

## **Warm glow or cold prickle:**

### **A field experiment on altruism in young South African men and women**

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Paper presented to the biennial conference of the Economic Society of South Africa

3-5 September 2019, Johannesburg

The evidence that giving in dictator games is equivalent to taking is mixed. Where differences have been detected, these often exhibit strong gender dynamics due to differences in the sense of property right and entitlement. A field experiment with a within-subject design was conducted in a township in the city of Mangaung in the Free State province of South Africa. The subjects were 240 young adults aged 18-24 years comprising 120 males and 120 females. Trained enumerators conducted face-to-face interviews with consenting study participants. Subjects completed a series of incentivised dictator games with a symmetric giving and taking frame at each of eight social distances. Altruism is measured by the amount of money transferred, the prevalence of giving and egalitarianism, and the area under the curve (AUC) and the social discounting rate ( $k'$ ). Descriptive and regression analysis is employed to assess the role of gender and framing in explaining altruism. The results are consistent with findings in the standard dictator game. In terms of the main gender effect, women are significantly more likely than men to give and more egalitarian than men, but not more altruistic otherwise. We find that, except for the prevalence of giving, altruism under a giving frame is not equivalent to altruism under a taking frame. This is especially true for men, who are more altruistic under the taking than the giving frame. We also find that women are more altruistic than men under a giving frame, but that men are more altruistic than women under a taking frame. Women are more egalitarian than men under both the giving and taking frame. The evidence suggests that the cold prickle of taking is stronger than the warm glow of giving among men, but that evidence for women are mixed.

**JEL classification:** C93, D64, J16

**Keywords:** altruism; dictator game; taking; gender; social distance

## 1. Introduction

To study greed and framing effects, researchers have adopted a taking rather than a giving frame in the standard dictator game (Bardsley, 2008; Cappelen, Nielsen, Sørensen, Tungodden, & Tyran, 2013; Chowdhury, Jeon, & Saha, 2017; Dreber, Ellingsen, Johannesson, & Rand, 2013; Grossman & Eckel, 2015; Korenok, Millner, & Razzolini, 2014; List, 2007; Visser & Roelofs, 2011). The evidence that giving in dictator games is equivalent to taking is mixed. On the one hand, List (2007) and Bardsley (2008) in earlier work report that generosity, as a result of impure altruism, is reversed when allowing subjects to take a partner's money, a finding in support of which Cappelen et al. (2013) provide further evidence. Visser and Roelofs (2011) and Korenok et al. (2014), however, found not taking to exceed giving. Dreber et al. (2013), on the other hand, found dictator behaviour to be insensitive to social framing, both in laboratory and field settings. More recently, Chowdhury et al. (2017) also report a giving and taking frame to be equivalent, but attribute this fact to opposing gender effects that offset each other. The authors attribute this gender effect to 'males' (relatively) stronger sense of entitlement and property right as shown by Bylsma and Major (1992) and females' (relatively) stronger endowment effect as shown by Dommer and Swaminathan (2013)" (Chowdhury et al., 2017: 475).

This paper reports on the results from a field experiment that investigates this same phenomenon among young African adults from a township in South Africa. Apart from its developing country extra-laboratory field context (Charness, Gneezy, & Kuhn, 2013), the paper adds a social distance dimension to its framing, which allows the inclusion in the analysis of additional measures of altruism. With the exception of the prevalence of giving, this study finds that the cold prickle of taking exceeds the warm glow of giving in that subjects are more altruistic under a taking than a giving frame, especially young adult men.

## 2. Data and method

*Participants and setting:* The subjects are young adults between the ages of 18 and 24 years and comprises of a balanced sample of 120 females and 120 males. Subjects were recruited in a township in the city of Mangaung in the Free State province of South Africa. Trained enumerators visited dwellings on a door-to-door basis and identified households with young adults. Where households included multiple young adults, a Kish grid was used to randomly select one of the young adults. The socio-demographic characteristics of the 240 subjects are described in Table 1.

*Ethical clearance:* Ethical clearance for the study was obtained from the Free State University's Faculty of Economic and Management Sciences (UFS-HSD2018/1397). Written informed consent was obtained from all study participants and participation in the study was voluntary.

*Procedure:* The dictator game is the most popular workhorse of experimental and behavioural economists in their study of altruism. In this study, subjects completed a dictator game task similar to the ones described in Korenok et al. (2014) and Chowdhury et al. (2017). Unlike these authors, however, subjects made a separate choice for each of eight social distances (1, 2, 3, 5, 10, 20, 50, 100). Subjects were first asked to mentally construct such a social hierarchy using the following instruction: “imagine that you have made a list of the 100 people closest to you in the world ranging from your dearest friend or relative at position #1 to a complete stranger at #100. The person at number one would be someone you know well and is your closest friend or relative. The person at #100 is a complete stranger”. Allocations in South African Rand were then made in ZAR10 increments from an endowment of ZAR100, as set out in the detailed instructions included in the annexure to this paper. Recipients’ had a passive role. In half of the questionnaires, the giving task was performed first, followed by the taking task, while the tasks were completed in the opposite order for the other half of respondents. Social distance was presented as ascending in half of the questionnaires and descending in the other.

*Payment:* Following completion of the instrument, a within-subject random incentive system (RIS) was used to calculate each subject’s individual earnings (Baltussen, Post, Van den Assem, & Wakker, 2012). First, twenty-four subjects were randomly selected from the total pool of respondents using Stata’s *sample* command. A four-sided die was then used to randomly select one of the two tasks, i.e. giving or taking. Next, one of the eight social distances was selected randomly using an eight-sided die. The selected subject’s choice on this individual task was implemented for actual payment. The experimenter implemented the payment process following completion of the survey. Subjects on average earned ZAR53 together with a ZAR50 participation fee paid to respondents after completion of the interview, while an average amount of ZAR47 was paid to recipients. Payments were made in private and via mobile phone, for cash withdrawal at an ATM.

*Measures:* The analysis includes five measures of altruism. ‘*Transfer*’ represents the amount of money (in multiples of ZAR10 ranging from zero up to ZAR100) allocated to or not taken from the recipient in the giving and taking frames, respectively. For the taking frame, the outcome was calculated by subtracting the amount taken from the endowment. ‘*Giving*’ in turn is measured using a binary outcome (0=giving zero and 1=giving a non-zero amount) and the mean represents the prevalence of giving, i.e. the percentage of subject who gave a non-zero amount. ‘*Egalitarian*’ indicates whether the subject transferred half of the endowment to the recipient (=1) or not (=0). These three outcomes are task-specific (n=3,840). The two remaining measures aggregates the information on giving across the eight social distances for each of the two task frames (n=480). The ‘*area under the curve*’ (AUC) represents a single a-theoretical discounting parameter independent of functional form and is inversely proportional to the rate of discounting. The index ranges from 0 (complete discounting – less altruism) to 1 (no discounting – greater altruism) (Locey, Jones, & Rachlin, 2011). An AUC index is constructed

for each individual subject, using the Excel software of Reed, Kaplan and Brewer (2012). The ‘*social discounting rate*’ ( $k'$ ) in turn is constructed by individually fitting a social discounting function on each subject’s choice set with the aid of the same Excel solver toolkit (Reed et al., 2012), using a standard hyperbolic discounting function. The constant  $k'$  measures the steepness of discounting: the greater  $k'$ , the greater the degree of social discounting and the lower the degree of altruism (Sharp et al., 2012).

*Analysis:* The analysis comprises a descriptive and regression part. In the descriptive analysis, the allocation decisions are first described using graphs (Figures 1-4). The three task-specific study outcomes are then compared across gender and across task frames using t-tests (Table 2). In the subsequent descriptive statistics, mean allocations per social distance is presented in Table 3, on aggregate and by task frame. Table 4 compares the mean AUC and  $k'$  values across gender and frame, using t-tests. In the regression analysis, OLS and probit regression models are employed to determine how gender and task frame (a binary outcome: 0 = giving frame and 1 = taking frame) are associated with the five study outcomes (Tables 5-8). Apart from the marginal effects for the gender and task frame dummies, particular emphasis is placed on the interactions of framing and gender. The analysis tests for four interactions of primary importance: female\*giving versus male\*giving; female\*taking versus male\*taking; male\*taking versus male\*giving; and female\*taking versus female\*giving. The regression results, where appropriate, are adjusted for social distance, task order, age, sex, education, employment status, and subjective economic wellbeing. For the three task-specific measures, we also conduct sub-group analysis by social distance. A distinction is drawn between ‘immediate’ relations (social distance = 1, 2, 3), ‘close’ relations (social distance = 5, 10), ‘intermediate’ relations (social distance = 20, 50) and a ‘stranger’ (social distance = 100).

*Hypotheses:* According to Chowdhury et al. (2017), the giving frame makes the dictator’s property right over the endowment salient, whereas the taking frame introduces salience of the recipient’s property right over the endowment. Dreber et al. (2013) hypothesise that dictators who are concerned about violating the recipient’s entitlement would leave more money in the taking frame, especially if recipients may learn about their decisions. Related to this, is Levitt and List’s (2007) argument that the moral cost of being selfish may be greater under taking than under giving. Our one hypothesis, therefore, is that such entitlement effect would result in greater altruism in the taking than the giving frame (i.e. a positive framing effect). In Andreoni’s (1995) terms, this hypothesis argues that the cold-prickle of negative framing is stronger than the warm-glow of positive framing. Chowdhury et al. (2017), moreover, point out that differences in framing may introduce gender-specific cognitive biases such as endowment effects (Thaler, 1980), status-quo bias (Samuelson & Zeckhauser, 1988) as well as entitlement effects (Bylsma & Major, 1992). As a result, one may observe asymmetric behaviour among males and females under alternative task frames. In Chowdhury et al.’s (2017) words, interactions of

gender and framing may have significant effects on altruism, independent of other cues and anonymity. Our other hypothesis therefore is that framing effects may be gender-specific.

### 3. Results

The mean age of the study participants is 20.6 years and do not differ statistically significantly between males and females, nor does employment status, where the majority of subjects are unemployed (72.8%) (Table 1). Marital status, education level and subjective economic well-being do however differ statistically significantly between males and females. Females are more likely to be married, which is in line with expectations insofar as women generally marry at younger ages than men. The group of young male adults had higher levels of education than the group of young female adults. Young female adults reported higher levels of subjective economic well-being.

Table 2 illustrates that young adults who participated in this study are altruistic. Overall, transfers, at a mean of ZAR41, are statistically significantly different from zero. Prevalence of giving is high, at 83.2%. Even for strangers (i.e. social distance 100), the transfers are statistically significantly different from zero (Table 3).

There are statistically significant gender differences in altruism (Table 2). On aggregate, the prevalence of giving is higher among females (84.9%) than males (81.4%) ( $p=0.002$ ) and so is egalitarianism, being 18.0% among males and 22.3% among females ( $p<0.001$ ). However, at ZAR41, the mean amount of money transferred is the same for male and female subjects ( $p=0.478$ ). An interesting picture though emerges when looking into the gender differences for the giving and taking frames of the task. In the giving frame, females (ZAR40) sent more money than males (ZAR30) ( $p<0.001$ ), while the opposite was true for the taking frame, where males left the recipient with ZAR52 and females left recipients with ZAR42 ( $p<0.001$ ). The same pattern is evident in the comparisons of the prevalence of giving, but the difference is only statistically significant for the giving frame. Here, 88.0% of females gave a positive amount, compared to 79.0% of males ( $p<0.001$ ). Similarly, significantly more females (20.3%) are egalitarian compared to men (16.4%) in the giving frame ( $p=0.015$ ). The same is true for the taking frame, with 24.3% of females leaving the recipient with half of the endowment compared to 19.6% of males ( $p=0.005$ ).

On aggregate, mean transfers, at ZAR47, are substantially greater in the taking than the giving frame (ZAR35) ( $p<0.001$ ), but this difference only applies to male subjects (ZAR52 versus ZAR30) ( $p<0.001$ ) (Table 2). The prevalence of giving, however, is not statistically significantly different in terms of framing ( $p=0.302$ ), but egalitarianism is more prevalent in the taking than the giving frame (21.9% versus 18.3%) ( $p=0.002$ ), as reflected in Figure 1. In the case of egalitarianism, the framing effect is

similar for males and females and statistically significant in both instances ( $p < 0.05$ ). For giving, however, the framing effect for males and females is opposite in nature. More males allocated non-zero amounts to recipients in the taking (83.9%) than the giving frame (79.0%) ( $p = 0.002$ ). The opposite is true for females: 81.8% (taking) versus 88.0% (giving) ( $p < 0.001$ ).

Table 3 shows that transfers decline with social distance and statistically significantly so, both on average and for the giving and taking frames individually ( $p < 0.001$ ). The positive framing effect, moreover, is statistically significant for each social distance, the only exception being social distance 1. The mean differences between frames, as shown in Table 3, seem to increase with social distance, particularly so between distances 1, 2 and above.

The results reported in Table 4 mirror some of the results shown in Table 2, in particular for the area under the curve. AUCs do not differ across gender on average ( $p = 0.358$ ), but the gender differences within each frame are opposite in nature. In the giving frame, females are significantly more altruistic than males ( $p < 0.001$ ), while in the taking frame, males are significantly more altruistic than females ( $p < 0.001$ ). The latter is also true for the social discounting rate, but the other gender-based comparisons of the social discounting rate are not statistically significant. In terms of the framing effect for AUC and  $k'$ , the effect is statistically significant and positive for the combined sample of subjects, but especially for males, i.e. altruism is greater under the taking frame.

In regards to the aggregate gender effect, it is only positive and statistically significant for the prevalence of giving (+2.7%) (Table 6) and egalitarianism (+4.7%) (Table 7), i.e. females exhibiting a higher prevalence of giving and being more egalitarian compared to males. For transfers, however, the neutral aggregate effect hides two offsetting gender-based framing effects (Table 5). For the giving frame, the male-female differential is positive and statistically significant (+ZAR9), but negative and statistically significant for the taking frame (-ZAR11). The same is true for the prevalence of giving, the area under the curve and the social discounting rate, with opposite signs on the two interaction terms. In all but one instance (female\*giving versus male\*giving for the social discounting rate), these differences are all statistically significant. For the prevalence of egalitarianism, however, the gender effects have similar signs for the two frames. Both effects are positive and statistically significant, showing female subjects to be more egalitarian under both the giving and taking task frames.

In the case of transfers (Table 5), this offsetting gender-based framing effect is robust, applying across the social distance hierarchy. The only exception is the gender difference in transfers to strangers under the giving frame. This is not the case for the prevalence of giving (Table 6). The aggregate gender effect only holds for strangers. For 'immediate' relations, there are no aggregate or offsetting gender effects. The opposite frame-based signs on the gender comparisons are only both statistically significant for 'close' relations. In the case of 'intermediate' relations and strangers, it is only the gender difference in

the giving frame that is statistically significant. For egalitarianism (Table 7), the aggregated results for gender differences are not robust across social distance. (In fact, due to limited variation in the study outcome across the covariates, including task frame and gender, it was not possible to obtain estimates for the ‘stranger’ sub-group. In addition, the model for ‘immediate’ relations did not achieve a satisfactory overall fit. For this reason, a meaningful comparison of the overall results across the social distance hierarchy is problematic.)

Apart from giving (Table 6), there is a positive and statistically significant aggregate framing effect according to the regression results. Transfers are greater (+ZAR12) (Table 5), egalitarianism is more prevalent (+3.5%) (Table 7) and the area under the curve and the social discounting rate is greater (+0.146) and smaller (-0.388) (Table 8), respectively. For males, the framing effect is positive and statistically significant for all five study outcomes. In the case of transfers (Table 5), the aggregate and male-specific framing effects hold in each social distance sub-group. The effect, however, is significantly less pronounced for ‘immediate’ relations compared to more distant relations. In regards to egalitarianism (Table 7), the aggregate framing effect applied to both ‘close’ and ‘intermediate’ relations, as does the significant framing effect specific to male subjects. Where the framing effect is statistically significant for females (giving) (Table 6), it has a negative sign, pointing to an offsetting effect. This offsetting effect, however, applies more strongly to ‘close’ and ‘intermediate’ relations.

#### **4. Discussion**

This work extends the literature in various ways. The study investigates the effect of the giving and taking frame on altruism in a developing country field context. This is only the second study moreover to test for specific gender-based framing effects, but does so in a field setting. The focus on young adults, moreover, is especially relevant due to the importance of the development of altruistic preferences over the life cycle. Furthermore, the adoption in the study of a social distance frame allows an investigation of these aggregate and gender-based framing effects on additional summary measures of human altruism.

Although there are studies that find no gender differences in giving in dictator games (Bolton & Katok, 1995), especially in non-student samples (Cappelen, Nygaard, Sørensen, & Tungodden, 2015; Carpenter, Connolly, & Myers, 2008), the published evidence on the whole suggests that women on average give more than men in dictator games (Andreoni & Vesterlund, 2001; Boschini, Dreber, Von Essen, Muren, & Ranehill, 2018; Brañaz-Garza, Capraro, & Rascón-Ramírez, 2018; Capraro & Marceletti, 2014; Capraro, Jordan, & Rand, 2014; Capraro, 2015; Croson & Gneezy, 2009; DellaVigna, List, Malmender, & Rao, 2013; Dickinson & Tiefenthaler, 2002; Dreber et al., 2013; Dufwenburg & Muren, 2006; Eckel & Grossman, 1998; Engel, 2011; Houser & Schunk, 2009; Rand, Brescoll, Everett,

Capraro, & Barcelo, 2016). This study also finds significant gender differences in most measures of altruism that favours women, but only in the standard giving frame. In the taking frame, the gender difference is also significant but lies in the opposite direction, with males being more altruistic than females. This offsetting effect has meant that the aggregate gender difference in altruism, apart from the prevalence of giving and egalitarianism, which is significantly higher in females compared to males, is not significant.

Giving decline with social distance, which is in line with empirical evidence (Bechler, Green, & Myerson, 2015; Bohnet & Frey, 1999; Brañaz-Garza et al., 2010; Charness & Gneezy, 2008; Goeree, McConnell, Mitchell, Tromp, & Yariv, 2010; Leider, Möbius, Rosenblat, & Do, 2009).

Unlike the literature that reports equivalence of a giving and taking frame in dictator games (Chowdhury et al., 2017; Dreber et al., 2013), this study finds a significant framing effect. More specifically, altruism is greater under the taking than the giving frame. Korenok et al. (2014) and Visser and Roelofs (2011) report a similar result, this suggesting that this piece of evidence has successfully travelled from the lab to this specific field setting. In addition, the findings suggest that this framing effect is mainly restricted to male subjects. This finding suggests that there is a significant entitlement effect, especially among males. According to Korenok et al. (2014), such lack of equivalence suggests that the amount not taken should enter into the dictator's utility function as a fourth argument or explanatory factor. More specifically,  $U(\Pi_D, \Pi_R, S)$ , where  $S = G$  (amount given) &  $N$  (amount not taken) and  $\Pi_D$  and  $\Pi_R$  represent the dictator's and recipient's payoffs, respectively. In other words, "giving is not equivalent to not taking in isomorphically equivalent scenarios" in this decision making space and "on average, the payoff to recipients increases with the introduction of the taking option" (Korenok et al., 2014: 497). As pointed out by Korenok et al. (2014), this evidence may help explain why opt-out strategies is more successful than opt-in strategies such as for organ donation and for contributions to health insurance or retirement plans.

Like Chowdhury et al. (2017), this study also detects opposite framing effects for males and females, but only for the prevalence of giving, and then in the opposite direction. Here, females gave less in the taking frame, while males gave more in the taking frame. This result suggests that the entitlement effect may be stronger than the endowment effect among males, but that the opposite may be true for females.

As a disclaimer, it should be pointed out that this study adopts a 'heavy' frame in labelling the name and actions in the game as 'taking' rather than more neutrally as 'transferring'. Although Dreber et al. (2013) find that such difference in labels does not affect transfers, such explanation cannot be ruled out in our study. In other words, subjects may have perceived the labels as normative and hence may have exhibited different behaviours.

## 5. Conclusion

This research shows that subjects behave differently under a taking than a giving frame in regards to their preferences for altruism. Specifically, the cold prickle of taking is stronger than the warm glow of giving. This paper also shows that young male adults behave differently from young female adults in their decision to give or not to take from others. Generally speaking, equivalence in giving and taking is the norm among young female adults, while the cold prickle of taking drives decisions among young male adults. This evidence may help explain why in some settings opt-out strategies is more successful than opt-in strategies.

## 6. Acknowledgement

This work was supported financially by South Africa's National Research Foundation's (NRF) Human and Social Dynamics Research Programme (grant ID96132).

## 7. References

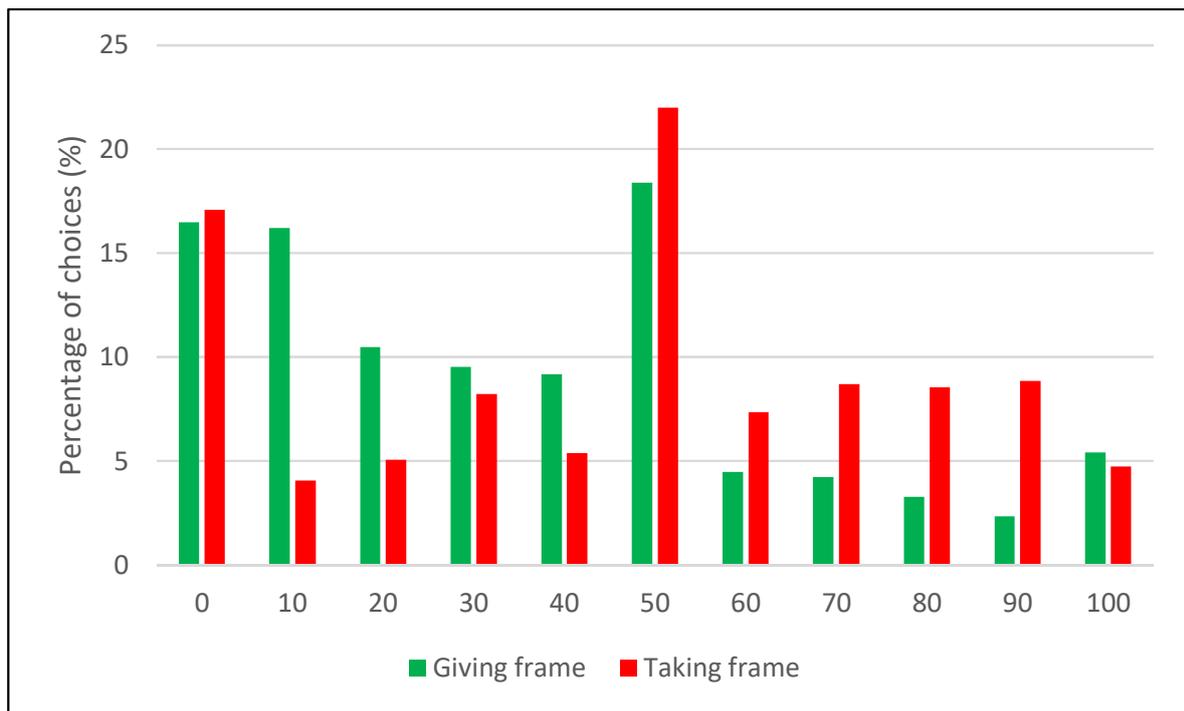
- Andreoni, J. (1995). Warm-glow versus cold-prickle: The effects of positive and negative framing on cooperation in experiments. *Quarterly Journal of Economics*, 110(1), 1–21.
- Andreoni, J., & Vesterlund, L. (2001). Which is the fair sex? Gender differences in altruism. *Quarterly Journal of Economics*, 116, 293–312.
- Baltussen, G., Post, G.T., Van den Assem, M.J., & Wakker, P.P. (2012). Random incentive systems in a dynamic choice experiment. *Experimental Economics*, 15, 418–443.
- Bardsley, N. (2008). Dictator game giving: altruism or artefact? *Experimental Economics*, 11, 122–133.
- Bechler, C., Green, L., & Myerson, J. (2015). Proportion offered in the Dictator and Ultimatum Games decreases with amount and social distance. *Behavioural Processes*, 115, 149–155.
- Bohnet, I., & Frey, B.S. (1999) Social Distance and Other-Regarding Behavior in Dictator Games: A Comment. *American Economic Review*, 89(1), 335–339.
- Bolton, G.E., & Katok, E. (1995). An experimental test for gender differences in beneficent behavior. *Economics Letters*, 48 (3), 287–292.
- Boschini, A., Dreber, A., Von Essen, E., Muren, A., & Ranehill, E. (2018). Gender and altruism in a random sample. *Journal of Behavioral and Experimental Economics*, 77, 72–77.

- Brañaz-Garza, P., Cobo-Reyes, R., Espinosa, M.P., Jimenez, N., Kovařak, J., & Ponti, G. (2010). Altruism and social integration. *Games and Economic Behavior*, 69, 249–257.
- Brañaz-Garza, P., Capraro, V., & Rascón-Ramírez, E. (2018). Gender differences in altruism on Mechanical Turk: Expectations and actual behaviour. *Economics Letters*, 170, 19–12.
- Bylsma, W.H., & Major, B. (1992). Two routes to eliminating gender differences in personal entitlement: Social comparisons and performance evaluations. *Psychology of Women Quarterly*, 16, 193–200.
- Cappelen, A.W., Nielsen, U.H., Sørensen, E.Ø., Tungodden, B., & Tyran, J. (2013). Give and take in dictator games. *Economics Letters*, 118, 280–283.
- Cappelen, A.W., Nygaard, K., Sørensen, E.Ø., & Tungodden, B. (2015). Social preferences in the lab: A comparison of students and a representative population. *Scandinavian Journal of Economics*, 117 (4), 1306–1326.
- Capraro, V. (2015). The emergence of hyper-altruistic behaviour in conflictual situations. *Scientific Reports*, 4, 9916.
- Capraro, V., Jordan, J.J., & Rand, D.G. (2014). Heuristics guide the implementation of social preferences in one-shot Prisoner's Dilemma experiments. *Scientific Reports*, 4, 6790.
- Capraro, V., & Marcelletti, A. (2014). Do good actions inspire good actions in others? *Scientific Reports*, 4, 7470.
- Carpenter, J., Connolly, C., & Myers, C.K. (2008). Altruistic behavior in a representative dictator experiment. *Experimental Economics*, 11 (3), 282–298.
- Charness, G., & Gneezy, U. (2008). What's in a name? Anonymity and social distance in dictator and ultimatum games. *Journal of Economic Behavior and Organization*, 68, 29–35 .
- Charness, G., Gneezy, U., & Kuhn, M.A. (2013). Experimental methods: Extra-laboratory experiments - extending the reach of experimental economics. *Journal of Economic Behavior & Organization*, 91, 93–100.
- Chowdhury, S.M., Jeon, J.Y., & Saha, B. (2017). Gender Differences in the Giving and Taking Variants of the Dictator Game. *Southern Economic Journal*, 84(2), 474–483.
- Croson, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, 47(2), 448–474.

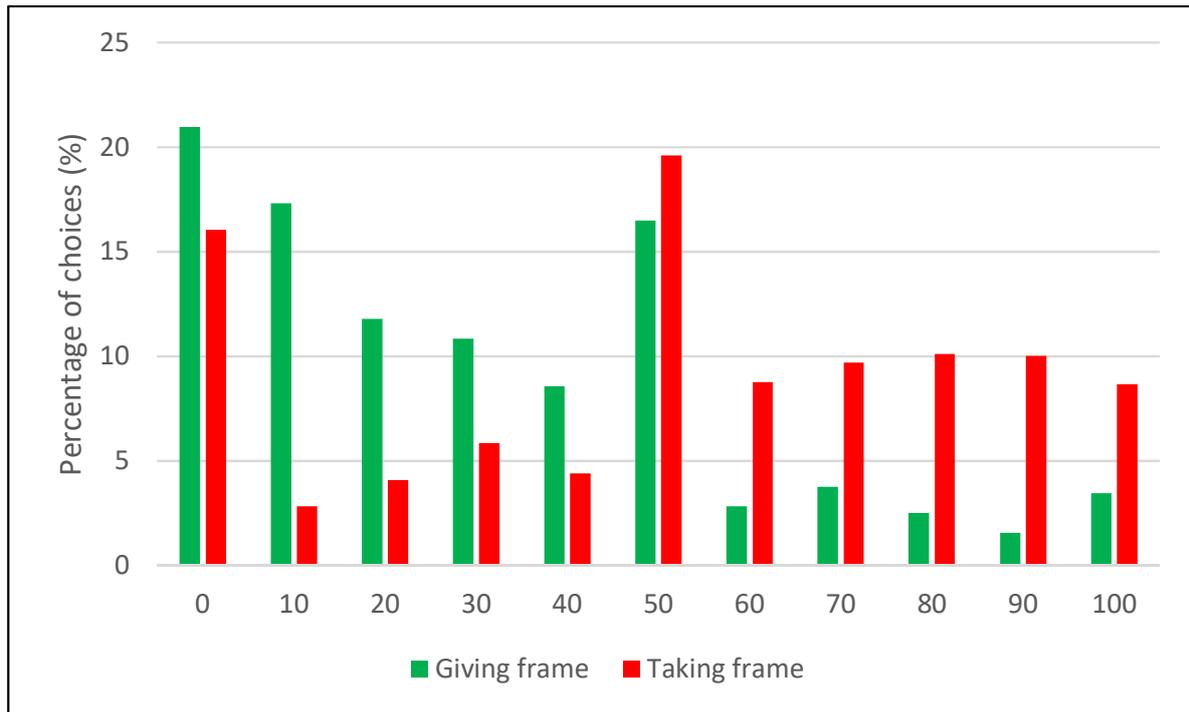
- DellaVigna, S., List, J.A., Malmiender, U., & Rao, G. (2013). The Importance of Being Marginal: Gender Differences in Generosity. *American Economic Review*, 103(3), 586–590.
- Dickinson, D.L., & Tiefenthaler, J. (2002). What is fair? Experimental evidence. *Southern Economic Journal*, 69(2), 414–428.
- Dommer, S.L., & Swaminathan, V. (2013). Explaining the endowment effect through ownership: The role of identity, gender, and self-threat. *Journal of Consumer Research*, 39, 1034–1050.
- Dreber, A., Ellingson, T., Johannesson, M., & Rand, D.G. (2013). Do people care about social context? Framing effects in dictator games. *Experimental Economics*, 16, 349–371.
- Dufwenberg, M., & Muren, A. (2006). Gender composition in teams. *Journal of Economic Behavior and Organization*, 61 (1), 50–54.
- Eckel, C.C., & Grossman, P.J. (1998). Are women less selfish than men? Evidence from dictator experiments. *Economic Journal*, 108 (448), 726–735.
- Engel, C. (2011). Dictator games: a meta study. *Experimental Economics*, 14, 583–610.
- Goeree, J.K., McConnell, M.A., Mitchell, T., Tromp, T., & Yariv, L. (2010). The 1/d Law of Giving. *American Economic Journal of Microeconomics*, 2(1), 183–203.
- Grossman, P.J. & Eckel, C.C. (2015). Giving versus taking for a cause. *Economics Letters*, 132, 28–30.
- Houser, D., & Schunk, D. (2009). Fairness, competition and gender: Evidence from German schoolchildren. *Journal of Economic Psychology*, 30, 634–641.
- Korenok, O., Millner, E.L., & Razzolini, L. (2014). Taking, giving, and impure altruism in dictator games. *Experimental Economics*, 17, 488–500.
- Leider, S., Möbius, M.M., Rosenblat, T., & Do, Q. (2009). Directed altruism and enforced reciprocity in social networks. *Quarterly Journal of Economics*, 124(4), 1815–1851.
- Levitt, S.D., & List, J.A. (2007). What Do Laboratory Experiments Measuring Social Preferences Reveal About the Real World? *Journal of Economic Perspectives*, 21(2), 153–174.
- List, J.A. (2007). On the Interpretation of Giving in Dictator Games. *Journal of Political Economy*, 115(3), 482–493.
- Locey, M.L, Jones, B., & Rachlin, H. (2011). Real and hypothetical rewards in self-control and social discounting. *Judgment and Decision Making*, 6(6), 552–564.

- Rand, D.G., Brescoll, V., Everett, J.A., Capraro, V., & Barcelo, H. (2016). Social heuristics and social roles: Intuition favors altruism for women but not for men. *Journal of Experimental Psychology: General*, 145, 389–396.
- Reed, D.D., Kaplan, B.A., & Brewer, A.T. (2012). A tutorial on the use of Excel 2010 and Excel for Mac 2011 for conducting delay-discounting analyses. *Journal of Applied Behavior Analysis*, 45, 375–386.
- Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of Risk and Uncertainty*, 1, 7–59.
- Sharp, C., Barr, G., Ross, D., Bhimani, R., Ha, C., & Vuchinich, R. (2012). Social Discounting and Externalizing Behavior Problems in Boys. *Journal of Behavioral Decision-Making*, 25, 239–247.
- Thaler, R. (1980). Towards a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, 1, 39–60.
- Visser, M.S., & Roelofs, M.R. (2011). Heterogeneous preferences for altruism: gender and personality, social status, giving and taking. *Experimental Economics*, 14, 490–506.

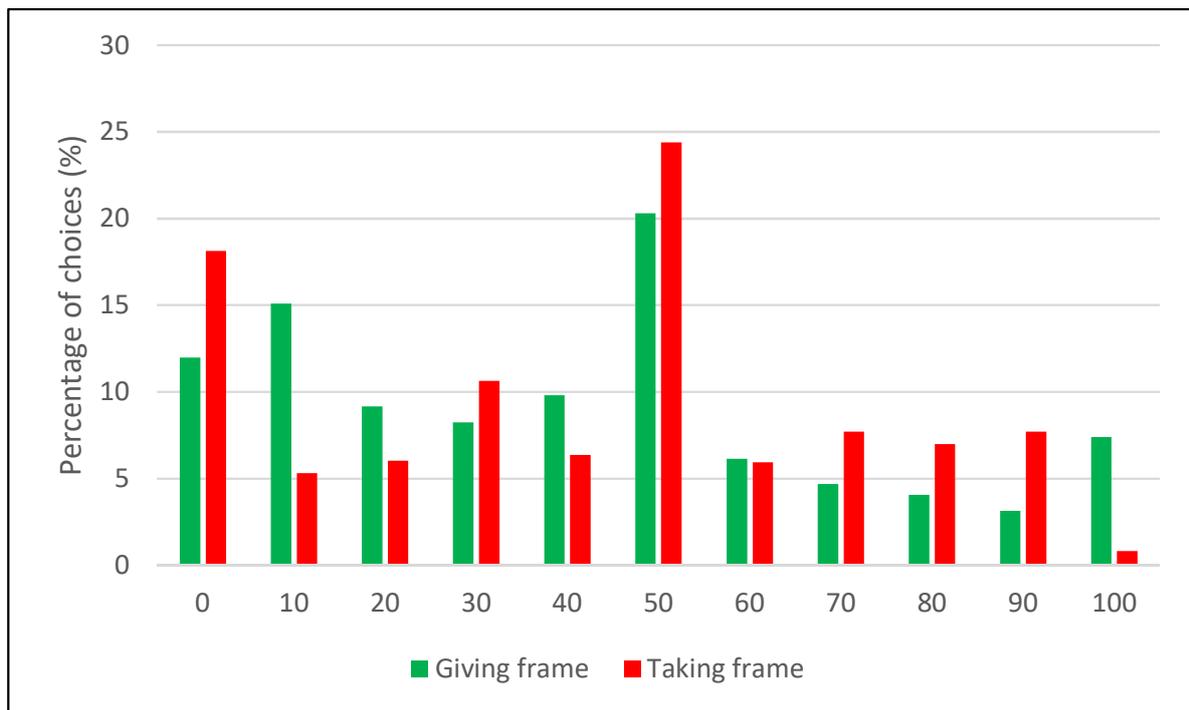
**Figure 1: Transfer (Rand), by frame**



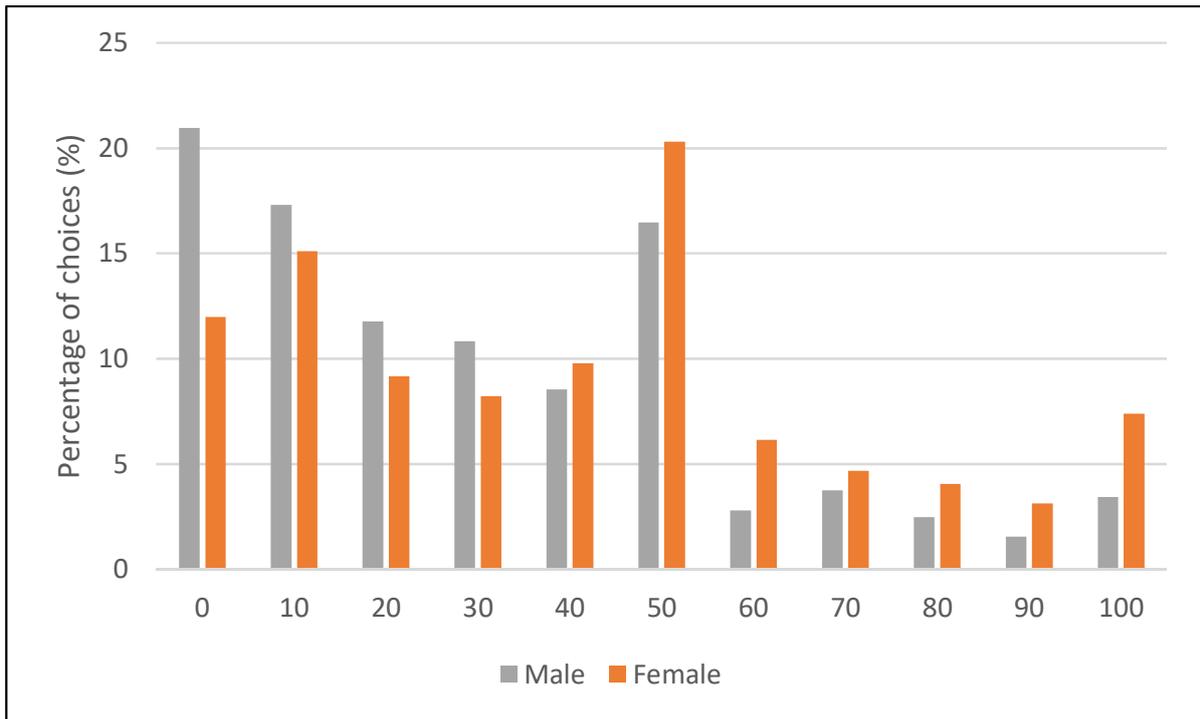
**Figure 2a: Transfer (Rand), by frame - Males**



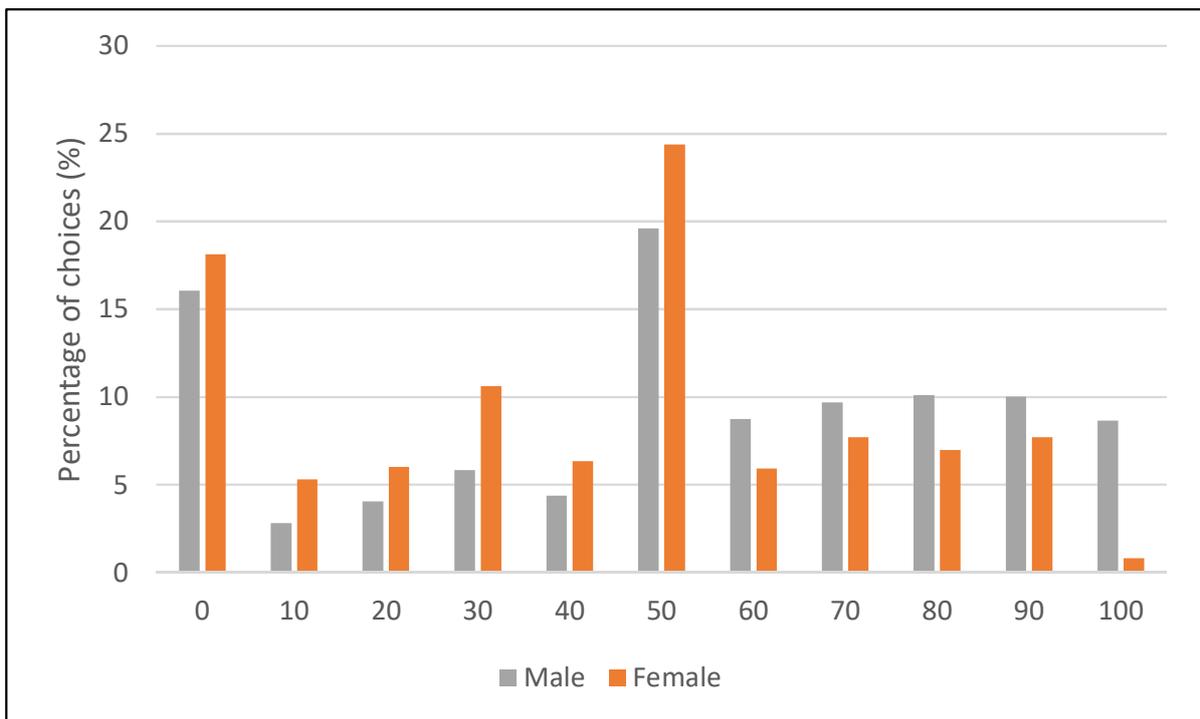
**Figure 2b: Transfer (Rand), by frame - Females**



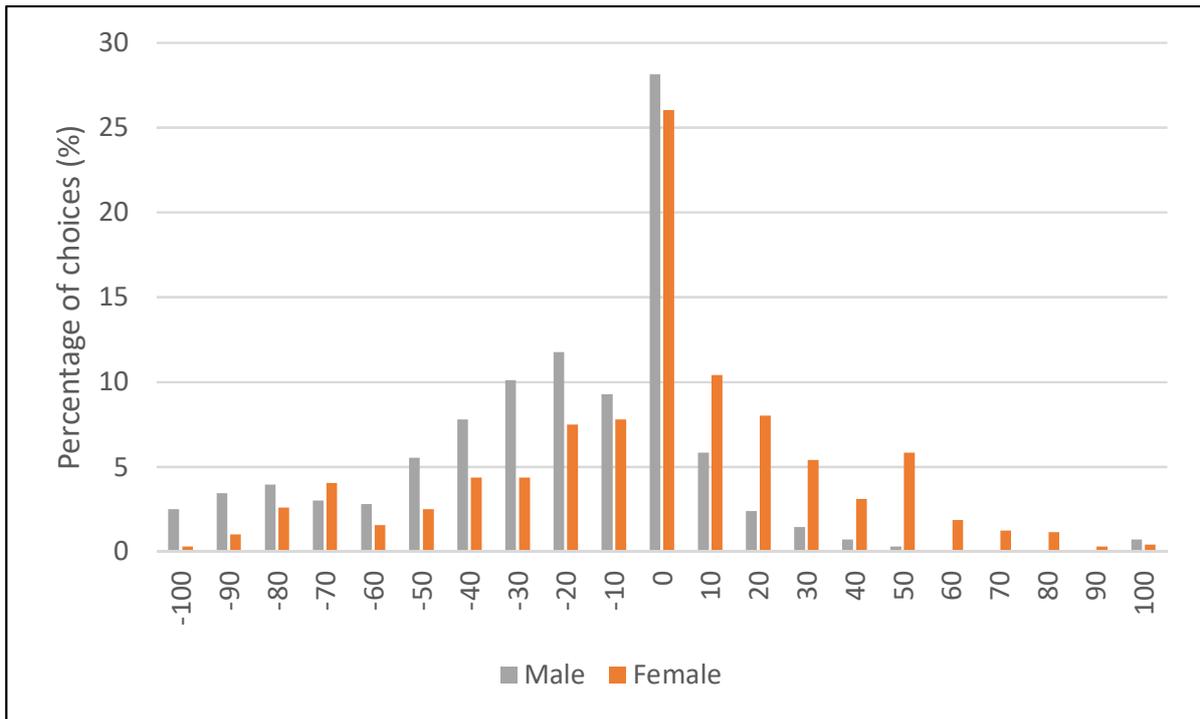
**Figure 3a: Transfer (Rand) in giving frame, by sex**



**Figure 3b: Transfer (Rand) in taking frame, by sex**



**Figure 4: Difference in transfer (Rand), by sex**



**Table 1:** Sample characteristics

|                                | <b>Male</b> | <b>Female</b> | <b>Total</b> | <b>p-value</b> |
|--------------------------------|-------------|---------------|--------------|----------------|
| Age (years):                   |             |               |              |                |
| Mean                           | 20.46       | 20.74         | 20.60        | 0.157          |
| Gender (%):                    |             |               |              |                |
| Female                         | 50.00       | 50.00         | 100.00       |                |
| Marital status (%):            |             |               |              |                |
| Married                        | 0.83        | 8.40          | 4.60         | 0.012          |
| Living together                | 15.83       | 19.33         | 17.57        |                |
| Never married                  | 83.33       | 72.27         | 77.82        |                |
| Total                          | 100.00      | 100.00        | 100.00       |                |
| Education (%):                 |             |               |              |                |
| None                           | 0.00        | 1.67          | 0.84         | 0.007          |
| Primary                        | 5.88        | 9.17          | 7.53         |                |
| Some secondary                 | 52.94       | 61.67         | 57.32        |                |
| Grade 12                       | 36.97       | 24.17         | 30.54        |                |
| Tertiary                       | 0.00        | 3.33          | 1.67         |                |
| Other                          | 4.20        | 0.00          | 2.09         |                |
| Total                          | 100.00      | 100.00        | 100.00       |                |
| Employment status (%):         |             |               |              |                |
| Student                        | 21.01       | 20.00         | 20.50        | 0.450          |
| Unemployed                     | 69.75       | 75.83         | 72.80        |                |
| Employed                       | 7.56        | 3.33          | 5.44         |                |
| Other                          | 1.68        | 0.83          | 1.26         |                |
| Total                          | 100.00      | 100.00        | 100.00       |                |
| Subjective economic wellbeing: |             |               |              |                |
| Mean                           | 3.56        | 4.47          | 4.02         | <0.001         |
|                                |             |               |              |                |
| Sample (n)                     | 120         | 120           | 240          |                |

**Table 2:** Transfers, by giving and taking

|                           | Frame            |                  |                  | t-test<br>(p-value) | Mean<br>difference |
|---------------------------|------------------|------------------|------------------|---------------------|--------------------|
|                           | Giving           | Taking           | Total            |                     |                    |
| <b>A. Transfer (Rand)</b> |                  |                  |                  |                     |                    |
| Male                      | 30.16<br>(0.86)  | 52.22<br>(1.03)  | 41.19<br>(0.71)  | 16.37<br>(<0.001)   | -22.03<br>(1.06)   |
| Female                    | 40.31<br>(0.95)  | 41.96<br>(0.92)  | 41.14<br>(0.66)  | 1.14<br>(0.106)     | -1.65<br>(1.16)    |
| Total                     | 35.24<br>(0.65)  | 47.09<br>(0.70)  | 41.16<br>(0.48)  | 12.35<br>(<0.001)   | -11.83<br>(0.82)   |
| t-test (p-value)          | 7.88<br>(<0.001) | 7.39<br>(<0.001) | 0.05<br>(0.478)  |                     |                    |
| Sample (n)                | 1,919            | 1,919            | 3,838            |                     |                    |
| <b>B. Giving (%)</b>      |                  |                  |                  |                     |                    |
| Male                      | 79.04<br>(1.31)  | 83.94<br>(1.18)  | 81.49<br>(0.88)  | 2.76<br>(0.002)     |                    |
| Female                    | 88.02<br>(1.04)  | 81.87<br>(1.24)  | 84.94<br>(0.81)  | 3.77<br>(<0.001)    |                    |
| Total                     | 83.53<br>(0.84)  | 82.90<br>(0.85)  | 83.22<br>(0.60)  | 0.518<br>(0.302)    |                    |
| t-test (p-value)          | 5.33<br>(<0.001) | 1.20<br>(0.114)  | 2.86<br>(0.002)  |                     |                    |
| Sample (n)                | 1,919            | 1,919            | 3,838            |                     |                    |
| <b>C. Egalitarian (%)</b> |                  |                  |                  |                     |                    |
| Male                      | 16.47<br>(1.19)  | 19.60<br>(1.28)  | 18.03<br>(0.87)  | 1.78<br>(0.037)     |                    |
| Female                    | 20.31<br>(1.29)  | 24.37<br>(1.38)  | 22.34<br>(0.95)  | 2.13<br>(0.016)     |                    |
| Total                     | 18.39<br>(0.88)  | 21.99<br>(0.94)  | 20.19<br>(0.64)  | 2.77<br>(0.002)     |                    |
| t-test (p-value)          | 2.17<br>(0.015)  | 2.52<br>(0.005)  | 3.32<br>(<0.001) |                     |                    |
| Sample (n)                | 1,919            | 1,919            | 3,838            |                     |                    |

Note: Standard errors in parentheses. ‘Giving’: allocated non-zero amount. ‘Egalitarian’: allocated 50%.

**Table 3:** Transfer (Rand), by social distance

| Social distance  | Frame              |                   |                    | t-test<br>(p-value) | Mean<br>difference |
|------------------|--------------------|-------------------|--------------------|---------------------|--------------------|
|                  | Giving             | Taking            | Total              |                     |                    |
| 1                | 64.33<br>(1.69)    | 64.45<br>(1.53)   | 64.39<br>(1.14)    | 0.05<br>(0.478)     | -0.12<br>(2.39)    |
| 2                | 51.75<br>(1.53)    | 59.62<br>(1.26)   | 55.68<br>(1.01)    | 3.95<br>(<0.001)    | -7.79<br>(2.12)    |
| 3                | 44.41<br>(1.48)    | 56.91<br>(1.23)   | 50.66<br>(1.00)    | 6.47<br>(<0.001)    | -12.50<br>(2.13)   |
| 5                | 38.08<br>(1.39)    | 52.45<br>(1.47)   | 45.27<br>(1.06)    | 7.07<br>(<0.001)    | -14.37<br>(2.18)   |
| 10               | 32.91<br>(1.44)    | 48.54<br>(1.62)   | 40.72<br>(1.14)    | 7.18<br>(<0.001)    | -15.62<br>(2.23)   |
| 20               | 29.53<br>(1.52)    | 45.02<br>(1.78)   | 37.28<br>(1.22)    | 6.59<br>(<0.001)    | -15.48<br>(2.41)   |
| 50               | 10.70<br>(1.26)    | 25.25<br>(2.40)   | 17.97<br>(1.39)    | 5.35<br>(<0.001)    | -14.54<br>(2.44)   |
| 100              | 10.16<br>(1.27)    | 24.45<br>(2.41)   | 17.31<br>(1.40)    | 5.22<br>(<0.001)    | -14.29<br>(2.47)   |
| Total            | 35.24<br>(0.65)    | 47.09<br>(0.70)   | 41.16<br>(0.48)    | 12.35<br>(<0.001)   | -11.83<br>(0.82)   |
| F-test (p-value) | 166.46<br>(<0.001) | 71.96<br>(<0.001) | 202.04<br>(<0.001) |                     | 5.41<br>(<0.001)   |
| Sample (n)       | 1,919              | 1,919             | 3,838              |                     | 1,919              |

Note: Standard errors in parentheses.

**Table 4:** Social discounting, by giving and taking

|                                      | Frame            |                  |                  | t-test<br>(p-value) | Sample<br>(n) |
|--------------------------------------|------------------|------------------|------------------|---------------------|---------------|
|                                      | Giving           | Taking           | Total            |                     |               |
| <b>A. Area under the curve (AUC)</b> |                  |                  |                  |                     |               |
| Male                                 | 0.131<br>(0.011) | 0.383<br>(0.029) | 0.257<br>(0.017) | 7.82<br>(<0.001)    | 238           |
| Female                               | 0.229<br>(0.016) | 0.268<br>(0.021) | 0.249<br>(0.013) | 1.43<br>(0.075)     | 240           |
| Total                                | 0.181<br>(0.010) | 0.325<br>(0.018) | 0.253<br>(0.011) | 6.73<br>(<0.001)    | 478           |
| t-test (p-value)                     | 4.81<br>(<0.001) | 3.11<br>(0.001)  | 0.36<br>(0.358)  |                     |               |
| Sample (n)                           | 239              | 239              | 478              |                     |               |
| <b>B. Discounting rate (k')</b>      |                  |                  |                  |                     |               |
| Male                                 | 0.716<br>(0.068) | 0.174<br>(0.019) | 0.445<br>(0.039) | 7.61<br>(<0.001)    | 238           |
| Female                               | 0.653<br>(0.107) | 0.429<br>(0.052) | 0.541<br>(0.059) | 1.78<br>(0.031)     | 240           |
| Total                                | 0.684<br>(0.063) | 0.302<br>(0.029) | 0.493<br>(0.036) | 5.46<br>(<0.001)    | 478           |
| t-test (p-value)                     | 0.50<br>(0.308)  | 4.53<br>(<0.001) | 1.32<br>(0.092)  |                     |               |
| Sample (n)                           | 239              | 239              | 478              |                     |               |

Note: Standard errors in parentheses.

**Table 5:** Regression analysis – Transfers (Rand), by social distance

|                                    | <b>Total</b>         | <b>Immediate</b>    | <b>Close</b>         | <b>Intermediate</b>  | <b>Stranger</b>     |
|------------------------------------|----------------------|---------------------|----------------------|----------------------|---------------------|
| <b>Frame:</b>                      |                      |                     |                      |                      |                     |
| Taking versus Giving               | +12.110 (0.796)      | +7.130 (1.232)      | +15.136 (1.452)      | +15.200 (1.816)      | +14.472 (2.509)     |
|                                    | t = 15.21, p < 0.001 | t = 5.79, p < 0.001 | t = 10.54, p < 0.001 | t = 8.37, p < 0.001  | t = 5.77, p < 0.001 |
| <b>Gender:</b>                     |                      |                     |                      |                      |                     |
| Female versus Male                 | -0.823 (0.856)       | -1.273 (1.298)      | +1.448 (1.561)       | -0.695 (1.952)       | -4.199 (2.756)      |
|                                    | t = 0.96, p = 0.337  | t = 0.98, p = 0.327 | t = 0.93, p = 0.354  | t = 0.36, p = 0.722  | t = 1.52, p = 0.128 |
| <b>Interactions:</b>               |                      |                     |                      |                      |                     |
| Giving*Female versus Giving*Male   | +9.438 (1.056)       | +7.009 (1.964)      | +13.620 (2.006)      | +11.217 (2.220)      | +4.895 (2.858)      |
|                                    | t = 8.93, p < 0.001  | t = 3.57, p < 0.001 | t = 6.79, p < 0.001  | t = 5.05, p < 0.001  | t = 1.17, p = 0.087 |
| Taking*Female versus Taking*Male   | -11.084 (1.272)      | -9.555 (1.598)      | -10.723 (2.253)      | -12.608 (3.048)      | -13.294 (4.428)     |
|                                    | t = 8.71, p < 0.001  | t = 5.98, p < 0.001 | t = 4.76, p < 0.001  | t = 4.14, p < 0.001  | t = 3.00, p = 0.003 |
| Taking*Male versus Giving*Male     | +22.334 (1.122)      | +15.378 (1.694)     | +27.436 (1.908)      | +27.088 (2.544)      | +23.529 (3.718)     |
|                                    | t = 19.90, p < 0.001 | t = 9.08, p < 0.001 | t = 14.38, p < 0.001 | t = 10.65, p < 0.001 | t = 6.33, p < 0.001 |
| Taking*Female versus Giving*Female | +1.811 (1.129)       | -1.186 (1.790)      | +3.903 (2.192)       | +3.262 (2.592)       | +5.338 (3.366)      |
|                                    | t = 1.60, p = 0.109  | t = 0.66, p = 0.508 | t = 1.41, p = 0.159  | t = 1.26, p = 0.209  | t = 1.59, p = 0.113 |
| F-test                             | 153.63 (p < 0.001)   | 9.84 (p < 0.001)    | 23.10 (p < 0.001)    | 18.85 (p < 0.001)    | 12.78 (p < 0.001)   |
| R <sup>2</sup>                     | 0.350                | 0.057               | 0.172                | 0.164                | 0.234               |
| Sample (n)                         | 3,790                | 1,422               | 948                  | 946                  | 474                 |

Note: OLS regression model. Marginal effects. Robust standard errors in parentheses. ‘Immediate’: social distances 1, 2, 3. ‘Close’: social distances 5, 10. ‘Intermediate’: social distances 20, 50. ‘Stranger’: social distance 100. Controls include social distance (‘Total’), task order, age, sex, education, employment status, and subjective economic wellbeing.

**Table 6:** Regression analysis – Giving, by social distance

|                                    | <b>Total</b>        | <b>Immediate</b>    | <b>Close</b>        | <b>Intermediate</b> | <b>Stranger</b>     |
|------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Frame:</b>                      |                     |                     |                     |                     |                     |
| Taking versus Giving               | -0.0081 (0.0088)    | -0.0075 (0.0044)    | +0.0101 (0.0124)    | -0.0016 (0.0291)    | -0.0428 (0.0378)    |
|                                    | z = 0.92, p = 0.360 | z = 1.70, p = 0.090 | z = 0.82, p = 0.413 | z = 0.06, p = 0.955 | z = 1.13, p = 0.258 |
| <b>Gender:</b>                     |                     |                     |                     |                     |                     |
| Female versus Male                 | +0.0267 (0.0096)    | +0.0028 (0.0049)    | +0.0067 (0.0125)    | +0.0569 (0.0306)    | +0.0898 (0.0397)    |
|                                    | z = 2.77, p = 0.006 | z = 0.57, p = 0.568 | z = 0.54, p = 0.589 | z = 1.86, p = 0.063 | z = 2.26, p = 0.024 |
| <b>Interactions:</b>               |                     |                     |                     |                     |                     |
| Giving*Female versus Giving*Male   | +0.6421 (0.0969)    | -0.0471 (0.3236)    | +1.0091 (0.2872)    | +0.4472 (0.1275)    | +0.7036 (0.1919)    |
|                                    | z = 6.62, p < 0.001 | z = 0.15, p = 0.884 | z = 3.51, p < 0.001 | z = 3.74, p < 0.001 | z = 3.67, p < 0.001 |
| Taking*Female versus Taking*Male   | -0.2398 (0.0941)    | +0.1994 (0.2674)    | -0.9373 (0.2995)    | -0.1349 (0.1249)    | -0.1057 (0.1794)    |
|                                    | z = 2.55, p = 0.011 | z = 0.75, p = 0.456 | z = 3.13, p = 0.002 | z = 1.08, p = 0.280 | z = 0.59, p = 0.556 |
| Taking*Male versus Giving*Male     | +0.3566 (0.0849)    | -0.4348 (0.2729)    | +1.0421 (0.2979)    | +0.2853 (0.1185)    | +0.2728 (0.1722)    |
|                                    | z = 4.20, p < 0.001 | z = 1.59, p = 0.111 | z = 3.50, p < 0.001 | z = 2.41, p = 0.016 | z = 1.58, p = 0.113 |
| Taking*Female versus Giving*Female | -0.5254 (0.0974)    | -0.1882 (0.2885)    | -0.9043 (0.2946)    | -0.3267 (0.1277)    | -0.5364 (0.1915)    |
|                                    | z = 5.39, p < 0.001 | z = 0.65, p = 0.514 | z = 3.07, p = 0.002 | z = 2.56, p = 0.011 | z = 2.80, p = 0.005 |
| Wald Chi2-test                     | 859.26 (p < 0.001)  | 68.36 (p < 0.001)   | 31.41 (p < 0.001)   | 67.50 (p < 0.001)   | 132.22 (p < 0.001)  |
| Pseudo R <sup>2</sup>              | 0.456               | 0.041               | 0.130               | 0.057               | 0.227               |
| Sample (n)                         | 3,790               | 1,422               | 948                 | 946                 | 474                 |

Note: Probit regression model. Marginal effects. Robust standard errors in parentheses. ‘Immediate’: social distances 1, 2, 3. ‘Close’: social distances 5, 10. ‘Intermediate’: social distances 20, 50. ‘Stranger’: social distance 100. Controls include social distance (‘Total’), task order, age, sex, education, employment status, and subjective economic wellbeing.

**Table 7:** Regression analysis – Egalitarianism, by social distance

|                                    | <b>Total</b>        | <b>Immediate</b>    | <b>Close</b>        | <b>Intermediate</b> | <b>Stranger</b> |
|------------------------------------|---------------------|---------------------|---------------------|---------------------|-----------------|
| <b>Frame:</b>                      |                     |                     |                     |                     |                 |
| Taking versus Giving               | +0.0357 (0.0124)    | +0.0101 (0.0242)    | +0.0648 (0.0272)    | +0.0416 (0.0193)    | -               |
|                                    | z = 2.88, p = 0.004 | z = 0.42, p = 0.677 | z = 2.38, p = 0.017 | z = 2.16, p = 0.031 |                 |
| <b>Gender:</b>                     |                     |                     |                     |                     |                 |
| Female versus Male                 | +0.0473 (0.0129)    | +0.0499 (0.0255)    | +0.0428 (0.0279)    | +0.0650 (0.0198)    | -               |
|                                    | z = 3.67, p < 0.001 | z = 1.95, p = 0.051 | z = 1.53, p = 0.125 | z = 3.27, p = 0.001 |                 |
| <b>Interactions:</b>               |                     |                     |                     |                     |                 |
| Giving*Female versus Giving*Male   | +0.1980 (0.0708)    | +0.0019 (0.1018)    | +0.2720 (0.1330)    | +0.6985 (0.1909)    | -               |
|                                    | z = 2.79, p = 0.005 | z = 0.02, p = 0.985 | z = 2.04, p = 0.041 | z = 3.66, p < 0.001 |                 |
| Taking*Female versus Taking*Male   | +0.1750 (0.0700)    | +0.2840 (0.1016)    | +0.0314 (0.1262)    | +0.1807 (0.1537)    | -               |
|                                    | z = 2.50, p = 0.012 | z = 2.79, p = 0.005 | z = 0.25, p = 0.803 | z = 1.18, p = 0.240 |                 |
| Taking*Male versus Giving*Male     | +0.1528 (0.0699)    | -0.1160 (0.1001)    | +0.3391 (0.1280)    | +0.5775 (0.1944)    | -               |
|                                    | z = 2.19, p = 0.029 | z = 1.16, p = 0.246 | z = 2.65, p = 0.008 | z = 2.97, p = 0.003 |                 |
| Taking*Female versus Giving*Female | +0.1298 (0.0680)    | +0.1660 (0.0979)    | +0.0986 (0.1277)    | +0.0598 (0.1452)    | -               |
|                                    | z = 1.91, p = 0.056 | z = 1.69, p = 0.090 | z = 0.77, p = 0.440 | z = 0.41, p = 0.680 |                 |
| Wald Chi2-test                     | 327.01 (p < 0.001)  | 12.70 (p = 0.241)   | 24.46 (p = 0.006)   | 31.97 (p < 0.001)   | -               |
| Pseudo R <sup>2</sup>              | 0.099               | 0.007               | 0.022               | 0.061               | -               |
| Sample (n)                         | 3,790               | 1,422               | 948                 | 946                 | -               |

Note: Probit regression model. Marginal effects. Robust standard errors in parentheses. ‘Immediate’: social distances 1, 2, 3. ‘Close’: social distances 5, 10. ‘Intermediate’: social distances 20, 50. ‘Stranger’: social distance 100. Controls include social distance (‘Total’), task order, age, sex, education, employment status, and subjective economic wellbeing.

**Table 8:** Regression analysis – social discounting

|                                    | <b>Area under the Curve<br/>(AUC)</b> | <b>Social Discounting Rate<br/>(k')</b> |
|------------------------------------|---------------------------------------|---|
| <b>Frame:</b>                      |                                       |   |
| Taking versus Giving               | +0.146 (0.019)                        | -0.388 (0.070)                          |
|                                    | t = 7.48, p < 0.001                   | t = 5.51, p < 0.001                     |
|                                    |                                       |   |
| <b>Gender:</b>                     |                                       |   |
| Female versus Male                 | -0.026 (0.021)                        | +0.119 (0.076)                          |
|                                    | t = 1.22, p = 0.222                   | t = 1.56, p = 0.119                     |
|                                    |                                       |   |
| <b>Interactions:</b>               |                                       |   |
| Giving*Female versus Giving*Male   | +0.080 (0.022)                        | -0.040 (0.132)                          |
|                                    | t = 3.52, p < 0.001                   | t = 0.030, p = 0.761                    |
|                                    |                                       |   |
| Taking*Female versus Taking*Male   | -0.133 (0.034)                        | +0.297 (0.063)                          |
|                                    | t = 3.88, p < 0.001                   | t = 4.41, p < 0.001                     |
|                                    |                                       |   |
| Taking*Male versus Giving*Male     | +0.253 (0.029)                        | -0.549 (0.072)                          |
|                                    | t = 8.66, p < 0.001                   | t = 7.62, p < 0.001                     |
|                                    |                                       |   |
| Taking*Female versus Giving*Female | +0.039 (0.026)                        | -0.228 (0.121)                          |
|                                    | t = 1.53, p = 0.128                   | t = 1.89, p = 0.060                     |
|                                    |                                       |   |
| F-test                             | 13.65 (p < 0.001)                     | 9.73 (p < 0.001)                        |
| R <sup>2</sup>                     | 0.269                                 | 0.084                                   |
| Sample (n)                         | 472                                   | 472                                     |

Note: OLS regression model. Marginal effects. Robust standard errors in parentheses. Controls include task order, age, sex, education, employment status, and subjective economic wellbeing.

8. Annexure

**SECTION H: SOCIAL DISCOUNTING**

The following set of questions asks you to imagine that you have made a list of the 100 people closest to you in the world ranging from your dearest friend or relative at position #1 to a complete stranger at #100. The person at number one would be someone you know well and is your closest friend or relative. The person at #100 is a complete stranger. / Sete e latelang ya dipotso e o kopa hore o nahane eka o entse lenane la batho ba 100 ba haufi le wena lefatsheng ho tloha ho motswalle wa hao wa hlooho ya kgomo kapa e mong wa lelapa boemong ba #1 ho isa ho motho eo o sa mo tsebeng ho hang ho #100. Motho ya ho nomoro ya pele e ka ba motho eo o mo tsebang hantle mme e le motswalle ya haufi le wena kapa e mong wa lelapa. Motho ya ho #100 ke motho eo o sa mo tsebeng ho hang.

You do not have to physically create the list of everyone - just imagine that you have done so. / Ha o tlameha ho etsa lenane la nnete la batho kaofela – nka feela jwalo kaha eka o entse jwalo.

In order to identify six specific persons on your list, we have to record their information. / E le ho hlwaya batho ba tshelatseng ba ikgethileng lenaneng la hao, re tlameha ho rekota tihahisoleseding ya bona.

[fieldworker: first record the first names of the respondent and each person on the list in the table below; then, after writing down all the names, ask for the cell phone number of each person. Where the respondent does not have a cell phone number, record a number where the particular person can be reached. Where the person on the list does not have a cell phone number or the respondent does not know the person's cell phone number, leave the space for the number blank.]

|                 |                   |                           |  |  |  |  |  |  |  |  |  |
|-----------------|-------------------|---------------------------|--|--|--|--|--|--|--|--|--|
| Respondent:     |                   | Cell phone number:        |  |  |  |  |  |  |  |  |  |
| First name:     |                   |                           |  |  |  |  |  |  |  |  |  |
| <b>Position</b> | <b>First name</b> | <b>Cell phone number:</b> |  |  |  |  |  |  |  |  |  |
| 1               |                   |                           |  |  |  |  |  |  |  |  |  |
| 2               |                   |                           |  |  |  |  |  |  |  |  |  |
| 3               |                   |                           |  |  |  |  |  |  |  |  |  |
| 5               |                   |                           |  |  |  |  |  |  |  |  |  |
| 10              |                   |                           |  |  |  |  |  |  |  |  |  |
| 20              |                   |                           |  |  |  |  |  |  |  |  |  |

You will make choices in two tasks. In one task, we will assume that you have access to R100. You will be asked to divide this amount between yourself and a specific person on the list and that is your 'giving' choice. In the other task, we will assume that a specific person on the list has access to R100. You now will have to decide how much of the R100 to take from this person and that is your 'taking' choice. We call this the 'giving' and the 'taking' task. /

**O tla etsa dikgetho mesebetsing e mmedi. Mosebetsing o mong, re tla nka eka o na le phihlello ho R100. O tla koptjwa ho arola palo ena pakeng tsa hao le motho ya itseng lenaneng mme eo ke kgetho ya hao ya 'phano'. Mosebetsing o mong, re tla nka eka motho ya itseng lenaneng o na le phihlello ho R100. Jwale o tla lokela ho nka qeto ya hore na ke bokae ho R100 eo o tla e nka ho motho enwa mme eo e tla ba kgetho ya hao ya 'ho nka'. Mosebetsi ona re o bitsa wa ho 'fana' le ho 'nka'.**

You and other people participating in this survey stands the chance to receive real money based on the choices made in these tasks. The chance to receive real money will work as follows: We will first select one person from every ten people who completed these tasks. We will then roll a dice to determine which of the two tasks we will pay for real. For the task that was selected, we will then roll a dice to pick one of the positions on the list of the people. In each case, we will pay to you in cash the share of the R100 that you decide to keep if we pay for the 'giving' task and we will proceed to pay the other person you identified at that position the rest of the R100 that you gave them. Where we pay for the 'taking' task, you will receive the share of the R100 you took from this person and we will proceed to pay the other person the share of the R100 that you left with them. There is a one in ten or 10% chance of you being paid real money for one of the two tasks. Also, each of the two tasks stands an equal chance of being selected and used for payment. If you or someone else are selected to receive money you will be paid this money via a message to your or their cell phone, within three weeks. Please note that we will not tell the other person who may receive money that you sent or took the money. You will remain anonymous. /

**Wena le batho ba bang ba nkang karolo phuputsong ena le na le monyetla wa ho fumana tjehelete ya nnete ho latela dikgetho tse etswang mesebetsing ena. Monyetla wa ho fumana tjehelete ya nnete o tla sebetsa tjena: re tla qala pele ka ho kgetha motho a le mong ho batho bohle ba leshome ba phethetseng mesebetsi ena. Kamora moo re tla theta letaese ho fumana hore na ke tshebetso efe ho tsena tse pedi eo re tla e lefa ele kannete. Bakeng sa mosebetsi o kgethilweng, re tla theta letaese ho kgetha bo bong ba maemo lenaneng la batho. Boemong ka bong, re tla o lefa kontane ka karolo ya R100 eo o nkang qeto ya ho e boloka haeba re lefella mosebetsi wa 'ho fana' mme re tla tswelapele ho lefa motho e mong karolo ya R100 eo o e siileng le ena. Hona le monyetla wa nngwe ho leshome kapa 10% ya hore o ka lefuwa tjehelete ya nnete bakeng sa mosebetsi o le mong wa ena e mmedi. Hape, mosebetsi ka mong o na le monyetla o lekanang wa ho kgethwa le ho sebediswa bakeng sa tefo. Haeba wena kapa motho e mong le kgethwa ho fumana tjehelete le tla lefuwa tjehelete ena ka molaetsa o yang fonong ya hao kapa ya hae, nakong ya dibeke tse tharo. Ka kopo lemoha hore re ke ke ra bolella motho e mong ya kannang a fumana tjehelete hore o rometse kapa o nkile tjehelete. O tla dula o sa tsebahatswe.**

We will now proceed to ask you these questions. /

**Jwale re tla tswelapele ho o botsa dipotso tsena.**

**15. Giving task**

*Instruction:*

You have access to R100. You have to make a simple decision. You have to decide how much of the R100, if any, to keep for yourself and how much of the R100 to give to the person in a specific position. Your choice can be anywhere from R0 to R100, in R10 increments for each of the persons. / **O na le phihlello ho R100. O lokela ho nka qeto e bonolo. O tlameha ho etsa qeto ya hore na ho R100 eo, o ipelokela bokae, haeba e le letho, le hore na o fa motho e mong bokae ho R100 ho fa motho ya sebakeng se itseng. Kgetho ya hao e ka ba kae kapa kae ho tloha ho R0 ho isa R100, ka dikeketseho tsa R10 bakeng sa motho ka mong.**

Let us start. / **Ha re qaleng:**

How much will you give to person #1 [name]? / **O tla fa motho #1 [lebitso] bokae?**

Assuming you have access to another R100, how much will you give to person #2 [name]? / **Ha ho nkwa eka o na le phihlello ho R100 e nngwe, o tla fa #motho #2 bokae [lebitso]?**

With another R100 at your disposal, how much will you share with person #3 [name]? / **Ha o na le R100 e nngwe eo o ka e sebedisang, o tla arolelana ka bokae le motho #3 [lebitso]?**

Assuming that you have R100 for each choice, how much will you give to person #5 [name]? / **Ha ho nkwa hore o na R100 bakeng sa kgetho ka nngwe, o tla fa motho #5 [lebitso] bokae?**

How about Person #10 [name]? / **Motho #10 [lebitso] ena?**

And person #20 [name]? / **Le motho #20 [lebitso] ena?**

How much of the R100 will you share with person #50? / **Ke bokae ho R100 eo o tla e arolelana le motho #50?**

And with a complete stranger (person #100)? / **Le motho eo o sa mo tsebeng ho hang teng (motho #100)?**

|   | First name | Amount (Rand)   |    |    |    |    |    |              |    |    |    |     |  |
|---|------------|-----------------|----|----|----|----|----|--------------|----|----|----|-----|--|
| 1   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 2   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 3   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 5   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 10  |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 20  |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 50  | n/a        | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 100   | n/a        | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
|   |            | Don't know = 98 |    |    |    |    |    | Refused = 99 |    |    |    |     |  |
| [fieldworker: circle ONE amount only in each row] |            |                 |    |    |    |    |    |              |    |    |    |     |  |

**16. Taking task**

*Instruction:* Now assume that it is as if you have not given anyone any money, i.e. that you have not made any of the choices. You have no money and no one on your list has any money. Assume that a person at a specific position whose name you have supplied has access to R100. You have to make a simple decision. You have to decide how much of the R100, if any, to take for yourself. Your choice can be anywhere from R0 to R100, in R10 increments. / **Jwale nka jwalo kaha eka ha o wa fa motho tjehelete efe kapa efe, e leng hore ha o wa etsa efe kapa efe ya dikgetho. Ha o na tjehelete mme ha hona motho lenaneng la hao ya nang le tjehelete. Nka eka motho ya sebakeng se itseng eo o faneng ka lebitso la hae a ka fihlella R100. O hloka ho etsa qeto e bonolo. O tlameha ho nka qeto ya hore na ho R100 o nka bokae, haeba o nka letho, bakeng sa hao. Kgetho ya hao e ka ba kae kapa kae ho tloha ho R0 ho isa ho R100, ka dikeketseho tsa R10.**

Let us start. / **Ha re qaleng.**

How much of person #1's [name's] R100 will you take from them? / **O tla nka bokae ho R100 ya motho #1 [lebitso] ho ena?**

Assuming person #2 [name] also has R100, how much will you take from [name]? / **Ha re nka hore motho #2 [lebitso] le ena o na le R100, o tla nka bokae ho tswa ho [lebitso]?**

How much of the R100 will you take from person #3 [name]? / **O tla nka e kae ho R100 ho tswa ho motho #3 [lebitso]?**

And how much will you take from person #5 [name]? / **O tla nka bokae ho tswa ho motho #5 [lebitso]?**

How about from Person #10 [name's] R100? / **Ho tswa ho R100 ya Motho #10 [lebitso] teng?**

And Person #20 [name's] R100? / **Le ho R100 ya Motho #20 [lebitso] teng?**

How much of the R100 will you take from person #50? / **O tla nka bokae ho R100 ya motho #50?**

And a complete stranger (person #100)? / **Le motho eo o sa mo tsebeng ho hang teng (motho #100)?**

|     | First name | Amount (Rand)   |    |    |    |    |    |              |    |    |    |     |  |
|-----|------------|-----------------|----|----|----|----|----|--------------|----|----|----|-----|--|
|     |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 1   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 2   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 3   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 5   |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 10  |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 20  |            | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 50  | n/a        | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
| 100 | n/a        | 0               | 10 | 20 | 30 | 40 | 50 | 60           | 70 | 80 | 90 | 100 |  |
|     |            | Don't know = 98 |    |    |    |    |    | Refused = 99 |    |    |    |     |  |

[fieldworker: circle ONE amount only in each row]

Because it is not possible for us to identify someone specific at positions #50 and #100, we will, where we select #50 or #100 for payment, donate the amount you gave or left with this person to Kovsie Foodbank, who provides food to needy university students. / **Hobane ha ho kgonahale hore re tsebe motho ya itseng maamong a #50 le #100, re tla, moo re kgethang #50 kapa #100 bakeng sa tefo, fana ka palo eo o faneng ka yona kapa eo o e siileng le motho enwa ho Kovsie Foodbank, e fanang ka dijo ho baithuti ba yunivesithi ba hlopheliheng.**