

Redistributive Justice – Entitlements and Inequality in a Third-Party Dictator

Game

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January, 2010

Abstract

The experiment presented here provides evidence that, in the presence of first possession and inequality, the degree to which a third-party redistributor honors preexisting entitlements is bounded. Using a third-party redistributive task, the design examines how impartial decision makers redistribute the income of an advantaged stakeholder to a disadvantaged stakeholder. The results show that redistribution significantly decreases when entitlements to income are legitimized *either* by having an endowed stakeholder earn the right to his advantageous position or by having him earn his income. When *both* rights and income are earned, however, redistribution does not decrease further.

Debates over income inequality, CEO compensation and other issues involving political redistribution demonstrate that people care, often passionately, about how resources get distributed across others in society. Not surprisingly, the issue of distributive justice has received widespread attention within philosophy and the social sciences. Both theoretical and empirical work, by analyzing how surpluses of unowned resources should be allocated under idealized settings, attempt to formally identify what makes for a fair *distribution*. Building on this earlier work, the experiment presented in this paper searches for positive features of *redistributive* behavior within a context characterized by preexisting ownership and a high degree of inequality. The results show that, in the presence of inequality, the degree to which a redistributor honors preexisting entitlements

may be bounded. Third-party redistribution decreases when entitlements to income are legitimized *either* by having an endowed stakeholder earn the right to his advantageous position or by having him earn his income. When *both* earnings conditions are met, however, redistribution does not decrease further.

The use of thought experiments to imagine behavior in idealistic settings is common within political philosophy. A prominent example of this approach is the original position in Rawls' (1999) theory of justice:

This original position is not, of course, thought of as an actual historical state of affairs, much less as a primitive condition of culture. It is understood as a purely hypothetical situation characterized so as to lead to a certain conception of justice...The original position is, one might say, the appropriate initial status quo, and thus the fundamental agreements reached in it are fair (*ibid*, p. 11).

Likewise, Sen (1974) formulates his pure distribution problem by imagining a hypothetical situation in which an individual must distribute a "fixed homogeneous income" (*ibid*, p. 301) across n others. The imagined behavior within these idealistic contexts provides baseline principles of justice to which practical states of affairs can be compared.

To examine whether people's *actual* choices are consistent with the philosophical claims derived from such settings, social scientists have used surveys and experiments to reconstruct thought experiments and assess whether respondents' choices match the normative prescriptions. These studies in "empirical social choice" (Konow, 2009, p. 124) have searched for notions of "pure justice" (Schokkaert & Lagrou, 1983), "unbiased justice" (Konow, 2009), "unbiased fairness" (Konow, 2001), "justice as fair division" (Frohlich, Oppenheimer, & Eavey, 1987a) or "moral intuitions" (Schokkaert & Overlaet, 1989; Sen, 2001; Yaari & Bar-Hillel, 1984). According to Konow (2009), "[T]he aim is

to identify views using a method that has normative appeal, which then establishes its validity for evaluating, and perhaps even informing, prescriptive theories” (p. 124).

Although the set of normatively appealing properties is fuzzy, two specific features characterize a large subset of studies in empirical social choice – impartial decision making and the absence of individual ownership of distributable resources.¹ Testing variants of Sen’s pure distribution problem, a popular methodology fits these criteria by placing third-party respondents in charge of allocating an unowned surplus across two hypothetical stakeholders.² First applied by Yaari and Bar-Hillel (1984) in abstract, Robinson-Crusoe scenarios, later examples have enriched surveys by introducing differences in production (Faravelli, 2007; Konow, 2009, 2001, 1996; Schokkaert & Capeau, 1991; Schokkaert & Overlaet, 1989) or moved decisions to the laboratory so as to examine actual behavior rather than hypothetical responses (Dickinson & Tiefenthaler, 2002; Konow, 2000). Across all of these empirical tests, distributive decisions occur within a context in which resources are an unowned social surplus and stakeholders have different opportunity costs (stemming from variation in needs, tastes, beliefs, effort or ability). According to Schokkaert and Overlaet (1989), by examining choices in such an environment, “[S]urvey research can help to find an answer to the most crucial question from an ethical point of view: under what conditions should we

¹ Impartiality is desirable from a normative perspective since the absence of self interest in a distributive decision lets agents (without cost) act in accordance with whatever principle(s) they regard as “fair.” The notion that distributable resources should be viewed as the rightful property of society naturally stems from certain assumptions embedded within egalitarian theories of distributive justice – i.e. assumptions that an individual’s inputs to production are largely uncontrollable (Arneson, 2000; Cohen, 1989; Dworkin, 1981; Roemer, 2000) and/or that output itself comes from cooperative endeavors (Rawls, 1999) or an interdependent division of labor (Anderson, 1999).

² An alternative (and widely-cited) approach tests the extent to which subjects in the laboratory choose the indifference principle (Rawls, 1999) in an environment modeled after Rawls’ original position (Frohlich & Oppenheimer, 1990; Frohlich et al., 1987a, 1987b). Results show that the indifference principle does not fare well.

prefer an equal division and under what conditions a proportional one?” (p. 23).³ Results have revealed substantial support for what Konow (1996, 2000, 2001) calls the accountability principle – goods are distributed in proportion to controllable inputs, while differences in uncontrollable inputs are ignored.

This establishment of normative standards of distributive justice represents a valuable research contribution. Individuals, however, most likely form opinions toward specific policies outside of an idealistic vacuum. As argued by Walzer (1984), “[T]he question most likely to arise in the minds of the members of a political community is not, What would rational individuals choose under universalizing conditions of such-and-such a sort? But rather, What would individuals like us choose, who are situated as we are, who share a culture and are determined to go on sharing it?” (*ibid*, p. 5). Thus, an understanding of preferences for distributive policies requires one to account for salient existential details. Schmitz (2006) highlights one very important detail:

Claims of justice must be fit for the world in which such claims purport to belong. In our world, this means acknowledging that, when any bargainer arrives on the scene, much of the world is already possessed by others in virtue of lifetimes of work (*ibid*, p. 154).

Yet, despite first possession’s obvious ubiquity, the phenomenon has largely been ignored in existing empirical analyses of distributive justice.⁴ The experiment presented in this paper is motivated by this gap in the literature. In a three-player dictator game, one

³ Schokkaert and Overlaet (1989) base this question on the work of Moulin (1987), who formalizes the distribution problem and shows that there are two normatively attractive focal points. If the problem is modeled as a cooperative game, then an equal division of the goods should be chosen; if the problem is viewed as a pricing problem, then goods should be divided in proportion to differences in opportunity costs.

⁴ The omission is understandable when considering that philosophical theories do not claim to address the world as it actually is. As Schmitz (2006) states (in direct continuation of the quote in the text above), “Theories tend to ignore where we actually are, because theorists want to avoid privileging the status quo” (*ibid*, p. 154). But, if the goal is to shed light on something practical, “[A] theory needs to privilege the status quo in some ways so as to be relevant to it” (*ibid*).

of two stakeholders is endowed with money and a third-party decision maker is given the ability to send any portion of this money to the unendowed stakeholder. Rather than allocating unowned “manna from heaven” (Nozick, 1974), the third party cannot affect the distribution of income without overriding a preexisting entitlement⁵ and *taking* money from the endowed stakeholder. As such, the task becomes one of *redistribution*.

Given that redistribution requires the undoing of preexisting entitlements, we explore how variation in the legitimacy of initial entitlements mediates the decision to redistribute. Specifically, following approaches used to legitimize entitlements in two-party⁶ and three-party distribution games⁷, our experiment examines how acts of earning rights (i.e. advantageous roles) and earning money separately and jointly affect third parties’ redistributive behavior.

Since empirical work shows a strong correlation between redistributive preferences and actual redistribution (Alesina & Angeletos, 2005; Alesina, Glaeser, & Sacerdote, 2001), a deeper understanding of redistributive preferences can inform existing – and potentially guide future – policies. With an overarching goal of shedding light on these preferences, the paper is organized as follows. The next section will lay out a model for examining redistributive decision making that draws insight from the

⁵ From Nozick (1974), someone has an “entitlement” over that which has been acquired by first possession: “Things come into the world already attached to people having entitlements over them” (*ibid*, p. 160). From Hoffman *et al* (1994), an entitlement is said to be “legitimized” if it is perceived as being earned.

⁶ Hoffman and Spitzer (1985) first examined the effect of earned rights in the context of a bargaining game. Hoffman *et al* (1994) extend the analysis to ultimatum and dictator games. Cherry, Frykblom and Shogren (2002) find that dictators who work for money keep more of it than dictators whose money is arbitrarily assigned by experimenters; Oxoby and Spraggon (2008) replicate this result and also show that dictators often give away more than 50 percent of their money when it is earned by receivers. Ruffle (1998) runs dictator and ultimatum games in which the redistributive stakes are determined by either the recipient’s luck (a coin flip) or skill (performance on a quiz); results show that recipients in the dictator game are rewarded (punished) for performing well (poorly) relative to those who were lucky (unlucky).

⁷ Dickinson and Tiefenthaler (2002) extend the earned-rights result to third-party distribution of an unowned surplus. Konow (2000) does likewise for the earned-income result.

work of Adam Smith. Subsequent sections will lay out the hypotheses, design and results. The paper will close with a discussion of the results' implications.

I. Adam Smith, Moral Sentiments and Redistribution

Yaari and Bar-Hillel (1984) pose problems of distributive justice as follows:

A fixed collection of well-defined, quantitatively measurable and perfectly divisible entities is to be divided amongst certain individuals, who have no prior claims on these entities; by what rules should this distribution be carried out? (p. 1).

In the present experiment, a specified amount of money is to be divided between two individuals, one of whom has it in his possession; by what rules *will* this *redistribution* be carried out? Adam Smith, whose pragmatic approach to moral philosophy took preexisting entitlements, inequality and other complex external phenomena into account, provides guidance. In *The Theory of Moral Sentiments*, Smith (1982) discusses how individuals have a natural inclination to be concerned with the fate of both the wealthy and the poor. After accepting the primary role that self interest has in influencing human sentiments ("Every man...is first and principally recommended to his own care" (*ibid*, VI.ii.i.1)), Smith proceeds down the hierarchy of types of people who are the subjects of our concern:

After the persons who are recommended to our beneficence, either by their connection to ourselves, by their personal qualities, or by their services, come those who are pointed out, not indeed to, what is called, our friendship, but to our benevolent attention and good offices; those who are distinguished by their extraordinary situation; the greatly fortunate and the greatly unfortunate, the rich and the powerful, the poor and the wretched. The distinction of ranks, the peace and order of society, are, in a great measure, founded upon the respect which we naturally conceive for the former. The relief and consolation of human misery depend altogether upon our compassion for the latter (VI.ii.i.20).

One's respect for society's fortunate, therefore, transcends the narrow desire to simply preserve the income of any particular individual; it represents a respect for the broader historical process that generated their income. It is against this respect for the "order of society" that one's inclination to console the unfortunate must be weighed. Smith further argues that people make this tradeoff by assuming the role of a third party or, in his terminology, an "impartial spectator":

[I]n what cases the strongest of all natural affections ought to yield to a regard for the safety of those superiors upon whose safety often depends that of the whole society; and in what cases natural affection may, without impropriety, prevail over that regard; must be left altogether to the decision of the man within the breast, the supposed impartial spectator (*ibid*, VI.ii.1.22).

The way that people handle this tradeoff between the fortunate and the unfortunate— how their attitudes and perceptions regarding inequality interact with their attitudes and perceptions regarding preexisting entitlements – lies at the heart of understanding preferences for redistribution. The decision that stems from this tradeoff can be operationalized by the following utility function:

$$(1) U(W, \pi_2, \pi_1) = W^\beta + \pi_2^\alpha \pi_1^{1-\alpha}, \quad \text{s.t. } \pi_1 + \pi_2 = \pi_o$$

where W denotes the third-party decision maker's income, β denotes the weight that the decision maker places on his own income, π_2 (π_1) denotes the amount that is redistributed (not redistributed), π_o denotes advantaged stakeholder's initial endowment (the initial endowment of the disadvantaged stakeholder is 0) and α and $(1 - \alpha)$ denote the weights that the redistributor places on the disadvantaged stakeholder and the advantaged

stakeholder, respectively. The two terms in the equation are additively separate based on the assumption of impartiality – if the decision maker receives a payoff, it is independent of the choice that is made.

A decision maker faces a given π_0 and chooses π_2 (and π_1 , by association) to maximize (1). The first-order condition, found after substituting $(\pi_0 - \pi_2)$ for π_1 , shows that optimality requires that the following relationship holds:

$$(2) \quad \alpha = \frac{\pi_2}{\pi_0}$$

Thus, the weight that a third party places on the worse-off stakeholder's welfare is equal to the percentage that is redistributed to him. At the poles, a weight of $\frac{1}{2}$ is consistent with purely egalitarian prescriptions, while a weight of 0 is consistent with libertarian prescriptions (i.e. Nozick's (1974) entitlement theory). We assume that weights are, at least in part, context-dependent; we therefore hypothesize that percentages redistributed will vary significantly with the legitimacy of the advantaged stakeholder's initial entitlement.

II. Design

Treatments

Across all of the experiment's treatments, a decision maker is paired with a sender and a receiver. The sender acquires money and the decision maker is given the opportunity to

send any portion of the sender's money to the receiver. Differences between treatments stem from how senders' and receivers' roles are assigned (earned or given rights) and how senders' initial endowments are acquired (earned or given income).

Rights are assigned either randomly or by performance on a quiz. In earned-rights treatments, all non-decision makers took a current-events quiz that was made up of questions pertaining to the 2008 US presidential election and general international affairs.⁸ All subjects were told that those who ranked in the top half of the distribution of scores would be senders and those who ranked in the bottom half of the distribution would be receivers. In given-rights treatments, all roles were determined by the random selection of identification letters prior to the experiment.

Senders acquire their income either randomly or through work. In earned-income treatments, senders are given seven minutes to work on a word-search task, earning \$2 for each word that they find.⁹ In given-income treatments, senders receive an amount of money that is written on a randomly drawn ticket. The distribution of amounts in treatments with tickets mimics a distribution from a treatment with earned income.

With both rights and income being associated with either a given or earned process, the design can be characterized by a 2 x 2 matrix with the following four treatments: givenR-givenI, givenR-earnedI, earnedR-givenI and earnedR-earnedI, where *R (*I) denotes the type of process that determines rights (income).

⁸ Hoffman *et al* (1994) use a current events quiz to assign roles; Ruffle (1998) uses "general knowledge and skill-testing questions" (p. 251) to assign levels of wealth, while Cherry, Frykblom and Shogren use questions from the Graduate Management Admission Test (GMAT) and Oxoby and Spraggon (2008) use a combination of GMAT and Graduate Record Examination (GRE) questions.

⁹ Senders' earnings from the word search range from \$4 to \$36. Median earnings from the word search are \$17.

Events and Procedures

All subjects were recruited via an online database made up of undergraduate and graduate students at George Mason University. Sessions required fourteen subjects. All participants signed a consent form, received a show-up fee of \$7.50 or \$7.00 and drew a slip of paper from a container.

In given-rights treatments, the main instructions immediately followed the drawing of slips. Instructions explained the procedures and told subjects that those who drew A-D would be senders, those who drew E-H would be decision makers and those who drew I, J, K or N would be receivers; two people who drew Ms would be monitors. After the instructions were read both silently and aloud, all senders and receivers left the lab and were brought by experimenters to different rooms. Decision makers remained in the lab.

In earned-rights treatments, eight slips were labeled with a “Q,” four were labeled with a “D,” and two were labeled with an “M.” A preliminary set of instructions then told all participants that the eight people with “Qs” would take a quiz, and “the four Qs who score highest will earn an opportunity to make money.” The four people who drew Ds and the two people who drew Ms were told to wait silently while the others took the quiz. After the quiz, the main instructions were read both silently and aloud. The eight subjects who took the quiz then left the lab, were sorted into senders and receivers based on performance, and were brought by experimenters to different rooms. Decision makers remained in the lab.

Across all treatments, monitors were used in order to create double-blind procedures similar to Hoffman et al (1994). All materials used throughout the experiment were coded with an identification letter and silently passed out and collected by one of the monitors. Thus, the monitors knew the mapping from subject to ID, while the experimenters knew the mapping from ID to decisions. Nobody, however, knew the mapping from subjects to decisions. All subjects were also told that the monitors were responsible for ensuring that experimenters followed the instructions.

Once decision makers, senders and receivers were divided, separate procedures took place in each room. In the senders' room, the amount of money that each sender would receive was determined first. In given-income treatments, each sender drew a slip of paper with an amount of money written on it. In earned-income treatments, each sender worked on the word search. Following the stakes-determining task, senders were given envelopes that contained their money; the monitor then collected all of this money. Senders then took a questionnaire that tested for comprehension of the instructions. Expectations, conditional on the amount of money that they either earned or were given, were elicited with the following question:

You earned/have been given \$X.
How much do you expect your paired Decision Maker to have you send to your paired Receiver? \$_____

In the lab, decision makers were first given questionnaires to test for comprehension.¹⁰ They then earned money by working on the word search.¹¹ Once the

¹⁰ The first section of the questionnaire listed the number of questions that eight hypothetical subjects answered correctly on the quiz. Respondents were required to denote which scores belong to senders and which scores belong to receivers. The second section tested for understanding of the decision process. In a table, amounts of words found (in treatments in which senders earn their money) or amounts written on tickets (in treatments in which senders are given their money) were listed. Subjects were required to state

senders' stakes were determined, the appropriate sender's amount was written on each decision form. Each form was then given to the appropriate decision maker, who made his or her decision, placed the form in an envelope, and gave the envelope to a monitor. After the envelopes with the decision forms were brought to the receivers' room, decision makers were paid and dismissed.

In the receivers' room, receivers waited while senders' determined their stakes and decision makers made their decisions. Once senders' stakes were determined, receivers were given questionnaires that tested their comprehension of the instructions and elicited expectations (conditional on the senders' stakes) with the following question:

Your paired Sender earned/has been given \$X.
How much do you expect your paired Decision Maker to have the Sender send to you? \$ _____

After decision makers made their decisions, all decision forms and money were brought to the receivers' room, where an experimenter determined the payoffs of each sender and receiver and put the proper amount in each subject's envelope. Receivers and senders were then dismissed separately.

Decision forms provided the following information in given-income treatments:

Sender X was given \$xx.
The receiver with whom s/he is randomly paired was given \$0.
I choose to have sender X send \$ _____ to the receiver with whom s/he is randomly paired.

the amounts of money associated with each performance on the word search or each of the selected tickets. The table also listed a series of decision makers' hypothetical decisions. Subjects were required to specify the earnings that each decision would generate for each sender and receiver. All decision makers were given two questionnaires sequentially. After the first questionnaire, an experimenter corrected any mistakes. A monitor then returned the original questionnaire and passed out a second one. If mistakes were made on this second questionnaire, the subject's decision was excluded from the analysis. All references made to "correct" or "incorrect" questionnaires refer to this second-chance questionnaire.

¹¹ Additional treatments show that decision makers who earn money (with the word search) do not behave differently compared to decision makers who are given money (through random selection).

In earned-income treatments, “Sender X has earned \$xx” replaced the first line from above.

III. Hypotheses

Our design enables us to examine how third-parties tradeoff respect for the entitlements of advantaged stakeholders against the welfare of disadvantaged stakeholders. It allows us to explore a fundamental question that has previously (to our knowledge) been unaddressed – when given the ability to redistribute another’s income, how low are third parties willing to go? More specifically, we explicitly test a number of hypotheses that examine how variation in the legitimacy of initial entitlements affect the percentage redistributed to the disadvantaged stakeholder. When neither the senders’ rights nor incomes are earned, we expect the sender’s preexisting entitlement to be perceived as being illegitimate, which should result in redistribution of roughly half of the senders’ income. Letting $\alpha_{\text{givenR-givenI}}$ denote the median percentage redistributed in the treatment with given rights and given income, the hypothesis can be formally stated as follows:

- $H_{a0}: \alpha_{\text{givenR-givenI}} = 1/2$
- $H_{a1}: \alpha_{\text{givenR-givenI}} \neq 1/2$

Thus, we expect redistribution in a state of illegitimate initial entitlements to resemble distribution in a state without first possession.

The remaining hypotheses examine the extent to which earned rights and earned income affect redistribution. The design tests whether higher levels of redistribution occur when both rights and income are given relative to when one is earned. Letting

$F(\alpha^{**})$ denote the distribution of percentages redistributed in the specified treatment, these hypotheses can be stated as follows:

- Rights H_0 : $F(\alpha_{\text{givenR-givenI}}) = F(\alpha_{\text{earnedR-givenI}})$
- Rights H_1 : $F(\alpha_{\text{givenR-givenI}}) > F(\alpha_{\text{earnedR-givenI}})$

- Income H_0 : $F(\alpha_{\text{givenR-givenI}}) = F(\alpha_{\text{givenR-earnedI}})$
- Income H_1 : $F(\alpha_{\text{givenR-givenI}}) > F(\alpha_{\text{givenR-earnedI}})$

In addition to testing for the separate effects of earned roles and earned money, the design also examines whether a treatment with *both* earned rights and earned income generates lower levels of redistribution compared to treatments in which only one of these is earned. This earnedR-earnedI treatment provides a test of Konow’s accountability principle in a redistributive context. If the accountability principle is met – and redistribution varies in proportion to factors that are controllable, but does not vary in proportion to factors that are uncontrollable – then redistribution will be lowest when *both* rights and income are earned. Compared to the treatment in which only income is earned, compliance with the accountability principle requires that percentages redistributed be lower in the earnedR-earnedI treatment. This hypothesis can be stated as follows:

- Joint H_{0a} : $F(\alpha_{\text{givenR-earnedI}}) = F(\alpha_{\text{earnedR-earnedI}})$
- Joint H_{1a} : $F(\alpha_{\text{givenR-earnedI}}) > F(\alpha_{\text{earnedR-earnedI}})$

Similarly, compared to the treatment in which only rights are earned, the accountability principle requires that percentages redistributed be lower in the earnedR-earnedI treatment:

- Joint H_{0b} : $F(\alpha_{\text{earnedR-givenI}}) = F(\alpha_{\text{earnedR-earnedI}})$
- Joint H_{1b} : $F(\alpha_{\text{earnedR-givenI}}) > F(\alpha_{\text{earnedR-earnedI}})$

Rejection of these latter two hypotheses would imply that third parties' weigh multiple dimensions when forming perceptions of entitlement legitimacy and trading off these perceptions against the desire to aid the receivers. Failure to reject the two joint hypotheses, combined with rejection of the separate Rights and Income hypotheses, suggests that third-party redistributors are influenced by whether *something* is earned by a stakeholder, but not by whether earning varies along multiple dimensions.

IV. Results

24 observations were collected in each of the four treatments. A box plot of decisions in the four treatments is displayed in Figure 1. The bold lines correspond to each treatment's median; the top (bottom) of each box corresponds to the third (first) quartile, while isolated dots correspond to outliers that are either less than the first-quartile or greater than the third-quartile percentage sent. Descriptive statistics are displayed in Table 1.

[Insert Figure 1 about here.]

[Insert Table 1 about here.]

Figure 2 displays the cumulative distribution functions of percentages sent, while Table 2 presents the results of pairwise Wilcoxon rank-sum tests.

[Insert Figure 2 about here.]

[Insert Table 2 about here.]

Redistribution is highest in the givenR-givenI treatment, and a sign test confirms that the median percentage sent in this treatment is not statistically different from $\frac{1}{2}$ ($p = 0.22$). Moreover, 18 out of the 24 third-party decision makers in the givenR-givenI treatment redistribute half of the sender's income.

As predicted, the existence of earned income and earned rights each decrease redistribution. The median percentage sent in the givenR-earnedI (earnedR-givenI) treatment is 0.354 (0.405). Visually, the effect of earned rights can be seen by comparing the cumulative distribution functions of the givenR-givenI and earnedR-givenI treatments, which are each marked with triangles in Figure 1. A rank-sum statistic of 2.90 ($p = .004$) allows rejection of the hypothesis that earned rights have no effect. Likewise, the effect of earned income can be seen by comparing the givenR-givenI and givenR-earnedI distributions – both emboldened in Figure 2. A rank-sum statistic of 3.46 ($p = .0005$) allows rejection of the hypothesis that earned income has no effect.

Despite these two separate effects, redistribution does not decrease further if both earning conditions are met. The median percentage sent in the earnedR-earnedI treatment is 0.345. The distribution of percentages sent in the earnedR-earnedI treatment is shown by the lightly-shaded line marked with squares in Figure 2. Rank-sum tests show that redistribution in the earnedR-earnedI treatment is not significantly lower than redistribution in the treatment with only earned income ($z = 0.00$, $p = 1.00$) or the treatment with only earned rights ($z = 1.139$, $p = .255$). Thus, the data do not allow rejection of the two joint hypotheses. Although the existence of earned rights and earned income each separately decreases redistribution, the simultaneous existence of both does not lead to any further decrease.

Figure 3 shows the distribution of alpha-weights across each of the four treatments. The three treatments in which *something* is earned show substantially more variation than the treatment in which neither rights nor income are earned. Thus, equal division is a focal outcome when first possession is established by illegitimate means; yet, once entitlements are legitimized to any degree, behavior is increasingly heterogeneous.

In addition to collecting choices from decision makers, the experiment elicited ex ante expectations from senders and receivers.¹² Table 3 presents descriptive statistics, sorted by treatment and the source of expectations (senders or receivers). Figure 4 shows the cumulative distribution functions for sender expectations, receiver expectations and actual decisions within each treatment. Table 4 shows the results of rank-sum tests that compare senders' and receivers' expectations.

[Insert Table 3 about here.]

[Insert Figure 4 about here.]

[Insert Table 4 about here.]

Within all treatments, senders expect less redistribution than receivers; the difference is significant in three treatments and approaches significance in the fourth. Perhaps surprisingly, expectations of neither senders nor receivers vary significantly across treatments. Stakeholders, therefore, do not anticipate the extent to which earned rights and earned income influence decision makers. Figure 4 and the last column in Table 3

¹² Expectations from senders and receivers who answered the questionnaire incorrectly or submitted invalid responses were dropped from the analysis. Results do not substantively change when expectations from erroneous questionnaires are included.

show that actual decisions and senders' expectations closely align in treatments in which there is at least one earned component (and decisions are significantly different from receivers' expectations); actual decisions and receivers' expectations closely align in the treatment in which there is no earned component (and decisions are significantly different from senders' expectations). These results suggest that, regardless of the actual treatment, senders expect their initial entitlement to be perceived as being legitimate, while receivers expect it to be perceived as being illegitimate.

Conclusions

Whether in a laboratory or in front of a television set, people form redistributive preferences given perceptions of (and attitudes toward) inequality and the legitimacy of others' preexisting entitlements. The experiment described here relaxes the standards of normative purity that pervade studies of distributive justice; it examines how first possession and the legitimacy of entitlements affect third-party redistribution in an initial state of inequality. In the experiment, third-party decision makers face a tradeoff between aiding an unfortunate stakeholder and protecting the entitlement of an advantaged stakeholder. Results show that, in the presence of inequality, third parties show increased respect for entitlements when they are legitimized through effortful processes. But given that the median amount redistributed does not drop below 35 percent in any treatment – even one in which both rights and income are earned – the effect seems to be bounded.

Although we can only speculate as to why redistribution does not decrease further when both rights and income are earned relative to when only one is earned, two possibilities emerge. First, it is possible that third parties feel obliged to provide a disadvantaged stakeholder with a token payoff, since these subjects expended effort in arriving to the experiment and devoted their time within the experiment. Perhaps redistribution would decrease if, *ceteris paribus*, the disadvantaged stakeholders did not have to come to the lab and wait while others made money and/or decisions.¹³ Second, instead of accounting for *all* relevant factors, third-party redistributors may rely on heuristics when the task of determining relative desert becomes sufficiently complex. Rather than decomposing all elements that contribute to relative desert, third-party redistributors may view desert as a binary concept – if a stakeholder earns some aspect of his advantageous state, then the rule is to redistribute less of his money; if nothing is earned, then the rule is to redistribute more. This explanation corresponds with the finding of Fong (2001), who uses Gallup Poll data to show that preferences for redistributive policies are significantly affected by whether respondents feel that wealth and poverty are caused by circumstances that are within individuals’ control. Our results extend this point by suggesting that it may take only two dimensions to elicit reliance on a heuristic in forming redistributive preferences. Merely knowing that *something* is earned – either income or an advantageous role – appears to be enough to generate decreased levels of preferred redistribution.

The substantial heterogeneity within the three treatments in which something is earned suggests that no clear-cut norm governs redistribution when entitlements are

¹³ Although, it should be noted, it may be impossible to implement such a manipulation while holding all else constant. Having people outside of the lab serve as receivers would, by itself, lead to increased social distance; it could also generate doubt among subjects that the receivers even exist.

legitimized. In contrast, the focal nature of equal division in the givenR-givenI treatment suggests that equality serves as a “default” strategy (Konow, 2003) in the absence of legitimate initial entitlements. Further work can attempt to shed light on the heterogeneity that characterizes redistribution in the presence of legitimized entitlements, either by identifying person-specific factors that govern preferences or by changing the context so that consensus emerges. Given that Konow (2009) shows that additional information generates increased consensus in distributive decisions, perhaps more information regarding the relative performance of senders may lead to increased consensus in redistributive decisions.

It remains to be seen whether our results are robust to third-party redistribution in a general sense or whether they are the product of this specific design. Given that, with *any* type of earned entitlement, we find a median percentage redistributed between 35 and 40 percent, it is possible that this range represents a replicable lower-bound on third-party redistribution. Such boundaries have emerged across a wealth of standard¹⁴ ultimatum games (30-40 percent, Camerer & Thaler, 1995) and dictator games (roughly 20 percent, Camerer, 2003); further work can determine if a systematic outcome also pervades studies of third-party redistribution. Alternatively, perhaps the very existence of a lower-bound is robust, but specific design features dictate where the boundary lies. In a different third-party-redistribution experiment (say with different methods of legitimizing entitlements), perhaps there is a lower-bound at a percentage above or below the 35-40 percent range. Given the prevalence and relevance of redistributive preferences, it is

¹⁴ “Standard” here denotes experiments that are run in the U.S. with neither double-blind conditions nor earned entitlements.

worth examining the extent to which either (or neither) of these possibilities for robustness holds.

Figure 1: Box Plots

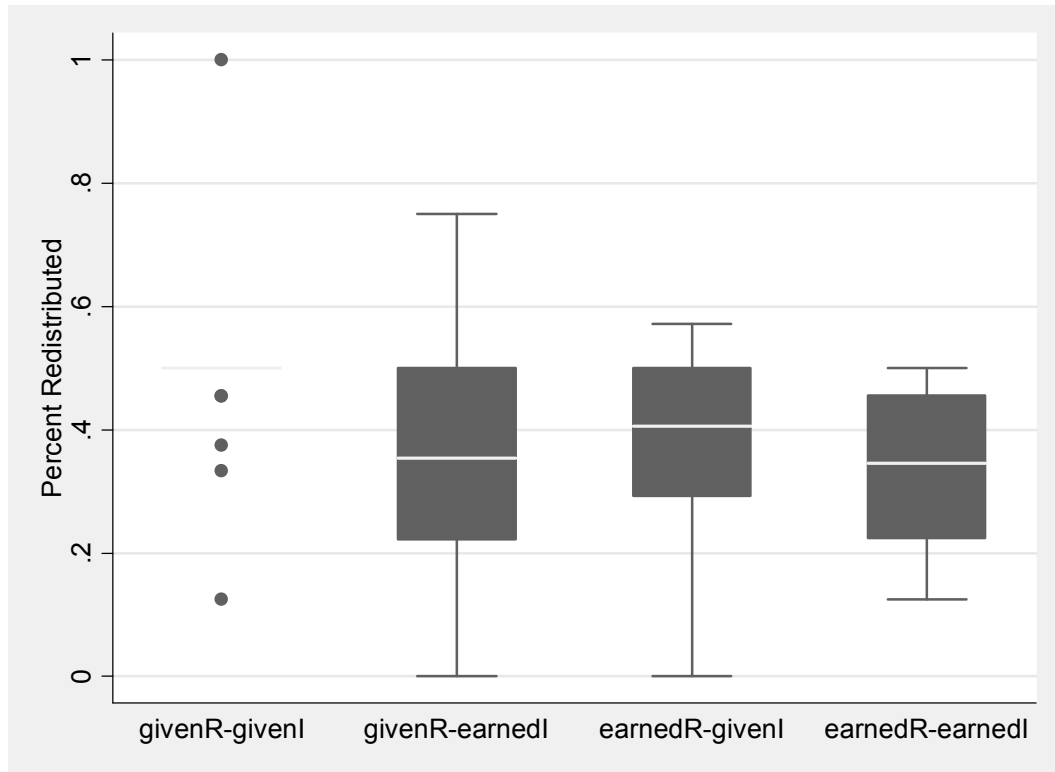


Table 1: Descriptive Statistics

	Mean Percent Sent to Receiver	Standard Deviation	Median Percent Sent to Receiver	Frequency of Even Splits
givenR-givenI (n = 24)	0.489	0.138	0.500	18
earnedR-givenI (n = 24)	0.373	0.143	0.405	8
givenR-earnedI (n = 24)	0.324	0.198	0.354	6
earnedR-earnedI (n = 24)	0.336	0.125	0.345	6

Figure 2: Cumulative Distribution Functions

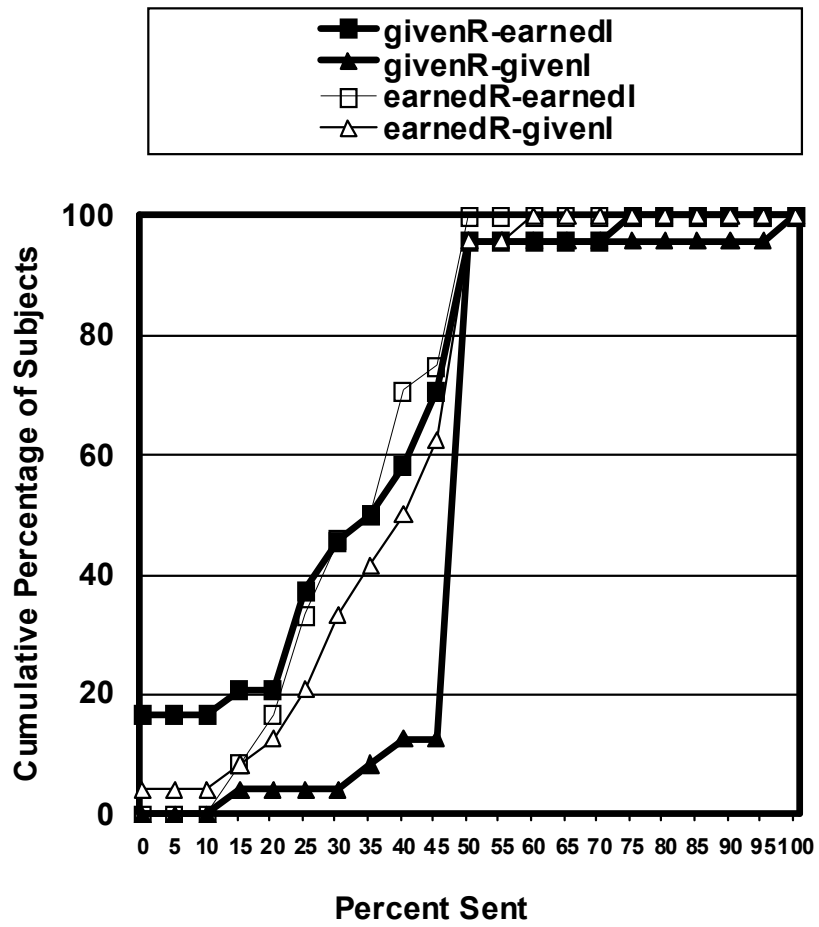


Table 2: Pairwise Wilcoxon Rank-Sum Tests

W Statistic (Probability significance level)	givenR- givenI	givenR- earnedI	earnedR- earnedI
earnedR-givenI	2.90 (0.004)	0.992 (0.321)	1.139 (0.255)
givenR-givenI	*	3.462 (0.0005)	3.891 (0.0001)
givenR-earnedI	*	*	0.000 (1.000)

Figure 3: Percentages Redistributed (α) across the Four Treatments (Sorted by α)

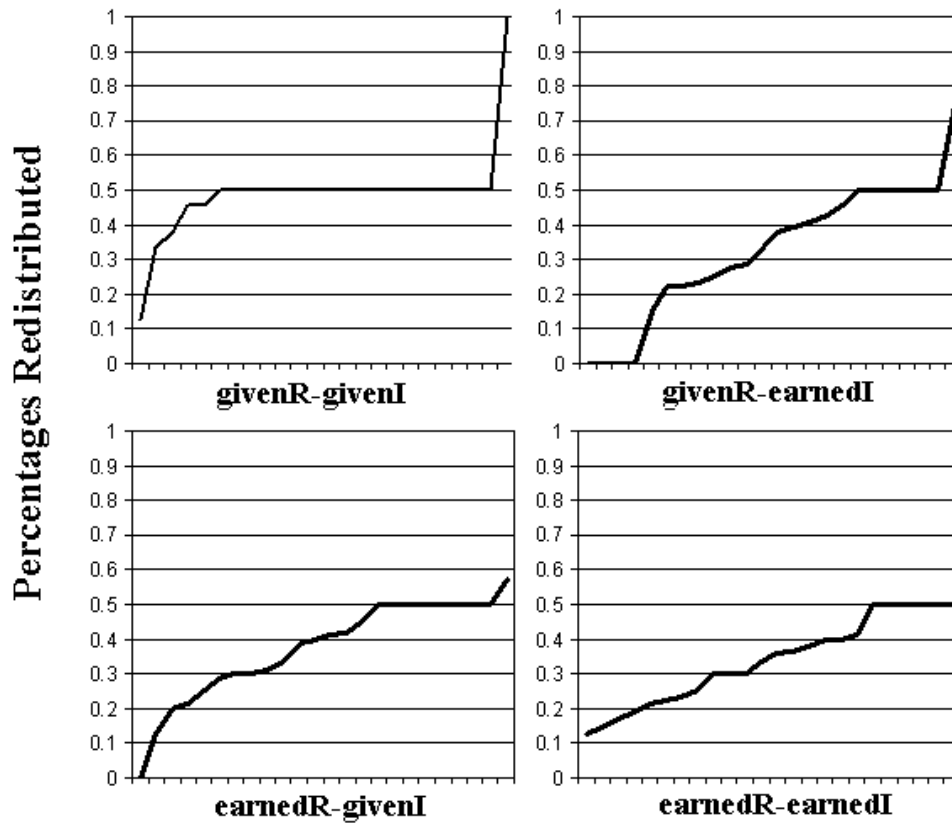


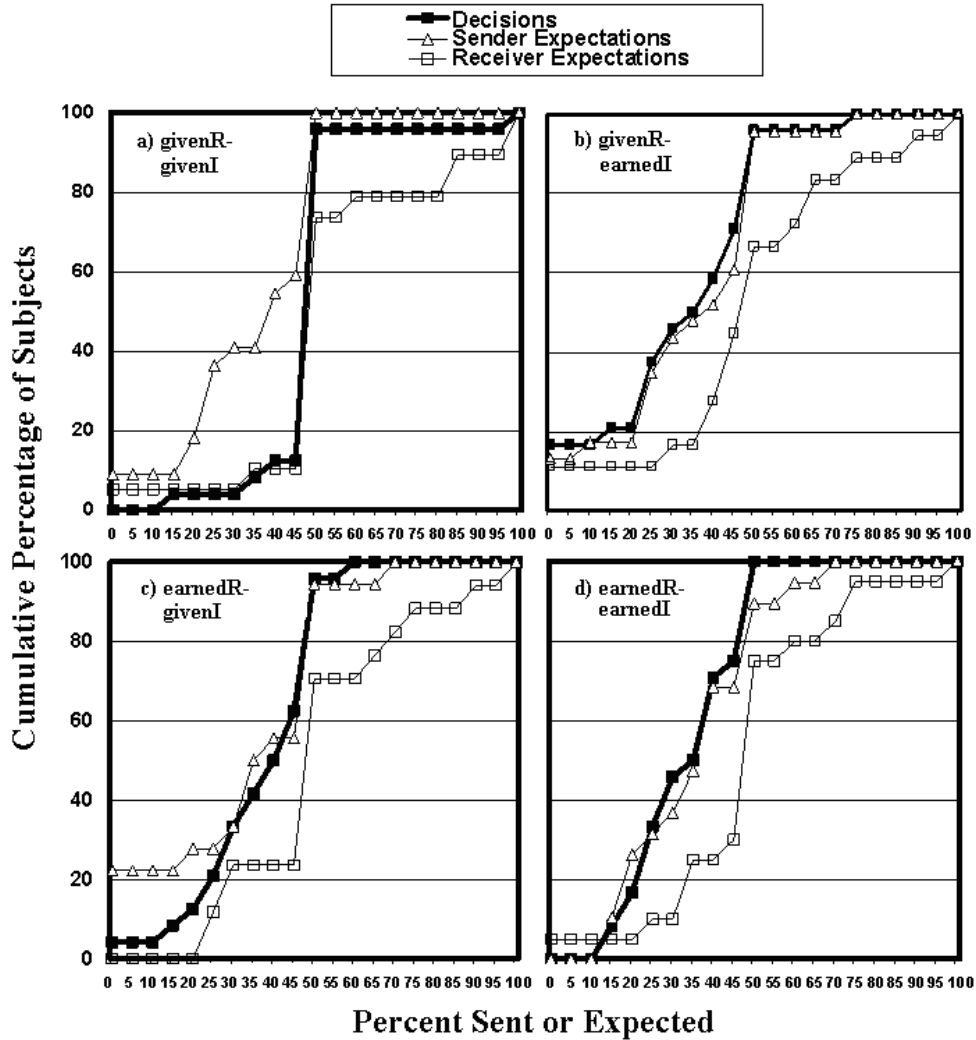
Table 3: Descriptive Statistics for Expectations

	Mean	Median	Standard Deviation	Pairwise Wilcoxon w/Percentage Redistributed
givenR-givenI				
Sender Percentage Expected (n = 22)	0.345	0.380	0.165	W = 2.967 (0.003)
Receiver Percentage Expected (n = 19)	0.551	0.500	0.230	W = 1.351 (0.177)
earnedR-givenI				
Sender Percentage Expected (n = 18)	0.329	0.356	0.213	W = .519 (0.604)
Receiver Percentage Expected (n = 17)	0.527	0.500	0.206	W = 2.374 (0.018)
givenR-earnedI				
Sender Percentage Expected (n = 23)	0.343	0.375	0.195	W = 0.486 (0.627)
Receiver Percentage Expected (n = 18)	0.484	0.500	0.246	W = 2.294 (0.022)
earnedR-earnedI				
Sender Percentage Expected (n = 19)	0.360	0.375	0.154	W = 0.443 (0.657)
Receiver Percentage Expected (n = 20)	0.499	0.500	0.206	W = 3.008 (0.003)

Table 4: Pairwise Wilcoxon Comparisons of Senders' and Receivers' Expected Percentages Sent in each Treatment

	W Statistic (Probability significance level)
givenR-givenI	3.241 (0.001)
givenR-earnedI	1.905 (0.057)
earnedR-givenI	2.356 (0.019)
earnedR-earnedI	2.340 (0.019)

Figure 4: Cumulative Distribution Functions of Expectations and Percentages Sent



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