

Incumbency, Generosity and the Valuation of Power: An Experimental Analysis

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September 19, 2021

Abstract

We investigate the factors influencing the valuation of power using a custom-designed experiment in which laboratory participants play multiple rounds of a standard dictator game and then are permitted to engage in price-mediated role exchange. Measurable personal characteristics and market experiences are predictive both of participants' valuations of power and of the impact of current power ownership (i.e., incumbency) on their valuations. Our analysis reveals a robust endowment effect for power. Generosity in the dictator role is consistently associated with a significant reduction in the endowment effect. We discuss our findings in the context of prior results relating to the endowment effect and altruistic behavior.

Keywords loss aversion; dictator game; endowment effect; altruism; simulated markets, incumbents.

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We thank Keiran Yuen for excellent research assistance. All remaining errors are our own. Declaration of Interest: none.

Power tends to corrupt, and absolute power corrupts absolutely.
- Lord Acton

1 Introduction

That power corrupts is a broad moral proposition offered in literary, historical, and philosophical scholarship. Can empirical work in economics make a contribution to our understanding of this proposed dynamic?

Consider a framing that is precise enough to be empirically falsifiable: the question of whether the possession of power dynamically affects the valuation of power. The answer carries important real-world implications. The dynamics of political or executive power—how it passes from one person to another—depend on the incentives and motivation to acquire and maintain that power. While democratic institutions make the allocation of power relatively transparent, there is little question that incumbents leverage resources that give them relative advantages in maintaining power (Robinson *et al.* 2006). If incumbents also subjectively value power more than non-incumbents, this could exacerbate the stickiness of incumbency and distort the allocation of power away from a pure democratic result.

In this paper, we measure experimentally the effects of a range of factors on the valuation of power, with a particular focus on whether possessing power changes one’s valuation of power—that is, whether there is an *endowment effect* for power. Our design enables us to investigate, among other things, whether generosity impacts either the valuation of power or the size of the valuation disparity between power “owners” and non-owners.

The connections amongst power ownership, altruism, and individuals’ valuations of power—while determinative of the extent of corruption, legislated generosity, and other political outcomes that, in turn, affect important economic and utilitarian outcomes—are not well understood. While pro-social leadership can be delivered by senators, CEOs, and department chairs over the long term when they put their constituents’ interests before their own, not all leaders are pure of heart. When the powerful manipulate the levers of power mainly to do favors for friends or enrich themselves (see, e.g., Murray & Frijters 2017), their resistance to being dislodged (cf., a particular recent U.S. president) can be a thorny social problem.

We examine these issues using a custom-designed experiment built around the classic

dyadic dictator game: a workhorse experimental set-up that embeds a between-subject power differential. In this game, one player (the dictator) decides how much money to allocate between herself and a passive player (the receiver).¹ We modify the standard experimental setup by allowing the players, once familiarized with the game, to engage in role trading, whereby the endowed receiver may pay the endowed dictator to swap roles. We find evidence of an endowment effect for dictator power, defined as a systematic positive differential between dictators’ willingness to accept (WTA) and receivers’ willingness to pay (WTP) for the role of dictator, all else equal.

Further, we find consistently that more generous participants exhibit an endowment effect that is significantly lower than that of less-generous participants. This pattern is confirmed regardless of whether generosity is measured using the average of dictator gifts during the initial rounds of play, or gift size during the final round after role trading has occurred. Those who give more on average during initial rounds as the dictator value the role more in acquisition—that is, they present with higher WTP—compared to those who give less. However, higher average generosity does not predict an increase in participants’ WTA in the initial rounds of play. Meanwhile, during the final round of play, giving shows no relationship with WTP, whereas it is associated with a lower WTA. Other significant influences on both dictator role valuation and the endowment effect also emerge from our analysis.

2 Prior literature

Existing work has documented an endowment effect for a range of tangible goods, including mugs, pens, chocolate bars, cans of Coke, highlighters, letter openers, trading cards, binoculars, and lottery tickets (Knetsch & Sinden 1984, Knetsch 1989, Kahneman *et al.* 1990, Bateman *et al.* 1997). An endowment effect has also been observed for various “semi-tangibles,” such as romantic dates, public goods, public land, and environmental, health, and safety regulations (Nataf & Wallsten 2013, Ortona & Scacciati 2003, Buccafusco & Sprigman 2010, Hammack & Brown Jr 2016); and also for fully intangible objects, such as time, intellectual property, and academic chores (Ortona & Scacciati 1992, Horowitz & McConnell 2002, Galin *et al.* 2006). As one example in the realm of intangible goods, participants have been found to consistently demand a higher price for performing house and academic chores than they would be willing to pay others to

¹We will refer to the dictator with female pronouns and the receiver with male pronouns throughout.

perform the same chores for them, indicating the presence of an endowment effect for the allocation of time (Hoorens *et al.* 1999).

Yet prior research has indicated that there is no endowment effect for money (Novemsky & Kahneman 2005, Svirsky 2014). Moreover, significant cultural variations have been observed. The endowment effect tends to be significantly lower in East Asian cultures as compared to Western cultures (Maddux *et al.* 2010), and a population of isolated hunter-gatherers was found not to display the endowment effect at all (Apicella *et al.* 2014). Temporary emotional states—sadness, disgust, regret, and disappointment—have been connected with reductions or reversals in the endowment effect (Lin *et al.* 2006, Martinez *et al.* 2011).

Existing work relating power to the endowment effect is limited. In a recent study, Chan & Saqib (2018) considered the moderating effect of feeling powerful on the differential in the valuations of sellers and buyers for three different products: a keychain, a gift card, and an iPhone case. They observed an endowment effect only for individuals experiencing relative powerlessness. Feelings of power reduced sellers’ asking prices and increased buyers’ willingness to pay, leading to a reversal of the endowment effect for individuals at the high-power end of the spectrum. These outcomes appear broadly consistent with Inesi’s (2010) finding that individuals experiencing a greater feeling of power exhibit lower loss aversion, in the case that loss aversion is the main driver of the endowment effect.

An extensive literature examines altruism in the context of the dictator game (e.g., Eckel & Grossman 1996, List & Cherry 2008, Chowdhury & Jeon 2014). Several recent studies indicate that generosity in the dictator game is diminished by introducing a loss frame—for example, a negative surprise in income relative to a reference point—as compared to a gain frame (Boun My *et al.* 2018, Fiedler & Hillenbrand 2020, Benistant & Suchon 2021). However, no prior work relates altruism to the existence, or size, of endowment effects, nor are there any results suggesting altruistic behavior causally explains the extent of individual loss aversion or the magnitude of ownership effects. To our knowledge ours is the first study to conceive of the dictator role—and, thereby, the power inherent in that role—as a tradable commodity, and to then study the behavior of participants in the market for that commodity. Our headline result - an estimate of the endowment effect for power - is also to our knowledge a first in the literature.

The rest of the paper is organized as follows. Section 3 outlines the design of our experiment. Section 4 analyzes the experimentally-collected data and presents results.

Section 5 offers a concluding discussion and identifies opportunities for future work.

3 Experimental Design

The experimental sessions from which we draw the data for our analysis were conducted at two points in time—June 2019 and November 2019—at the BizLab at the University of New South Wales (UNSW) in Sydney, Australia.²

The overarching structure of the experimental procedure in both June 2019 and November 2019 was as follows. After being greeted at the lab, participants were given a participant information sheet and escorted to computer terminals, where they clicked on a button labelled ‘I agree to participate’ to indicate their informed consent to being involved in the study.³ They were then provided with instructions detailing the experimental procedures step by step, which were also read aloud.⁴ Following this, participants completed a simple real-effort task to earn experimental currency for use in the subsequent rounds of the experiment. The three main stages of the session then commenced.

At the start of each of the three stages, participants received an initial endowment based on performance in the real-effort task and played five practice rounds consisting of one specific dyadic game type. They were then re-endowed based on their original real-effort task performance, were assigned a role for a final round of the same game, were permitted (but not required) to trade that role for the alternative role, and then played out the final round. Participants’ sense of the power associated with the roles in the game was elicited during the course of these rounds using a short questionnaire. Each of the three main experimental stages involved a different game type, but otherwise proceeded identically.

After all three stages were played out, the final round in one of the three stages was selected at random as the basis for real-money payout, following criteria that had previously been explained to the participants. Payments were prepared in real Australian dollars at a fixed exchange rate, adjusted to ensure that the average payout would be in line with the BizLab’s standard participant-payment levels. While payments were being prepared, participants answered questions on their demographic, psychological, and other personal characteristics. After completing the questionnaire and receiving

²Our experiments were all conducted using oTree (Chen *et al.* 2016).

³The participant information sheet from the experiment is reproduced in the Appendix.

⁴See Appendix for the complete instructions used in both the June 2019 and November 2019 sessions.

their payments, participants left the lab.

Each experimental session lasted approximately 90 to 110 minutes. Participants received on average A\$15 per hour for their participation, plus a A\$5 show-up fee.

In November 2019, the three game types used in the three stages consisted of three variants on the dyadic dictator game, as follows. In the “standard” dictator game variant, the player designated the “dictator” was given the option of offering the second player – termed the “receiver” – any amount of money she wished from her endowment, according to her choice. She could, if she wished, offer nothing. The receiver had no choice but to passively accept the offer made by the dictator as his final payoff, while the dictator’s final payoff was her initial endowment minus the amount given to the receiver. In a “tax” variant, play proceeded precisely as in a standard dictator game variant except that gifts from the dictator to the receiver were subjected to a 10% tax. For example, if the dictator chose to give $\$M$ to the receiver, the receiver would only receive $\$[M - 10\% \times M]$. In a “variation” variant, play proceeded precisely as in a standard dictator game except that gifts from the dictator to the receiver were subject to a 10% tax with 50% probability and a 10% subsidy with 50% probability. Thus, if the dictator chose to give $\$M$ to the receiver, the receiver would actually get $\$[M - 10\% \times M]$ with 50% probability and $\$[M + 10\% \times M]$ with 50% probability. Note that, in both cases, the cost to the dictator would be the same $\$M$; thus the financial impact on the dictator was unchanged relative to the standard treatment, whereas the *expected* impact on the receiver is the same as in the standard treatment.

In June 2019, the three game types consisted of one “standard” dyadic dictator game, as described above, and two other dyadic game types. In the present paper, we draw data from all dictator-game-based stages: i.e., all three stages from the November 2019 sessions, plus the stage in which the standard dictator game was played from the June 2019 sessions.

3.1 Participants

Students were recruited using ORSEE (Greiner 2015) from a standing participant pool consisting mainly of university students enrolled in undergraduate study programs administered by the UNSW Business School. Seventy-two students were recruited for the June 2019 session, and fifty-six for the November 2019 session. No participant exclusion criteria were applied during recruitment other than standard exclusions (i.e., no children,

no conflicts of interests) required by the UNSW Human Research Ethics Committee, in line with the HREC protocol under which this study was covered (HREC 10239). No participant was allowed to enroll in more than one experimental session.

3.2 Division into High and Low ‘Types’, Participant Communication, and Simultaneous Play

The instructions described the real-effort task as a “letter-finding” task. This task is described by Azar (2019). Based on their performance in this task, participants were divided into two groups: “high types” who exceeded the performance of the median participant, and “low types” who performed below this threshold. These designations formed the basis for the participants’ endowments at the beginning of the games—100 experimental dollars (ED) for low types and 200 ED for high types—and prior to a final round (see below).⁵ They also influenced who participants were matched with for subsequent rounds of play.

To avoid priming any concepts likely to influence strategic choices in the game, the games to be played were referenced neutrally in the instructions. Each variant of the game was described as a “Rectangle-Circle Game,” with the role that we know as ‘dictator’ being referenced neutrally as the “rectangle” role and the ‘receiver’ role being referenced as the “circle” role. Also, participants were not told explicitly of their status as “high type” or “low type.” They were, however, advised in the instructions that performance in the “letter-finding” task would determine the amount of ED that would be deposited in their spending account, and the amount ultimately deposited was reported to them.

Following Bose *et al.* (2020), all participants played as both the dictator and the receiver simultaneously in two separate games. Participants played anonymously and were matched into dyadic partnerships at random with others in the lab of the same type (high or low). Figure 1 displays a sample screen shot from one of the practice rounds, showing the two simultaneously-played games as Game A and Game B. An important advantage of the simultaneous-play design was to give all participants equal exposure to both roles prior to the final round. Though double-matching to the same partner was possible, an individual’s partner for the dictator role was unlikely to be the same as her partner for the receiver role in any given round, because separate and independent draws

⁵We converted ED to real currency at an exchange rate intended to result in the average payout equalling the BizLab’s standard hourly pay rate. This rate ended up being 1 ED = A\$0.10. See Appendix for more information.

Stage Blue (Rectangle-Circle Game) - Round 1

Endowment: 200 experimental dollars for Game A and 0 experimental dollars for Game B

Game A

You are playing the Rectangle role. Please select how much (if any) you want to give to the Circle player, and how much you want to keep.

How much would you like to give to the Circle player?

Game B

You are playing the Circle role. Please click next and wait while the Rectangle player decides how much (if any) to give you.

Next

Instructions

Figure 1: Simultaneous Play of Dictator Game (screen shot)

were used to create the two simultaneous partnerships in each round.

3.3 Role Trading, Power Elicitation, and the Post-Experiment Questionnaire

The final—or “starred”—round of each game was immediately preceded by a number of pre-play processes. First, all participants were endowed anew, with 120 ED for low types, and 240 ED for high types. Second, participants were randomly assigned either the dictator or receiver role. Third, for those assigned the receiver role, we elicited how much they would be willing to pay to trade their role for the dictator role, which they would then be able to play in the starred round of the game. Similarly, for those assigned the dictator role, we elicited how much they would require to part with the dictator role and play the receiver role instead in the starred round. Consistent with convention for endowment effect experiments, we refer to these elicited values as “willingness to pay” (WTP) and “willingness to accept” (WTA), respectively.

Elicitations were conducted using a standard multiple-price list (MPL) mechanism.⁶

⁶See, e.g., Brebner & Sonnemans (2018).

Starred Trading Round

Endowment: 240 experimental dollars

For this round you have been assigned to the: **Rectangle role**

You can attempt to sell the Rectangle role and perform the Circle role instead.

Please mark the decision you would like to make for the following options:

	I will sell the Rectangle role	I will not sell the Rectangle role
10	<input type="radio"/> Sell	<input type="radio"/> Don't Sell
20	<input type="radio"/> Sell	<input type="radio"/> Don't Sell
30	<input type="radio"/> Sell	<input type="radio"/> Don't Sell
40	<input type="radio"/> Sell	<input type="radio"/> Don't Sell
50	<input type="radio"/> Sell	<input type="radio"/> Don't Sell
60	<input type="radio"/> Sell	<input type="radio"/> Don't Sell
70	<input type="radio"/> Sell	<input type="radio"/> Don't Sell

Starred Trading Round

Endowment: 240 experimental dollars

For this round you have been assigned to the: **Circle role**

Instead of performing the Circle role, you can attempt to buy the Rectangle role.

Please mark the decision you would like to make for the following options:

	I will buy the Rectangle role	I will not buy the Rectangle role
10	<input type="radio"/> Buy	<input type="radio"/> Don't Buy
20	<input type="radio"/> Buy	<input type="radio"/> Don't Buy
30	<input type="radio"/> Buy	<input type="radio"/> Don't Buy
40	<input type="radio"/> Buy	<input type="radio"/> Don't Buy
50	<input type="radio"/> Buy	<input type="radio"/> Don't Buy
60	<input type="radio"/> Buy	<input type="radio"/> Don't Buy
70	<input type="radio"/> Buy	<input type="radio"/> Don't Buy

Figure 2: MPL Elicitations for Dictator Game Role-Trading (screen shots)

Elicited WTP and WTA levels were used to construct demand and supply curves, respectively, for the dictator role. Trades were then conducted based on the induced equilibrium price. Trades only occurred between those receivers whose willingness to pay was higher than the equilibrium price, and dictators whose willingness to accept was lower than this price. Figure 2 displays sample screen shots of the MPL elicitation for both the dictator (prospective seller) and the receiver (prospective buyer).

Following the execution of role trades, if any, the final, starred round of the dictator game was commenced. At the end of play, payoffs were calculated as the initial endowment for the starred round, adjusted for any funds received or paid out in the settlement

of role trades, and then further adjusted for the receipt or payment of dictator gifts during the starred round.

At the beginning of the starred round, half of the participants were chosen at random to report their subjective perception of the power associated with one of the roles, based on their experience of having played in that role during the practice rounds. We refer to this as “hypothetical” power elicitation, because at the time of survey completion participants did not know which role they would be playing in the starred round. The other half of participants completed a “non-hypothetical” power elicitation survey following role trades but before the commencement of the starred round of play, based on the role they then knew they would be playing in the starred round. Perceived power was elicited using an adjusted version of Anderson’s (2012) power questionnaire.

Following completion of the starred round, participants filled out a short individual survey, which included a binary generalized trust question (Rosenberg 1956), self-esteem scale (Rosenberg 1965), locus of control scale (Pearlin & Schooler 1978), and a set of general personal questions including demographic information (adapted from Foster *et al.* 2018).⁷

4 Analysis and Results

In our preliminary analysis, we found no significant effect on our measured results based on data from the different dictator game variants (standard, tax, and variation). The results we present below are based accordingly on the pooled sample across all dictator game treatments.

4.1 Summary Statistics and Unconditional Means

Table 1 presents summary statistics for some key variables obtained as outputs from our experimental study. It displays numbers of observations (N), means, standard deviations, minima and maxima associated with the full sample of participant-treatment observations.

One can immediately see that there is an endowment effect associated with the dictator role as a commodity. The measured endowment effect is significant, as confirmed on the basis of a difference in means test that compares mean WTA and mean WTP.

⁷See Appendix for screenshots showing the complete survey.

Table 1: Summary Statistics

Variable	<i>N</i>	Mean	Std. Dev.	Min.	Max.
WTA	120	116.50	80.01	10	250
WTP	120	67.50	59.71	0	210
Endowment Effect (Mean WTA/Mean WTP)	--	1.73***	--	--	--
Gift to Receiver, practice rounds mean (<i>mgive</i>)	240	37.70	42.35	0	200
Perceived Power: Dictator	120	4.56	1.76	1	7
Hypothetical only	60	4.74	1.44	1.4	7
Non-hypothetical only	60	4.37	2.03	1	7
Perceived Power: Receiver	120	3.23	1.72	1	7
Hypothetical only	60	2.64††	1.48	1	6
Non-hypothetical only	60	3.83††	1.76	1	7
Generalized Trust	240	0.30	0.46	0	1
Asian	240	0.69	0.46	0	1
Australian or British	240	0.24	0.43	0	1

***Significant at 1% level (based on difference in means - WTA vs. WTP)

††Hypothetical vs. Non-hypothetical significantly different at 1% level

Between-participant results regarding power perceptions seem to indicate that participants expect to feel (i.e., in the hypothetical) more powerful as the dictator and less powerful as the receiver than they end up feeling (i.e., non-hypothetically) when actually holding those roles. The means of the hypothetical and non-hypothetical elicited power perceptions for the receiver role differ significantly at the 1% level.

Table 2 explores the possibility that valuations and the endowment effect vary systematically with giving behavior, perceived power, and type (high versus low). Here, means are displayed by quartile for the mean of the amount given over the five practice rounds (*mgive*), standardized by dividing by the participant's endowment; across pooled quartiles corresponding to hypothetical and non-hypothetical power scores for the dictator and receiver roles, respectively;⁸ and by quartiles based separately on the hypothetical

⁸Quartiles were identified for both hypothetical and non-hypothetical elicitation scores. Means were then taken across the pooled sub-samples represented by the respective hypothetical and non-hypothetical score quartiles.

Table 2: Means by high-type vs. low-type;
and by quartile of standardized *mgive*, dictator power, receiver power

Variable	Standardized <i>mgive</i> quartile				High-type only (<i>N</i> =120)	Low-type only (<i>N</i> =120)	
	Lowest (<i>N</i> =58)	2nd (<i>N</i> =61)	3rd (<i>N</i> =61)	Highest (<i>N</i> =60)			
WTA	129.1	103.5	111.0	122.1	158.33	74.67	
WTP	45.2	46.7	77.3	94.4	87.67	47.33	
Endowment Effect (Mean WTA/Mean WTP)	2.86***	2.22***	1.43***	1.29*	1.81***	1.58***	

	Dictator power quartiles, pooled				Receiver power quartiles, pooled			
	Lowest (<i>N</i> =28)	2nd (<i>N</i> =31)	3rd (<i>N</i> =29)	Highest (<i>N</i> =32)	Lowest (<i>N</i> =28)	2nd (<i>N</i> =30)	3rd (<i>N</i> =25)	Highest (<i>N</i> =37)
WTA	79.4	102.7	124.4	162.1	115.5	110.0	118.8	121.2
WTP	60.8	52.5	88.2	101.1	41.8	65.9	43.3	76.0
Endowment Effect (Mean WTA/Mean WTP)	1.30	1.96**	1.41	1.60***	2.76***	1.67*	2.74***	1.59**

	Dictator hyp power quartile				Dictator non-hyp power quartile			
	Lowest (<i>N</i> =14)	2nd (<i>N</i> =16)	3rd (<i>N</i> =13)	Highest (<i>N</i> =17)	Lowest (<i>N</i> =14)	2nd (<i>N</i> =15)	3rd (<i>N</i> =16)	Highest (<i>N</i> =15)
WTA	78.0	111.7	68.6	150.0	81.7	96.7	160.0	174.3
WTP	77.5	42.0	80.0	73.0	52.5	70.0	98.0	136.3
Endowment Effect (Mean WTA/Mean WTP)	1.01	2.66**	0.86	2.06**	1.56*	1.38	1.63*	1.28

Notes: *mgive* standardized by dividing by participant's initial endowment level.

***Significant at 1% level (based on difference in means - WTA vs. WTP)

**Significant at 5% level

*Significant at 10% level

and non-hypothetical dictator power perception scores. Means are also broken out for the high-type and low-type sub-samples.

The mean endowment effect shows a clear inverse trend with prior giving behavior, as measured by the standardized *mgive*, while mean WTP shows a clear positive trend with this measure of giving behavior. The mean WTA trend is non-monotone, but is monotone increasing over the three highest quartiles. We also see that participants who experience more perceived power when actually in the dictator role, as opposed to anticipating it hypothetically, appear to value being the dictator more.

Mean WTA for high-type participants is elevated by a factor of about 2.12 relative to low types, while for mean WTP the corresponding factor is about 1.85. Since the

dictators' allocations are doubled in the high-type relative to low-type scenario, it is not surprising that valuations would double more or less. The inexactitude of this doubling—more for WTA, less for WTP—is borne out in the mean WTA-to-WTP ratio being larger for high types, on average, than low types.

As the notations in Table 2 indicate, the endowment effects for nearly all the groupings we examined were found to be significant, based on difference-in-means tests.

4.2 Regression Results

To understand the factors affecting the valuation of power and the size of the endowment effect, we analyze the data from our study using the following regression model consisting of participant-treatment level observations, $n = 1 \dots N$, on $I < N$ individual participants:

$$\begin{aligned} y_n = & \alpha' + WTA_{indic_n} \cdot \left(\beta'_0 + \beta'_1 x_{1n} + \dots + \beta'_K x_{Kn} \right) \\ & + \gamma'_0 + \gamma'_1 x_{1n} + \dots + \gamma'_K x_{Kn} \\ & + \gamma'_{K+1} x_{K+1,n} + \dots + \gamma'_{K+M} x_{K+M,n} \end{aligned} \quad (1)$$

Here, y_n is the participant's revealed valuation of the dictator role; WTA_{indic} is an indicator variable that takes a value of “1” if the participant's valuation in the treatment was a WTA, and “0” if it was a WTP; and $x_1, \dots, x_{K+M} \equiv \mathbf{x}$ are regressors, some but not all of which vary by treatment. This structure allows us to estimate the effect of each regressor in \mathbf{x} on the WTP for the dictator role (i.e., through $\gamma' \equiv \gamma'_1, \dots, \gamma'_{K+M}$). For the subset x_1, \dots, x_K , the differential effect of the regressor on WTA—holding constant its main effect on WTP—is also estimated; this captures the effect of each of these regressors in increasing or decreasing the endowment effect (i.e., via $\beta' \equiv \beta'_1, \dots, \beta'_K$). For $k = 1, \dots, K$, the sum of each β'_k and each corresponding γ'_k provide the full effect of x_k on the participant's WTA. Lastly, β'_0 measures the endowment effect when $x_1, \dots, x_K = 0$. We estimate six versions of the model in (1), varying the suite of regressors across specifications, using ordinary least squares. Because the N observations consist of multiple observations on some participants, we cluster standard errors by participant using the Huber-White method. In Table 3 we present the results.

The top portion of the table displays coefficients and standard errors for variables interacted with WTA_{indic} , such that what we observe are estimated impacts on the

Table 3: Determinants of WTP and the Endowment Effect for the Dictator Role: OLS Models

	(1)	(2)	(3)	(4)	(5)	(6)
<i>WTAIndic</i>	38.972*** (8.286)	36.346*** (9.943)	56.002*** (13.780)	53.210*** (14.421)	54.907*** (13.821)	35.635*** (10.119)
<i>WTAIndic</i> x <i>mgive</i>	-0.579*** (0.174)	-0.579*** (0.175)	-0.577*** (0.167)	-0.577*** (0.167)	-0.561*** (0.168)	-0.563*** (0.175)
<i>WTAIndic</i> x High-type	62.485*** (20.052)	62.420*** (20.117)	62.710*** (19.251)	62.636*** (19.283)	61.669*** (19.224)	61.411*** (20.033)
<i>WTAIndic</i> x Original Session		8.794 (18.755)		10.112 (18.901)		8.770 (18.726)
<i>WTAIndic</i> x College-educated Mom			-28.291 (17.243)	-28.669 (17.395)	-27.710 (17.278)	
Constant	29.332*** (7.181)	29.903*** (7.530)	27.119*** (10.223)	27.719*** (10.427)	45.518*** (13.290)	47.206*** (11.208)
<i>mgive</i>	0.581*** (0.144)	0.581*** (0.144)	0.581*** (0.146)	0.581*** (0.147)	0.595*** (0.144)	0.596*** (0.143)
High-type	19.939* (11.417)	19.950* (11.471)	19.916* (11.385)	19.925* (11.442)	20.643* (11.562)	20.662* (11.610)
Original Session		-1.749 (12.079)		-1.832 (12.113)		0.490 (11.972)
College-educated Mom			3.390 (10.586)	3.410 (10.647)	2.622 (10.782)	
Trust	-20.962* (11.517)	-20.885* (11.600)	-21.200* (11.241)	-21.125* (11.307)	-21.805* (11.501)	-21.575* (11.809)
Perceived Dictator Power, Non-Hypothetical	6.017*** (1.739)	6.059*** (1.729)	6.296*** (1.671)	6.349*** (1.652)	6.322*** (1.638)	6.085*** (1.687)
Australian or British	24.121** (10.372)	23.692** (10.483)	23.742** (10.262)	23.210** (10.412)		
Asian					-18.169* (9.319)	-18.253* (9.430)
R^2	0.4181	0.4191	0.4316	0.4329	0.4258	0.4138

Notes: Results based on estimation of (1). Each model clusters standard errors by participant (individual). $N=240$ for all models.

***Significant at 1% level

**Significant at 5% level

*Significant at 10% level

endowment effect. The middle portion displays the estimated effects of the same variables on WTP for the dictator role. Summing the coefficients on a given variable from the top portion and middle portion yields that variable's total estimated effect on WTA. The bottom portion displays the main effects of additional regressors on WTP for the dictator role.

Between 41 and 43 percent of the variation in the elicited value of power is explained by these parsimonious models. Several consistent findings emerge in the results. The sizeable and significant positive coefficient on *WTAIndic* is consistent with our finding

of an endowment effect for the dictator role.⁹ This $WTA - WTP$ differential seems to be on the order of 40 or 50 experimental dollars (ED) - that is, around A\$4 or A\$5.

The significant negative coefficient on *mgive* interacted with *WTAindic* indicates those who are more generous exhibit a significantly lower endowment effect. Specifically, the $WTA - WTP$ differential declines by approximately 58 or 59 cents for each experimental dollar of giving observed in the practice rounds. Generous individuals exhibit a higher willingness to pay for the dictator role, all else equal, as the main effect of *mgive* shown in the middle panel of the table indicates. As the main effect of *mgive* is almost exactly equivalent in size to its estimated coefficient on the interaction with *WTAindic* while in the opposite direction, we can conclude that additional generosity as dictator in the practice rounds is associated with no change in WTA.

High types exhibit both a significantly higher WTP and a higher endowment effect for the dictator role. The $WTA - WTP$ differential is increased by about 62 ED for high types relative to low types. The elevated WTP for high types—of about 20 ED—is not surprising, given that high-type dictators are allocated more money either to keep or to give. The increased endowment effect for high types may derive from the increased power associated with the greater amounts available to distribute or retain—presuming the endowment effect accrues to this power intrinsically.

Those individuals who are more trusting appear to value being the dictator less. While this result is only marginally significant, it is consistently so. Perhaps trusting individuals are content to leave the wielding of power to others—particularly as regards the power to allocate funds, which is what our experiment examines. We discuss this finding further in section 5.

Participants who indicated that they felt more powerful holding the dictator role showed a significantly greater WTP for the role. This suggests that the experience of power is valued intrinsically. Finally, we observe significant cultural effects on valuation of the dictator role. Those who identify as having an Australian or British cultural background have a WTP for the dictator role about 23 ED more than the average individual. Meanwhile, those identifying as having an Asian cultural background exhibit a WTP for the dictator role about 18 ED less than the average individual in our study.

⁹What the coefficient indicates more precisely is the expected $WTA - WTP$ differential in the event of zero values for all regressors.

Table 4: Determinants of WTA for the Dictator Role: OLS Models

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	68.304*** (8.956)	66.250*** (9.528)	83.121*** (13.870)	80.929*** (13.779)	100.425*** (15.341)	82.841*** (12.427)
<i>mgive</i>	0.003 (0.174)	0.003 (0.176)	0.005 (0.161)	0.004 (0.162)	0.034 (0.158)	0.033 (0.172)
High-type	82.424*** (17.512)	82.371*** (17.534)	82.626*** (16.645)	82.561*** (16.617)	82.312*** (16.393)	82.073*** (17.226)
Original Session		7.045 (15.567)		8.280 (15.806)		9.260 (15.467)
College-educated Mom			-24.901* (15.020)	-25.259* (15.234)	-25.089* (14.996)	
R^2	0.4181	0.4191	0.4316	0.4329	0.4258	0.4138

Notes: Results based on estimation of (2). Results redundant with those observed based on estimation of (1) are suppressed. Each model clusters standard errors by participant (individual). $N=240$ for all models.

***Significant at 1% level

**Significant at 5% level

*Significant at 10% level

As a counterpart to our first regression, we specify the alternative regression model,

$$\begin{aligned}
y_n = & \alpha'' + WTP_{indic_n} \cdot \left(\beta_0'' + \beta_1'' x_{1n} + \dots + \beta_K'' x_{Kn} \right) \\
& + \gamma_0'' + \gamma_1'' x_{1n} + \dots + \gamma_K'' x_{Kn} \\
& + \gamma_{K+1}'' x_{K+1,n} + \dots + \gamma_{K+M}'' x_{K+M,n}
\end{aligned} \tag{2}$$

where WTP_{indic} is an indicator variable that takes a value of “1” if the participant’s valuation in the treatment was a WTP, and “0” if it was a WTA. In Table 4 we present the results of estimating this specification.

Whereas estimating the model in (1) yields through $\gamma' \equiv \gamma_1', \dots, \gamma_{K+M}'$ the effect of each regressor in \mathbf{x} on the WTP for the dictator role, the model in (2) instead delivers through γ'' the effect of these regressors on the WTA. The effect on WTA is expected to be distinct from the effect on WTP for the subset of those variables x_1, \dots, x_K that our model proposes as influences on the endowment effect; thus estimation of (2) provides different information from what we obtain by estimating (1). In particular, the value of running this alternative specification is to obtain standard errors on the effects of our variables on WTA, which could only be deduced but were not estimated directly in (1). For the remaining explanatory variables for which our model proposes no influence on the endowment effect (i.e., x_{K+1}, \dots, x_{K+m}), the results will be the same as using (1), as the influence on WTA and WTP must perforce be identical. Similarly, the $\beta'' \equiv \beta_1'', \dots, \beta_K''$

in (2) measure the endowment effect identically to the coefficients in (1), but with the opposite signs. In light of this, Table 4 displays only the effects of x_1, \dots, x_K on WTA, while results redundant with what is shown in Table 3 are suppressed.

Three results stand out in Table 4. First, the effect of *mgive* on WTA is insignificant. This could be deduced—though not estimated directly—from the results shown in Table 3, which also showed a negative effect of average giving in the practice rounds on WTP. This finding underscores the diminished endowment effect for more generous participants. Second, being a high type is associated with a greater WTA. This effect parallels the positive effect—deduced, albeit not directly estimated, to be about 81 ED—of high-type status on WTA based on the results in Table 3. Together with the evidence in Table 3 that high-type status brings only about 20 ED higher WTP, these results are consistent with our finding of an increased endowment effect for those with high-type status. Third, having a college-educated mother is associated consistently, albeit only with marginal statistical significance, with having a lower WTA for the dictator role.

To check the robustness of our altruism results, we run alternative regressions in which we examine the association with valuation and the endowment effect of giving in the final round (i.e., the round that “counts”), as distinguished from average giving in the five practice rounds. This giving behavior is captured in the variable *fgive*. One issue with this approach is that the sample of participants—consisting of individuals who actually played the role of dictator in the final round, after the stage in which it could be bought or sold—is effectively selected based on their high expressed valuation of the dictator role. This sample therefore necessarily exhibits more limited variation in both WTP and WTA. Moreover, to the extent that WTP is elevated for generous people, the *fgive* sample would be heavily weighted toward larger gifts, implying reduced variation in measured dictator gift amounts (via *fgive*) relative to the full sample (via *mgive*). These two influences would increase noise in the estimation of the endowment effect coefficient on *fgive*, all else equal, leading to depressed significance in the coefficient estimate.

We estimate the same six model versions based on both (1) and (2) as we previously did using *mgive*, here substituting *fgive* for *mgive*, and limiting the estimation to the half of participants who held the dictator role in the final round, having either obtained it through trade or retained it because trade did not occur. Table 5 presents the results from estimation of the model in (1), and Table 6 from the model in (2). Consistent with our previous reporting, we have suppressed in Table 6 those results which would be redundant with what is shown in Table 5.

Table 5: Determinants of WTP and the Endowment Effect, Final Round Participants Only:
OLS Models

	(1)	(2)	(3)	(4)	(5)	(6)
<i>WTAIndic</i>	29.960*** (9.409)	32.220*** (10.418)	46.151*** (12.473)	47.117*** (12.995)	45.844*** (12.431)	32.576*** (10.294)
<i>WTAIndic</i> x <i>fgive</i>	-0.883** (0.384)	-0.803* (0.409)	-1.025** (0.415)	-0.951** (0.438)	-1.039** (0.412)	-0.821** (0.407)
<i>WTAIndic</i> x High-type	20.798 (14.165)	21.458 (13.777)	15.925 (14.342)	15.555 (14.100)	16.208 (14.227)	21.588 (13.703)
<i>WTAIndic</i> x Original Session		-15.661 (13.369)		-10.844 (13.188)		-17.438 (13.280)
<i>WTAIndic</i> x College-educated Mom			-20.456 (13.863)	-20.122 (13.636)	-20.199 (13.750)	
Constant	84.832*** (7.822)	81.473*** (8.199)	86.407*** (10.489)	84.262*** (10.619)	97.392*** (10.562)	94.884*** (8.803)
<i>fgive</i>	-0.006 (0.249)	-0.070 (0.296)	0.035 (0.264)	-0.009 (0.304)	0.045 (0.266)	-0.061 (0.303)
High-type	82.585*** (11.247)	81.891*** (10.805)	83.426*** (10.724)	83.218*** (10.519)	83.363*** (10.685)	81.849*** (10.769)
Original Session		20.310** (10.124)		20.918* (10.591)		21.620** (10.209)
College-educated Mom			-3.582 (11.691)	-5.860 (11.773)	-3.270 (11.556)	
Trust	-14.141 (10.015)	-16.877 (10.204)	-16.832 (10.458)	-20.980* (10.841)	-16.662 (10.310)	-16.814 (10.191)
Perceived Dictator Power, Non-Hypothetical	0.375 (1.194)	0.217 (1.201)	0.769 (1.207)	0.659 (1.197)	0.613 (1.168)	0.030 (1.159)
Australian or British	9.179 (7.551)	10.586 (7.577)	8.370 (6.984)	9.313 (6.807)		
Asian					-12.683* (7.058)	-15.331* (7.777)
R^2	0.6800	0.6868	0.6997	0.7091	0.7047	0.6935

Notes: Based on estimation of (1). Each model clusters standard errors by participant (individual). N=120 for all models.

***Significant at 1% level

**Significant at 5% level

*Significant at 10% level

Table 6: Determinants of WTA, Final Round Participants Only: OLS Models

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	114.791*** (8.946)	113.693*** (9.691)	132.558*** (12.133)	131.379*** (12.013)	143.236*** (12.753)	127.460*** (10.8117)
<i>fgive</i>	-0.890*** (0.285)	-0.873*** (0.286)	-0.990*** (0.302)	-0.960*** (0.312)	-0.994*** (0.300)	-0.882*** (0.279)
High-type	103.383*** (10.575)	103.349*** (10.708)	99.352*** (10.613)	98.773*** (10.594)	99.571*** (10.490)	103.437*** (10.649)
Original Session		4.649 (9.701)		10.074 (9.845)		4.183 (9.567)
College-educated Mom			-24.038** (11.025)	-25.983** (11.237)	-23.469** (10.776)	
R^2	0.6800	0.6868	0.6997	0.7091	0.7047	0.6935

Notes: Based on estimation of (2). Results redundant with those observed based on estimation of (1) are suppressed. Each model clusters standard errors by participant (individual). N=120 for all models.

***Significant at 1% level

**Significant at 5% level

*Significant at 10% level

In all 6 runs, we obtain a significant negative effect of *fgive* on the endowment effect, consistent with our previous findings when using *mgive* to measure generosity. Particularly in view of the selection issue articulated above, our findings here give a strong demonstration of the robustness of the negative association between giving and the endowment effect.

In a departure from our results using *mgive*, we find no significant relationship between *fgive* and WTP for the dictator role, while we find a robust *negative* relationship between *fgive* and WTA. These results might be viewed as capturing the relationship of the valuation of power to generosity for those who value power the most, potentially indicating a nonlinear relationship between generosity and valuation. That is: perhaps it is the case that the more someone values a powerful role, the stronger the negative relationship when he is in that role between the role's value to him—as captured in WTA—and his altruistic use of his power—as captured in his observed giving behavior.

To test this possibility, we re-run our OLS regression models based on (1) and (2) with the addition of *mgive* squared on the right-hand side. The results of these regressions, which we do not display in this paper in the interests of space, do not allow us to reject the hypothesis of a linear form of the effect of *mgive* on WTA in favor of a quadratic at either the 1% or 5% level for any of our specifications.

Another possibility is that there exists a *dynamic* relationship between generosity and

the valuation of power: while generosity might predict greater valuation for participants inexperienced in the dictator game, the relationship between generosity and the valuation of power may turn increasingly negative as individuals gain experience with the game. While our results are suggestive in this regard, more definitive evaluation is needed. We discuss the potential relevance of such evaluation, which is beyond the scope of the present paper, in section 5.

The robustness of additional results is confirmed by the final-round regressions. Being a high type is associated with a significantly greater WTP and WTA. (However, it is *not*, in the final-round regressions, associated with an increased endowment effect.) Also, for this sample, having a college-educated mother is robustly associated with having a significantly lower WTA.

Recognizing the role played by altruistic behavior in the endowment effect for power, we employ a final regression to measure the factors that determine giving in the dictator game. Specifically, we regress *mgive* on participant gender, response to the Rosenberg generalized trust item, and indicators for whether the participant was high type, of an Australian or British cultural background, or a Commerce major. Two specifications include research session dummies and an indicator for the original three sessions, while a third limits the analysis to only the last two sessions, in which all participants were run through all three treatments. In Table 7 we present the results.

Between 26 and 37 percent of the variation in giving is explained by these specifications. We find unsurprisingly that giving is higher for high types, who have a higher endowment from which to give. Consistent with previous experimental results on the dictator game (Chowdhury & Jeon 2014), this finding of increased giving with increased common income of the dictator and receiver¹⁰ favors the theory of impure altruism (Andreoni 1989, Andreoni 1990) over inequality aversion (Fehr & Schmidt 1999).

Trusting people are more giving, as are Commerce majors. Those who identify as having an Australian or British cultural background appear marginally more giving. Finally, males consistently give more than females. While surprising on the surface, the result is not inconsistent with the literature on gender and altruism, which finds no consensus about the influence of gender in explaining giving behavior (Andreoni & Vesterlund 2001).

¹⁰Whereas the endowment of the other game participants is not common knowledge, neither is it explicitly communicated, so we may conclude that income inequality is not salient to participants.

Table 7: Determinants of Dictator Giving: OLS Models

<i>Dependent variable: mgive</i>	(1)	(2)	(3)
Male Gender	15.546** (6.419)	17.257*** (6.364)	21.720** (8.623)
High-type	33.330*** (6.545)	33.385*** (6.707)	37.471*** (8.286)
Trust	14.030* (7.161)	15.363** (7.714)	19.151* (9.609)
Commerce major	17.646* (9.764)	17.871* (9.954)	33.142** (14.689)
Australian or British	9.703* (5.462)	9.135 (6.231)	8.699 (6.885)
Session dummies?	Y	N	N
Original sessions indicator?	N	Y	N
Original sessions excluded	N	N	Y
N	240	240	168
R^2	0.3026	0.2665	0.3690

***Significant at 1% level

**Significant at 5% level

*Significant at 10% level

All runs contain a constant term (coefficient not shown)

5 Discussion

In analyzing the data from our experiment, two findings stand out as the most consistent and robust results of our study. First, we consistently find an endowment effect for the possession of dictator power. Second, we observe that the endowment effect associated with the dictator role is significantly lower for those who give more on average when they are the dictator. It appears from these results that incumbency has a significant impact on the valuation of power. It also appears that generosity tempers that impact.

There is much that we still do not know about the observed association of generosity and the endowment effect for power, and about which we may only speculate. First, might our findings indicate that more altruistic people will exhibit a lower endowment effect not

only with respect to power, but more broadly? The lower endowment effect attributed to people in East Asian cultures has been attributed to interdependent self-construal, which in turn results in a strong collectivist attitude (Maddux *et al.* 2010). It is tantalizing to consider that the endowment effect may in a broad sense be a disease of those who fail to recognize adequately the inter-reliance of individuals. Evolutionary theories of the endowment effect suggest that it may have developed as a mechanism to support stronger bargaining positions, thereby enabling organisms in competition for scarce resources to survive more effectively (Huck *et al.* 2005). Meanwhile it has been suggested that altruism evolved for individuals who have depended effectively on reciprocity for survival (Kurzban *et al.* 2015). The ability to substitute reliance on reciprocity for success in the competitive arena might explain why individuals who are characteristically more generous exhibit a lower endowment effect. Future research is needed to establish whether altruistic behavior is associated with lower endowment effects as a general proposition, going beyond the specific “commodity” we have investigated here.

Second, is the observed association of higher generosity with a lower endowment effect an indication that the experience of giving causally results in an attenuation of the endowment effect? Or does what we observe accrue to some permanent characteristic of the individual—that is, altruism as a *trait*—which is in turn associated both with a lower endowment effect and with greater observed generosity? Or does it instead indicate reverse causation—say, that individuals who characteristically exhibit lower loss aversion consequently find it relatively easy to behave philanthropically?¹¹

List (2003) has shown previously that the endowment effect diminishes with incremental market experience. List interprets this dynamic causal effect as a convergence toward neoclassical predictions, but he does not propose an operative mechanism. One might interpret List’s result through the lens of conditioning, along the following lines. Trading involves relinquishing goods. As individuals experience trading repeatedly, and come to associate the experience with the absence of a negative outcome, they overcome the loss aversion individuals naturally experience when they relinquish or contemplate relinquishing possessed objects.

On the basis of this, one might similarly expect that incremental experience in giving—whether additional experiences, or larger amounts given—will incrementally increase the individual’s conditioning to relinquishing possessions without loss aversion.

¹¹Such a direction of causation would be broadly consistent with the prior findings of Boun My *et al.* (2018), Fiedler & Hillenbrand (2020), and Benistant & Suchon (2021).

To the extent that the endowment effect is driven by loss aversion, one may conjecture that greater giving should then be associated with subsequent reductions in the endowment effect. The experimental design we have used in this paper does not allow us to distinguish precise causes along the lines of this conjecture. Determining whether our finding is related to the same underlying mechanism that explains experienced trader effects, and what the implications thereof might be, is a promising topic for future research.

Going beyond the association of generosity with the endowment effect, other results from our study are notable. Our analysis suggests a possible dynamic relationship between the generosity and the valuation of power. This preliminary finding indicates another potential effect along the lines of List (2003): that progressive experience with giving reduces the relationship between generosity and the value one places on the power to express generosity. If this conjectured effect proves genuine—and to the extent it generalizes to broader contexts involving power—it would suggest that generosity as a motive to acquire or hold power holds sway for only those new to the practice of power, or those otherwise with less sophistication. For the experienced and sophisticated (e.g. a career politician), a greater valuation of power may actually be associated with less generosity. These wider implications seem worthy of further investigation.

The robust observed negative relationship between trust and valuation of the dictator role is also noteworthy. One possible interpretation of our results is that trusting people have less need for personal power over the allocation of funds. A real-world demonstration of such a link may lie in calls to defund government agencies and institutions, such as—particularly recently—the police. These calls, it could be argued, reflect a desire for more personal control over funds as motivated by increased distrust. Political scientists over the last quarter century have emphasized the importance of trust as a key factor in decisions to maintain support of and investment in political institutions (Hetherington 1998, Chanley *et al.* 2000, Rudolph & Evans 2005). Our results provide experimental evidence supporting this perception of a link between trust and willingness to eschew personal power in favor of representatives or institutions.

Having a college-educated mother implies a greater development of “soft skills” in childhood, which may lead to lower valuations of the sort of power we measure here. Different cultural valuations of power are unsurprising results as well. These findings and our other results concerning the valuation of power, however, merely scratch the surface. Additional experimental work can contribute a greater economic understanding

of how individuals engage with the possession of power, with far-reaching implications.

A Appendix

A.0.1 Participant Information Sheet

Attached below as PDF.

A.0.2 Participant Instructions - June 2019 Sessions

Attached below as PDF.

A.0.3 Participant Instructions - November 2019 Sessions

Attached below as PDF.

A.0.4 Exit Survey: Screenshots

Attached below as PDFs.

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ONLINE PARTICIPANT INFORMATION STATEMENT

Decisions on intangibles
Professor Gigi Foster

1. What is the research study about?

You are invited to take part in this research study. The research study aims to explore decision-making in the context of intangible goods. You have been invited because you are a member of the BizLab standing subject pool, and your contact details were obtained from the administrators of that pool.

2. Who is conducting this research?

The study is being carried out by the following researchers: Professor Gigi Foster (UNSW) and Professor Matthew Nagler (City University of New York).

Research Funder: This research is being funded by the UNSW BizLab.

3. Inclusion/Exclusion Criteria

Before you decide to participate in this research study, we need to ensure that it is ok for you to take part. The research study is looking recruit people who meet the following criteria:

- Native English speaker

4. Do I have to take part in this research study?

Participation in any research study is voluntary. If you do not want to take part, you do not have to.

If you decide you want to take part in the research study, you will be asked to:

- Read the information carefully (ask questions if necessary);
- Participate in a series of computerised decision-making tasks;
- Complete a computerised questionnaire.

5. What does participation in this research require, and are there any risks involved?

You will be asked to complete some simple tasks at a computer. You will participate in some activities that involve role-playing and interaction with other participants. You will make some choices during those activities and will be asked questions about your choices. There are no risks involved.

If you decide to take part in the research study, we will ask you to complete an online questionnaire. The questionnaire will ask you questions about your demographics, and your degree of agreement with certain statements intended to tell us something about your personality and attitudes. It should take approximately two hours to complete.

You will be paid at the conclusion of the experiment based on the decisions you make during the experiment. A comprehensive explanation of the way payments will be calculated will be provided in the detailed experimental instructions.

If you experience discomfort or feelings of distress while participating in the research and you require support, you can stop participating at any time. You can also tell a member of the research and they will provide you with assistance or alternatively a list of support services and their contact details are provided below.

6. What are the possible benefits to participation?

We hope to use information we get from this research study to benefit others by better understanding how people value certain intangibles. These valuations relate to some broader social issues, and understanding them may allow us to make public policy recommendations.

7. What will happen to information about me?



ONLINE PARTICIPANT INFORMATION STATEMENT

Decisions on intangibles
Professor Gigi Foster

Submission of the online questionnaire is an indication of your consent. By clicking the 'I agree to participate' button you are providing your permission for the research team to collect and use information about you for the research study. Your data will be kept indefinitely. We will store information about you in a **non-identifiable** format at **UNSW Kensington**. **Your information will only be used in aggregation with other participants' information to generate conclusions for the study. Individually identifiable data will remain private to the researchers and will not be released.**

8. How and when will I find out what the results of the research study are?

The research team intend to publish and/ report the results of the research study in a variety of ways. All information published will be done in a way that will not identify you.

9. What if I want to withdraw from the research study?

If you do consent to participate, you may withdraw at any time. You can do this by leaving the experimental laboratory. If you withdraw from the research, we will destroy any information that has already been collected. Once you have submitted the questionnaire however, we will not be able to withdraw your responses as the questionnaire is anonymous.

10. What should I do if I have further questions about my involvement in the research study?

The person you may need to contact will depend on the nature of your query. If you require further information regarding this study or if you have any problems which may be related to your involvement in the study, you can contact the following member/s of the research team:

Research Team Contact

Name	Gigi Foster
Position	Professor
Telephone	9385 7472
Email	Gigi.foster@unsw.edu.au

If at any stage during the study, you become distressed or require additional support from someone not involved in the research please call:

Contact for feelings of distress

Name/Organisation	UNSW Counselling and Psychological Services
Position	
Telephone	9385 5418
Email	counselling@unsw.edu.au

What if I have a complaint or any concerns about the research study?

If you have a complaint regarding any aspect of the study or the way it is being conducted, please contact the UNSW Human Ethics Coordinator:

Complaints Contact

Position	Human Research Ethics Coordinator
Telephone	+ 61 2 9385 6222
Email	humanethics@unsw.edu.au
HC Reference Number	HC190167



ONLINE PARTICIPANT INFORMATION STATEMENT

Decisions on intangibles
Professor Gigi Foster



ONLINE PARTICIPANT INFORMATION STATEMENT

Decisions on intangibles
Professor Gigi Foster

Form for Withdrawal of Participation

I wish to **WITHDRAW** my consent to participate in the research proposal described above and understand that such withdrawal **WILL NOT** affect my relationship with The University of New South Wales. In withdrawing my consent I would like any information which I have provided for the purpose of this research study withdrawn.

Participant Name

Name of Participant (please type)	
Date	

Submit withdrawal of consent

Instructions

Thank you for participating in this experiment! Please pay attention to the information provided here and make your decisions carefully. If at any time you want to ask a question, please raise your hand and an experimenter will come to you.

Please **do not communicate** with other participants at any point in this study, and do not use the lab computer for **any purpose** other than participation in the experiment. Failure to adhere to these rules would force us to stop this study and you would be asked to leave the experiment.

We estimate the total duration of this study to be approximately 2 hours. All money incentives displayed on the screen will be denominated in experimental dollars. The final amount of experimental dollars you have earned by the end of the experiment's money-earning stages will be converted to real Australian dollars at a fixed exchange rate, calibrated to make it such that the average payout of participants in today's session is equal to the BizLab's target average payout rate of \$15 per hour. You may earn more or less than this average figure, depending on your choices and on chance events during the experiment. The real-dollar equivalent of your experimental dollar-denominated earnings will be added to your show-up fee of \$5, and the total sum will be paid to you in real dollars at the conclusion of the experiment. All information collected will be kept strictly confidential and used for the sole purpose of this study.

You will participate first in a letter-finding task that enables you to earn an "endowment" of experimental dollars that will be available to you in an electronic wallet in the subsequent stages of the experiment. People who perform better in the letter-finding task will have more experimental dollars deposited in their wallets in later stages, and can expect to take home more real Australian dollars, than people who perform worse. Three main stages of the experiment will then take place, followed by a questionnaire.

Each of the main stages described below will be made up of several rounds, of which one round will be starred. Of the three starred rounds, one will be selected for actual payout at the end of the experiment. The stages described below may be presented to you in any order, and a short survey may appear during the course of one or more stages. To progress from screen to screen once the experiment starts, please press the "Next" button.

Stage Yellow (Mug/Bottle Game)

To begin this stage, you will first play five practice rounds of a game in which you can buy and sell tokens with the other experimental participants sitting here in the lab. In each round, you will play the game both as "Buyer" and as "Seller". The idea of these practice rounds – which will **not** be actually paid out in money and tokens – is to familiarise you with the interface you will be using in the final, starred round of the game.

At the start of each practice round, each Seller will be allocated a token that has resale value (i.e., the experimenter would be willing to buy the token back for a stated price). The resale value of the tokens allocated to different individuals will be different. Each Buyer will have the opportunity to try to buy a token using experimental dollars from his/her wallet, and each Seller will have the opportunity to try to sell the token he/she was allocated. The token will be traded, just like other goods in a market, in cases where trade is mutually desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, the amount of money and tokens you ended up with in that round will be tallied up as the sum of the amount you ended up with in your role as a Buyer, plus the amount you ended up with in your role as a Seller. This will end the practice round, after which everyone's wallets will be re-filled to their starting levels and the next practice round will start.

After the fifth practice round, the final, starred round of this stage will start. In this round, you will be randomly assigned either to the role of Buyer or to the role of Seller. In either role, your starting wallet will contain your endowment from the letter-finding task plus a bit more. In the Seller role, you will also be allocated an item – either a UNSW mug or a UNSW bottle – which you can see now displayed on a table in the lab. Each Buyer will have the opportunity to try to buy one of these items using experimental dollars from his/her wallet, and each Seller will have the opportunity to try to sell the item he/she has been allocated. Items will be traded amongst everyone in the lab, just like other goods in a market, in cases where trade is mutually desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, your earnings in this starred round will be the amount of experimental dollars you ended up with in your role (whether as Buyer or as Seller) plus, if you have ended up with one, a mug or bottle. This will conclude the starred round of this stage.

Stage Green (Triangle-Square Game)

To begin this stage, you will first play five practice rounds of a two-person “Triangle-Square” game in which each person has the option to invest some of his/her wallet’s contents into a joint project with a known investment return. In each round, you will play the game as both the **"Triangle"** with one person, and as the **"Square"** with another. These roles are described more fully below. The people you play with will be randomly selected from the people sitting here in the lab, but the exact identity of who you’re playing with will remain unknown to you. You will be randomly re-matched to people each round, so it’s unlikely (though possible) that you will play with the same person more than once or twice across all the rounds and roles.

When playing in the role of Triangle, in addition to deciding how much of your wallet to invest in the joint project, you will have the option to spend experimental dollars from your wallet in order to increase, decrease, or leave unchanged how much the person you’re playing with (the Square) earns from the round depending on how much he/she invests in the joint project. When playing in the role of Square, you will decide how much of your wallet to invest in the joint project, knowing that the person you’re playing with (the Triangle) will have committed to increasing, decreasing, or leaving unchanged your earnings depending on how much you invest in the joint project. Triangles must commit to increasing, decreasing, or leaving unchanged the earnings of the Square they are matched with, based on different levels of investment the Square might choose, before they know how much the Square actually chooses to invest in the joint project. Once the Triangle has made these commitments – which the Square will not see – both players will choose their investment levels, after which the joint project’s return will be realized and reported to both players.

Your earnings in the Triangle role will be calculated as follows and displayed on the screen:

$$\text{earnings} = (\text{wallet endowment} - \text{your contribution}) + 0.75 * (\text{total contributions to project}) - 25 * L$$

where $L=1$ if the Square’s contribution level was one at which you committed to increasing **or** decreasing the Square’s earnings (which costs the Triangle 25), and $L=0$ if the Square’s contribution level was one at which you committed to leaving the Square’s earnings unchanged.

Your earnings in the Square role will be calculated as follows and displayed on the screen:

$$\text{earnings} = (\text{wallet endowment} - \text{your contribution}) + 0.75 * (\text{total contributions to project}) + 25 * M - 75 * N$$

where $M=1$ if your contribution level was one at which the Triangle committed to increasing your earnings (which gives you an extra 25), and $M=0$ otherwise. Similarly, $N=1$ if your contribution level was one at which the Triangle committed to decreasing your earnings (which takes away 75 from you), and $N=0$ otherwise. Note that at levels of the Square's contributions for which the Triangle commits to decreasing the Square's earnings, the earnings deduction for the Square is equal to three times what it costs the Triangle to implement the reduction.

This will end the practice round, after which everyone's wallets will be re-filled to their starting levels and the next practice round will start. The idea of these practice rounds – which will **not** be actually paid out in money – is to familiarise you with how the game works and the interface you will be using in the final, starred round of the game.

After the fifth practice round, the final, starred round of this stage will start. In this round, you will be randomly assigned either to the role of Triangle or to the role of Square. In either role, your starting wallet will contain your endowment from the letters task plus a bit more. If you are allocated to the Triangle role, you will have the opportunity to try to sell that role and take on the role of Square instead. If you are allocated to the Square role, you will have the opportunity to try to buy a Triangle role, using experimental dollars from your wallet, and leave the role of Square. Roles will be traded amongst everyone in the lab in cases where trade is mutually desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, you will be allocated the amount of experimental dollars you earned in the letter-finding task, and Triangles and Squares will be randomly matched to each other to play the Triangle-Square game using those experimental dollars. Your earnings in this starred round will be the amount of experimental dollars you end up with after trading (if applicable) plus whatever you earn from playing the Triangle-Square game in your final role. This will conclude the starred round of this stage.

Stage Blue (Rectangle-Circle Game)

To begin this stage, you will first play five practice rounds of a two-person "Rectangle-Circle" game. In each round, you will play the game as both the "**Rectangle**" with one person, and as "**Circle**" with another. These roles are described more fully below. The people you play with will be randomly selected from the people sitting here in the lab, but the exact identity of who you're playing with will remain unknown to you. You will be randomly re-matched to people each round, so it's unlikely (though possible) that you will play with the same person more than once or twice across all the rounds and roles.

When playing in the role of "Rectangle", you will be allocated an amount of experimental dollars equal to what you earned in the letter-finding task, and will decide how much of that amount to keep and how much (if any) to give to the person you're playing with (the "Circle"). When playing in the role of "Circle", you will receive whatever amount the person you're playing with (the "Rectangle") chooses to give you out of the amount he/she is allocated.

The idea of these practice rounds – which will **not** be actually paid out in money – is to familiarise you with how the game works and the interface you will be using in the final, starred round of the game.

After the fifth practice round, the final, starred round of this stage will start. In this round, you will be randomly assigned either to the role of Rectangle or to the role of Circle. In either role, your starting wallet will contain your endowment from the letter-finding task plus a bit more. If you are allocated to the Rectangle role, you will have the opportunity to try to sell that role and take on the role of Circle instead. If you are allocated to the Circle role, you will have the opportunity to try to buy a Rectangle role, using experimental dollars from your wallet, and leave the role of Circle. Roles will be traded amongst everyone in the lab in cases where trade is mutually

desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, Rectangles will be allocated the amount of experimental dollars equal to what they earned in the letter-finding task, and they and Circles will be randomly matched to each other to play the Rectangle-Circle game. Your earnings in this starred round will be the amount of experimental dollars you end up with after trading (if applicable) plus whatever you earn from playing the Rectangle-Circle game in your final role. This will conclude the starred round of this stage.

Payout

At the end of the experiment, of the three starred rounds, one will be randomly selected by the computer for actual payout. Your final payout will also include the \$5 show-up fee and will include a UNSW mug or bottle, if you came away with one in the starred round of Stage Yellow and that round was randomly selected for payout. Your final payout in experimental dollars will be shown on the screen, and we will then convert this amount to real Australian dollars at a fixed exchange rate. You will receive this money in cash at the end of the experiment. We will ask you to sign a receipt for your earnings as paid out in real dollars, and the experiment will be over.

Please raise your hand if you have any questions about this experiment. Do NOT proceed until the experimental monitor advises that it's OK to do so.

The UNSW mugs and bottles to be used in the experiment today are displayed for your inspection on a table in the lab.

Instructions

Thank you for participating in this experiment! Please pay attention to the information provided here and make your decisions carefully. If at any time you want to ask a question, please raise your hand and an experimenter will come to you.

Please **do not communicate** with other participants at any point in this study, and do not use the lab computer for **any purpose** other than participation in the experiment. Failure to adhere to these rules would force us to stop this study and you would be asked to leave the experiment.

We estimate the total duration of this study to be approximately 2 hours. All money incentives displayed on the screen will be denominated in experimental dollars. The final amount of experimental dollars you have earned by the end of the experiment's money-earning stages will be converted to real Australian dollars at a fixed exchange rate, calibrated to make it such that the average payout of participants in today's session is equal to the BizLab's target average payout rate of \$15 per hour. You may earn more or less than this average figure, depending on your choices and on chance events during the experiment. The real-dollar equivalent of your experimental dollar-denominated earnings will be added to your show-up fee of \$5, and the total sum will be paid to you in real dollars at the conclusion of the experiment. All information collected will be kept strictly confidential and used for the sole purpose of this study.

You will participate first in a letter-finding task that enables you to earn an "endowment" of experimental dollars that will be available to you in an electronic wallet in the subsequent stages of the experiment. People who perform better in the letter-finding task will have more experimental dollars deposited in their wallets in later stages, and can expect to take home more real Australian dollars, than people who perform worse. Three main stages of the experiment will then take place, followed by a questionnaire. The questionnaire will begin with a lottery task in which you may earn extra experimental dollars that will be added to your total payout from the experiment.

Each of the main stages described below will be made up of several rounds, of which one round will be starred. Of the three starred rounds, one will be selected for actual payout at the end of the experiment. The stages described below may be presented to you in any order, and a short survey may appear during the course of one or more stages. To progress from screen to screen once the experiment starts, please press the "Next" button.

Stage Blue

To begin this stage, you will first play five practice rounds of a two-person "Rectangle-Circle" game. In each round, you will play the game as both the "**Rectangle**" with one person, and as "**Circle**" with another. These roles are described more fully below. The people you play with will be randomly selected from the people sitting here in the lab, but the exact identity of who you're playing with will remain unknown to you. You will be randomly re-matched to people each round, so it's unlikely (though possible) that you will play with the same person more than once or twice across all the rounds and roles.

When playing in the role of "Rectangle" in Stage Blue, you will be allocated an amount of experimental dollars equal to what you earned in the letter-finding task, and will decide how much of that amount to keep and how much (if any) to give to the person you're playing with (the "Circle"). When playing in the role of "Circle" in Stage Blue, you will receive whatever amount the person you're playing with (the "Rectangle") chooses to give you out of the amount he/she is allocated.

The idea of these practice rounds – which will **not** be actually paid out in money – is to familiarise you with how the game works and the interface you will be using in the final, starred round of the game.

After the fifth practice round, the final, starred round of Stage Blue will start. In this round, you will be randomly assigned either to the role of Rectangle or to the role of Circle. In either role, your starting wallet will contain your endowment from the letter-finding task plus a bit more. If you are allocated to the Rectangle role, you will have the opportunity to try to sell that role and take on the role of Circle instead. If you are allocated to the Circle role, you will have the opportunity to try to buy a Rectangle role, using experimental dollars from your wallet, and leave the role of Circle. Roles will be traded amongst everyone in the lab in cases where trade is mutually desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, Rectangles will be allocated the amount of experimental dollars equal to what they earned in the letter-finding task, and they and Circles will be randomly matched to each other to play the Rectangle-Circle game. Your earnings in this starred round will be the amount of experimental dollars you end up with after trading (if applicable) plus whatever you earn from playing the Rectangle-Circle game in your final role. This will conclude the starred round of Stage Blue.

Stage Green

To begin this stage, you will first play five practice rounds of a two-person “Rectangle-Circle” game. In each round, you will play the game as both the **"Rectangle"** with one person, and as **"Circle"** with another. These roles are described more fully below. The people you play with will be randomly selected from the people sitting here in the lab, but the exact identity of who you’re playing with will remain unknown to you. You will be randomly re-matched to people each round, so it’s unlikely (though possible) that you will play with the same person more than once or twice across all the rounds and roles.

When playing in the role of “Rectangle” in Stage Green, you will be allocated an amount of experimental dollars equal to what you earned in the letter-finding task, and will decide how much of that amount to keep. You will also indicate how much (if any) you would like to give to the person you’re playing with (the “Circle”), but the amount you indicate will be subject to a 10% tax. When playing in the role of “Circle” in Stage Green, you will receive whatever amount the person you’re playing with (the “Rectangle”) indicated he/she wanted to give you out of the amount he/she is allocated, minus this 10% tax. For example, if in the role of Rectangle you indicate you wish to give \$M to the Circle player, the Circle player will receive $\$[M - (10\%)*M]$. The tax revenue does not accrue to either player.

The idea of these practice rounds – which will **not** be actually paid out in money – is to familiarise you with how the game works and the interface you will be using in the final, starred round of the game.

After the fifth practice round, the final, starred round of Stage Green will start. In this round, you will be randomly assigned either to the role of Rectangle or to the role of Circle. In either role, your starting wallet will contain your endowment from the letter-finding task plus a bit more. If you are allocated to the Rectangle role, you will have the opportunity to try to sell that role and take on the role of Circle instead. If you are allocated to the Circle role, you will have the opportunity to try to buy a Rectangle role, using experimental dollars from your wallet, and leave the role of Circle. Roles will be traded amongst everyone in the lab in cases where trade is mutually desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, Rectangles will be allocated the amount of experimental dollars equal to what they earned in the letter-finding task, and they and Circles will be randomly matched to each other to play the Rectangle-Circle game. Your earnings in this starred round will be the amount of experimental dollars you end up with after trading (if applicable) plus whatever you earn from playing the Rectangle-Circle game in your final role. This will conclude the starred round of Stage Green.

Stage Yellow

To begin this stage, you will first play five practice rounds of a two-person “Rectangle-Circle” game. In each round, you will play the game as both the **"Rectangle"** with one person, and as **"Circle"** with another. These roles are described more fully below. The people you play with will be randomly selected from the people sitting here in the lab, but the exact identity of who you’re playing with will remain unknown to you. You will be randomly re-matched to people each round, so it’s unlikely (though possible) that you will play with the same person more than once or twice across all the rounds and roles.

When playing in the role of “Rectangle” in Stage Yellow, you will be allocated an amount of experimental dollars equal to what you earned in the letter-finding task, and will decide how much of that amount to keep. You will also indicate how much (if any) you would like to give to the person you’re playing with (the “Circle”), but the amount you indicate will be either increased or decreased by 10%, depending on the outcome of a coin flip that the computer will perform. When playing in the role of “Circle” in Stage Yellow, you will receive whatever amount the person you’re playing with (the “Rectangle”) indicated he/she wanted to give you out of the amount he/she is allocated, plus or minus this 10%. For example, if in the role of Rectangle you indicate you wish to give \$M to the Circle player, the Circle player will receive either $\$[M + (10\%)*M]$ (if the computer’s coin-flip comes up heads) or $\$[M - (10\%)*M]$ (if the computer’s coin-flip comes up tails). Each outcome is equally likely to happen.

The idea of these practice rounds – which will **not** be actually paid out in money – is to familiarise you with how the game works and the interface you will be using in the final, starred round of the game.

After the fifth practice round, the final, starred round of Stage Yellow will start. In this round, you will be randomly assigned either to the role of Rectangle or to the role of Circle. In either role, your starting wallet will contain your endowment from the letter-finding task plus a bit more. If you are allocated to the Rectangle role, you will have the opportunity to try to sell that role and take on the role of Circle instead. If you are allocated to the Circle role, you will have the opportunity to try to buy a Rectangle role, using experimental dollars from your wallet, and leave the role of Circle. Roles will be traded amongst everyone in the lab in cases where trade is mutually desired. Trade will not happen for buyers who offer a price too low, or for sellers who ask a price too high, for a mutually-desired exchange to occur. Once all mutually-desired trades have happened, Rectangles will be allocated the amount of experimental dollars equal to what they earned in the letter-finding task, and they and Circles will be randomly matched to each other to play the Rectangle-Circle game. Your earnings in this starred round will be the amount of experimental dollars you end up with after trading (if applicable) plus whatever you earn from playing the Rectangle-Circle game in your final role. This will conclude the starred round of Stage Yellow.

Payout

At the end of the experiment, of the three starred rounds, one will be randomly selected by the computer for actual payout. Your final payout will also include whatever you earned from the lottery task. Your final payout in experimental dollars will be shown on the screen, and we will then convert this amount to real Australian dollars at a fixed exchange rate and add it to the \$5 show-up fee. You will receive this money in cash at the end of the experiment. We will ask you to sign a receipt for your earnings as paid out in real dollars, and the experiment will be over.

Participant Instructions – November 2019 sessions

Please raise your hand if you have any questions about this experiment. Do NOT proceed until the experimental monitor advises that it's OK to do so.

Exit Survey (1 of 7)

For each of the nine pairs of lotteries listed below, please select your preferred lottery: either option A or option B. Each lottery is characterised by the probability of receiving one of two payoffs. (Probabilities are expressed as percentage chances of receiving this payoff, e.g., 20% = a chance of 2 out of 10 of receiving this payoff). All lotteries are expressed in terms of experimental dollars. One of these lotteries will be chosen randomly by the computer for actual payout and added to your total sum of experimental dollars from this experiment.

☐ A: 10% chance of 20 ED and 90% chance of 16 ED

☐ B: 10% chance of 40 ED and 90% chance of 1 ED

☐ A: 20% chance of 20 ED and 80% chance of 16 ED

☐ B: 20% chance of 40 ED and 80% chance of 1 ED

☐ A: 30% chance of 20 ED and 70% chance of 16 ED

☐ B: 30% chance of 40 ED and 70% chance of 1 ED

☐ A: 40% chance of 20 ED and 60% chance of 16 ED

☐ B: 40% chance of 40 ED and 60% chance of 1 ED

☐ A: 50% chance of 20 ED and 50% chance of 16 ED

☐ B: 50% chance of 40 ED and 50% chance of 1 ED

☐ A: 60% chance of 20 ED and 40% chance of 16 ED

☐ B: 60% chance of 40 ED and 40% chance of 1 ED

☐ A: 70% chance of 20 ED and 30% chance of 16 ED

☐ B: 70% chance of 40 ED and 30% chance of 1 ED

☐ A: 80% chance of 20 ED and 20% chance of 16 ED

☐ B: 80% chance of 40 ED and 20% chance of 1 ED

☐ A: 90% chance of 20 ED and 10% chance of 16 ED

☐ B: 90% chance of 40 ED and 10% chance of 1 ED

Next

Exit Survey (2 of 7)

1. What is your Gender?

- ☐ Male
- ☐ Female
- ☐ Prefer Not To Say
- ☐ Prefer to Self-Describe:

2. How old are you?

- ☐ <18 years old
- ☐ 18 years old
- ☐ 19 years old
- ☐ 20 years old
- ☐ 21 years old
- ☐ 22 years old
- ☐ >22 years old

3. What are you studying? (If doing a dual degree, please tick all that apply)

- ☐ Bachelor of Economics
- ☐ Bachelor of Commerce/Bachelor of Commerce (International)
- ☐ Bachelor of Science
- ☐ Bachelor of Arts
- ☐ Bachelor of Law
- ☐ Other (Please specify):

☐ Not currently studying

Next

Exit Survey (3 of 7)

4. Which culture do you identify with the most?

- ☐ Australian
- ☐ Chinese
- ☐ Indonesian
- ☐ British
- ☐ Indian
- ☐ Other (Please specify):

5. Are you a local or international student?

- ☐ Local
- ☐ International

6. All things considered, how satisfied are you with your life? (Please rate your satisfaction on a scale of 1 to 10, where **0 is totally dissatisfied** with life and **10 is totally satisfied** with life)

- ☐ 0 - totally dissatisfied
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10 - totally satisfied

7. To what degree are you influenced by your peers?

- ☐ My peers have a great deal of influence over what I do.
- ☐ My peers have moderate influence over what I do.
- ☐ My peers have little influence over what I do.
- ☐ My peers have no influence over what I do.

8. In political matters, people talk of 'the left' and 'the right'. How would you place your views on this scale, generally speaking?

- ☐ 1 - strongly left of center
- ☐ 2 - slightly left of center
- ☐ 3 - neither right nor left of center
- ☐ 4 - slightly right of center
- ☐ 5 - strongly right of center

Next

Exit Survey (4 of 7)

9. What was the highest level of education your mother attained?

- ☐ None
- ☐ Primary school only
- ☐ Some secondary school, but no more than Year 10
- ☐ Year 11 or equivalent
- ☐ Year 12 or equivalent
- ☐ Some tertiary studies
- ☐ University (other)
- ☐ University (Bachelor)
- ☐ University (Master)
- ☐ University (Doctorate)
- ☐ Teachers college / College of Advanced Education
- ☐ Institute of Technology
- ☐ Technical college / TAFE / College of Technical and Further Education
- ☐ Employer Training Program
- ☐ I don't know

10. What was the highest level of education your father attained?

- ☐ None
- ☐ Primary school only
- ☐ Some secondary school, but no more than Year 10
- ☐ Year 11 or equivalent
- ☐ Year 12 or equivalent
- ☐ Some tertiary studies
- ☐ University (other)
- ☐ University (Bachelor)
- ☐ University (Master)
- ☐ University (Doctorate)
- ☐ Teachers college / College of Advanced Education
- ☐ Institute of Technology
- ☐ Technical college / TAFE / College of Technical and Further Education
- ☐ Employer Training Program
- ☐ I don't know

11. When you were a child, how well off were your parents or guardians, in a financial sense?

- ☐ Well off
- ☐ Fairly well off
- ☐ About average
- ☐ Fairly poor
- ☐ Poor

Next

Exit Survey (5 of 7)

Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?

- ☐ Most people can be trusted.
- ☐ Can't be too careful.

Next

Exit Survey (6 of 7)

Please rate your level of agreement with each statement below, from 1 - **strongly agree** to 7 - **strongly disagree**:

1. I have little control over the things that happen to me:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

2. There is really no way I can solve some of the problems I have:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

3. There is little I can do to change many of the important things in my life:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

4. I often feel helpless in dealing with the problems of life:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

5. Sometimes I feel that I'm being pushed around in life:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

6. What happens to me in the future mostly depends on me:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

7. I can do just about anything I really set my mind to do:

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

Next

Exit Survey (7 of 7)

Please rate your level of agreement with each statement below, from 1 - **strongly agree** to 7 - **strongly disagree**:

1. On the whole, I am satisfied with myself.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

2. At times, I think I am no good at all.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

3. I feel that I have a number of good qualities.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

4. I am able to do things as well as most other people.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

5. I feel I do not have much to be proud of.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

6. I certainly feel useless at times.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

8. I wish I could have more respect for myself.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

9. All in all, I am inclined to feel that I am a failure.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

10. I take a positive attitude toward myself.

- ☐ 1 - strongly agree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - strongly disagree

Next