportunity. However, in both cases the share of participants who become less supportive is significantly larger than

[31]The p-values from rank-sum tests for item 1–3 of the questionnaire are $p = 0.609$, $p = 0.360$, and $p = 0.729$, respectively. Chi-squared tests of independence yield $p = 0.944$, $p = 0.956$, and 0.153, respectively.

[32]We aggregate responses in favor of the policy (4-6 on the response scale). Of the remaining responses, 1% are neither against nor in favor and 2% are against the policy (0-2 on the response scale). Appendix B shows the full raw distributions per item.

[33]Here, 87% are in favor, 5% are neither against nor in favor, and 8% are against the redistribution policy.

[34]In the no-opportunity and low-opportunity condition, significantly more participants are in favor than against the policy ($p < 0.001$ each); in the normal opportunity condition, the fractions are the same ($p = 0.823$; p-values are from binomial tests, excluding participants who are neither against nor in favor).

the share of participants who become more supportive.[35]

Table 3: Changes in support for redistribution policy for increasing levels of recipient's opportunity to help themselves.

	Δ Support for Redistribution Policy		
Δ *Opportunity*	Less Supportive	No Change	More Supportive
No → *Low*	51.34%	41.96%	6.70%
Low → *Normal*	79.91%	18.30%	1.79%
No → *Normal*	86.61%	10.27%	3.12%

All observations ($N = 224$). Significantly larger shift to less supportive when compared to more supportive also conditional on treatment and player role.

We move on to explore the relationship between participants' support for redistribution and their score on the self-reliance norm inventory. Remember that our main treatment manipulation (opportunity-vs-helpless-giving) had no significant effect on either measure, which supports the idea that they are exogenous in our setting and their interpretation as measures of general personal views and attitudes.

The previous analysis showed that agreement with self-reliance norm had no effect in the helpless treatment but a strong negative effect in the opportunity treatment. Since, by virtue of design, policy support in the *no-opportunity* condition resembles the helpless treatment, we expect no significant relationship between self-reliance norm score and policy support in this condition. On the other hand, we expect a significant relationship between self-reliance norm score and policy support under *low-opportunity* and, even more so, under *normal-opportunity*, since they lend increasing scope for self-reliance norms to operate on giving choices.

Table 4 shows that there is a strong relationship between self-reliance norm score and support for redistribution policy in all three conditions. However, as expected, the relationship is weakest (smallest coefficient) in the no-opportunity condition and strongest under normal opportunity.

We next test whether the short survey measure of redistributive policy support can predict behavior in the giving game. Remember that the three conditions we used to elicited support for redistribution only differ in the degree of the recipient's opportunity to help

[35] Focusing on participants who respond to changes in the condition, binomial tests yield $p < 0.001$ in all comparisons. Signed-rank tests of differences in raw responses between opportunity conditions yield $p < 0.001$ for all pairwise comparisons.

Table 4: OLS of individual self-reliance norm score on support for government redistribution policy, depending on recipient's opportunity to help themselves.

	Support for Redistribution Policy		
	(1)	(2)	(3)
	No opportunity	*Low opportunity*	*Normal opportunity*
Self-reliance norm score	-2.576***	-2.991***	-4.494***
	(0.393)	(0.529)	(0.740)
Constant	6.403***	5.943***	4.824***
	(0.183)	(0.246)	(0.344)
N	224	224	224
R^2	0.162	0.126	0.143

All coefficients are also significant for regressions conditional on treatment and player role (i.e., also when focusing on B players in opportunity treatment, as below).

themselves. Therefore, a straightforward way to capture variation in policy approval that is specific to self-reliance norms is to look at individual differences in policy approval between conditions, specifically, between (i) no- and low-opportunity, (ii) low- and normal-opportunity, and, the overall difference, between (iii) no- and normal-opportunity.

We note that (unlike in the previous section), a relationship between policy support and giving is expected also in the no-opportunity condition—as long as there is heterogeneity in individuals' general tendency to give. For example, more empathic, altruistic, or inequity-averse participants might want to give for higher costs of giving in the giving game and also express stronger support for government redistribution when compared to less empathic, altruistic, or inequity-averse participants. Some indication of such individual-specific effects can be seen in the significant and positive correlations of responses between the three conditions.[36] That is, participants who show comparatively strong support for the policy in the no-opportunity condition (when compared to other participants) tend to also show comparatively strong support in the no- and normal-opportunity conditions.

Since policy support in the no opportunity condition is not expected to be affected by self-reliance norms, and hence only on individual-specific effects in giving (such as individual level of altruism), we can use it as an additional control for the latter when testing the effect of self-reliance related policy approval through responses in the other two

[36]Spearman's rank correlation coefficients between conditions are $\rho_{no,low} = 0.486$, $\rho_{low,normal} = 0.622$, and $\rho_{no,normal} = 0.289$ with $p < 0.001$ each.

conditions.

Table 5 shows regressions of B's giving rate on the difference between their support for redistribution in the policy condition with no opportunity and the condition with low opportunity. This difference in support should capture a participant's self-reliance norm adherence, and thus should predict giving in *Opportunity* but not *Helpless*. This is indeed what we find.

Table 5: OLS of B' giving on support for government redistribution policy, depending on recipient's opportunity to help themselves.

	Giving					
	(1)	(2)	(3)	(4)	(5)	(6)
	All	Helpless	Opportunity	All	Helpless	Opportunity
No opportunity	0.041*	0.022	0.057**	0.033	0.009	0.078**
−Low opportunity	(0.023)	(0.037)	(0.027)	(0.027)	(0.039)	(0.038)
No opportunity fixed effects	No	No	No	Yes	Yes	Yes
Constant	0.486***	0.562***	0.419***	0.398	0.200	0.669*
	(0.031)	(0.048)	(0.038)	(0.338)	(0.318)	(0.349)
N	107	50	57	107	50	57
R^2	0.030	0.008	0.076	0.056	0.054	0.124

Estimated fixed effects omitted.

3.4 Self-reliance and real world vignettes

We also assess the external validity of self-reliance norms using vignettes. At the end of the experiment, participants saw four scenarios describing real-world situations. In each scenario, a person faced hardship by external factors and participants rated how likely they would be helping the person in each scenario. After participants submitted their responses, they saw a variation of the same scenarios. The two versions of each scenario differed only by whether or not the agent had an opportunity to overcome (or avert) the hardship on their own. Half of the participants saw all four scenarios in the *helpless* version first and then the four scenarios in the *opportunity* version; the other half of the participants saw the versions in reversed order.

In the first scenario, a neighbor's roof was damaged by a storm, and they could [could not] take on a second job to earn the money for repairs. In the second scenario, a colleague lost clients due to a recession and they could [could not] make up the difference by working evenings and weekends. In the third scenario, a family lost their home in a hurricane and they could [could not] earn money for rebuilding by taking on second jobs. In the fourth scenario, a man works a low-wage job and could [could not] have afforded college by taking a night job in high school. Participants rated how likely they would be helping the person in each scenario using an 8-item Likert scale.[37]

We find a very robust tendency for altruism to shift in the scenarios, according to whether the disadvantaged individual has an opportunity for self help. Table 6 shows that the opportunity for self-help significantly reduces willingness to be altruistic across all of the scenarios.

[37]The response scale ranged ranged from *definitely not* (1), over *very unlikely* (2), *unlikely* (3), *somewhat unlikely* (4), *somewhat likely* (5), *likely* (6), *very likely* (7), to *definitely* (8).

Table 6: Inclination to help in real-life scenarios depending on whether recipient is *helpless* or has had an *opportunity* to help themselves.

		Inclination to Help (categorized responses)		Changes in Inclination to Help (individual level)		
Scen.	Condition	Unlikely	Likely	Less likely	No change	More likely
#1	*Helpless*	26.8%	73.2%	63.0%	33.0%	4.0%
	Opportunity	54.0%	46.0%			
#2	*Helpless*	18.3%	81.7%	58.0%	35.7%	6.3%
	Opportunity	40.2%	59.8%			
#3	*Helpless*	8.9%	91.1%	62.5%	32.1%	5.4%
	Opportunity	20.5%	79.5%			
#4	*Helpless*	25.5%	74.5%	54.5%	38.4%	7.1%
	Opportunity	43.8%	56.2%			

Left panel: categorized data of raw responses: Unlikely=(1-4), Likely=(5-8). Right panel: categorized data of individual changes in raw responses; individual changes are significantly more likely to be in the direction of "less likely" than "more likely" to help (binomial tests of uniformity, i.e., against 0.5 ratio when excluding "no change", yield $p < 0.001$ for each scenario; signed-rank tests on raw responses between conditions yield $p < 0.001$ for each scenario).
Between-subject tests using only the first page subjects saw (either all scenarios in the helpless condition or all scenarios with opportunity) yield weaker but qualitatively the same results; see Table 10 in Appendix B.3.).

4 Experiment 2: Taking

4.1 Experiment Design

The experiment consisted of two treatments, the *helpless-taking* treatment and the *opportunity-taking* treatment. Each participant participated in only one treatment.

Similar to Experiment 1, all participants first completed ten counting tasks and were then randomly matched to pairs of A and B players. In contrast to Experiment 1, each participant earned the same amount for the ten counting tasks, $5, and B players could potentially take $4 from A's earnings. That is, if B took from A, their final payments were $9 and $1, respectively; if B chose to not take, their final payments were $5 each.

The *helpless-taking* and *opportunity-taking* treatment differed as follows. In the *helpless-taking* treatment, the A player had no choice and the final payments were determined by B alone (see Figure 6, left panel). In the *opportunity-taking* treatment (Figure 6, right panel), A players could choose to pay $3 to prevent B players taking from them. If A chose to pay, the game ended and the final payments were \$2 and \$5 for A and B, respectively. If A chose to not pay, then both players were paid according to B's choice, as above.

We used the strategy method, i.e., the players did not know the other player's choice at the time of their decision making.

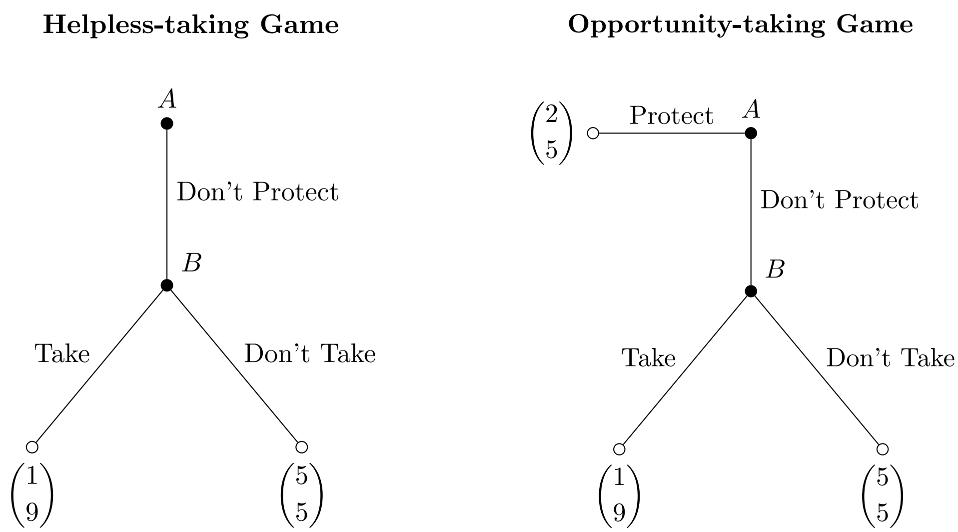

Figure 6: Helpless-taking game (left panel) and Opportunity-taking game (right panel).

4.2 Procedures

Participants were recruited from the undergraduate student population of the University of Pittsburgh. There was one treatment per session and each participant only participated in one session. We run ten sessions in total with 104 participants in the No-Agency treatment and 84 participants in the Agency treatment. The experiment was programmed and conducted with z-Tree (Fischbacher (2007)).

At the beginning of each session, participants went through the experiments instructions followed by comprehension questions. At the end of each session, we elicited participants' risk preferences using lottery choice menus similar to (Holt and Laury (2002)). For each of 21 problems, participants chose between a sure payoff of \$2 and a lottery $(p, \$5; (1-p), \$1)$ with p in $\{0, 0.05, 0.1, ..., 1\}$. One of the choices was randomly selected for payment at the end of the experiment. Next, participants completed a basic demographics questionnaire on gender, age, primary field of studying, and academic standing. Then, participants learned about the choice of their matched participant (except for B players in the no-agency treatment), their payoff from the lottery choices, and their total earnings from the experiment. The average duration of the sessions was 65 minutes.

4.3 Results (Taking games)

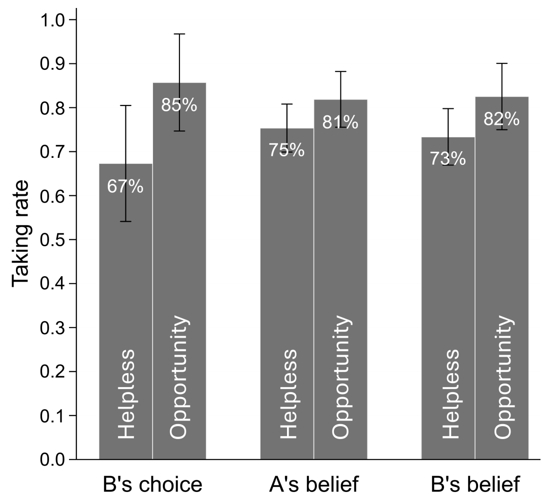

Figure 7: Choices and beliefs in the taking games.

Figure 7 shows B's taking rates together with A and B's average beliefs about B's taking rate in each treatment. The left bars show that B players take from the A player in 67% when the A player was helpless and in 85% of the cases when A had the opportunity to protect herself ($p = 0.039, \chi^2$-test). Table 7 shows that the treatment effect is significant when controlling for gender, age, academic year (column 2), risk aversion (column 3), and the time the player took to complete the five counting tasks (column 3).

Figure 7 further shows that both A and B players anticipated the agency effect (see middle and right bars). Both A and B players believed that B is more likely to take when A had a choice, compared to the case in which A could not act to protected herself ($p = 0.005$, Wilcoxon's rank-sum test). Overall, the treatment difference in participants beliefs is weaker than the actual treatment effect on taking rates, but it is statistically significant, overall and for each player role separately.

The final result of this paper is on the recipient's average outcome across treatments. In our particular setting, we find that providing A with opportunity to help themselves

Table 7: Probit regressions of taking rates on treatment dummy and controls (marginal effects).

	Taking rate			Beliefs about take rate		
	(1)	(2)	(3)	(4)	(5)	(6)
Opportunity treatment	0.184**	0.181*	0.206**	0.078**	0.078**	0.088**
	(0.088)	(0.092)	(0.099)	(0.036)	(0.038)	(0.038)
Female		−0.027	−0.026		−0.049	−0.044
		(0.101)	(0.103)		(0.040)	(0.041)
Age		−0.052	−0.057		0.027	0.026
		(0.085)	(0.087)		(0.033)	(0.034)
Dummies for field of study		Yes	Yes		Yes	Yes
Risk switch row			−0.005			−0.008*
			(0.013)			(0.005)
Work time			0.008			0.006
			(0.013)			(0.005)
Constant	0.673***	1.566	1.613	0.744***	0.261	0.288
	(0.059)	(1.575)	(1.592)	(0.026)	(0.621)	(0.617)
R^2	0.045	0.195	0.201	0.031	0.085	0.116
N	94	94	94	152	152	152

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

reduces their average pay, when compared with helpless recipients. By design, A players who pay the price in the opportunity treatment receive a final payoff of $2. When given opportunity to help themselves, not paying the price gives an expected payoff of $1.57 for the A players. Thus, paying the price is optimal for risk-neutral and risk-averse players and 50% of A players do so. However, without opportunity, in the helpless treatment, A's expected payoff is $2.30. That is, if B players did not reduce their generosity when A players have opportunity to help themselves, A players would actually fare better (in terms of average pay) when not paying the price. Hence, the social norm of self-reliance identified in this paper is making recipients worse off when equipped with agency.

5 Discussion

This paper provides evidence that altruism is conditional on a previously understudied situational factor: whether potential beneficiaries have costly opportunities to help themselves. Across laboratory experiments that control for initial effort and equalize baseline conditions, we find that the mere presence of a self-help option significantly reduces giving behavior, even when exercising that option would require additional effort from already-disadvantaged individuals. This effect is concentrated among those who endorse self-reliance norms and operates through shifts in fairness perceptions. Specifically, failing to provide help is judged as less unfair when recipients could have helped themselves. We document parallel patterns in taking behavior, demonstrating that self-reliance norms also license exploitation of those who fail to protect themselves when protection is available.

Our findings contribute to the literature on social preferences by identifying self-reliance as a distinct fairness view, separate from meritocratic concerns about effort versus luck. While meritocracy conditions deservingness on how existing endowments were generated, self-reliance conditions deservingness on the availability of forward-looking opportunities, regardless of whether those opportunities are exercised. This distinction carries different implications for information interventions and policy design. Efforts to increase support for redistribution by emphasizing the role of luck in outcomes may prove less effective if target populations are perceived as having opportunities for self-improvement.

The broader implication of our results is the existence of a potential "hidden cost of opportunity." Policies or circumstances that expand options for disadvantaged groups, such as job training programs, microfinance availability, or labor market access, may inadvertently reduce altruistic assistance from others in society. This crowding-out effect could partially or fully offset the direct benefits of expanded opportunity, a possibility that merits consideration in policy evaluation. Future research might investigate the magnitude of such effects in field settings, examine whether information about the costs of self-help opportunities can attenuate the crowding-out of altruism, and explore cross-cultural variation in the strength of self-reliance norms.

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Online Appendix

A Theoretical framework

A.1 Checking conditions for existence of self-reliant-other-regarding equilibrium

Proof. We check whether the conditions for Kakutani's (1941) fixed-point theorem are met (cf. Fudenberg and Tirole, 1991). First, the joint mixed strategy space $S = S_1 \times \cdots \times S_n$ is standard. Each S_i is non-empty and, by virtue of being a simplex, S_i is compact and convex; the joint strategy space S is compact (convex) [nonempty] since it is a finite product of compact (convex) [nonempty] sets. Second, we confirm that each player's best response correspondence $B_i : S_{-i} \rightrightarrows S_i$, $B_i(s_{-i}) = \{s_i \in S_i \mid s_i = \arg\max_{s_i \in S_i} u_i^{\circledast}(s_i, s_{-i})\}$ is non-empty for all $s_{-i} \in S_{-i}$: because (i) S_i is a non-empty, compact, and convex subset of a finite dimensional Euclidean space, and (ii) $u_i^{\circledast}(s_i, s_{-i})$ is linear in the probabilities that make up s_i (by virtue of expected utility), $u_i^{\circledast}(s_i, s_{-i})$ is continuous on S_i. Hence, Weierstrass' extreme value theorem applies and a maximum exists. Since this holds for each player, it also holds for the set of best response correspondences $B(S) = \{B_i(s_{-i})\}_{i \in I}$, which is itself a correspondence, i.e., $B : S \rightrightarrows S$. Third, we confirm that the best response correspondence is convex-valued, which is true since $u_i^{\circledast}(s_i, s_{-i})$ is linear in s_i, as usual. Fourth, we check that the best response correspondence has a closed graph, which also holds as usual due to continuity of $u_i^{\circledast}(s_i, s_{-i})$ on S (as observed above). In sum, all conditions for Kakutani (1941)'s theorem are fulfilled and a Nash equilibrium point exists.

□

B Additional results

B.1 Additional result on self-reliance norm

Table 8 provides a regression-based analysis of the role of a norm of self-reliance as a mechanism for the treatment effect on giving. Columns (1) and (2) show the estimated slopes per treatment (cf. Figure 5). The next two columns show the unconditional treatment

Table 8: OLS regressions of giving on agreement with self-reliance norm.

	Giving					
	Helpless	Opportunity	All			
	(1)	(2)	(3)	(4)	(5)	(6)
Opportunity			-0.123**	-0.118**	0.137†	
			(0.057)	(0.056)	(0.179)	
Self-reliance norm score	0.005	-0.587**		-0.325	0.005†	
	(0.324)	(0.238)		(0.197)	(0.295)	
Opportunity × norm score					-0.592	-0.338***
					(0.395)	(0.114)
Constant	0.570***	0.707***	0.572***	0.710***	0.570***	0.586***
	(0.144)	(0.110)	(0.041)	(0.093)	(0.132)	(0.039)
N	50	57	107			
R^2	0.000	0.099	0.043	0.067	0.087	0.077

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Ordered probits yield qualitatively the same results. †Variable removed from (3) by stepwise model selection; selected model is (4).

effect (3) and the treatment effect controlled for B's self-reliance norm score (4). In both cases, the treatment effect is significant and similar in size, and the treatment unspecific self-reliance norm score does not significantly contribute to explaining the data. Column (5) shows the full model with an interaction effect, i.e., allowing for treatment-specific effects of the self-reliance norm score. Here, none of the explanatory variables are significant. The insignificant coefficient on the norm score is expected as it simply reiterates the null in the helpless treatment (cf. column (1) and right panel of Figure 5). The insignificant coefficient on the opportunity dummy suggests that for a norm score of zero, the giving rates are indeed the same in both treatments. However, high variance inflation factors on the treatment dummy and its interaction with the norm score (>10 each), as well as the insignificant coefficient on the latter (in contrast to column 2), suggest a multicollinearity problem. To address this problem, we apply stepwise model selection to the specification in (5). The estimated coefficients of the selected model are shown in column (6). The selected model contains only a constant and the slope of norm score in the opportunity treatment (now significant due to more precise estimate). That is, the opportunity dummy is not contained in the final model suggesting that both treatments indeed share the same intercept (giving rate is the same at zero norm score).

B.2 Additional results on fairness judgments

Table 9: OLS regressions of giving on fairness ratings (at $1 cost of giving).

	Giving at cost of $1					
	(1) All	(2) All	(3) All	(4) Helpless	(5) Opportunity	(6) All
Opportunity	-0.341	-0.197				-0.260
	(0.262)	(0.273)				(0.435)
Fairness		-0.112**	-0.120**	-0.127	-0.105*	-0.127
		(0.053)	(0.051)	(0.096)	(0.063)	(0.096)
Opportunity × Fairness						0.021
						(0.114)
Constant	0.772***	1.052***	0.970***	1.091***	0.831***	1.091***
	(0.198)	(0.243)	(0.211)	(0.322)	(0.294)	(0.322)
N	107	107	107	50	57	107
logL	-62.627	-60.319	-60.579	-25.489	-34.812	-60.301

Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
The results of Probit regressions are qualitatively the same.

B.3 Additional results on real-world vignettes

Scenario 1: House repair | second job "Suppose you and your neighbor each have a large tree in your respective yards. A storm blows the neighbor's tree over onto their house and damages their roof. Your tree survives the storm. Because of having to spend money on repairing the roof, your neighbor does not have enough money to send his child to summer camp. [Helpless: Suppose the neighbor has *no way* to get the money on his own.] [Opportunity: The neighbor could start a second job, to get the needed money on his own, but chooses not to.] How likely is it that you would offer to give him some money to help pay for the child's camp?"

Scenario 2: Recession | working evenings and weekends Imagine you and a colleague both work for the same company as sales people, selling office supplies to businesses. Several of your colleague's clients go out of business due to a recession. Because of this, your colleague will not be able to meet the annual sales target and will not get a bonus at the end of the year. [Helpless: Your colleague has *no way* to get more clients on his own in time to help.] [Opportunity: Your colleague could start working evenings and weekends, to make up the difference on his own, but chooses not to.] How likely is it that you will be willing to give your colleague one of your clients, enabling him to get his bonus (without preventing you from getting yours)?

Scenario 3: Hurricane rebuild | second job Suppose that a family living in your town loses their home due to a hurricane. [Helpless: They have *no way* to earn the money needed to repair the home on their own.] [Opportunity: They could take on second jobs to earn money needed to rebuild on their own, but they choose not to.] The family starts an online 'go fund me' campaign, seeking help from the community to rebuild their home. How likely are you to contribute money to the campaign?

Scenario 4: No college | night job Imagine that a man in your town works 40 hours per week in a low wage job. He wasn't able to get a higher paying or full-time job because unemployment is high and he doesn't have a college degree. His parents didn't have enough money to help him pay for [Helpless: college, and he had *no way* to earn the money on his own.] [Helpless: college. He could have taken on a job in high school, working nights, to earn the money on his own, but chose not to.] The man sometimes stands on the main street and asks for spare change. How likely are you to give him change?

Table 10: Inclination to help in real-life scenarios (Between-Subject Data).

Scenario	Condition	Inclination to Help (categorized responses) Unlikely	Likely
#1	*Helpless*	33.9%	66.1%
	Opportunity	49.6%	50.4%
#2	*Helpless*	19.1%	80.9%
	Opportunity	34.4%	65.6%
#3	*Helpless*	13.9%	86.1%
	Opportunity	13.5%	86.5%
#4	*Helpless*	31.3%	68.7%
	Opportunity	46.2%	53.8%

Table includes only data from the first scenario condition each subject saw (randomized on individual level). Categorized data of raw responses: Unlikely=(1-4), Likely=(5-8). Rank-sum tests on raw responses between conditions yield $p = 0.006$, $p = 0.001$, $p < 0.001$, and $p = 0.016$, for scenarios 1–4, respectively.