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Fairness and Promises for Sale [*]

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Fairness and Promises for Sale

Abstract

While many studies have shown that fairness matters few efforts have been made to find out how important fairness is to the individual and thereby assessing the upper limits of these fairness concerns. This study reports on Trust game experiments in Sweden and Jamaica where subjects could forego a more fair allocation in return for extra money. The results indicate that 90 percent of subjects who had demonstrated fairness ambitions were willing to let down their counterparts if compensated. Explicit promises did not seem to matter. The first player was informed that the second player could earn extra money by changing to an unfair allocation. This modification appeared to make the trust aspect more salient, which can explain a relatively strong consistency between trust behavior and answers to attitudinal trust questions.

JEL classification: C91; D63; D64

Key words: Experiments; trust game; fairness, inequality aversion, opportunism, promise

You look like an angel, walk like an angel, talk like an angel, but I got wise. You're a devil in disguise
B. Giant, B. Baum and F. Kay.

1 Introduction

Yugoslavia, July 20th, 1941: partisans are lined up in front of a German firing squad. Just before the shots are fired, one of the German soldiers, Joseph Schultz, drops his gun and walks over to the partisans. He is executed. The situation is documented in a photo taken by one of the other German soldiers.[1]

Outside Ayod village, Sudan, March, 1993: a photo shows an emaciated girl who has collapsed on her way to the feeding station. Behind her, a vulture is patiently waiting. The photo was taken by Kevin Carter, a South African photographer. When Carter found the girl, the vulture arrived. Carter waited 20 minutes to get a better picture. He did not help the girl, his argument being that there were hundreds of girls in similar situations and there was not much he could do about it.[2]

The stories illustrate the frequent conflict between self-interest and doing what is perceived as morally right. Schultz chose to follow his moral instincts even though the prize was his own life. Carter appears to have acted in self-interest, sacrificing the girl to get a good photo.[3] In this paper we will investigate how subjects in economic experiments respond when faced with such a conflict. To do this in an economic context we formulate our questions in terms of fairness and trust.

In recent models aiming at explaining experimental data, subjects are assumed to make a trade-off between acting in their own material self-interest and being "fair" in the sense of trying to avoid inequalities (see Fehr and Schmidt, 1999, Bolton and Ockenfels, 2000) and/or to reciprocate intentional actions (see Rabin, 1993, Dufwenberg and

[1] The photo can be seen on http://www.riksutstillinger.no/print.shtml?pid=183&rtyp=2.
[2] The story is told in Rosenberg (2000, p. 123). Carter's photo can be seen on http://picturenet.co.za/photographers/kc.
[3] Although Carter appears to have had second thoughts later on. Two months after he received the Pulitzer price for his photo he committed suicide. In a parting letter he wrote that he was haunted by his memories.

Kirschsteiger, 2004, and Falk and Fischbacher, 2000).[4] A related, but under-researched, question is: what is the monetary value of fairness, that is to say, how much money is the individual willing to forego in order to avoid an unfair allocation? The answer to this question is of some interest, because if individuals attach low monetary values to fairness, utility models that incorporate fairness concerns will be of interest mainly in the analysis of certain experimental situations. However, if individuals attach high monetary value to fair outcomes, it can be argued that the traditional utility model fails to take into account important aspects of individual behavior and thus warrants modification.

This paper reports and interprets results from an experiment designed to elicit the monetary value of fairness. The point of departure is the Trust Game (Berg, Dickhaut and McGabe, 1995). In this game, there is one A-player and one B-player. A and B both receive an initial sum equal to *M*. A can then send a sum, x ($0 \le x \le M$), to B. The sum sent by A will be tripled by the experimenter. B can then send back a sum, y (where $0 \le y \le 3x$), to A. Clearly, under selfishness and rationality the subgame perfect equilibrium is $x = 0$ and $y = 0$. However, experimental studies from throughout the world suggest that A-players send on average 45 to 70 percent of their initial sums and B-players return about one third of what they have received.

In standard Trust games, these results may be interpreted in terms of fairness in two different ways. First, the "inequality story" is that by sending money, A creates an unequal allocation. By knowing or assuming that B dislikes unequal allocations, A then expects B to return money to correct this allocation. Second, the "reciprocity story" is that by sending money, A signals intentional kindness that he expects B to reciprocate because A knows or assumes that B derives utility from reciprocation. In our extension of the standard

[4] There are also are also models of older vintages on altruistic motives (see e.g., Becker, 1974, Andreoni, 1990, and Konow, 2003, for a survey) that drive behavior toward more "fair" outcomes. Thus, in this paper fairness considerations have a broad interpretation, incorporating both distributive preferences and reciprocity mechanisms. Some authors have reserved the term "social preferences" for this broadly defined fairness concept.

Trust game (cf. below), a third interpretation is possible – the "promise story": if B delivers an explicit promise on how much to return before A makes a sending decision, A may send money because he believes that B will keep her promise and B may return money because she feels that she is committed to the explicit promise. All of these stories rely on the assumption that A expects B to satisfy what Camerer (2003, p.85) denotes a "moral obligation." From the literature it is known that the higher relative price of satisfying the moral obligation the lower is the willingness to satisfy it.[5] However, unlike the previous literature, this paper is an inquiry into the upper limits of this price (for the majority of the subjects).[6] This upper limit can be interpreted as the amount needed to bribe a person into behaving entirely selfish.

We modify the standard Trust game in two ways. First, we ask the B-player to send a message on how large a share she promises to return. This promise reaches A before he makes his sending decision.[7] Second, after B has made her decision on the amount to return, she is given the opportunity to forego that decision in return for extra monetary compensation (the information that B will be given this opportunity is known to the A-player before he makes his sending decision). This modification of the Trust game enables us to see how B values the moral obligation created in the game. In addition, by having appropriate control groups, it is possible to distinguish different effects.

The new information treatment puts an extra pressure on the A-player's trust, since he will know that the B-player will be exposed to extra temptations to behave opportunistically. Despite the game's name, an earlier study by Glaeser et al. (2000), did not

[5] For instance, satisfying the moral obligation to give in dictator games with different "relative prices" of giving has been explored in Andeoni and Miller (2002). Fehr et al. (1997) have demonstrated that the willingness to reciprocate in gift exchange games is sensitive to the price of punishment (see also Grossman and Eckel, 1996). Furthermore, the relative price effect of fairness in alternating offer bargaining has been studied in Zwick and Chen (1999).

[6] It should be noted that although the willingness to safisfy the moral obligation may stem from combinations of different mechanisms (i.e., distribution motives, reciprocity emotions and/or committments to promises) the upper limit studied in this paper will apply to all of them.

[7] One reason for introducing an explicit promise is that socio-psychological studies by Loomis (1959) and more recent economic experiments by Charness and Dufwenberg (2003), and Ellingsen and Johannesson (2003) suggest that communication matters in games similar to the Trust game.

detect any relationship between attitudinal answers to trust questions and A-player behavior in Trust games. However, Holm and Danielson (2005), Fehr et al. (2003), Bellemare and Kröger (2003) have detected significant but relatively weak relationships between such answers and trust behavior. These findings suggest that answers to attitudinal questions only weakly predict real trust or that the standard trust game is not ideally suited for measuring real trust. If the last explanation is accepted then modifications of the trust game where the trust component is more salient are called for. The modifications proposed here allow us to do precisely that.

The modified trust game experiment was conducted both with Jamaican and Swedish subjects. The primary reason for this was to get cultural variation in the subject pool.[8]

The remainder of the paper is organized as follows. The main question to be asked is interpreted in a theoretical framework in Section 2. Section 3 contains a description of the experiments. The results are presented in Section 4. Concluding remarks are offered in Section 5.

2. Theory

We interpret our main research question in the framework of inequality aversion provided by Fehr and Schmidt (1999).[9] Consequently, this section starts by such an interpretation. It is also

[8] Living in a stable democracy characterized by a relatively high per capita GDP, a high percentage saying that they trust others, low levels of perceived corruption and ambitious re-distributive well-fare systems Swedish subjects may be somewhat biased toward strong emotions for trust and distributive fairness, which might impact the fairness price. Jamaican subjects live in a country characterized by political instability, a relatively low per capita GDP and widespread suspicions about corruption. A priori, there is not much in Jamaica that would motivate expectations of the same behavioral bias as among the Swedish subjects. Running the experiment in these relatively different countries safeguards against country specific results.

[9] This parsimonious model is chosen because of its tractability and ability to explain a wide range of experimental results. However, it should be noted that phenomena relating to intentions (see e.g., Falk et al., 2000) cannot be explained by this type of distribution models. Furthermore, Engelmann and Strobel (2004) have demonstrated that other models can explain behavior in certain pure distribution problems better than the one suggested by Fehr and Schmidt (1999).

claimed that the modification in the Trust experiment has a novel interpretation as robustness against opportunism. This aspect is discussed in the following subsection.

2.1 Inequality Aversion and the Price of Fairness

In the linear model of Fehr and Schmidt (1999), (henceforth FS) the utility of a player *i* in a game with two players $i, j \in \{A, B\}$ is given by the following expression:

$$U_i(x_i, x_j) = x_i - \alpha_i \max(x_j - x_i, 0) - \beta_i \max(x_i - x_j, 0), \qquad (1)$$

where $i \neq j$ and it is assumed that $\beta_i \leq \alpha_i$ and $0 \leq \beta_i < 1$. With such utility functions, there are two equilibrium outcomes in the Trust game that depend on the B-player's value of β_i and the A-player's belief concerning B's type. If A knows or believes that $\beta_B < 1/2$ then the equilibrium coincides with the standard prediction that no money is sent, i.e. that $x = 0$ and $y = 0$. However, if $\beta_B > 1/2$ then the equilibrium is that the A-player sends all money to B who returns half his total endowment after receiving 3*M*, that is $x = M$ and $y = 2M$.[10] In the trust game this simple model gives somewhat extreme predictions that are typically not observed in experiments, where the vast majority of A-players send less than *M*, but more than 0 and B-players send less than 2*M* but more than 0. FS also make the latter observation (for Dictator games that are strategically equivalent to the B-player's decision) and suggest instead that the last term in (1) be concave in inequality. In that case observations are in line with theory since $0 \leq x \leq M$ and $0 \leq y \leq 2M$ are consistent with equilibrium.[11]

[10] A formal proof is in Appendix 1.

[11] Clearly, the theory has no empirical content for the A-player since the entire strategy set is consistent with theory meaning that "anything goes". For the B-player, the theory has some empirical content in the sense that there are observations that would refute it.

Let us now use the simple model described in (1) to interpret the question posed in this paper. According to this model some individuals may act consistently with standard theory (those for which $\beta_B < 1/2$). Observations of this category of subjects do not motivate any revisions of standard utility functions. However, evidence suggests that the vast majority of subjects send money, which implies that fairness concerns (in the form of inequality aversion) matter. If we ask how important these concerns are we can only answer this question partially with observations from the Trust game. Observations from the first player do not tell us anything since even an entirely self-interested player would send all his money to a B-player if he knew that the B-player would always return 50 percent of his entire endowment. Thus, the critical observation regarding fairness concerns the B-player in this model.

If it is observed that a B-player sends *y* this means that $\beta_B > 1/2$ and that his fairness concerns are *at least* worth *y*, since the player had the possibility of keeping *y* to himself, but did not. Thus, B has revealed that $U_B\left(x_B^1 - y, x_A^1 + y\right) \geq U_B\left(x_B^1, x_A^1\right)$, where $x_A^1 = M - x$ is A's endowment after sending *x*, and $x_B^1 = M + 3x$ is B's endowment after receiving 3*x* but before returning *y*. However, by observing *y* we only get the lower limit of these concerns. We do not really observe how the individual values the unequal outcome to the chosen one. One way to assess the importance of fairness concerns in this context is to ask how much B must be compensated in order to be indifferent between reversing the transaction, that is to recover *y*. Thus, we are trying to observe a fairness price, $\tilde{w}$, such that $U_B\left(x_B^1 - y, x_A^1 + y\right) = U_B\left(x_B^1 + \tilde{w}, x_A^1\right)$.

The following observation uses the equilibrium of the FS model to provide some guidance concerning $\tilde{w}$.

Observation 1*: For individuals for which* $\beta_B > 1/2$*, any* $\tilde{w} = \frac{2M}{1-\beta_B} - 4M > 0$ *is consistent with the linear FS model.*[12]

The observation tells us that FS provides a direct relationship between the initial endowment, *M*, B's fairness or guilt parameter, β_B, and the fairness price, $\tilde{w}$. The fairness price is increasing in initial endowments and the fairness parameter. Furthermore, it should be clear from the observation that without any knowledge of β_B the linear FS does not give any guidance in answering the question of how much the individual should be compensated in order to abandon the fairer outcome. The presence of an (a priori) arbitrarily high fairness price depends on the fact that as $\tilde{w}$ increases so does inequality and if β_B is close to one, an extra dollar in the individual's own pocket does not matter since the positive utility effect of more money to oneself is balanced by the negative impact from "inequality" or "guilt". It should be mentioned that if the last term in (1) is a concave function the fairness price could still be determined from the model. However, the explicit solution would depend on the specification of the function. Hence, the value of $\tilde{w}$ would still be an empirical question.

The observation made above concerns the standard Trust game. In the experiment reported in this paper we modify the information A will get. Hence, A will know that B has a possibility of earning extra money by setting $y = 0$. This will make the equilibrium more difficult to derive. However, since B has all relevant information in the last stage of the game, the logic behind her behavior will be the same as in the standard Trust game. However, in the analysis of the modified game it cannot be assumed that $x = M$. By again using the condition that $U_B\left(x_B^1 - y, x_A^1 + y\right) = U_B\left(x_B^1 + \tilde{w}, x_A^1\right)$ we get a more general variant of Observation 1.

[12] See Appendix 1 for a proof.

Observation 1': *For individuals for which* $\beta_B > 1/2$, *any* $\tilde{w} = \frac{y(2\beta_B - 1)}{1 - \beta_B} > 0$ *is consistent with the linear FS model in the modified game.*

It can be noted that $\tilde{w}$ is still increasing in the guilt parameter (β_B). Now it is also increasing in the amount B plans to return (*y*) but not in the amount received from A (*x*). As before there is no a priori restriction as to what the price should be.

2.2 Robustness against opportunistic shocks

We argue that the fairness price has implications for the new fairness theories and the traditional materialistic utility model in a specific sense. Suppose the fairness price is *b*. This means that the observed fairness behavior (implied by sending *y*) is robust to payoff shocks that make unfair actions more advantageous to the decision-maker (i.e. in the way $\tilde{w}$ did in section 2.1) and is smaller than *b*. However, for larger payoff shocks fairness concerns are dominated by selfish materialistic concerns and observed behavior will be consistent with the traditional utility model. Hence, the price *b* can be interpreted as an indicator of the new type of models' robustness against explanations that only rely on selfish materialistic concerns.

The described shocks in payoffs should not be considered foreign to economic life. They can simply be interpreted as an unexpected occurrence that would increase the payoff of letting down another person. Examples range from reconsidering paying back a partner when discovering a more profitable investment opportunity or reconsidering returning a favor when an attractive competing activity is suddenly discovered. In this sense the fairness price, *b*, is an indicator of the amount of opportunistic noise an individual can take before changing to self-interested behavior.

3 Experimental Design

During the fall term of 2003, 60 and 48 subjects were recruited from the introductory economics course at Lund University in Sweden and at the University of the West Indies in Jamaica, respectively. Subjects were asked to come to a certain place to participate in an experiment in economic decision-making, in which some money could be earned.

Based on their lecture groups, subjects were directed to two rooms, room 1 for A-players and room 2 for B-players. Players then received one out of two treatments, the control treatment or the promise treatment. The phrasing was slightly adapted to the different treatments, but otherwise identical. As in Berg, Dickhaut and McCabe (1995) initial amounts were given to both A and B-players. This amount was SEK120 in Sweden and J$300 in Jamaica, which corresponds to 1.5 hours paid work for students in these countries.[13]

To ascertain common knowledge in the Trust game situation, B-players received the standard Trust game information and the information that A has received the same information about *this situation*. A also received information about the standard Trust game information and the information that B also had received the same information about *this situation*. Then A received the additional information that the experimenters would offer money to "buy a change" in B's decision so that she would not return any money to A and the information that B did not know this.[14] In this way B was truthfully informed about the Trust game situation and A was truthfully informed about the whole situation. B-players with the

[13] These amounts correspond to 16 and 5 US dollars, respectively.

[14] This information was important for two reasons. First, if we had not informed A-players about our intentions to buy a change in B's decision, A-players might argue that they were deceived by the experimenters to send money in a situation that was more uncertain than the one they were informed about. Secondly, we were also interested to see how this information affected A-player behavior.

promise treatment received standard trust game instructions and were also asked to state the share of the amount received that they promised to send back to the A-players.[15]

The experiment was conducted with paper and pencil with assistants bringing forms between rooms. The sequence of the experiment is given in Table 1 and contained the following elements:

1. B-players with promise treatment filled in message forms with their promises.
2. A-players with promise treatment received message forms and decided how much to send to the B-player. At the same time A-players in the control group decided the amount to send.
3. B-players decided the amount to be returned to the A-player.
4. B-players were given the opportunity of changing their decision (i.e., of not returning any money to A) in return for money.
5. All subjects completed a questionnaire containing questions on personal characteristics and attitudes.

TABLE 1

The fourth stage deserves some additional comments. After the forms where B-players had indicated the amount they wanted to return had been collected, subjects were informed that they had an opportunity to earn more money. This opportunity was given to subjects who had chosen to return a positive amount of money in the control group and those subjects in the promise group who had sent back at least as much money as they had promised.[16] In this way subjects with fairness ambitions were selected.

[15] The possibility of letting the promise be conditioned on the amount sent by the A-player was considered, but not included in the final design since such a feature would apply the strategy method which would have made the instructions substantially more complicated. Furthermore, Holm and Nystedt (2004), using the strategy method, found that the majority of B-players sent back a fixed proportion of the amount received from the A-players. If promise behavior is consistent with actual behavior this observation suggests that this restriction on the promise does not alter promise behavior much.

[16] To keep the other subjects busy and to obtain some additional information they were asked to fill out hypothetical questions.

The mechanism to buy changes in B-players' decisions was then introduced. Subjects were informed that the change would mean that they would keep all money received from A and on top of that the money earned from the sale of the change in the decision. They were also informed that if the change in the decision took place, A would only get what he did not send in the first stage. The incentive compatible mechanism was the one suggested by Becker, DeGroot and Marschak (1964). Thus, subjects were asked to write down the minimum amount required to change the initial decision. The interval was SEK0-300 in Sweden and J$0-750 in Jamaica (i.e. up to 250% of the initial sums). A random number would then determine the actual price. B-players' offers were purchased if the price stated was lower than the random number. Subjects were informed that by stating 0 they would always sell a change in their decisions and by stating the maximum amount (SEK300 and J$750, respectively) they would never sell. To make sure that the subjects understood the mechanism, an exercise sale was made before they made their real decisions.

4 Results

This section is organized in the following way. First, subjects are briefly characterized. We will then analyze the subjects' behavior. The focus of the present paper is on B-player behavior. The presentation therefore starts with results on this player category. Promises affect both player types and the results relating to them are analyzed at the end of the section. It shall also be noted that although the primary objective of this paper is not a cross-country comparison of behavior, we report the results for the different countries separately.

4.1 Characteristics of the subjects

As noted above, 60 subjects participated in the experiment in Lund and 48 subjects in the experiment in Kingston. All subjects were first-year students of Economics. In each case, half

were in a control group. In Table 2 we present some characteristics of the subjects. In Sweden, 53 percent were women; in Jamaica almost 70 percent. Mean age of subjects in Sweden was 22.8 years, slightly higher than in Jamaica. In both cases subjects perceived that they came from homes with roughly average income. All subjects in Jamaica answered that they believe in God; in Sweden the corresponding number was 45 percent. A notable difference between the subjects concerns their answer to the attitudinal trust question. In Sweden 80 percent stated that they trusted others whereas only 12.5 percent did so in Jamaica.

TABLE 2

4.2 Fairness for Sale

We begin by presenting data on the share the B-players chose to return before they were offered the opportunity to sell changes in their decisions. The distributions on the proportions returned in Sweden and Jamaica for the B-players are given in Figures 1a-d. The mean proportion returned is about 0.37 in both countries, which is fairly standard in trust games (Camerer, 2003: Ch. 2). For B-players in the baseline treatment this is hardly surprising, since at the time B-players made this decision, they had received standard trust game treatment. Furthermore, the vast majority returned some money. Out of the 50 B-players who received money from A-players (and thus could return money), only 4 subjects (all Swedes) chose not to return anything. Hence, like in most subject populations, the vast majority appears to have fairness preferences.

FIGURES 1 a-d

In the elicitation of the fairness price we were interested in subjects who had proven to have fairness concerns. Consequently, some subjects were excluded from the elicitation. To qualify for the elicitation subjects either had returned a positive amount of money in the baseline treatment or had kept their promises in the promise treatment. The

numbers of subjects who did not send money or did not keep their promises are presented in Table 3. In all 36 players were selected as having fairness concerns.

TABLE 3

Let us now ask if there is a price on fairness and how high it is. Out of 36 subjects, 31 stated reservation prices that were less than the maximum amount. In Sweden, one subject and in Jamaica four subjects stated a reservation price equal to the maximum amount; these subjects were thus the only ones not willing to change their initial decision. This means that the vast majority of subjects were prepared to give up their fairness ambitions if the price was sufficiently high. It should be stressed that this result concerns a group that has demonstrated "fairness ambitions" earlier in the game. Furthermore, the prices required by B-players to let down "their" A-player are presented in Table 4.[17] In Sweden the mean reservation price was slightly below USD 13 and in Jamaica it varied somewhat depending on treatment but was not higher than USD 4. This corresponds roughly to the hourly salary these subjects would earn on a typical job in respective country. However, since the total sum B-players are willing to forego also includes *y* it is reasonable to include that sum in the total reservation price. As shown in Table 4 this doubles or triples the mean reservation prices.[18] These reservation prices now correspond to a couple of hours' work. If we look at the five individuals who stated the maximal fairness price, it should be clear that some people are willing to forego a substantial amount of money to satisfy their moral obligation to an anonymous person. In Jamaica the highest reservation price (including *y*) was J$1,250 (USD21). In Sweden it was SEK 500 (USD67). The Swedish player with the highest reservation price belonged to the baseline group and had consequently not even made a promise.

[17] The five subjects that stated the maximum reservation price are excluded from Table 4.
[18] Note, in the group selected for elicitation, the amounts returned (i.e., *y*, were somewhat higher for the group that received the promise treatment. The reason for this is likely to be a selection effect since only individuals that kept their promises were selected.

TABLE 4

The distributions of the prices as proportions of the maximum amounts are presented in Figures 2a-d. Whereas the mean reservation prices as a proportion of the maximum price are relatively similar the distribution appears more polarized in Jamaica. In Jamaica the mode reservation price was J$10. In Sweden it was SEK100. However, more subjects stated the maximum reservation price in Jamaica. Relatively many subjects (especially in Jamaica) stated a low reservation price. There are two conceivable explanations for this. First, it is quite likely that at least some subjects are almost indifferent between sending *y* and keeping the entire amount. These subjects should state a reservation price close to zero. A second explanation is that some subjects might have felt that the moral obligation of returning *y* became less important when they were given the opportunity to reconsider sending back money.

FIGURES 2a-d

According to Observation 1' FS predict that the fairness price is positively related to *y*. This result is confirmed and demonstrated in Figure 3a-b. The reservation prices are strongly and positively correlated with the proportion returned in both Sweden and Jamaica. The correlation coefficient between the proportion returned and the reservation price is 0.55 in both countries and highly significant at conventional levels ($p = 0.018$). Note that this correlation is strong despite the fact that the group that decided to return a large fraction of the amount received also had the most to gain by changing their decisions. The conclusion is that subjects returning a large fraction of the amounts received are more prone to demand a high price for being "unfair" than others are. This suggests that the motives behind behavior in the returning decision and the decision to state a reservation price are similar.

FIGURES 3a-b

4.3 Trust Behavior and Attitudes

Most A-players sent some money to their B-player even when informed that the B-player would have an opportunity to revoke his promise. The distributions on the proportion A-players in Sweden and Jamaica sent are given in Figures 4a-b. The mean proportion sent was 33 percent in Jamaica and 58 percent in Sweden. A Mann-Whitney test strongly rejects that the Jamaican and Swedish sender decisions are obtained from the same underlying distribution ($p = 0.0042$). This result is consistent with how the groups responded to attitudinal trust questions: Jamaican subjects displayed considerably less willingness to trust others.[19] Even more revealing is perhaps the fact that only 12.5 percent of the subjects in Jamaica stated that they in general thought that most people could be trusted. In Sweden, the corresponding figure was almost 80 percent.[20] We thus have some backing for the assertion in this paper of Swedish subjects being more trusting than their Jamaican counterparts both in terms of behavior and in terms of how they answer survey questions. It should be noted that a similar consistency at the group level could not be found in a study by Holm and Danielson (2005) where the standard trust game was used. In that study Swedish students and Tanzanian students were compared. Despite a large difference between the groups regarding their attitudinal trust, the distributions on amounts sent in Trust game behavior were remarkably similar.[21]

FIGURES 4a-b.

We used three generalized trust questions from Glaeser et al. (2000): 1. “Would you say that most of the time people try to be helpful/are mostly looking out for themselves”; 2. “Do you think that most people would take advantage of you if they got a chance/ try to be

[19] The question was ”On a scale from 1 to 6, how would you rate your willingness to trust others”. Possible alternatives ranged from 1 (always trusting) to 6 (always careful). Mean answer in Sweden was 2.75 and in Jamaica 3.9.

[20] This is the so called generalized trust question: ”Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with other people”.

fair "; and 3. "Generally speaking, would you say that most people can be trusted/you can't be too careful in dealing with people." The first alternative got a value of zero and the second one. To test if the distribution of amounts sent in the trust game for the groups that received a zero and a one, we run one Mann-Whitney test for each question. For all the questions the median amount sent was higher in the groups that stated that "people try to be helpful", "try to be fair" and "can be trusted". Furthermore, despite the small number of observations (n = 54) the differences between the distributions were highly significant.[22] Given the relatively weak consistency between attitudinal trust and survey trust that has been reported in earlier research it is reasonable to conjecture that the modification in the Trust game makes subjects more focused on aspects that are more directly related to trust.

4.4 The Price of a Promise

Everyday promises are made, kept and broken. From a strict economic or game theoretic point of view this is not entirely easy to understand. In many situations such communication would be labeled cheap talk and should not matter. Still promises are facts of life and if they have a value it is reasonable to believe that they might serve as a contract-enforcing device that could lower transactions cost. Despite the potential value of promises it has not been studied thoroughly. Two recent studies by Charness and Dufwenberg (2003) and Ellingsen and Johannesson (2003) suggest that communication may matter in games similar to the trust game. The former study explains the effect of promises by two alternative hypotheses, guilt aversion and dislike of lying,[23] while the latter model explains it with consistency combined with inequality aversion. In both these studies subjects can send relatively unrestricted messages to their counterparts. Furthermore, subjects did not receive any extra bonuses for

[21] 74 percent of the Swedish subjects said that they trusted others whereas only 41 percent of the Tanzanian subjects did so. A-players sent 53 percent of their initial endowments in Tanzania and 51 percent in Sweden.
[22] The p-values were 0.002, 0.034 and 0.009, respectively.
[23] The dislike of lying has also been suggested by Gneezy (2005).

not keeping the promises. In our experiment there is an opportunity to study the effect of promises in an environment that is much harsher in the sense that the promise message was restricted to a number and the A-player knew that the B-player would be tempted by extra payment not to keep the promise.

The promises made as percentages of the amounts received from the A players are given on the x-axis in Figures 5a-b. Promises are plotted against the difference between the amount returned and the promise made. Thus, a promise was considered broken if this difference was negative and a promise was considered kept if the difference was zero or positive. The most common promise was 50 percent and most of the subjects who kept their promises returned the exact amount promised. There is a tendency that the higher percentage promised the more likely it is that the promise is broken. Hence, a generous promise may not be a good signal for the A-player in this sense. However, A-players appear to have seen through this and appear not significantly affected by the promise. According to our findings, neither the amount promised nor the promise itself matter for the amount sent by the A-players. In both Sweden and Jamaica, A-players that received promises sent slightly less than the control group. About half the subjects who received a positive amount from their A-players and could keep their promises did so. However, even subjects that kept their promises were willing to break them if the compensation was sufficiently high. Moreover, the reservation prices of changing the decision were not significantly different for B-players in the promise group and the control group. These conclusions should be clear from inspection of Table 4. Thus, explicit promises in this context appear to be neither strongly believed in nor considered especially important to keep. Despite this observation subjects in general perceive themselves as trustworthy and believe that other people think they are trustworthy.[24] For instance, over 80 percent of those B-players who had broken their explicit promise in the

trust game answered that the statement "I am always trustworthy" was either "correct" or "completely correct". This suggests that there is a clear discrepancy between what people say and how they act when it comes to trustworthiness.[25]

FIGURES 5a-b.

The difference between our results and the findings in the studies mentioned above have two possible explanations. First, the information that the B-player would be tempted not to keep the promise made A-players more skeptical about the promises. Second, the communication form was more restricted in the present experiment, which made it impossible for subjects to write more personally designed messages where e.g., intentions could be effectively communicated in detail.

When they say you was highclassed, well that was just a lie.
You ain't caught a rabbit and you're no friend of mine.
J. Leiber and M. Stoller

5. Concluding Remarks

What is your reservation price for receiving an additional sum of money? To a traditional economist such a question would seem utterly idiotic. In this paper it is shown that such a reservation price has a theoretical interpretation in recent fairness models and may also be interpreted as a measure of a specific behavioral robustness against opportunism.

Fairness concerns and fairness norms are important aspects of economic behavior. However, this does not necessarily mean that economic man has to be modeled differently. Most real-life situations that contain fairness considerations involve repetition and publicly observed actions. These are therefore arguably subject to dynamic concerns that can be properly described using game theory and standard utility theory. However, a vast number

[24] Subjects answered the question "I am always trustworthy" on a scale ranging from 1 (Completely wrong) to 6 (Completely correct). Mean answer in Sweden was 5.2 and in Jamaica 5.0. The same scale was used for the question "Most people think that I am always trustworthy". Mean answer in Sweden was 5.2 and in Jamaica 5.1.
[25] It is not unlikely that this discrepancy reflects some kind of self-deception (see e.g., Babcock et. al., 1996, and Konow, 2000).

of experimental results convey that subjects incorporate fairness concerns even in situations where subjects are anonymous and the game is not repeated. As a consequence models trying to incorporate fairness in the utility function have been suggested to better understand these results. An important question is then how widely this new conception of economic man should be applied. In this paper we address this issue in a novel way by asking how much it would take to make individuals unfair.

The results clearly demonstrate that there is a upper limit on the price on fairness in experimental contexts.[26] In support of the fairness models a substantial part of the subjects stated a positive price. However, the reservation prices were not especially high. In the experiments reported here around 90 percent of the subjects were willing to let down a counterpart who had been kind to them if the price was lower than what they could earn on a few hours paid work.[27] In addition to this, subjects making explicit promises were not hesitant to break these if the price was sufficiently high. These results were established both in Sweden and in Jamaica why some robustness with respect to cultural variation can be claimed. One implication of these results is that when opportunistic noise of a certain magnitude enters the experimental situation behavior coincides with the selfishness prediction.

[26] Clearly, this does not mean that there is a price on fairness in every other context. However, we consider this context to be important to study since the cited fairness models are mainly motivated by results from experiments.

[27] According to Observation 1, for a given initial endowment, there is no a priori theoretical limit on the fairness price across individuals. However, for each individual the fairness price will depend on the initial endowment. This means that the price of fairness should not be interpreted in any absolute sense across contexts.

Appendix :

A1. Proofs to statements in section 2.1.

In this appendix we provide proofs for the equilibrium discussed in section 2.1 and Observations 1 and 1'. Following Fehr and Schmidt (1999) we make a distinction in the proofs between the case where players have complete knowledge and incomplete knowledge, respectively of the parameters in the model. We start by the case were it is assumed that A perfectly observes β_B and comment on the latter case afterwards.

For players with a linear FS utility function described by (1) there are two subgame perfect equilibrium outcomes in the Trust game. These are $(x^*, y^*) = \{(0,0),(2M,2M)\}$ *and depend on the B-player's value of* β_i.

Proof: Following backward induction, the B-player's subgame is just a Dictator game. B has $3x$ to spend and his total endowment after receiving this is $3x + M$, which means that before he decides about *y*, he will have at least as much money as A (who will have $M - x$). If $x > 0$ only the first and last term in (1) will affect utility. A marginal increase in *y* will then affect B's utility by $2\beta_B - 1$, which means that utility increases (decreases) linearly if $\beta_B > 1/2$ ($\beta_B < 1/2$). However, utility only increases up to the point where both players end up with the same amount of money, which happens when $y = 2x$. At this point, further marginal increases in *y* would affect utility by $-2\alpha_B - 1$, which clearly is negative. In the case where $\beta_B < 1/2$ returning money decreases utility which means that the optimal strategy would be $y = 0$. Hence, if $x > 0$ and $\beta_B > 1/2$ then $y^* = 2x$. If $\beta_B < 1/2$ then $y^* = 0$. Finally, note that if $x = 0 \rightarrow y = 0$, since by construction $y \leq 3x = 0$.

We now turn to Player A's decision. Clearly, if $y = 0$, then $x^* = 0$, which establishes the first equilibrium. If $y^* = 3x$, then the best response clearly is $x^* = M$. The

reason is that A earns one unit for each unit sent, and ends up in an equal allocation. Hence, the set of subgame perfect Nash-equilibria is: $(x^*, y^*) = \{(0,0),(2M,2M)\}$. Q.E.D.

If A imperfectly observes the type of B we need to incorporate A's envy parameter, α_A and his (subjective) probability estimate, *p*, that B's type is such that $\beta_B > 1/2$.

For players with a linear FS utility function described by (1) equilibrium can be characterized by the following optimal responses by the B-player:

$y^* = 2M \qquad if\ \beta_B > 1/2$

$y^* = 0 \qquad \beta_B < 1/2$

The optimal amounts sent by A will then be:

$x^* = M \qquad if\ p > \dfrac{1+4\alpha}{2+4\alpha}$

$x^* = 0 \qquad if\ p < \dfrac{1+4\alpha}{2+4\alpha}$

Proof: The logic behind the B-player behavior is the same as before. A now optimizes the expected utility given B's behavior. In this linear model his choice will be binary, i.e., to send M or to send zero. Hence, it will be strictly optimal to send M iff:

$$p \cdot 2M + (1-p)(-\alpha \cdot 4M) > M \Leftrightarrow p > \frac{1+4\alpha}{2+4\alpha}.$$

Q.E.D.

Proof of Observation 1:

For B-players who send money, it must be the case that $\beta_B > 1/2 \rightarrow (x^*, y^*) = (2M, 2M)$ according to the proof above. We are trying to find $\tilde{w}$ such that:

$$U_B(M + 3x^* - y^*, M - x^* + y^*) = U_B(M + 3x^* + \tilde{w}, M - x^*) \rightarrow \qquad (2)$$

$$\rightarrow 2M = (4M + \tilde{w})(1 - \beta_B) \rightarrow \qquad (2')$$

$$\rightarrow \tilde{w} = \frac{2M}{(1 - \beta_B)} - 4M \, . \qquad (2'')$$

From (2'') it can be verified that if $\beta_B \rightarrow 1 \Rightarrow \tilde{w} \rightarrow \infty$ and if $\beta_B \rightarrow 1/2 \Rightarrow \tilde{w} \rightarrow 0$. Thus, any positive observation of $\tilde{w}$ is consistent with the linear FS. Q.E.D.

Proof of Observation 1':

Even if A is not informed about all aspects of the elicitation game, B is. To derive predictions concerning B's behavior we can apply more general best-replies. Hence, if B sends positive amounts of money to A in the modified game and $U_B(x_B^1 - y, x_A^1 + y) = U_B(x_B^1 + \tilde{w}, x_A^1)$ is satisfied, then $\tilde{w}$ must also satisfy the following:

$$M + 3x - y - \beta_B(M + 3x - y - (M - x + y)) = M + 3x + \tilde{w} - \beta_B(M + 3x + \tilde{w} - (M - x)) \qquad (3)$$

$$\rightarrow \tilde{w} = \frac{y(2\beta_B - 1)}{1 - \beta_B} - 4M \, .$$

Q.E.D.

Appendix 2: Instructions and forms

General Information

(P, B)[28]

Dear Participant,

You have agreed to participate in this study. You will participate in an economic experiment and you will be requested to fill out a questionnaire. In total the study will take about one hour to complete. The purpose of the study is to gain knowledge about how people make economic decisions, and to compare different scientific methods. Your participation is completely voluntary.

To make the study more realistic you can earn some money in the experiment. The experimentalists will pay out the money that you earn as announced before. The venue will be announced at the end of today's experiment.

In some of the situations, your answers will be paired with that of another participant. The amount that you earn in such situations will depend both on your answers and the answers of the other person. You will not be told with whom that you have been paired and the other person will not be told that s/he has been paired with you.

Your choices in the experiments and your answers on the questionnaire will be used for scientific purposes only. For identification purposes you have received an ID-note, and we will not link your ID-number with your name. The ID-note serves a double purpose: it is your identity during the course of this experiment and it is also a receipt when you collect your money tomorrow.

If you cannot show the ID-note tomorrow, we will not be able to pay you any money, so do NOT hand in the ID-note with your answer forms and your questionnaire.

Best regards,

Anders Danielson and Hakan Holm

[28] P – refers to information in the promise treatment, B – refers to information in the baseline treatment, P, B – refers to information that was the same in both treatments.

Instructions (Room 1)

(P)

You have been asked to participate in an economic experiment. The instructions that you will receive explain what you should do. Please do not talk to anyone during the experiment. If you have questions or anything is unclear, raise your hand and the instructor will assist you.

There may be a few moments of idle time and we ask you to be patient. It is important that every instruction and part of the experiment get the necessary time. If and when your are waiting for further instructions, you may reread the instructions so that you are sure that you understand what you are supposed to do when we ask you to make your decisions.

In this experiment, you will be paired with another person in another room. This is Room 1 and the other person is in Room 2. You will be called A and the other person will be called B. You will be told the true identity of B neither during, nor after the experiment. Likewise, you will remain anonymous to B.

You have in this experiment been given the sum of J$300 and the same sum has been given to B. You can now send all of the money, part of the money or nothing to B. The sum that you send to B will be tripled by the experiment leaders. If you, for instance, send J$100 to B, the sum that reaches B will be J$300. If you send J$200, B will receive J$600. B will then decide how much of that sum to return to you. The sum that B sends back to you will not be multiplied by us. B has received the same information about this situation as you.

The total sum that you earn in this experiment will be J$300 less the sum that you send to B plus the sum that B sends back to you.

Before you decide how much to send to B, you will receive a message from B concerning how many percent of what B receives from you that s/he promises to return to you (that is, the money that you sent multiplied by three). What B didn't know when s/he gave that promise is that the experiment leaders will offer B a certain amount of money if s/he does not return any money and thus break the promise made. B does not have to break her/his promise. This happens only if B demands a sufficiently large sum for breaking the promise.

You should now wait for B's promise. Then you should complete questions **1** and **2** on the transfer form.

Instructions (Room 1)

(B)

You have been asked to participate in an economic experiment. The instructions that you will receive explain what you should do. Please do not talk to anyone during the experiment. If you have questions or anything is unclear, raise your hand and the instructor will assist you.

There may be a few moments of idle time and we ask you to be patient. It is important that every instruction and part of the experiment get the necessary time. If and when your are waiting for further instructions, you may reread the instructions so that you are sure that you understand what you are supposed to do when we ask you to make your decisions.

In this experiment, you will be paired with another person in another room. This is Room 1 and the other person is in Room 2. You will be called A and the other person will be called B. You will be told the true identity of B neither during, nor after the experiment. Likewise, you will remain anonymous to B.

You have in this experiment been given the sum of J$300 and the same sum has been given to B. You can now send all of the money, part of the money or nothing to B. The sum that you send to B will be tripled by the experiment leaders. If you, for instance, send J$100 to B, the sum that reaches B will be J$300. If you send J$200, B will receive J$600. B will then decide how much of that sum to return to you. The sum that B sends back to you will not be multiplied by us. B has received the same information about this situation as you.

The total sum that you earn in this experiment will be J$300 less the sum that you send to B plus the sum that B sends back to you.

Before you choose how much to return to B, you should know the following. When B has received information on how much you have sent, the experiment leaders will offer B a certain amount of money for not sending back any money. B may still choose to return money to you. This will be the case if B demands a sufficiently large sum for not sending back money to you.

You can now complete questions **1** and **2** on the transfer form.

(B,P)

Transfer Form

Participants in Room 1 should complete **1** and **2**.

1. Please write *the number on your ID-note*: _____

2. Please write down the sum that you would like to send to B:

I'll send J$_____ (a sum which is not smaller that 0 and not larger than 300)

Participants in Room 2 should complete **3** and **4**

3. You should first triple the sum (in **2** above). The sum that you have received from A is then J$_____. (A sum that is not less than 0 and not larger than 900.)

4. Please write down the sum that you would like to return to A.

I'll return J$_____. (A sum which is not less than 0 and not larger that the sum that you wrote in **3** above.)

Please do not write here. The experiment instructors will complete the sums below.

Person A earns: 300 - _____(**2**) + _____(**4**) = _____(A's sum)

Person B earns: 300 + _____(**3**) – _____(**4**) = _____(B's sum)

Instructions (Room 2)

(P)

You have been asked to participate in an economic experiment. The instructions that you will receive explain what you should do. Please do not talk to anyone during the experiment. If you have questions or anything is unclear, raise your hand and the instructor will assist you.

There may be a few moments of idle time and we ask you to be patient. It is important that every instruction and part of the experiment get the necessary time. If and when your are waiting for further instructions, you may reread the instructions so that you are sure that you understand what you are supposed to do when we ask you to make your decisions.

In this experiment, you will be paired with another person in another room. This is Room 2 and the other person is in Room 1. You will be called B and the other person will be called A. You will be told the true identity of A neither during, nor after the experiment. Likewise, you will remain anonymous to A.

You have in this experiment been given the sum of J$300 and the same sum has been given to A. Person A is able to send all of the money, part of the money or nothing to you. The experiment leaders will triple the sum that A sends to you. If A, for instance, sends J$100 to you, the sum that reaches you will be J$300. If A sends J$200, you receive J$600. You will then decide how much of that sum to return to A. The sum that you send back to A will not be multiplied by us.

The total sum that you earn in this experiment will be J$300 plus the sum that A sends to you (multiplied by three) minus the sum that you send back to A. A has received the same information about this situation as you.

Before A makes her/his choice about how much to send to you, you will send a message to A, indicating the share of the amount you receive from A that you promise to return.

When A has received your message, s/he will choose how much to send to you. Then, you will choose how much to return.

(P)

Message Form

Please write the number on your ID-note: _____

I promise to send back _____ percent of what I receive from you.*

* The number that you write should be no less that 0 and not larger than 100. The sum is the amount sent by A multiplied by three. For example, if A send you J$160, so that you receive J$480, and you say that you will return 50 percent, you promise to return 0.5*480 = J$240 to A.

Instructions (Room 2)

(B)

You have been asked to participate in an economic experiment. The instructions that you will receive explain what you should do. Please do not talk to anyone during the experiment. If you have questions or anything is unclear, raise your hand and the instructor will assist you.

There may be a few moments of idle time and we ask you to be patient. It is important that every instruction and part of the experiment get the necessary time. If and when your are waiting for further instructions, you may reread the instructions so that you are sure that you understand what you are supposed to do when we ask you to make your decisions.

In this experiment, you will be paired with another person in another room. This is Room 2 and the other person is in Room 1. You will be called B and the other person will be called A. You will be told the true identity of A neither during, nor after the experiment. Likewise, you will remain anonymous to A.

You have in this experiment been given the sum of J$300 and the same sum has been given to A. Person A is able to send all of the money, part of the money or nothing to you. The experiment leaders will triple the sum that A sends to you. If A, for instance, sends J$100 to you, the sum that reaches you will be J$300. If A sends J$200, you receive J$600. You will then decide how much of that sum to return to A. The sum that you send back to A will not be multiplied by us.

The total sum that you earn in this experiment will be J$300 plus the sum that A sends to you (multiplied by three) minus the sum that you send back to A. A has received the same information about this situation as you.

A will now choose how much to send to you. Then, you will choose how much to return.

Instructions (Room 2, V)

(P)

Please write the number on your ID-note: _____

Before we conclude this experiment you will be given the opportunity to change your earlier choice and also earn additional money. This situation is only for those that have received money from A and chosen to return at least as much as they promised. All others should turn this page overleaf and follow the instructions there.

The experiment leaders are prepared to offer a sum of money to you if you break your promise to A. To "buy" a change in your decision we have developed a mechanism that is described below:

You should state a "minimum sum" that is the lowest sum that you want to break your promise. (The minimum sum can be between J$0 and J$750.) The precise sum will be randomly determined in the following way:
A number between 1 and 750 will be randomly drawn. If this number is larger than your minimum sum you will receive the number of J$ corresponding to the randomly drawn number. In this case, your promise to A is broken and no money will be returned to A irrespective of your earlier decision. The money that you earlier said would be returned will instead be given to you together with the money that you earned earlier on. If the random number is smaller than or equal to your minimum sum, your earlier decision stands and you receive no additional money.

Two hypothetical examples:
Example 1: Assume that you state J$160 as your minimum sum and that the randomly picked number is 420. In this case you will earn J$420 in addition to what you have already earned, which in this case is J$300 plus the money that A has sent to you. A receives what s/he did not send to you.
Example 2: Assume that you state J$575 as your minimum sum and that the randomly picked number is 290. In this case you will not receive any extra money, since the "price" of your promise is higher than the random number. Your promise has not been purchased. Then you receive nothing except what you earned earlier, which in this case is J$300 plus the money that A has sent to you minus the amount that you returned. A receives what s/he did not send to you plus the money that you returned.

Consequently, the minimum sum that you state does not determine the price that you sell for. It determines which sums that you find acceptable and the probability that you will be able to "sell" your promise. A high minimum sum means a low probability that you can sell your promise and a low minimum sum means that a sale of your promise takes place with higher probability.

Before you fill out the sum below, a trial sale will be carried through so that all steps in the mechanism are clear to you.

You should now state your minimum sum:
To break my promise to A, I demand the following sum: J$_____. (A number between 0 and 750.)

(Note that if you demand 750 the promise cannot be broken and you can consequently not receive extra money. If you demand 0 the promise will always be broken and you are guaranteed extra money.)

Instructions (Room 2, V)

(B)

Please write the number on your ID-note: _____

Before we conclude this experiment you will be given the opportunity to change your earlier choice and also earn additional money. This situation is only for those who have chosen to return more than 0 to A. All others should turn this page overleaf and follow the instructions there.

The experiment leaders are prepared to offer a sum of money to you if you do not return any money to A. To "buy" a change in your decision we have developed a mechanism that is described below:

You should state a "minimum sum" that is the lowest sum that you want to change your decision. (The minimum sum can be between J$1 and J$750.) The precise sum will be randomly determined in the following way:
A number between 1 and 750 will be randomly drawn. If this number is larger than your minimum sum you will receive the number of J$ corresponding to the randomly drawn number. In this case, no money will be returned to A irrespective of your earlier decision. The money that you earlier said would be returned will instead be given to you together with the money that you earned earlier on. If the random number is smaller than or equal to your minimum sum, your earlier decision stands and you receive no additional money.

Two hypothetical examples:
Example 1: Assume that you state J$160 as your minimum sum and that the randomly picked number is 420. In this case you will earn J$420 in addition to what you have already earned, which in this case is J$300 plus the money that A has sent to you. A receives what s/he did not send to you.
Example 2: Assume that you state J$575 as your minimum sum and that the randomly picked number is 290. In this case you will not receive any extra money, since the "price" of a change in your decision is higher than the random number. The change in your decision has not been purchased. Then you receive nothing except what you earned earlier, which in this case is J$300 plus the money that A has sent to you minus the amount that you returned. A receives what s/he did not send to you plus the money that you returned.

Consequently, the minimum sum that you state does not determine the price that you sell for. It determines which sums that you find acceptable and the probability that you will be able to "sell" a change in your decision. A high minimum sum means a low probability that you can sell a change in your decision and a low minimum sum means that a sale of a change in your decision takes place with higher probability.

Before you fill out the sum below, a trial sale will be carried through so that all steps in the mechanism are clear to you.

You should now state your minimum sum:
To change my decision I demand the following sum: J$_____. (A number between 0 and 750.)

(Note that if you demand 750 the decision cannot be changed and you can consequently not receive extra money. If you demand 0 the decision will always be changed and you are guaranteed extra money.)

Overleaf (Room 2, V)

(B,P)

Please write the number on your ID-note: _____

NOTE! Only those who do not complete the other side of this form should complete the page.

We will ask a couple of hypothetical questions. This means that you will *not* be able to earn extra money for this. Still we ask you to answer as honestly as possible.

Assume that you, in the situation described earlier, had given a promise that you would return 50% of what A sent to you (after that sum was tripled).

I. Would you keep your promise and send back 50% if you received:

(a) J$900 from A (i.e., A sent all J$300)? *Yes* *No*

(b) J$450 from A (i.e., A sent J$150)? *Yes* *No*

(c) J$12 from A (i.e., A sent J$4)? *Yes* *No*

Assume that you still have given a promise to A to return 50% of what you receive. Assume also that the experiment leaders would be prepared to pay you a sum of money for you to break your promise. Breaking the promise would mean that no money would be returned to A and that the money that A sent would be given to you in addition to the money that you have already earned.

II. State the minimum sum that you would demand as additional payment for breaking the promise (i.e., to return 50%) in the situations below:

(a) You have received J$900 from A.
To break my promise, I would demand _____J$

(b) You have received J$450 from A.
To break my promise, I would demand _____J$

(c) You have received J$12 from A.
To break my promise, I would demand _____J$

Appendix 3: The Questionnaire[29]

Write your ID-number (the number on your ID note):._____

Please answer all of the questions which follow. Some of the questions are about facts (e.g., date of birth), and some of the questions are about your opinions. We hope you will answer every question, but you are of course free to skip over any questions that you do not feel comfortable answering. If you do wish to skip over a question, please make a note in the margin indicating that you are skipping the question. Other than that, please make no extra marks on the questionnaire.

Finally, remember that your responses to this survey are guaranteed to be kept strictly anonymous. (We will not be able to connect your name and the number of your ID-note.)

For most of the questions, there are several alternatives. Please make a circle around the answer that suit you best, like this:

7. *Did you, at the age of 16, live in the Kingston Metropolitan Area?*

(Yes) No

[29] This is the questionnaire distributed in Jamaica. The one used in Sweden was similar, but in Swedish and adapted to local conditions.

1. *What is your sex?* Female Male

2. *What is your year of birth?* _____

3. How many older brothers and sisters do you have? Include stepbrothers, stepsisters, and children adopted by your parents.

Older Brothers: _____ Older Sisters: _____

4. How many younger brothers and sisters do you have? Include stepbrothers, stepsisters, and children adopted by your parents.

Younger Brothers: ____ Younger Sisters: _____

The following questions concern your mother and father:

5. How many years of formal education do your mother and your father have?

Mother _____
Father _____

6. *How many years of tertiary education do your mother and father have (write 0 (zero) if none)?*

Mother _____
Father _____

7. *Did you, at the age of 16, live in the Kingston Metropolitan Area?*

Yes No

8. *Did your biological parents live together in the same household when you were 16?*

Yes No

9. Thinking about the time when you were 16 years old, compared with Jamaican families in general, would you say your family income was roughly ...

far below average
below average
average
above average
far above average

10. *Now we would like to know something about the groups or organizations to which you belong. Here is a list of various organizations. Could you tell us whether or not you are an **active** member*

Political club	Yes	No
Voluntary organizations	Yes	No
Religious organizations	Yes	No
Student organizations	Yes	No
Sports club	Yes	No
Performance and/or arts organization	Yes	No

11. *How many hours during a normal week do you spend….*

Working or studying together with other people _____hours
on activities in clubs or organizations _____hours
Socializing with friends _____hours
Working for pay _____hours

12. *How much money PER YEAR do you give to charity?* _____J$

13. *Do you believe in God?* Yes No

14. *Which is the largest sum of money that you have lent out during the past year?* _____J$

Please indicate your agreement with the following (please circle only ONE alternative):

15. *I am always trustworthy*

Completely wrong Wrong Slightly wrong
Slightly correct Correct Completely correct

16. *Most people think that I am always thrustworthy*

Completely wrong Wrong Slightly wrong
Slightly correct Correct Completely correct

Consider the following statements. Please describe your level of agreement or disagreement with them.

17. *When somebody else is mean to me, I sometimes go out of my way to be mean back to them.*

Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

18. *I don't mind giving money to others --- even people that I don't know --- if they need the money more than I do.*

Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

19. *I wouldn't mind spending eight hours per week volunteering for a good cause.*

Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

20. *In general, I treat other people the same way that they treat me.*

Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

21. *I treat most people the same, whether or not they've been nice to me in the past. I treat most people the same, whether or not they've been nice to me in the past.*

Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

22. *Human nature is fundamentally cooperative.*

Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

Please circle only *one* response for each of the following 3 questions.

23. *Would you say that most of the time people …*

…try to be helpful. …are mostly just looking out for themselves.

24. *Do you think most people would try to …*

…take advantage of you if they got a chance. …be fair.

25. *Generally speaking, would you say …*

…that most people can be trusted. …you can't be too careful in dealing with people.

26. *On a scale from 1 to 6, how would you rate your willingness to trust others?*

1 (always trusting)
2
3
4
5
6 (always careful)

27. *On a scale from 1 to 6, how would you rate your trustworthiness?*

1 (completely trustworthy)
2
3
4
5
6 (looking out for myself)

Consider the following list of institutions in this country. As far as the people running these institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?

28. *Banks and financial institutions*
great deal of confidence only some confidence hardly any confidence

29. *Major companies*
great deal of confidence only some confidence hardly any confidence

30. *Organized religion*
great deal of confidence only some confidence hardly any confidence

31. *Education*

great deal of confidence only some confidence hardly any confidence

32. *Press and television*
great deal of confidence only some confidence hardly any confidence

33. *Police*
great deal of confidence only some confidence hardly any confidence

34. *Central Government*
great deal of confidence only some confidence hardly any confidence

35. *Local Government*
great deal of confidence only some confidence hardly any confidence

Please indicate whether you agree or disagree with the following statements.

36. *To make money, there are no right and wrong ways any more, only easy and hard ways.*
More or less agree More or less disagree

37. *These days you can't count on strangers.*
More or less agree More or less disagree

38. *Most public officials (people in public office) are not really interested in the problems of the average man.*
More or less agree More or less disagree

39. *These days, a person doesn't really know whom he can count on.*
More or less agree More or less disagree

40. *Most people don't really care what happens to the next fellow.*
More or less agree More or less disagree

41. *Do you think most people can be trusted?*
Generally yes Generally no

42. *How much do you tend to trust people when you have a lot at stake?*
1 (not at all)
2
3
4
5
6 (totally)

Here are different opinions about social differences in Jamaica. Please indicate for each one whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

43. *Only if differences in income are large enough is there an incentive for individual effort.*
Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

44. *Personal income should not be determined solely by one's work. Rather, everybody should get what he/she needs to provide a decent life to his/her family.*
Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

45. *One of the big problems in this country is that we don't give everybody an equal chance.*
Strongly Disagree Somewhat Disagree Somewhat Agree Strongly Agree

Now please indicate your level of agreement using a 6 level scale.

46. *If you give the average person a job to do and leave him or her to do it, the person will finish it successfully.*

Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

47. *People usually tell the truth, even when they know they would be better off lying.*

Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

48. *Most people are basically honest.*

Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

49. *If you want people to do a job right, you should explain things to them in great detail and supervise them closely.*

Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

50. *Most people would tell a lie if they could gain by it.*

Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

51. *Most people would cheat on their taxes if they had a chance*

Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

References

Andreoni, J., (1990), “Impure Altruism and Donations to Public Goods: A Theory of Warm Glow Giving”, Economic Journal, 100, 464-477.

Andreoni, J., and Miller, (2002), "Giving According to GARP: An Experimental Test of the Consistency of Preferences for Altruism", Econometrica, 70, 737-753.

Babcock, Wang, X., L., and G. Loewenstein., (1996), “Choosing the Wrong Pond: Social Comparisons in Negotiations that Reflect a Self-Serving Bias”, Quarterly Journal of Economics, 111(1), 1-19.

Becker, G., DeGroot M., and J. Marschak, (1964), “Measuring Utility by a Single-Response Sequential Method, *Behavioral Science*, 9, 226-32.

Becker G., (1974), “A Theory of Social Interaction”, *Journal of Political Economy*, 82, 1063-1093.

Bellemare C. and S. Kröger, (2003) “On Representative Trust”, Discussion Paper 47, Tilburg University, Center for Economic Research

Berg, J., J. Dickhaut and K. A. McCabe, (1995) “Trust, Reciprocity, and Social History”, *Games and Economic Behavior*, vol. 10(1): 122-42.

Bolton G. E., and A. Ockenfels, (2000) “A Theory of Equity, Reciprocity and Competition”, *American Economic Review*, vol. 90(1): 166-93.

Camerer, C., (2003), *Behavioral Game Theory, Experiments in Strategic Interaction*, Princeton University Press, Princeton.

Charness G., and M. Dufwenberg, (2003), “Promises & Partnership,” Stockholm University, Department of Economics, Research Papers in Economics 2003:3.

Dufwenberg M., and G. Kirchsteiger (2004), " A Theory of Sequential Reciprocity," Games and Economic Behavior, 47, p 268-298.

Ellingsen, T. and M. Johannesson (2003), “Promises, Threats and Fairness” *Economic Journal*, forthcoming

Engelmann D., and M. Strobel, (2004), “Inequality Aversion, Efficiency and Maxmin Preferences in Simple Distribution Experiments”, American Economic Review, 94(4): 857-869.

Falk, A., E. Fehr, and U. Fischbacher U., (2000), “Testing Theories of Intentions – Intentions Matter.” Institute for Empirical Research in Economics, University of Zurich, Working Paper 63.

Falk, A., and U. Fischbacher, (2000), “A Theory of Reciprocity”, Institute for Empirical Research in Economics, University of Zurich, Working Paper 6.

Fehr E., Gächter, and G. Kirschsteiger, (1997), "Reciprocity as a Contract Enforcement Device: Experimental Evidence", Econometrica, 65: 833-860.

Fehr E., and K. M. Schmidt, (1999) ”A Theory of Fairness, Competition, and Cooperation”, *Quarterly Journal of Economics*, vol. 114(3): 817-68.

Fehr E., U. Fischbacher, B.v. Rosenbladt, J. Schupp and G. Wagner,(2003), “A Nation-Wide Laboratory - Examining Trust and Trustworthiness by Integrating Experiments in Representative Surveys, Institute for Empirical Research in Economics nstitute for Empirical Research in Economics, University of Zürich, Working Paper No. 120

Glaeser, E., D. I. Laibson, J. A. Scheinkman and C. L. Soutter (2000) “Measuring Trust” *Quarterly Journal of Economics*, Vol. 115: 811-846

Gneezy, U., (2005), “The Role of Consequences,” American Economic Review, 95(1): 384-394.

Holm, H., and A. Danielson (2005), “Tropic Trust versus Nordic Trust: Experimental Evidence from Tanzania and Sweden”, *Economic Journal*, Vol. 115: 472-499.

Holm, H., and P. Nystedt, (2004), ”Intra-Generational Trust - a Semi-Experimental Study of Trust Among Different Generations”, forthcoming in *Journal of Economic Behavior and Organization*.

Konow, J., (2000), “Fair Shares: Accountability and Cognitive Dissonance in Allocation Decisions”, American Economic Review, 90:4, 1072-91.

Konow, J., (2003), “Which Is the Fairest One of All? A Positive Analysis of Justice Theories”, *Journal of Economic Literature*, 41: 4, 8-1239.

Loomis, J. L., (1959), “Communication the Development of Trust, and Cooperative Behavior”, *Human Relations*, 12, 305-315.

Rabin, M., (1993), “Incorporating Fairness into Game Theory and Economics,” *American Economic Review*, 83(5), 1281-1302.

Rosenberg, G., (2000), *Tankar om Journalistik*, (*Thoughts on Journalism)*, Prisma: Stockholm.

Zwick, R., and X. Chen, "What Price Fairness? A Bargaining Study", Management Science, 45(6): 804-823.

Tables

A-players	B-players
Directed to Room 1	Directed to Room 2
Distribution of ID-notes	Distribution of ID-notes
General information	General information
	(P) Promise (percentage to return)
(P) Receive promise	
Amount to send in Trust game	
Questionnaire (demographics, attitudinal trust questions)	Amount to return in Trust game
	Elicitation of reservation prices on fairness
	Questionnaire (demographics, attitudinal trust questions)
Payment (a couple of days later)	Payment (a couple of days later)

Table 1: Timing of tasks in experiment. P refers to specific promise treatments.

Variable	Jamaica	Sweden
# subjects	48	60
Female	70%	53%
Age	19.5	22.8
Family income[a]	2.8	3.4
GSS Trust[b]	12.5%	80%
Believe in God[c]	100%	45%

Table 2: Subject characteristics.

Comments: [a]Family income: subjects were asked to rate their family's income (compared to other families' incomes in their country) when they were 16 years old. Rates were from 1 (far below) to 5 (far above).

[b] Percentage answering that they trusted others in the following question: "Generally speaking would you say that most people can be trusted/you can't be too careful in dealing with people".

[c] Percentage who answered "yes" to the question:"Do you believe in God? Yes/No."

Country	Jamaica	Jamaica	Sweden	Sweden
Treatment	Promise	Baseline	Promise	Baseline
N	12	12	15	15
$x = 0^{*}$	2	0	1	1
$y = 0^{**}$	0	0	0	2
Break promise***	4	-	8	-
Remaining****	6	12	6	12

Table 3: B-players categorized according to their behavior.
Comments: *One receiving zero from A had to send back zero. **This is the number of B-players who did not return anything, but had the option to do so (i.e., they received something from their A-player) ***This is the number who sent less than promised. **** Subjects remaining for the elicitation of reservation prices.

Country	Jamaica	Jamaica	Sweden	Sweden
Treatment	Promise	Baseline	Promise	Baseline
Mean Reservation Price (%)	9	31	25	30
Mean Reservation Price (US Dollars)	4	1	10	12
Mean Reservation Price + *y* (US Dollars)	5	3	27	22

Table 4: Mean Reservation prices as percent of the possible amount to return and in US dollars.

Figures

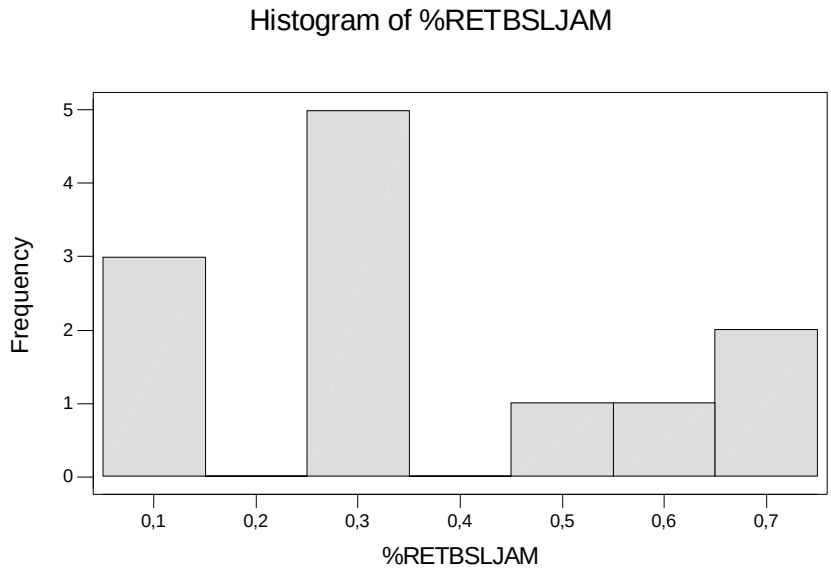


Figure 1a: Histogram on the proportions returned by Jamaican B-players in the baseline treatment.

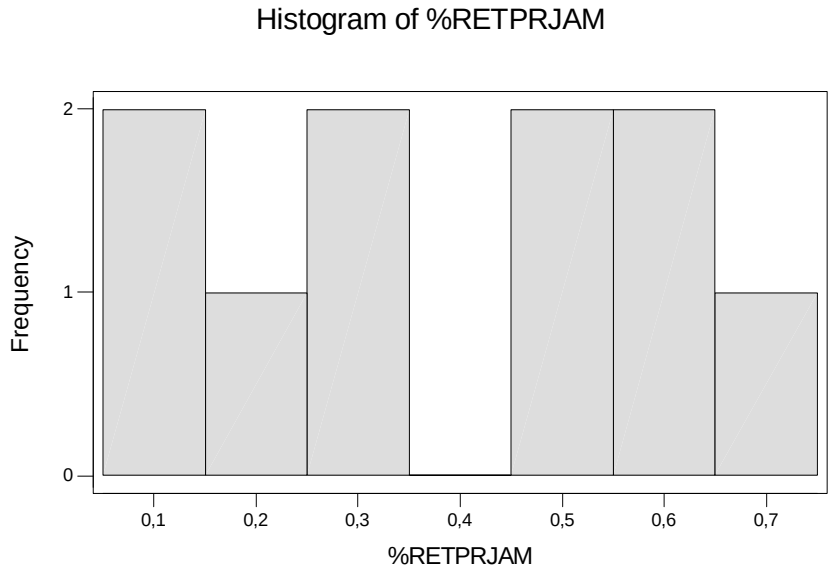


Figure 1b: Histogram on the proportions returned by Jamaican B-players in the promise treatment.

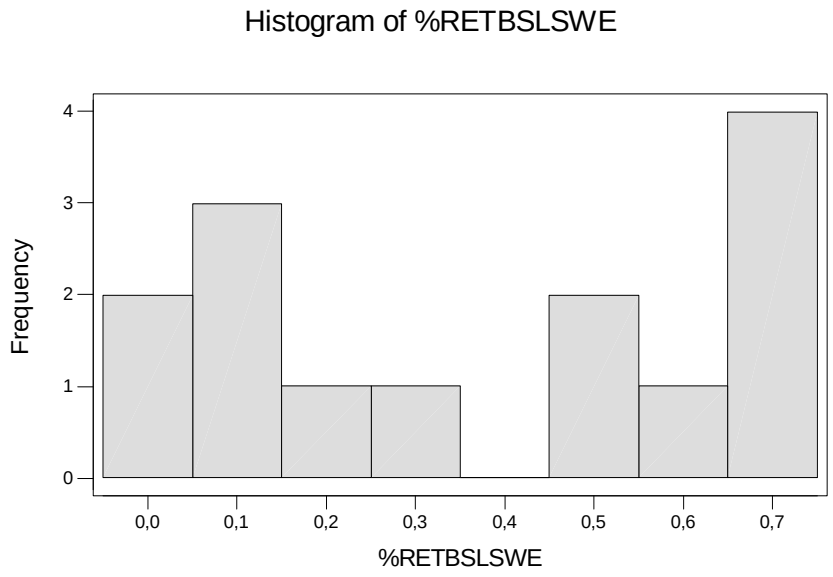


Figure 1c: Histogram on the proportions returned by Swedish B-players in the baseline treatment.

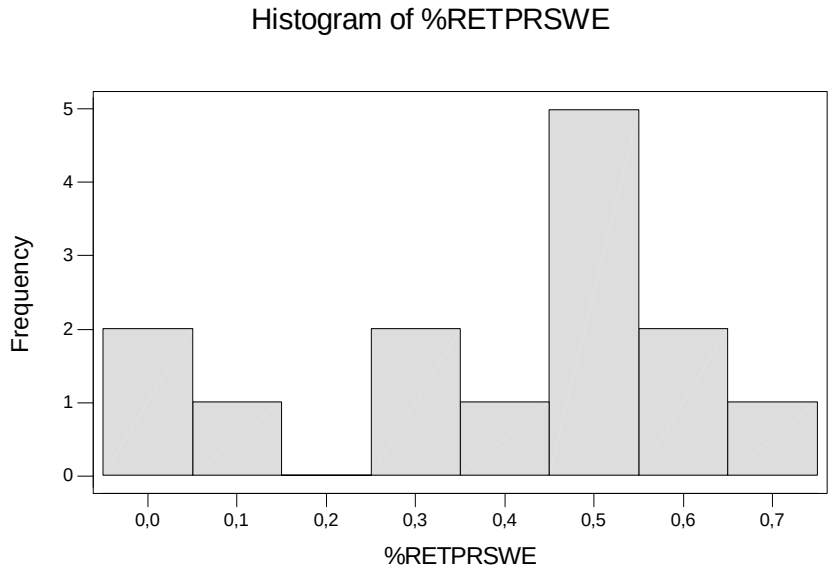


Figure 1d: Histogram on the proportions returned by Swedish B-players in the promise treatment.

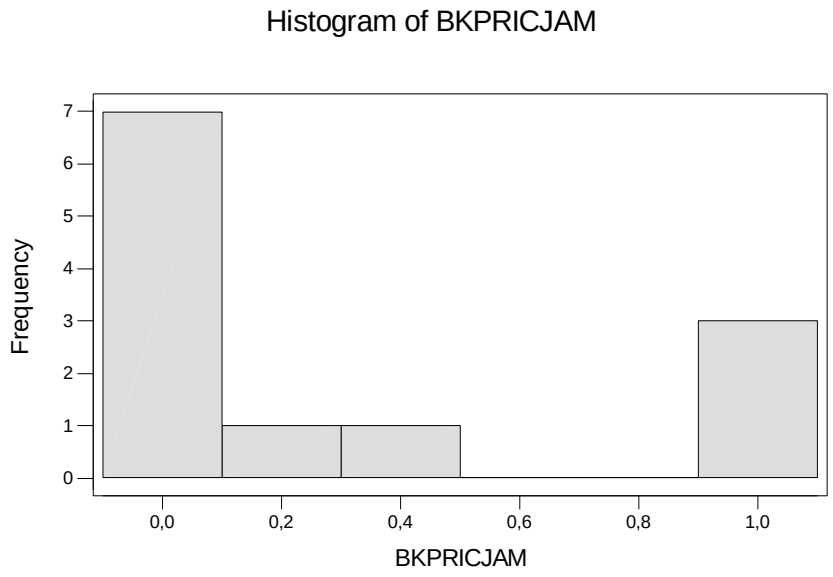


Figure 2a: Reservation price for the group receiving baseline treatment in Jamaica.

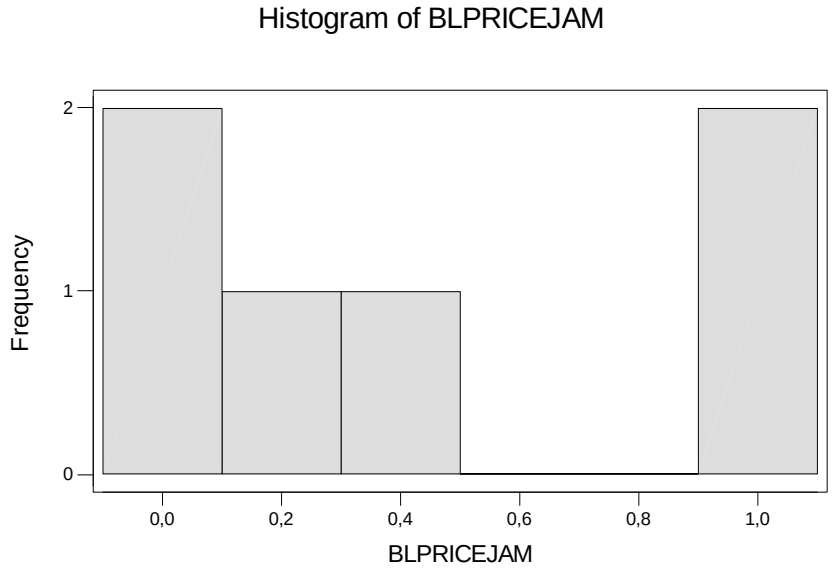


Figure 2b: Reservation price for the group receiving promise treatment in Jamaica

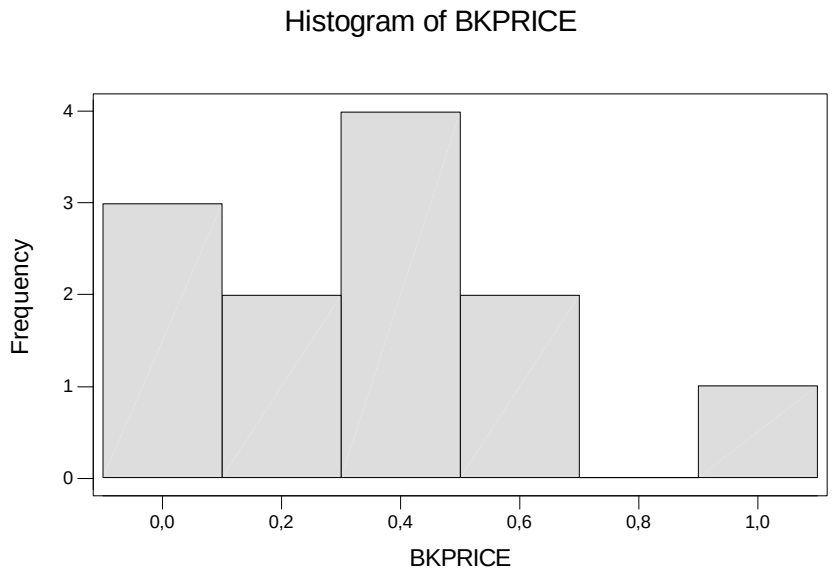


Figure 2c: Reservation price for the group receiving baseline treatment in Sweden.

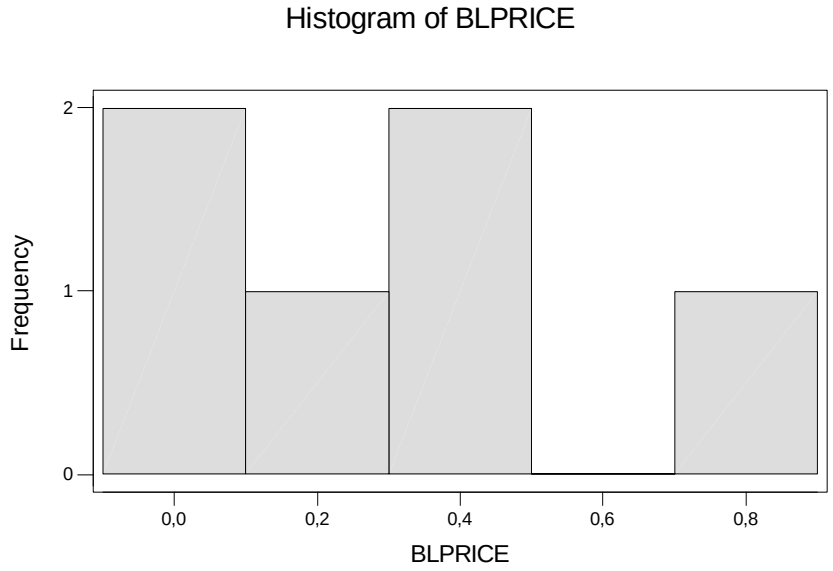


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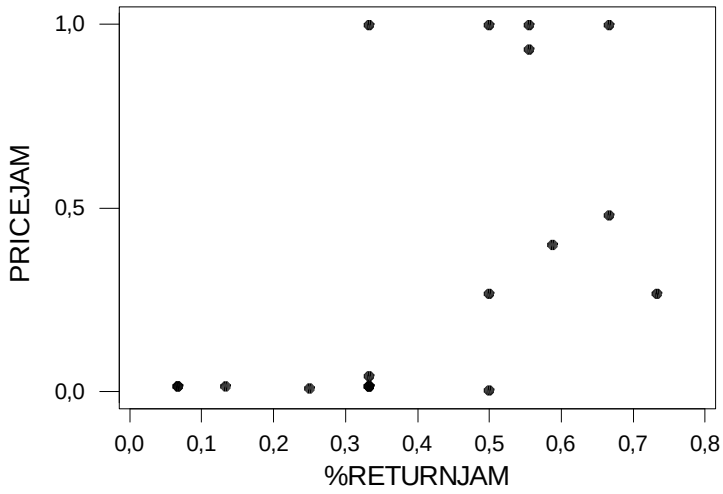


Figure 3a. Plot between reservation price and percentage returned in Jamaica.

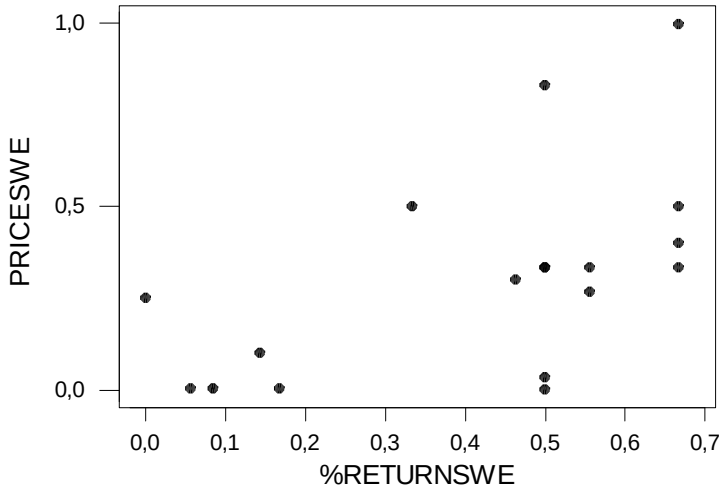


Figure 3b. Plot between reservation price and percentage returned in Sweden.

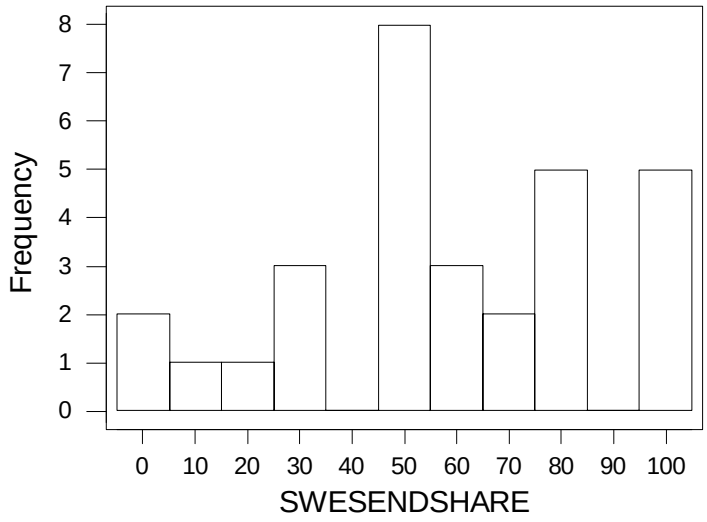


Figure 4a: Histogram of percentage sent in Sweden

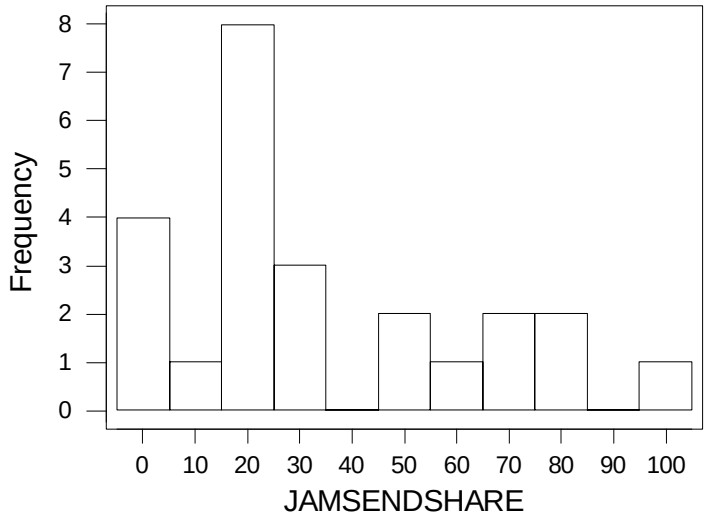


Figure 4b: Histogram of percentage sent in Jamaica

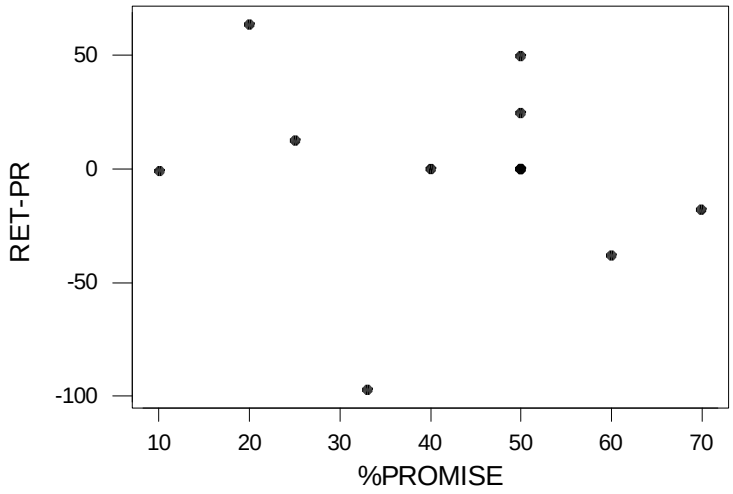


Figure 5a: Promise (as a percentage of amount received) against difference between amount returned and amount promised in Jamaica.
Note: Some points may represent more than one observation. Three subjects promised 50% percent and returned exactly the amount promised (i.e., the amount returned minus the amount promised equaled 0).

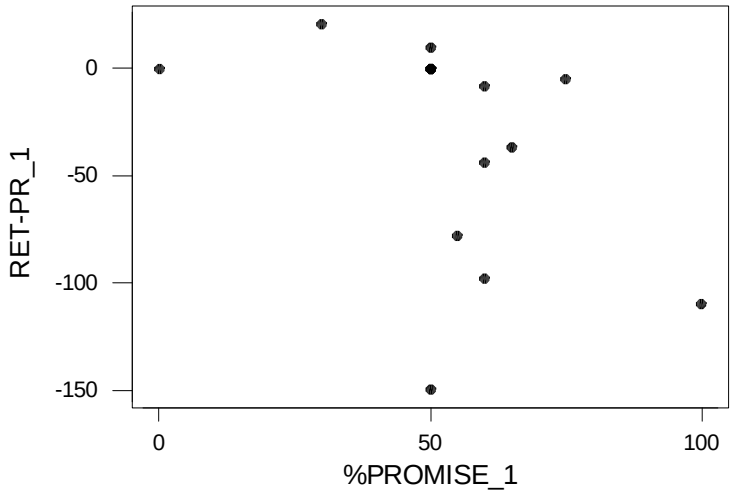


Figure 5b: Promise (as a percentage of amount received) against difference between amount returned and amount promised in Sweden.
Note: Some points may represent more than one observation. Four subjects promised 50% percent and returned exactly the amount promised (i.e., the amount returned minus the amount promised equaled 0).