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**THE “STATUS” OF GIVING IN  
SOUTH AFRICA: AN EMPIRICAL  
INVESTIGATION INTO THE BEHAVIOUR  
AND ATTITUDES OF SOUTH AFRICANS  
TOWARDS REDISTRIBUTION**

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# The “Status” of Giving in South Africa: An Empirical Investigation into the Behaviour and Attitudes of South Africans towards Redistribution

## **Abstract**

*A dictator game experiment and a questionnaire were used to gather information on redistributive preferences among a sample of South African university students. The questionnaire was used to gather data on the attitudes of individuals regarding redistribution, as well as their demographic details. The experiment used is known as the dictator game and it measures the altruistic motivations of the subjects involved. The complementary use of the dictator game and questionnaire provided incentive compatible information on the true preferences of the students for redistribution. The results indicate that only the status of the giver and the perceived worthiness of the recipient of redistribution significantly alter the giving behaviour of the “dictator”. Furthermore there is no correlation between those subjects who express a desire for redistribution and their experimental earnings.*

## **Introduction**

South Africa is a country of extraordinary income inequality, making the topic of redistribution from the rich to the poor both relevant and controversial. Debates over the extent of the redistributive policies continue to rage on in South Africa as problems such as rising unemployment, poverty and crime rates continue to rise unabated. While policy measures such as the old age pension scheme have been successful redistributive mechanisms, success in other areas (such as the redistribution of land) has not been promising. This slow pace of redistribution may hold some serious implications for the sustainability of democracy in South Africa. Morgan Tsvangirai, leader of the opposition in Zimbabwe, argues in light of the Zimbabwean experience that in five or so years time, South Africans will be fed up with the lack of redistribution, pushing Mbeki to use the “race card” as a scapegoat for his government’s failings (*Mail and Guardian*, September 5, 2002).

How willing are South Africans to redistribute their income? Are attitudes toward redistribution altered by either the status of the giver or the perceived worthiness of the recipient? Understanding how willing South Africans are to accept greater redistributive measures is an important issue in the design of anti-poverty and welfare policies that aim to redress inequalities.

Typically, surveys are used to analyse people's attitudes on redistribution or any other host of problems. While surveys are useful at collecting large amounts of information from large numbers of heterogeneous individuals, they suffer from incentive compatibility problems. Not only might individuals have an incentive to misreport, but they may answer in the way that they think the interviewer would like them to answer (Carpenter, 2000). More importantly, there may be a disjuncture between what individuals say they believe and what they actually do in practice. This is particularly important in studies concerning redistributive preferences as individuals who express a preference for greater redistribution and willingness to contribute towards redistribution programmes may not in fact follow this through in their actions. Carpenter (2000) therefore suggests that economic experiments be used as a complementary method to verify survey-based results. This is the approach adopted in this paper.

A dictator game experiment and a questionnaire were used to gather information on redistributive preferences among a sample of South African university students. The questionnaire was used to gather data on the students' attitudes regarding redistribution, as well as their demographic details. The experiment used is known as the dictator game. It measures the altruistic motivations of the subjects involved. In the dictator game two anonymous players are paired with each other. One player (Player A) is the "dictator" and is given a monetary endowment to split with the other player (Player B). The second player cannot reject this offer and the game is not repeated. The game theoretic prediction of the experiment is simple: the dictator should give nothing. As there are no strategic considerations to the game, the only plausible motivation for giving something (i.e. any non-zero amount) must be pure altruism (Eckel *et al.*, 1996). As the experimental subjects have the opportunity to earn real money, individuals have an incentive to reveal their true preferences. The link between altruism and redistribution is that voluntary redistribution can be seen as an altruistic move similar to that in the dictator game. The complementary use of surveys and experiments allows an examination of whether there is a correlation between those who express a desire for redistribution in the survey and those who are willing to give away their experimental earnings.

A total of 153 students were recruited at the University of Cape Town (UCT), through posters, leaflets and e-mail correspondence. Each student was given a participation fee of R20 (to compensate them at an equivalent rate to the opportunity cost of the time they spent participating). Each “dictator” was given an endowment of R40 that he or she could then choose to re-allocate. The sum of R40 was chosen because this approximates what an undergraduate student is likely to earn in two hours of work. Funding for the experiments was provided by the UCT Faculty of Commerce.

The demographic profile of the student participants is a fair indication of a typical university student population in South Africa. The average age of the participants was approximately twenty years. The sex of the participants was reasonably well divided between men and women (with 57% women and 43% men). Just over one-third (37%) were African, about the same proportion (35%) were white, 20 percent were coloured and 8% Asian or Indian. Participants were spread across all of the major undergraduate degrees: B.Sc. (14%), B.A. (18%), B.Com. (26%), B.Soc.Sci. (23%) and B.Bus.Sci. (13%).

Experiments generally use university students as subjects. The reasons for this are simple: students usually make up a good cross-section of the population; their time is flexible; monetary incentives for participation are lower in comparison to professionals; and they are easy to recruit as they all rotate around a small space. But in a developing country such as South Africa, using students can be a problem as they most likely come from the “upper crust” of society and are generally wealthier than your average population. Another problem with using students is that, due to their age and lack of experience in solving real social dilemmas, they may lack the external validity to extrapolate their results (Carpenter, 2001). The majority of students most likely have not ever earned their own money or had to pay income tax, therefore making the question of redistribution less relevant to them. Although it is standard practice to use university students in experiments, the fact that they are not representative of the overall population means that caution should be exercised when interpreting the results.

## **Attitudes towards Redistribution**

The questionnaire that the experimental subjects answered was detailed and included questions regarding their demographic details, their attitude towards redistribution, and their attitudes towards the experiment itself (see Appendix

for the questionnaire). The students completed the questionnaire immediately after the experiment. This is standard practice and the students had not been told at any stage what the experiment was about. It might have been better to administer the questionnaire several weeks before the experiment, but this was logistically impossible. The problem with asking experimental subjects to answer a questionnaire after an experiment is that they may have been influenced in some way by the experiment and therefore their survey results may be biased. To test if this is indeed the case, the responses of Player As can be compared with the responses of the Player Bs. This comparison revealed that the Player As and Bs held, on average, similar opinions on redistribution. It can therefore be concluded that the survey results are valid.

The students were questioned as to their awareness of the problem of income inequality in South Africa. Just over two fifths of the students were not all that concerned with this issue, agreeing that ‘there will always be the rich and the poor in any society, and South Africa is no different’. Almost half of the respondents answered that ‘South Africa has one of the worst income inequality problems in the world, which is something that should be dealt with urgently’. There was no significant difference in the perception about income inequality across race groups. But richer individuals perceived income inequality to be less of a problem than poorer individuals.<sup>1</sup> This is expected, as richer subjects would most likely be more sheltered from the effects of widespread poverty.

Students were asked if the progressive tax system was a fair system for redistributing wealth from the rich to the poor (see Figure 1). Of the total number of respondents almost two thirds answered that it was a fair method of redistribution. Women, on average, are less in favour of the progressive tax system than men are. The poorer students were more in favour of the progressive tax system and for the distribution of wealth being more evenly spread than the wealthier students. In addition, over two thirds of the students answered that “the money and wealth (*of South Africa*) should be more evenly distributed among a larger percentage of the people”. These two questions together provide evidence that these participants were aware of the problem of income inequality and are not averse to mechanisms such as the progressive tax system being used for redress. Furthermore there is a significant correlation (at the 0.01 level) between the two results from those respondents that were in favour of redistribution. This implies that the respondents were answering the questionnaires in a consistent manner.

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<sup>1</sup> The income status of the subjects was self-reported.

### Figure 1: Attitudes toward Inequality and Redistribution

14. The Progressive tax system (i.e. a system of tax where richer individuals are taxed more than poorer individuals through tax brackets) is seen as one method of redistributing wealth from the rich to the poor. How fair do you believe this system to be?

fair	63%	unfair	26%	Don't know/have no opinion	9%
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16. How well do you think the government is dealing with income inequality?

The government is doing very well, they are closing the gap between the rich and poor quite quickly	0%
The government is working hard on the problem, it just needs time and patience	48%
The government has been completely ineffective in solving the income inequality problem	37%
I don't have an opinion on this issue	15%

17. Do you think that the South African government should help the poor, or do you think it is up to the poor to help themselves?

Poor should help themselves	16%	Government should help the poor	72%
Don't know	7%	Don't care	6%

19. Do you think that the distribution of money and wealth in South Africa today is fair, or do you think that the money and wealth in South Africa should be more evenly distributed among a larger percentage of the people?

The current distribution of money and wealth is fair	10%	Don't know	22%
The wealth and money should be more evenly distributed among a larger percentage of people	69%		

20. Which one of the views expressed below do you most agree with?

There is plenty of opportunity in South Africa, and anyone who works hard can get far	61%
There is not much opportunity in South Africa, and the average person doesn't have much chance to get far even if they work hard	39%

21. South Africa is sometimes described as a country of "haves" (people who have money and live well) and "have-nots" (people who are poor and struggle for the basic necessities in life). Which of the following groups do you think you're in?

Haves	50%	Have-nots	16%
Neither	26%	Don't know	7%

23. Do you think the same situation of "land-grabbing" will arise in South Africa in the near future?

Not at all likely	2%	It is a possibility that should not be ignored	57%
Very likely	8%	I don't know	11%

24. If you had the opportunity to uplift a family that you have never seen or known by sacrificing some of your present/future income, would you do it?

Only if I knew that the family was deserving of charity	57%
Only if it was a small proportion of my total income	8%
I would willingly give money to uplift others	25%
I would never give money to people I do not know	3%
I don't have an opinion on this issue	7%

Students were asked if they would be willing to give money to an anonymous family. Most of the respondents answered that they would give money to a family only if the family was deserving of charity. Almost a quarter of the students said that they would willingly give their money away even though they did not know anything about the circumstances of the family. This is the first confirmation of the fact that people may be more willing to give money away when they feel that the recipient is deserving. This theme will be explored later in the discussion of the experimental results.

On the issue of who should bear the responsibility for redistribution, government was seen as having the greatest responsibility for helping the poor (45% of the respondents). Moreover, when given a choice between the poor helping themselves and the government helping the poor, 72% of the respondents answered that the government should help the poor. Yet, when they were asked how well they felt the government was dealing with income inequality no one answered that the government was doing very well. Just under half of the respondents had faith in the government, and believed that they were working on the problem, which requires patience, while 37% of the students felt that the government had been completely ineffective thus far in reducing income inequality. More of the white students felt that the government had been completely ineffective in redressing inequality as compared to students from other race groups.

Finally, over 60% of the students felt that there was plenty of opportunity available in South Africa for those who were willing to work hard. The split by race revealed that African students were the most pessimistic about opportunities while white students were the most optimistic (although this difference was not significant). The male subjects were far more optimistic than the female subjects. Richer students were, as expected, more optimistic about opportunities than poorer students (see Table 1).

*Table 1: Opportunity in South Africa*

	<i>'Rich' and 'Upper Income'</i>	<i>'Middle Income'</i>	<i>'Lower Income' or 'Poor'</i>
Plenty of opportunity	73% (n=28)	58% (n=45)	53% (n=20)
Not much opportunity	27% (n=10)	42% (n=32)	47% (n=18)

The results of the survey indicate that the majority of the subjects are in favour of redistribution and they are aware of the problem of income inequality. They feel that government should be largely responsible for the role of redistribution although none of the subjects believed that the government had done a good job of it to date. Most of the student subjects felt that there was opportunity in South Africa, if you were willing to work hard.

## Experiments

Individuals' responses in surveys may differ from how they actually behave in real life. Experiments can be used as a complementary method of extracting incentive compatible information regarding people's attitudes towards redistribution. Nevertheless, an experiment, by itself, can have little explanatory power if unaccompanied by a questionnaire. It is through using complementary surveys and experiments that we can develop powerful explanations of social behaviour.

Our experiments focused on altruism. Altruism can be defined as the 'regard for others as a principle of action' (*Concise Oxford Dictionary*, p.35). For Eckel, 'altruism is a motivating factor in human behaviour in general and dictator games in particular' (Eckel, 1996).

Before outlining the experimental protocol used in this project, it is worth addressing the validity of the experimental results. It could be argued that experiments are highly unlikely events that an individual will most probably never repeat again. How can an experiment draw behavioural parallels with the real world? Gintis (2000) argues that people assign these improbable situations into a context that they can understand. They therefore place the experiment into a high-probability event and behave accordingly. Consequently if economic agents have social preferences, i.e. they have stable preferences for how money is allocated, and if evolution has indeed created cognitive heuristics for playing games, then social norms should enforce those heuristics and thus simulate a sterilised real world (Camerer & Fehr, 2000). Games are, of course, enormous simplifications of social phenomena, but they may be able to isolate specific social behaviour that is motivated by material payoffs. They can also be used to test different treatment effects, i.e. if one alteration is made in the experiment, for example communication is allowed, then the experiment is isolating that effect with respect to the control group. The advantage of experiments is that they are easily replicable and comparable. Furthermore, the

subjects are given incentives to take the experiment seriously and to make truthful decisions. However because experiments are such simplifications of the real world, it is not advisable to generalise the results of an experiment to actual social phenomena.

The dictator game was designed to isolate altruistic motivations. One player is the “dictator” and is given a monetary endowment to split with the other player. The second player cannot reject this offer and the game is not repeated. The game theoretic prediction of the experiment is that dictator should give nothing. If altruism exists and if people do care about others purely as a reflex action, then there may be a future for more expansive redistributive policies. Generalised results from around the world indicate that approximately 80% of the dictators send a positive amount through to their recipients, with approximately 20% giving away half of the pie (Rigdon, 2002). It was therefore proposed that people do have altruistic motivations and are willing to help out others with no benefit to themselves.

**Table 2: Dictator Game Results**

<i>Study</i>	<i>Forsythe et al. (1994)</i>	<i>Hoffman et al. (1994)</i>	<i>Eckel &amp; Grossman (1996)</i>	<i>Eckel &amp; Grossman (1996)</i>
Treatment	Single-blind	Double-blind	Double-blind	Red Cross
Average allocation	23%	9%	11%	30%
Modes	0%, 30%	0%		0%, 20%, 50%

*Source: Carpenter, 2000.*

Important experimental results from dictator games are summarised in Table 2. The mean offers are consistently greater than zero, but the offers are very sensitive to ‘framing effects’. The original dictator game was run by Forsythe *et al.* (1994), utilising a single-blind protocol – i.e. the dictator is completely anonymous to the recipient. The results of this experiment indicated that altruism was a motivating factor in human psychology and the neo-classical model of self-interested agents was flawed. In this experiment, dictators on average sent 23% of their endowments. By way of contrast, in a dictator game utilising a double-blind treatment – i.e. where the dictator is anonymous to both the recipient and the experimenter – the average allocations dropped to 9%. Hoffman *et al.* (1994) argued that that dictators concern themselves with their

social standing when deciding on how much to send. As Forsythe *et al.* (1994) had used a single-blind treatment, Hoffman *et al.* (1994) maintained that the dictators were observed by the experimenters or subject to the “experimenter effect” (Eckel, 1996b) and this altered their behaviour. In other words, their behaviour may be due to concern over what the experimenter might think of them and not altruism *per se*. Hoffman *et al.* performed double blind dictator experiments, showing that when the subjects were completely anonymous, their offers fell. This suggested that the double-blind treatment is the correct approximation of self-interested behaviour. This result was verified by Eckel and Grossman (1996) in a similar double-blind treatment.<sup>2</sup> This implies that in conditions of relative anonymity, akin to many market transactions, individuals may be inclined to behave more selfishly.

However, Frohlich *et al.* (2000) proposed that the high degree of anonymity in the double-blind treatment might have a cost of its own: doubt. If the subjects in the game doubt the existence of their partners, then they may behave more selfishly than they would have otherwise. Furthermore, if the experiment is perceived as a game, then the dictators would be behaving competitively, i.e. winning through maximisation of their own welfare. Frohlich *et al.* ran the dictator game with two treatments: the first was the typical dictator game where the players are pre-assigned to rooms and they never see their partners; the second is where the subjects are all in one room, and therefore any doubt that their partners’ exist should be erased. The results of the experiment were as hypothesised: those who doubted the experiment less, gave more; and those who were less oriented towards the experiment as a game, gave more. Frohlich *et al.* (2000) maintained that once the experimenter effect and all social context is removed from the experiment, doubt arises in the minds of the dictators, and therefore the idea that double-blind dictators measures the true level of self-interest, may be flawed.

In addition, the experiments run by Bolton *et al.* (1995) refuted the significance of the “experimenter effect”. They found that of the potential sources for the variation in the distributions of dictator games, only the ‘game frame’ – i.e. the manner in which the game is described – was significant. They argued that the main reasons behind the difference in results was simply because the

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<sup>7</sup> The dictators received an envelope with ten slips of paper and ten one dollar bills. The dictators had to remove ten slips from the envelope and the recipient in the other room would always receive an envelope with ten slips in it, whether it was money or paper. This ensures that the dictator is completely anonymous to any observation and therefore should not be affected by social standing considerations.

experimenters used words such as “provisionally allocated to each pair” in the experiment (Forsythe *et al.*, 1994) or the experiment is described as a market transaction (Hoffman *et al.*, 1994). These differences are more likely to affect the outcome of the dictator game than the experimenter effect. In short, the dictator game is very sensitive to framing effects and that the experimenter effect is not a cause for concern in these experiments.

While the dictator game is very susceptible to framing effects, this also means that the game can easily be transformed so as to produce an isolated effect. One of the uses of the dictator game is that one may be able to study the changes in behaviour with the changes in the status of the subjects. By simply altering the information that the dictator receives about their partner, or by changing the method of assigning dictators, the effect of status on the game may be dramatic. There are certain instances of social interaction that are not anonymous and where behaviour is affected by context. To illustrate this, Eckel and Grossman (1996) used a second treatment with their double-blind experiment. They altered the game frame slightly by informing the dictators that they were sending the money to the Red Cross instead of a randomly chosen person in the next room. In the anonymous treatment the subjects donated an average of 11% of their \$10 pie while in the Red Cross treatment the subjects donated an average of 31% of their \$10 pie. The difference between the treatments was statistically significant, indicating that if the subjects believe that their recipient is somehow “deserving” then it alters their behaviour significantly. Thus context does matter: knowing something about the agent with whom one is interacting affects one’s behaviour.

Following on this result, Eckel *et al.* (2001) designed a market-style dictator game where players are assigned roles randomly or through their performance on a trivia quiz. Their experimental hypothesis was that: ‘In markets where sellers have higher status, the distribution of equilibrium prices will be higher than in markets where buyers have higher status’ (*ibid*). Status is a subjective good: people rank each other on different score sheets. Therefore in order to simulate a consistent status effect, the status must be easily understandable and emphasised, as well as transparent. In Eckel *et al.*’s (2001) experiment, the subjects wrote a trivia quiz on five obscure economic questions and status was assigned based on supposed performance in this quiz. The subjects were told that those who scored more highly on their trivia questions would receive gold

stars and earn the right to be dictators, whilst those who performed poorly on the quiz were assigned the role of Player B. In fact, the assignment was random.<sup>3</sup>

Their use of a competitive model instead of a bargaining experiment should discipline the subjects to behave in a rational manner, and remove all other individual oddities or noise from the experiment. Eckel *et al.* (2001) find that status, i.e. a social, hierarchal ranking that entitles a person to special resources, has a significant effect on the earnings of the players and that status may subsequently have real effects in other situations. Their results find that the mean earnings for the high-status subjects exceed those for the low-status subjects, and that this result is significant. However, the effect of awarded status is not significantly different from randomly assigned status. This may be due to either the effect of the lack of conviction on the parts of the subjects of the awarded status method or due to the fact that status is important, but people do not care how it was obtained.

Further experiments performed by Eckel *et al.* (2001) found that for a status to be effective it should be publicly announced to both the lower and higher-status subjects. In their experiments a lot of fuss was made of the dictators, they were treated differently to the Player Bs and their success on scoring well on the quiz was heavily congratulated upon, with clapping and cheering. Therefore for status to be effective, not only do the higher-status individuals have to be told that they were more successful in the quiz, but they need to feel somewhat superior to their Player Bs through the reactions of others to their success.

Clearly status, i.e. induced status, matters. But even naturally occurring status such as gender can affect behaviour. Eckel *et al.* (2001) found that men earned more of the surplus and that men were significantly more aggressive in attaining the surplus than women throughout the sessions. Therefore this is further proof that status has an effect on economic outcomes.

Eckel *et al.* (1998) also examined the effects of gender in a double-blind dictator game. They maintained that women are more “socially-oriented” and that men are more “individually-oriented”. This implies that women are more selfless or

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<sup>10</sup> The subjects must believe that the status was truly earned. For instance, if some subjects were only guessing and they were still awarded the gold star, this may affect their belief about the assignment of status and hence their behaviour. Furthermore, the quizzes were taken out of the room to be marked. This may further add to the suspicion that the quizzes were fixed. Therefore the method of assigning gold stars may produce a significant effect on the behaviour of the players; this may be more pronounced if the process is more transparent. In the random treatment, the players are transparently and randomly assigned status.

less selfish than men, and that therefore altruistic principles would be stronger in women than in men. Their results confirm this with women giving, on average, almost double of what men give (\$1.60 versus \$0.82 out of a \$10 pie). However, the double-blind experiment may be somewhat flawed despite their efforts to control for environmental factors. As the experiment was double-blind, in each individual treatment, all the player As were either men or women. Therefore the “dictators” may have suspected that all of the other players were also of the same sex. As Dufwenberg *et al.* (2002) have shown, women are more willing to give to other women than men (solidarity). Furthermore men act chivalrously and give more to women than to men. Therefore if the subjects were suspicious of the experimental design and believed that they were paired with someone of their own gender, this may sway the results. In other words, women may not be as generous as the results suggest. However, Dufwenberg *et al.* (2002) did find that men are significantly more likely to give zero than women. Therefore it may be advisable to gather demographic data from your subjects after the experiment rather than allowing for possible doubt to affect your experimental design. Otherwise the subjects should answer a questionnaire as to their beliefs about the experimental design so as to filter out the doubters.

## The Experimental Results

The purpose of this research is to understand redistributive preferences. The anonymous dictator game, as described above, was used in order to examine the altruistic principles of the subjects. In addition to this, two other treatments were used to analyse the effects of different status effects.

Camerer and Fehr (2001) suggest the mathematical formulation for the dictator game. In this two-player game players are assumed to prefer more money to less, yet they are also income inequality averse, and thus they wish allocations to be equal. The goals of the players are formalised as such: Let  $x_i$  denote the material payoff to player  $i$  (the dictator in the dictator game), and  $x_j$  the material payoff to player  $j$  (the recipient of the dictator’s offer). Then the utility of player  $i$  is given as:

$$U_i(x) = x_i - \beta(x_i - x_j)$$

where  $\beta$  measure how much player  $i$  dislikes income inequality. When  $\beta$  is zero, the player is purely selfish and it is assumed  $0 \leq \beta < 1$ . When a positive

allocation occurs in the dictator game when player  $i$  has a positive  $\beta$  (based on guilt or fairness principles). However two other effects on the utility of player  $i$  are explored in this research, namely the status of the dictator and the status of the recipient. Therefore the above mathematical formulation is altered as such:

$$U_i(x) = S_i x_i - \beta(x_i - x_j) s_j$$

where  $S_i$  is the status of player  $i$  and  $s_j$  is the status of player  $j$ . Therefore if player  $i$  is assigned some form of status (i.e.  $S_i$ ) then this increases the motivation of player  $i$  to be selfish, or alternatively to place more weight on player  $i$ 's own material payoff in the calculation of player  $i$ 's utility. The use of  $s_j$  increases the willingness of player  $i$  to give to player  $j$  when the status of player  $j$  is accentuated. It is assumed that  $S_i, s_j \geq 1$ .

The calculation of the partial derivatives of the above equation reveals the hypothesised relationships:

$$\partial U_i / \partial x_i = S_i - \beta s_j > 0$$

Therefore if  $S_i$  increases (i.e. the status of the dictator is accentuated) holding all else constant, then the marginal utility with respect to player  $i$ 's endowment increases. This is consistent with the experimental results obtained by Eckel (2001) in her experiments, as discussed above, as the dictator would derive incrementally more utility from his/her endowment if he/she felt that it was earned. The above relationship also shows that if  $s_j$  is increased then the marginal utility derived from an additional unit of money falls. Therefore if the neediness of player  $j$  is emphasised, then guilt or some other social norm will decrease Player  $i$ 's marginal utility from another unit of his/her own endowment. Furthermore as  $0 \leq \beta < 1$ , if both  $S_i$  and  $s_j$  effects are induced in an experimental setting, it could be assumed that the effect of  $S_i$  would be stronger on the marginal utility of player  $i$ . The calculation of the partial derivative of the utility of player  $i$  with respect to the endowment of player  $j$  reveals the following relationship:

$$\partial U_i / \partial x_j = \beta s_j > 0$$

Therefore if the status of player  $j$  is communicated to player  $i$  (i.e. to be a relatively more needy person) then the marginal utility of the dictator with respect to the recipient's endowment increases. Therefore the dictator will derive positive marginal utility from an incremental increase in the endowment of his/her recipient. The equations derived above will be examined in the rest of this research to investigate if the hypothesised relationships do in fact exist.

### **Treatment 1: Anonymous and Random**

The students were asked to all meet in one venue. Once they had all signed their consent forms and been assigned their player identification numbers, students were randomly chosen from the crowd and asked to move to another venue. The students were given player identification numbers so that their anonymity was assured and so their offers and answers to their questionnaires could be tracked. In separate venues, the students were informed of their status in the experiment as either Player A or Player B. They were all told that in addition to their R20 show-up fee, the Player As had been given R40. The Player As were asked to decide whether they wanted to give any of their R40 endowment to their anonymous Player B in the next room, and if so, how much (offers could range from 0 to R40). They wrote down how much they were willing to offer on a sheet that recorded their player identification number and another sheet that simply recorded their offer amount. The anonymous slip of paper was sent to the Player B's and randomly distributed while the other sheet was used to record their offer amount and their player identification number. Once the Player Bs had received their offers all the students were asked to fill out a questionnaire, and on the completion of the questionnaires, they were all paid their experimental earnings.

### **Treatment 2: Status effect**

Following the design used by Eckel and Grossman (2001), the effect of status on the altruistic motivations of the subjects was induced through the use of a general knowledge quiz. All the subjects were requested to answer a short quiz at the beginning of the experiment.<sup>4</sup> The subjects were told that the results of the quiz would determine their status in the game as either Player A or Player B,

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<sup>13</sup> The questions asked in the quiz were as follows: How many players are there in a water polo team? What is South Africa's current inflation rate? How many oceans are there? How many official South African languages are there? How many provinces are there in South Africa?

although in fact they were randomly assigned. Those who scored the best on the quiz were told they had “earned” the right to be Player A. These Player A students were applauded and congratulated on their success and repeatedly told they had earned their status as Player A. This was a deliberate act intended to induce a status effect with Player As being seen as privileged. It was hypothesised that the status treatments would provoke more selfish giving by the dictators in comparison to the random treatment.

**Treatment 3: Financial Aid students**

The third treatment entailed giving the dictators information about their Player Bs. They were told that the recipient of their offer was a student on financial aid (which was in fact true). It was hypothesised that the giving of the dictators would be more generous if they felt that their partner was “needy”.

**Experimental Results According to Treatment**

The histogram of the offer amounts and the means of the three treatment offers are shown below. Table 3 shows that average offers differed across treatments. As hypothesised, mean offers were higher in the financial aid treatment and lowest in the status treatment.

*Table 3: Treatment means (Offer amount)*

<i>Treatment</i>	<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>
Anonymous	13.4	25	11.1
Status	7.5	26	6.5
Financial aid	17.5	28	9.1
Total	12.9	79 <sup>5</sup>	9.9

Using ANOVA there is a significant difference between these treatment means at the 1% level (see Appendix A, Table 5). The Mann-Whitney test, a non-parametric test, was used to see if the treatments were significantly different to the control treatment (see Appendix A, Tables 6 and 7). The difference between the status treatment and the control group was significant at the 5% level and the

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<sup>15</sup> The total number of participants in the experiments was 153, however as only 79 of them were dictators, it is their data that is relevant for this research.

difference between the financial aid and control group was significant at the 15% level. Changing the frame of the dictator experiments has a significant effect on the behaviour of the Player As. This result indicates that status has a negative effect on the altruistic motivations of the subjects. If the neediness of their recipient is accentuated, however, then the Player As prove to be more forthcoming in their generosity.

Figure 2: Histogram of offer amounts (Random Treatment)

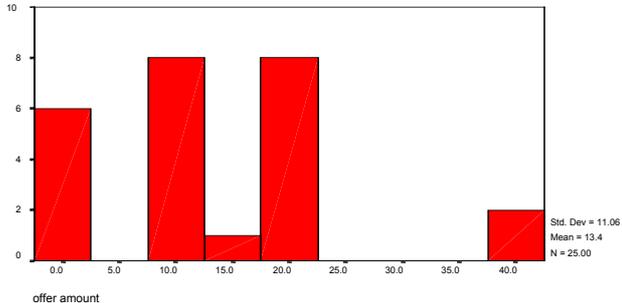


Figure 3: Histogram of offer amounts (Status Treatment)

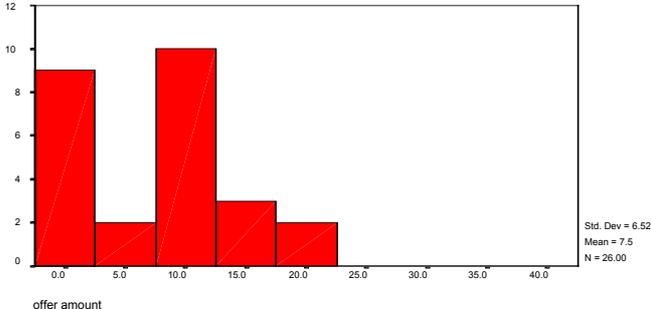
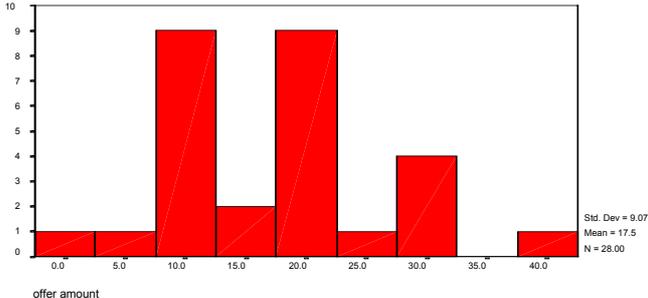


Figure 4: Histogram of offer amounts (Financial Aid Treatment)



Histogram plots of the actual offers made in each treatment group also provide some interesting insights into the distribution of actual offers. In the anonymous treatment almost a quarter of dictators were motivated into giving half of their pie, with only six subjects behaving like Homo Economicus and giving zero. By way of contrast, in the status treatment, modal offers occur at zero and R10, with only two dictators making equal splits. Subjects appear to behave far more selfishly, on average, when they believed that they have earned the right to their resources. Finally, the histogram from the financial aid treatment clearly shows how the perceived need of the recipient increases the generosity of the subjects.<sup>6</sup> Not only were one third of the dictators willing to give half of their money away, but six subjects felt it was necessary to give more than half away to help out their fellow students. In general then, it appears that status does affect redistributive behaviour. Individuals exhibited a willingness to redistribute their resources to others whom they perceived as needy, but this motivation is suppressed when the individual feels they have somehow earned the right to their resources (in this case through a supposedly good performance on a quiz).

In each treatment group, the dictators were asked why they gave the amount they did. This was an attempt to see if they were aware of their own motivations for their altruistic behaviour. The most common reason given was that they “wanted to be fair”. The second most common reason was that they felt they needed to help out their Player Bs, i.e. this is a direct altruistic motivation.

## **The Effects of Demographic Variables**

Initial analysis of offers by demographic variables such as age, race and gender suggest that offers by age and gender are not significant, but offers by race are. Women in the sample made lower offers than men: the mean for women was R11.77 (with a standard deviation of 7.82), compared to a mean of R14.65 (and a standard deviation of 12.30) for men. This contradicts the 1998 Eckel results. But this difference is not significant at the 10% level, using ANOVA (see Appendix A, Table 8). There was a significant difference between the mean

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<sup>6</sup> One of the financial aid treatments was significantly larger than the other financial aid treatment. It was thought that this might skew the results as the subjects are more likely to feel anonymous in a large group and therefore behave more selfishly. However the analysis shows that group size has no effect on the average giving behaviour of the subjects and if anything the larger the group, in the example of the financial aid treatment, the more generous the dictators.

offers by race group at the 10% level, using ANOVA (see Appendix A, Table 10), but the significance of this result must be qualified because the removal of the highly variable Indian group renders the difference between the means no longer significant. This result implies overall that a) men and women in this sample are not that different from each other in their altruistic motivations and b) that racial ties do not alter altruistic behaviour significantly, in this sample.

The subjects were also asked to rank themselves into different income groups based on their perceived affluence. While this ranking is highly subjective and may not be an accurate representation of actual affluence, it is hypothesised that those who perceive themselves to be rich will be more likely to give more whilst those who perceive themselves to be poorer will give less, due to the diminishing marginal utility of money theorem. The difference in means between the income groups is significant, using ANOVA, at the 5% level (see Appendix A, Table 11). However, once the handful of “rich” students are removed from the sample, the ANOVA result is insignificant. The means are shown in Table 4 below. Evidence for the diminishing marginal utility of money is mixed here. This may be due to the aforementioned problem with measuring the income of students.

*Table 4: Income Group Means (Offer amount)*

<i>Financial situation<sup>18</sup></i>	<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>
Upper income	15.26	19	10.34
Middle income	12.60	42	9.56
Lower income	17.00	10	9.19
Poor	4.00	5	5.48
Total	12.90	79	9.85

Finally, neither the students’ home language nor religious affiliation (see Appendix A, Tables 12 and 13). Commerce students gave slightly less than non-commerce students – with mean offers of R12.17 and R13.35 respectively – but the difference was not significant (see Appendix A, Table 14).

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<sup>18</sup> The sample of “rich” students was very small and thus their experimental results have been excluded from the analysis. Their mean was R3.33, with an n=3

## Correlations between Experimental and Survey Results

The experimental results seem to indicate that the conventional demographic variables such as gender, race, language or religion are not particularly good predictors of behaviour in this experimental setting. The only significant predictors of behaviour appear to be the treatment group and status effects. Thus the correlation between participants' behaviour in the experiments and their survey responses was examined. The correlation between those who said they would willingly give money to uplift others and their actual offers in the experiment was low and insignificant (see Appendix A, Table 15). Despite the survey results indicating that the majority of participants favoured redistribution, those who profess this aversion to inequality are not actually willing to carry out their own form of redistribution when they are afforded the opportunity in the dictator game. There was also no correlation between whether the subjects believed that the distribution of wealth in South Africa was fair and their actual offers in the dictator game (see Appendix A, Table 16). This reinforces the conclusion that those who say that they are in favour of redistribution are not necessarily those who carry it out. This highlights the inadequacy of relying solely on surveys to capture individuals' attitudes and preferences towards redistribution.

Finally, in order to analyse the effectiveness of the experiments in eliciting more accurate responses than would have been done by a survey alone, the recipients of the dictator games were asked to make a hypothetical offer to an imaginary partner. The mean of these offers was R17.11 (or 43% of the pie) compared to the mean in the actual experiment of R12.90 (or 32% of the pie). The difference between the two means is significant at the 1% level (see Appendix A, Table 17). This suggests strongly that responses to hypothetical situations in a survey overestimate the amounts that people will actually give in a real situation.

Frohlich *et al.* (2000) argued that experimental results would be affected by any doubt in the minds of the experimental subjects as to the design of the experiment and the existence of the other players. A question was inserted into the questionnaire to analyse if there existed any doubt in the minds of the students regarding the experiments. Almost half of the students answered that they believed that everything that they were told about the experimental design was true. The other half felt that most of what they were told was the truth. Therefore the experiments were effective in terms of the lack of doubt on behalf

of the students and the experimental results were therefore not invalidated by the existence of doubt.

## Conclusions

The experimental results provide evidence of altruistic behaviour amongst the sample of university students, as exhibited by the mean offers in the dictator experiment. The students behave more generously when the deservingness of the recipient of the offer is accentuated. The students are more willing to give to those who they feel need it more than they do. This generosity is reduced when the person feels that they have rightfully earned their money. This is seen in the fact that the mean offer in the status treatment is significantly lower than that in the random treatment. This implies that people are more unwilling to give money away when they have worked for it or earned it in one way or another. However the analysis, when broken down into demographic details, did not provide any significant results. Although this may seem surprising, why would we think that a student sample would be any different to each other in their generosity? It provides evidence for the argument that the new generation of South African students behave in a similar manner when faced with the dictator game, regardless of race or gender.

The analysis of the survey results reveals that the students in the sample are, in general, in favour of redistribution. They view the government as being primarily responsible for addressing redistribution, although no one felt that the government was doing a good job. There was little correlation between those individuals who expressed a desire for redistribution and their actual giving behaviour in the experiment. This may be because individuals do not feel it is their role to redistribute wealth. These results suggest that surveys aimed at eliciting preferences on redistribution are inadequate on their own, as there may be a divergence between what people say and what they actually do. Nevertheless, it does seem to imply the sample of students were unwilling to follow through with their expressed desires for redistribution when the occasion arises, but rather they give out of some feeling of sympathy for their fellow student or for the sake of being “fair”.

Overall, it seems that the students in the sample do have a common understanding in terms of their giving behaviour and their altruistic motivations. There are many examples of altruistic behaviour in South Africa. One only needs look at the car guard industry and the way it has arisen to uplift the lives

of many South Africans and foreigners. There is no reason to pay a car guard for his services, he is not authorised by any official body to protect your car, and he lives on donations alone. Yet people feel compelled consistently to give money to these strangers.

South Africa faces a deteriorating situation where redistribution does not appear to be happening fast enough and the promises of the government are not being kept. The majority of the participants understand the need for redistribution and the results of this research indicate that people are willing to redistribute. However this compulsion is tempered when they feel that they have earned the right to a greater share of the resources. At the same time, when people feel that the recipient of their charity is deserving, they are more willing to help that person out with a donation. These two conflicting impulses provide a clue as to the reason for the current slow pace of redistribution.

There are many ways in which this study could be taken further. The lack of funding meant that only students could be used for these experiments. A more accurate understanding of the South African public would require that experiments such as these are performed on a wider scale. Even if this was not possible, a larger sample size is needed to obtain more significant results. It would be preferable that the questionnaire is administered several weeks before the experiment. The size of the pie given to the dictators should be varied to see if this has any effect on their giving behaviour. It would also be interesting if the dictators were given some information about the person they were sending to and how this altered their giving behaviour. Another avenue for future research is to compare these results to a double-blind dictator game, but with almost exactly the same instructions, to see if the giving behaviour of the dictators significantly changed. This research should be viewed as the first step in the direction of conducting more experiments to investigate social questions in South Africa, and its results should be used as a baseline case for future research.

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## Appendix A

*Table 5: ANOVA Table: Mean Offers by Treatment*

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	1347.726	2	673.863	8.234	.001
Within Groups	6219.464	76	81.835		
Total	7567.190	78			

*Table 6: Mann-Whitney Test – Status treatment*

Ranks

<i>treatment</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
Anonymous	25	30.18	754.50
Status	26	21.98	571.50
Total	51		

Test Statistics

	offer amount
Mann-Whitney U	220.500
Wilcoxon W	571.500
Z	-2.050
Asymp. Sig. (2-tailed)	.040

*Table 7: Mann-Whitney Test – Financial Aid Treatment*

Ranks

<i>Treatment</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
Anonymous	25	23.64	591.00
Financial aid	28	30.00	840.00
Total	53		

Test Statistics

	offer amount
Mann-Whitney U	266.000
Wilcoxon W	591.000
Z	-1.546
Asymp. Sig. (2-tailed)	.122

Table 8: ANOVA Table: Mean Offers by Gender

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	155.614	1	155.614	1.617	.207
Within Groups	7411.576	77	96.254		
Total	7567.190	78			

Table 9: Mean Offers by Race

<i>Race group</i>	<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>
African	12.0	27	9.3
White	11.9	33	9.7
Coloured	13.2	14	7.8
Indian	26.3	4	16.0
Asian	10.0	1	.
Total	12.9	79	9.9

Table 10: ANOVA Table: Table: Mean Offers by Race

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	773.241	4	193.310	2.106	.089
Within Groups	6793.949	74	91.810		
Total	7567.190	78			

**Table 11: ANOVA Table: Table: Mean Offers by Income**

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	948.720	4	237.180	2.652	0.040
Within Groups	6618.470	74	89.439		
Total	7567.190	78			

**Table 12: ANOVA Table: Mean Offers by Home Language**

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	911.760	10	91.176	.932	.510
Within Groups	6655.430	68	97.874		
Total	7567.190	78			

**Table 13: ANOVA Table: Mean Offers by Religious Affiliation**

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	1188.623	8	148.578	1.631	.132
Within Groups	6378.567	70	91.122		
Total	7567.190	78			

**Table 14: ANOVA Table: Mean Offers by Course of Study**

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	982.039	9	109.115	1.143	.345
Within Groups	6585.150	69	95.437		
Total	7567.190	78			

**Table 15: Correlations Between Offer Amount and Survey Response (Willingly Give Money to Uplift Others)**

		<i>offer amount</i>	<i>willing giving</i>
offer amount	Pearson Correlation	1.000	.005
	Sig. (2-tailed)	.	.965
	N	79	79
willing giving	Pearson Correlation	.005	1.000
	Sig. (2-tailed)	.965	.
	N	79	79

**Table 16: Correlations Between Offer Amount and Survey Response (Redistribution)**

		<i>offer amount</i>	<i>new distribution ques</i>
offer amount	Pearson Correlation	1.000	.132
	Sig. (2-tailed)	.	.246
	N	79	79
distribution ques	Pearson Correlation	.132	1.000
	Sig. (2-tailed)	.246	.
	N	79	79

**Table 17: Paired Samples Test, Hypothetical Offers versus Experimental Offers**

<i>Paired Differences</i>						<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	offer amount - Player B's hypothetical offer	-4.08	12.27	1.43	-6.92	-1.124			.006



The following questions should be answered as honestly as possible. They are simply a matter of opinion, i.e. no answer is right or wrong. We simply wish to gauge your responses on a number of issues. In each case, **please circle your answer.**

**14. The Progressive tax system (i.e. a system of tax where richer individuals are taxed more than poorer individuals through tax brackets) is seen as one method of redistributing wealth from the rich to the poor. How fair do you believe this system to be?**

- i) fair
- ii) unfair
- iii) Don't know/have no opinion

Below is a list of 6 individuals. We would like you to do the following: In Column B, please indicate how much money **you** would give each of them if they were the person you were paired with in the experiment. In each case, imagine that you have been given R40 to split. In Column C, we would like you to make a guess as to how much each of these individuals would give, if they were Player A who had R40 to split.

<i>Individual</i>	<i>Column B: How much would you give to this person?</i>	<i>Column C: Ranking</i>
Greg Smith, a young male in his early twenties.	Out of R40, I would give him R.....	Out of R40, he would give R..... to Player B.
Thandi Mzikwa, a middle aged woman.	Out of R40, I would give her R.....	Out of R40, she would give R..... to Player B.
Simpiwe Ndlovu, a UCT student	Out of R40, I would give her R.....	Out of R40, she would give R..... to Player B.
Nasser Abrahams, a wealthy business man.	Out of R40, I would give him R.....	Out of R40, he would give R..... to Player B.
Chantel du Toit, a young unemployed single mother	Out of R40, I would give her R.....	Out of R40, she would give R..... to Player B.
Johannes van Rensburg, a Dutch Reformed Church minister.	Out of R40, I would give him R.....	Out of R40, he would give R..... to Player B.

**15. What do you think about income inequality in South Africa?**

- i) There will always be the rich and the poor in any society, and South Africa is no different.
- ii) Income inequality is not a serious problem in South Africa
- iii) Income inequality is a problem but not as much as people make out
- iv) South Africa has one of the worst income inequality problems in the world, which is
- v) something that should be dealt with urgently
- vi) I don't have an opinion on this issue

**16. How well do you think the government is dealing with income inequality?**

- i) The government is doing very well, they are closing the gap between the rich and poor quite quickly
- ii) The government is working hard on the problem, it just needs time and patience
- iii) The government has been completely ineffective in solving the income inequality problem.
- iv) I don't have an opinion on this issue

**17. Do you think that the South African government should help the poor, or do you think it is up to the poor to help themselves?**

- i) Poor should help themselves
- ii) Government should help the poor
- iii) Don't know
- iv) Don't care

**18. Which of the following groups/individuals do you think has the greatest responsibility to help the poor?**

- i) Churches
  - ii) Private charities
  - iii) The government
  - iv) The families and relatives of the poor
  - v) The poor themselves
  - vi) Other
- (please say who you think this should be \_\_\_\_\_)

**19. Do you think that the distribution of money and wealth in South Africa today is fair, or do you think that the money and wealth in South Africa should be more evenly distributed among a larger percentage of the people?**

- i) The current distribution of money and wealth is fair
- ii) The wealth and money should be more evenly distributed among a larger percentage of people.
- iii) Don't know

**20. Which one of the views expressed below do you most agree with? Circle the one you most agree with.**

- i) There is plenty of opportunity in South Africa, and anyone who works hard can get far.
- ii) There is not much opportunity in South Africa, and the average person doesn't have much chance to get far even if they work hard.

**21. South Africa is sometimes described as a country of "Haves" (people who have money and live well) and "Have-nots (people who are poor and struggle for the basic necessities in life). Which of the following groups do you think you're in?**

- i) Haves
- ii) Have-nots
- iii) Neither
- iv) Don't know

**22. What do you think about the recent land seizures in Zimbabwe?**

- i) It is about time Mugabe took the land back from the colonists
- ii) It is something that needed to happen, it just happened in the wrong way
- iii) The seizure of private property without compensation breaks one of the fundamental human rights, and should be punished as such
- iv) I don't have an opinion on this issue

**23. Do you think the same situation of "land-grabbing" will arise in South Africa in the near future?**

- i) Not at all likely
- ii) It is a possibility that should not be ignored
- iii) Very likely
- iv) I don't know

**24. If you had the opportunity to uplift a family that you have never seen or known by sacrificing some of your present/future income, would you do it?**

- i) Only if I knew that the family was deserving of charity
- ii) Only if it was a small proportion of my total income
- iii) I would willingly give money to uplift others
- iv) I would never give money to people I do not know
- v) I don't have an opinion on this issue

These last few questions are about the actual experiment.

**25. Do you think the experiment was staged, or do you believe that everything that the monitors told you was true?**

- i) Everything we were told was the truth
- ii) Most of what we were told was the truth
- iii) There are actually no other students in the other lecture venue
- iv) The monitors lied to us to get us to behave in strange ways

**26. Why did you give the amount of money you did to Player B?**

- i) It seemed the most fair offer to make
- ii) I chose to play strategically
- iii) I needed to keep the money for my own enjoyment
- iv) I gave what I felt I needed to give
- v) I don't know why I gave what I gave

**27. Would you have given more money to Player B if you had known who they were?**

Yes                      No (circle one)

**28. Would you have given more money to Player B if all the participants in the experiment (including the Player B's) had known how much you were sending to Player B?**

Yes                      No (circle one)

**29. Would you have given more money to Player B if you had known that he/she needed the money far more than you do?**

Yes                      No    (circle one)

Thank you for your participation in this experiment, you will now be paid for participation.