Are Men Less Generous to a Smarter Woman in a Non-romantic Setting?

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Abstract

Are men less generous to a woman with a higher IQ in a non-romantic setting? I test this question using a dictator game experiment with a novel design that exogenously varies the gender and relative IQ of the receivers. Based on a sufficiently powered analysis, I do not find that men are less generous to a woman whose IQ is higher than theirs; if anything, they are slightly more generous to a higher-IQ woman than to a higher-IQ man. In addition, I do not find that women are less generous to a woman with a higher IQ either. The results hold both in mean and distribution, and are not driven by the so-called "beauty premium." These results suggest that although men (and women) care about their IQ very much and that men dislike smarter women in the marriage market, the men's dislike does not manifest outside the marriage market.

JEL Classification: J16, D91, C91
Keywords: Gender, IQ, generosity, dictator game, laboratory experiment

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1 Introduction

Cognitive skill, or intelligence, is an attribute men (and women) care most about that they even reduce their payoff by distorting their belief updating (Eil and Rao 2011; Zimmermann 2020) and by avoiding information (Castagnetti and Schmacker 2022). At the same time, men dislike smarter women in the marriage market (Fisman et al. 2006). This men's dislike of smarter women may manifest also outside the marriage market.

This paper studies whether men are less generous to a woman smarter than them in an non-romantic setting. Answering this question using secondary data is difficult due to non-random group formation and that intelligence is correlated with generosity (Falk et al. 2021). Also, a clean measure of one's generosity to other people is not readily available in secondary data. To overcome these challenges, I design a laboratory experiment where participants first work on an incentivized IQ test (Raven matrices) which measures their intelligence. After the test, participants are randomly assigned to a group of six and receive an IQ rank relative to other group members. Then three of the six members are randomly chosen to be dictators and play three rounds of dictator game with the other three members chosen to be receivers, observing the receivers' facial photos and first names, both of which convey information about gender, and the IQ ranks. I use the dictators' allocation as the measure of generosity, which is a widely used tool in experimental economics and shown to predict one's generosity outside the laboratory (Franzen and Pointner 2013). The use of photos follows recent literature (Babcock et al. 2017; Coffman 2014; Isaksson 2018) and allows the dictators to infer the gender of the receivers naturally as they would do in the real world without inducing experimenter demand effects.[1] I use dictator IQ fixed effects in the analysis to compare allocations of dictators with the same IQ but assigned different IQ ranks due to random group formation, allowing me to cut the correlation between IQ and generosity.

I first confirm that male and female dictators behaviors are consistent with the literature: their allocation amount is close to a previous study with a similar level of social distance with receivers and that female dictators allocate more. Yet, I do not find male dictators are not less generous to a female receiver with higher IQ: the point estimate is quantitatively negligible and statistically indistinguishable from 0, and the confidence interval is tight. If anything, male dictators are slightly more generous to a female receiver with higher IQ. These results are not driven by the so-called "beauty premium" and hold across the whole distribution of the male dictator allocation. Although statistically insignificant, belief about paired receivers' IQ is roughly consistent with the experimental design. I do not find that female dictators are less generous to a female receiver with higher IQ either. Taken together, these findings suggest that although IQ is an attribute men (and women) care most about and that men dislike smarter women in the marriage market, this men's dislike of smarter women does not manifest outside the marriage market.

This paper's main contribution is to the literature on men's dislike of women who are superior than them by showing men do not dislike smarter women in a non-romantic setting. In the marriage

1. Yet, I show the robustness the results to the concern that facial photos may be subject to the so-called "beauty premium."

market, men do not like women superior than them: women who get promotion are more likely to face divorce (Folke and Rickne 2020), skilled women are less likely to get married especially in countries with conservative gender norm (Bertrand et al. 2021), and that women smarter than men are less likely to be preferred as a romantic partner (Fisman et al. 2006). Outside the marriage market, men dislike to be led by women: male teachers are more likely to quit when they work under female principals (Husain, Matsa, and Miller 2021), men treat more aggressively female leaders (Chakraborty and Serra 2022) and female competitors (Datta Gupta, Poulsen, and Villeval 2013), and offer less support for female leaders (Born, Ranehill, and Sandberg 2022). Men are also more likely to lose interests in the work when female managers criticize them compared to when male managers do the same (Abel 2022). My results show these men's dislike of superior women outside the marriage market is not driven by those women being smarter than them.

This paper also contributes to the literature on the role of receivers' gender in dictator games by examining the role of IQ interacted with gender. A meta-study of dictator game by Engel (2011) find dictators allocate higher amount to female receivers across 39 studies regardless of dictators' gender. My results show that results from previous studies are not overturned even by separately examining allocations to higher-IQ and lower-IQ female receivers.

The remainder of the paper proceeds as follows. Section 2 describes the experimental design, procedure, and implementation. Section 3 describes the data. Section 4 discusses the empirical strategy. Section 5 presents the results. Section 6 concludes.

2 Experiment

2.1 Design and procedure

The experiment consists of two parts. Participants receive instructions at the beginning of each part. They earn a participation fee of 2.5€ for their participation.

Pre-experiment: Random desk assignment & photo taking

After registration at the laboratory entrance, participants are randomly assigned to a partitioned computer desk. Afterwards, participants have their facial photos taken at a photo booth and enter their first name on their computer. After that, the experimenters go to each participant's desk to check that their photo and first name match them to ensure all participants that other participants' photos and first names are real, following Isaksson (2018).

Part 1: IQ test

In part 1, participants work on an incentivized 9 IQ questions for 9 minutes. I use Bilker et al. (2012)'s form A 9-item Raven test which measures one's IQ more than 90% as good as the full-length Raven test. Participants receive 0.5€ for each correct answer, and they do not receive

information about how many IQ questions they have solved correctly until the end of the experiment. While higher IQ people earn more in this part, I control for this wealth effects in the analysis.

After the IQ test, participants make an incentivized guess on the number of IQ questions they have solved correctly; they receive 0.5€ if their guess is correct. The answer to this question measures their over-confidence level. They do not receive feedback on their guess until the end of the experiment.

Following Eil and Rao (2011), six participants are randomly grouped and informed of the ranking of their IQ relative to other group members. Ties are broken randomly. They then answer a set of comprehension questions about their IQ rank; they cannot proceed to the next part until they answer these questions correctly.

Part 2a: Dictator game (dictators only)

In part 2, three participants in each group are randomly assigned to the role of dictators and the other three participants the role of receivers. Dictators are paired with the three receivers in their group one by one in a random order, receive an endowment, and play a dictator game. Thus, they play a dictator game three times with three different receivers. When they play the dictator game, dictators observe the receivers' facial photo and first name and IQ rank; see panel A of figure 1 for an example. The use of photos follows recent literature (Babcock et al. 2017; Coffman 2014; Isaksson 2018) and minimizes experimenter demand effects. While I use photos, I show later that the results are not driven by the so-called "beauty premium."

Dictators are also told that their allocation decisions are anonymous: they are told that their allocation will be paid to the receivers as a "top-up" to their earnings. Dictators decide allocation by moving a cursor on a slider where the cursor is initially hidden to prevent anchoring; panel B of figure 1 shows the cursor after clicking the slider. I vary the endowment across rounds to make each dictator game less repetitive: 7€ for 1st and 3rd rounds, 5€ for 2nd round. At the end of the experiment, one out of three allocations is randomly chosen for each participant as earnings for this part.[2]

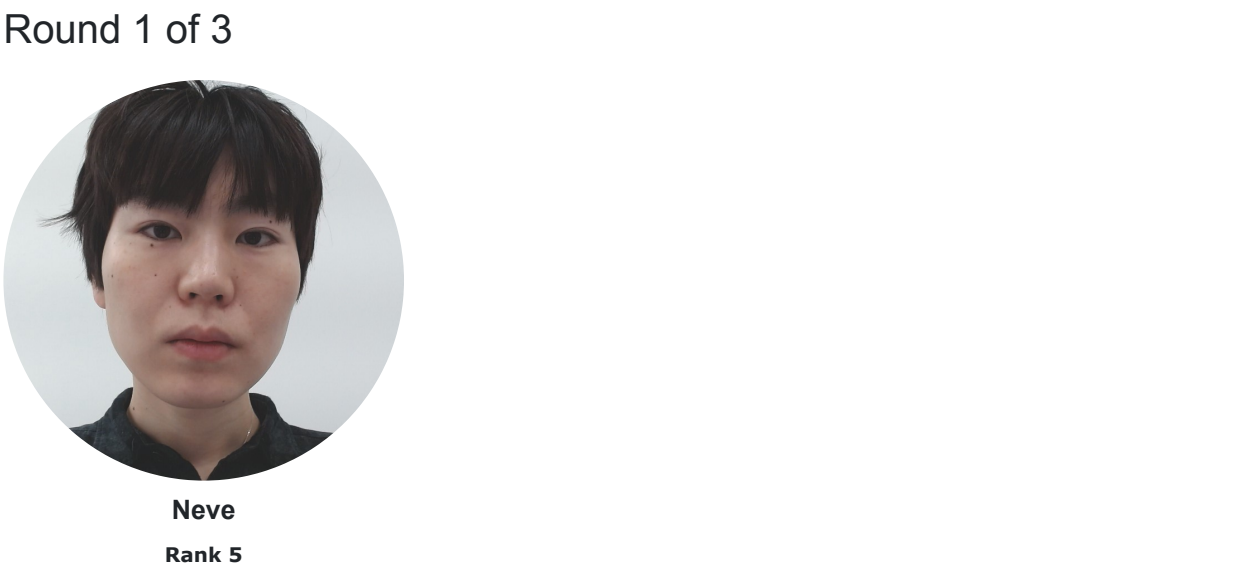
Part 2b: Belief elicitation (receivers only)

I also collect an indirect measure of dictators' beliefs on how many IQ questions the paired receivers have solved correctly. To prevent the belief elicitation to affect or be affected by the dictator game, I exploit the random assignment of participants to dictators and receivers (derived from the random desk assignment) and use receivers' beliefs as a proxy for dictators' beliefs. Specifically, while dictators are playing the dictator game, receivers are paired with the other two receivers in the same group one by one in random order and make incentivized guesses on how many IQ questions

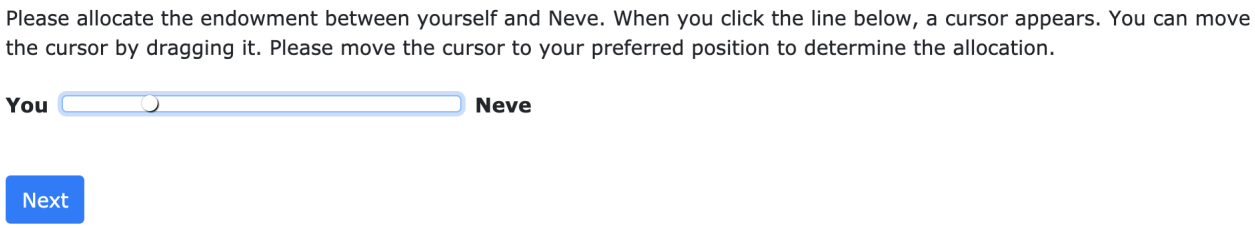
2. For each dictator for each round, one of the three receivers in the same group is randomly chosen *without replacement* and the dictator allocates the endowment between themselves and the receiver. Thus, it is possible that two dictators play dictator game with the same receiver in the same round. At the end of the dictator games, each participant has three allocations, and one of which is randomly chosen for payment.

Figure 1: Dictator's allocation screen

(a) Initial screen



(b) After clicking the slider



Notes: This figure shows an example of a dictator's allocation screen. Panel A shows the screen before clicking the slider bar and panel B after clicking it. In this example, the dictator is playing the first round and paired with a receiver whose first name is Neve with IQ rank 5.

they have solved correctly, observing the other two receivers' facial photo, first name, and IQ rank. Each correct guess gives them 0.5€.

To address the non-anonymity of showing facial photos and first names, I ask participants how well they know the paired participants on a scale of 4.[3] I ask this question twice to make sure

3. The answer choices are: "I didn't know him/her at all," "I saw him/her before," "I knew him/her but not very

they do not answer randomly: right after the three dictator games for dictators or two guesses for receivers and in the post-experimental questionnaire.

Post-experiment: Questionnaire

After the dictator game and guessing are over, participants are told their earnings from the IQ test, dictator game, and the guesses. Before receiving their earnings, participants answer a short questionnaire about their demographics that are used for balance tests and robustness checks. receivers are also asked if I could use their photo in another experiment with a gratuity of 1.5€.

2.2 Implementation

The experiment was programmed with oTree (Chen, Schonger, and Wickens 2016) and conducted in English during November-December 2019 at the Bologna Laboratory for Experiments in Social Science (BLESS). I recruited 390 students (195 female and 195 male) of the University of Bologna via ORSEE (Greiner 2015) who (i) were born in Italy, (ii) had not participated in gender-related experiments in the past (as far as I know), and (iii) available to participate in English experiments. The first condition is to reduce the chance that receivers' first names and photos signal ethnicity, race, or cultural background. The second condition is to reduce experimenter demand effects. The third condition is to run the experiment in English. The number of participants was based on the power simulation in the pre-analysis plan to achieve 80% power.[4] The experiment is pre-registered with the OSF.[5]

As a further attempt to make the data cleaner, I exclude receivers with non-Italian sounding names and allocations in which the dictator declared they knew the paired receivers "very well" at least once.[6] These data screenings leave me 388 participants, 195 dictators, and 558 dictators' allocations.

I ran 24 sessions in total, and the number of participants in each session was a multiple of 6 (12 to 30). The average length of a session was 70 minutes, including registration and payment. The average payment per participant was about 10€ including the participation fee and 1.5€ of gratuity for photo use in another experiment (only for those receivers who agreed).

3 Data description

Table 1 describes dictators' own (panel A) and paired receivers' characteristics (panel B) as well as dictators' social distance with paired receivers (panel C) and dictator game allocation (panel D), separately for male and female dictators.

well," and "I knew him/her very well."

4. I exclude the 1st session data because of the problem discussed in Appendix A.

5. The pre-registration documents are available at the OSF registry: https://osf.io/r6d8f/files.

6. Although it is easy to distinguish Italian and non-Italian sounding names, to make sure not to misclassify, I asked the laboratory manager who was native Italian to check participants' first names after each session.

Table 1: Dictators' and paired receivers' characteristics, proximity between dictators and paired receivers, and dictator game allocation

	Male dictators		Female dictators		Difference (Male – Female)		
	Mean	SD	Mean	SD	Mean	SE	P-value
Panel A: Own characteristics							
IQ level	6.52	1.20	6.89	1.24	0.37	0.18	0.04
IQ rank	3.83	1.59	3.31	1.73	-0.52	0.24	0.03
Age	23.68	2.62	23.23	2.81	-0.45	0.39	0.25
From Emilia-Romagna	0.18	0.39	0.19	0.39	0.00	0.06	0.94
Humanities	0.58	0.50	0.32	0.47	-0.26	0.07	0.00
Social sciences	0.15	0.36	0.24	0.43	0.09	0.06	0.13
STEM	0.27	0.45	0.44	0.50	0.17	0.07	0.01
Post bachelor	0.53	0.50	0.37	0.49	-0.16	0.07	0.03
Overconfidence	0.31	0.78	0.56	0.72	0.25	0.11	0.02
Time on feedback (sec.)	107.67	89.88	107.52	102.26	-0.16	13.88	0.99
Observations	91		104				
Panel B: Paired receivers' characteristics							
IQ level	6.77	1.19	6.91	1.12	0.14	0.09	0.11
IQ rank	3.39	1.75	3.45	1.74	0.05	0.10	0.61
Higher IQ	0.57	0.50	0.48	0.50	-0.09	0.05	0.08
Age	23.17	2.57	23.55	2.98	0.37	0.24	0.12
Female	0.50	0.50	0.43	0.50	-0.07	0.04	0.06
From Emilia-Romagna	0.15	0.36	0.25	0.43	0.09	0.04	0.01
Observations	260		298				
Panel C: Social distance with paired receivers							
Did not know at all	0.98	0.15	0.95	0.23	-0.03	0.02	0.14
Knew but not well	0.02	0.15	0.03	0.18	0.01	0.02	0.48
Saw before	0.00	0.00	0.02	0.14	0.02	0.01	0.06
Observations	260		298				
Panel D: Dictator game allocation (fraction of endowment)							
Allocation	0.43	0.22	0.37	0.25	-0.06	0.03	0.04
Allocation (residualized)	0.03	0.22	-0.03	0.25	-0.06	0.03	0.06
Observations	260		298				

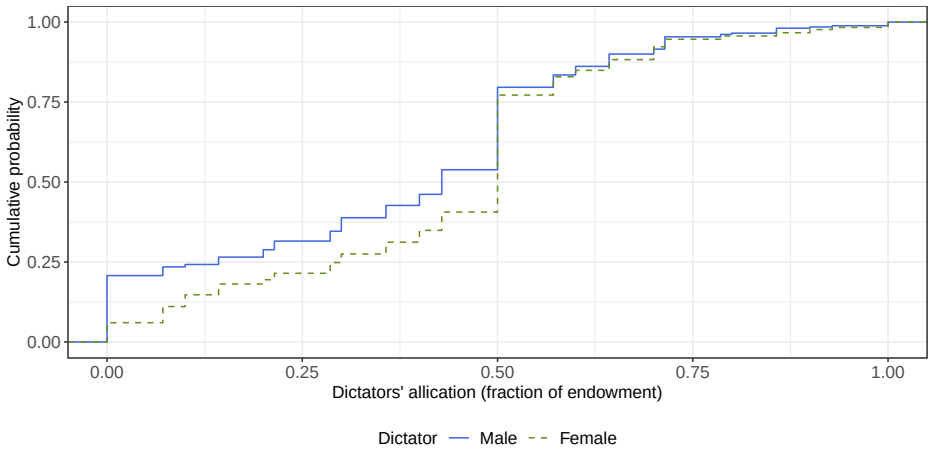
Notes: This table shows dictators' own (panel A) and paired receivers' characteristics (panel B) as well as dictators' social distance with paired receivers (panel C) and dictator game allocation (panel D), separately for male and female dictators. Residualized allocation is residual from the regression of the dictator game allocation as a fraction of endowment on IQ fixed effects and shows within dictator IQ variation. P-values for the difference between male and female dictators are calculated with heteroskedasticity-robust standard errors with Bell and McCaffrey (2002)'s small sample bias adjustment for Panel A and with Pustejovsky and Tipton (2018)'s small cluster bias adjustment for Panels B-D.

Panel A shows that male dictators solve 0.37 more IQ questions (out of 9) than female dictators, but the difference is quantitatively insignificant. Also, male dictators are less likely to major in humanities and more likely to major in science, technology, engineering, and mathematics

(STEM), consistent with the pattern observed in most OECD countries (see, for example, Carrell, Page, and West 2010). In addition, male dictators are more overconfident than female dictators, consistent with other studies (Bertrand 2011; Croson and Gneezy 2009; Niederle and Vesterlund 2011). Further, male dictators are less likely to have completed undergraduate studies than female dictators, consistent with that women are more educated than men in OECD countries (see, for example, Almås et al. 2016; Autor and Wasserman 2013).

Panel B shows that paired receivers' characteristics are roughly balanced, except that male dictators are 10% less likely to be paired with receivers from the Emilia-Romagna region where the experiment was conducted. I control this imbalance in the analysis.

Figure 2: Distribution of the dictators' allocation



Notes: These figures plots empirical cumulative distribution function (CDF) of dictators' allocation separately for male (blue, solid line) and female (green, dashed line) dictators.

Panel C shows that dictators do not know at all 95-98% of the paired receivers, addressing the concern that dictator game allocation is driven by the relationships outside the laboratory. Panel D shows that male dictators allocate 6% less than female dictators. To elaborate these points, Figure 2 plots empirical cumulative distribution function (CDF) of dictators' allocation separately for male (the solid blue line) and female (the dashed green line) dictators. First, the empirical CDF resembles that of Bohnet and Frey (1999)'s one-way identification with information treatment where the social distance between dictators and receivers is the closest to my setting. Second, the empirical CDFs show that female dictators allocate slightly more than male dictators below the 50% split but not above that, consistent with the Bilén, Dreber, and Johannesson (2021)'s meta analysis that female dictators allocate more but the difference is not quantitatively large, and with Klinowski (2018) that female dictators allocate so that the amount between themselves and receivers are equalized, but aside from that, female and male dictators allocate the same amount.

Finally, residualized allocation in Panel D shows the dictator game allocation after adding the dictator IQ fixed effects and shows that the standard deviation is large enough compared to the raw allocation, which suggests that the dictator IQ fixed effects – which I use in the anlysis to address

the endogeneity of dictators' IQ – do not over-control dictator game allocation.

4 Empirical strategy

I estimate the following model with OLS with male dictator allocation data:

$$\begin{aligned} Allocate_{ij} =& \beta_1 HigherIQReceiver_{ij} \times FemaleReceiver_j \\ &+ \beta_2 HigherIQReceiver_{ij} + \beta_3 FemaleReceiver_j + X'_{ij}\gamma + \mu_i^{IQ} + \epsilon_{ij} \end{aligned} \tag{1}$$

where each variable is defined as follows:

- $Allocate_{ij} \in [0,1]$: dictator i's allocation to receiver j as a fraction of endowment.
- $RHigherIQReceiver_{ij} \in \{0,1\}$: an indicator variable equals 1 if receiver j's IQ is higher than that of dictator i.
- $FemaleReceiver_j \in \{0,1\}$: an indicator variable equals 1 if receiver j is female.
- X_{ij}: a set of additional covariates to increase statistical power and to address the potential ex-post imbalance. Appendix B provides a full description of the covariates.
- ϵ_{ij}: omitted factors that affect dictator i's allocation to receiver j conditional on covariates.

and $\mu_i^{IQ} \equiv \sum_{k=1}^{9} \mu^k \mathbb{1}[\text{i's IQ} = k]$ is fixed effects for the dictators' IQ (number of IQ questions they have solved correctly), where $\mathbb{1}$ is the indicator variable. Standard errors are clustered at the dictator level with Pustejovsky and Tipton (2018)'s small cluster bias adjustment. Dictator's IQ fixed effects are included following Zimmermann (2020) so that the coefficients in equation 1 capture allocation differences due to the receivers' IQ, not that of the dictators. Appendix Table C1 provides evidence that dictator IQ rank is uncorrelated with dictator characteristics conditional on dictator IQ fixed effects.[7] There is no order effect because the order that dictators play a dictator game with receivers in the same group is randomized.

The coefficient of interest is β_1, which captures the difference of dictators' allocation to higher-IQ and lower-IQ female receivers relative to the difference of dictators' allocation to higher-IQ and lower-IQ male receivers as a comparison group. I use the comparison group because there can be wealth effect due to that the part 1 IQ test is incentivized and higher-IQ receiver would have earned more than lower-IQ receiver, which can induce dictators' inequality aversion (Fehr and Schmidt 1999).

The key identification assumption is that conditional on dictator IQ fixed effects, receiver's gender, receiver's IQ rank relative to dictator's, and their interaction are uncorrelated with factors that affect dictator game allocation. The receiver's gender is exogenous to dictator game allocation by random desk assignment. Receiver's IQ rank is also exogenous to dictator game allocation conditional on dictator's IQ fixed effects by random desk assignment and random matching of dictators and receivers in part 2. Appendix Table C2 shows that they are indeed uncorrelated with the dictator or the paired receiver characteristics, dictator game rounds, or social distance between

7. There is some ex-post unbalance that dictators majoring social sciences are more likely to receive IQ rank 6. I control for dictators' majors in the analysis.

dictators and paired receivers.[8]

5 Results

5.1 Regression results

Columns 1-5 of Table 2 present the regression results of equation 1 for male dictators. Column 1 shows that when we do not control for dictators' IQ, dictators allocate more to higher IQ receivers, which suggests that lower IQ dictators allocate more to higher IQ receivers, although the difference is only statistically marginally significant. Columns 2-5 gradually add more controls and show that coefficient estimates are roughly stable across different specifications, especially after controlling for dictator characteristics some of which are ex-post unbalanced, suggesting irregularities in the data is unlikely to drive the results.

Looking at column 5, my preferred specification, the coefficient estimate on higher-IQ receiver is positive but statistically insignificant, suggesting that male dictators do not allocate differently to higher-IQ and lower-IQ male receivers. In addition, the coefficient estimate on female receiver is slightly positive but statistically insignificant, suggesting that male dictators do not discriminate or favor female receivers over male receivers.

The coefficient estimates on the interaction term between higher-IQ receiver and female receiver in column 5 is positive but statistically insignificant even at 10%. The 95% confidence interval, presented below the standard error, is relatively tight as well: it is roughly the lower bound of a typical effect size of dictator game experiments that examine the role of social distance with university students is 8.9% to 11.4% of the endowment.[9]

Column 6 presents the same specification as column 5 but for female dictators. Although they allocate less to higher-IQ receivers albeit statistically insignificant, presumably because female dictators prefer equal allocation more than male dictators. Still, the coefficient estimate on the interaction term between higher-IQ receiver and female receiver is positive albeit statistically insignificant. The results do not change when we pool male and female dictators, presented in column 7.

Thus, I do not find evidence that men (or women) are less generous to a woman with higher IQ than them; if anything, they are slightly more generous to a higher-IQ woman.

8. There are some ex-post unbalances that dictators from Emilia-Romagna region are less likely to be paired with higher-IQ female receivers and more likely to be paired with higher-IQ male receivers and female receivers, and that receivers from Emilia-Romagna region is more likely to be higher IQ. I control dictators' and receivers' region of origin in the analysis.

9. For example. Charness and Gneezy (2008) examine how informing the receiver's family name increases the dictators' allocation using a university student sample and find an 8.9% increase in allocation as a fraction of endowment. Leider et al. (2010) find using a university student sample that dictators increase allocation by 11.4% as a fraction of endowment for their friends relative to someone living in the same student dormitory. Brañas-Garza et al. (2010) also find using a university student sample that dictators give about 10% more of their endowment to friends relative to other students in the same class.

Table 2: Male dictators' allocation to higher-IQ female receivers – OLS

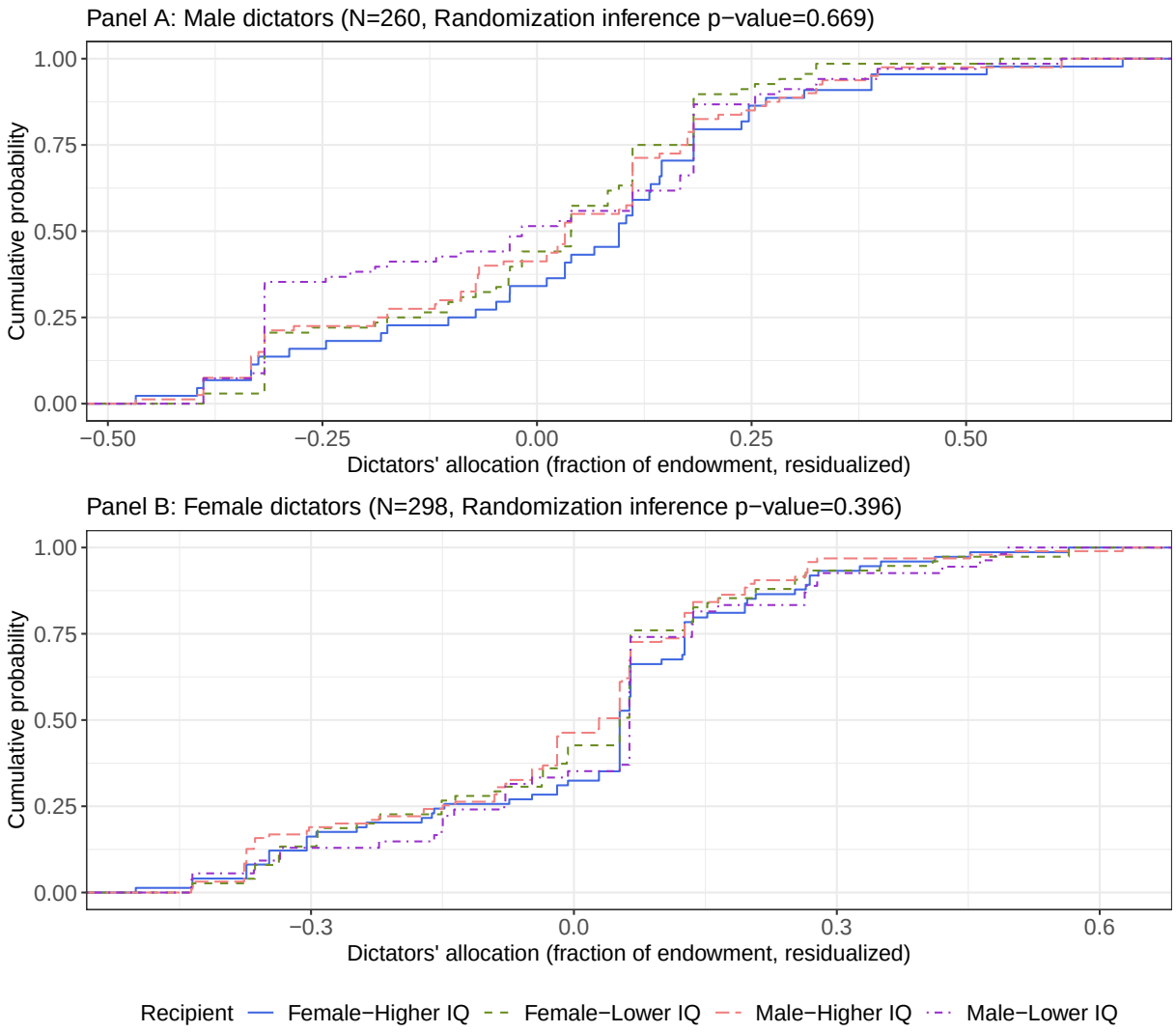
Outcome:	Dictator's allocation (fraction of endowment)			
Sample:	Male dictators			
	(1)	(2)	(3)	(4)
Higher IQ receiver x Female receiver	0.018	0.017	0.008	0.035
	(0.060)	(0.060)	(0.062)	(0.060)
	[-0.101, 0.136]	[-0.101, 0.134]	[-0.113, 0.130]	[-0.083, 0.154]
Higher IQ receiver	0.093*	0.054	0.056	0.042
	(0.048)	(0.053)	(0.053)	(0.054)
	[-0.001, 0.188]	[-0.050, 0.159]	[-0.049, 0.161]	[-0.064, 0.147]
Female receiver	0.038	0.031	0.031	0.014
	(0.035)	(0.035)	(0.035)	(0.034)
	[-0.031, 0.107]	[-0.038, 0.100]	[-0.037, 0.100]	[-0.052, 0.081]
Dictator IQ FE	-	✓	✓	✓
Round FE	-	-	✓	✓
Social distance FE	-	-	✓	✓
Dictator controls	-	-	-	✓
Receiver controls	-	-	-	-
Baseline Mean	0.355	0.355	0.355	0.355
Baseline SD	0.262	0.262	0.262	0.262
Adj. R-squared	0.032	0.052	0.051	0.083
Observations	260	260	260	260
Clusters	91	91	91	91

Outcome:	Dictator's allocation (fraction of endowment)			Belief on IQ (fraction of baseline SD)
Sample:	Male dictators	Female dictators	All dictators	Male receivers
	(5)	(6)	(7)	(8)
Higher IQ receiver x Female receiver	0.031	0.057	0.035	0.449
	(0.061)	(0.046)	(0.037)	(0.286)
	[-0.089, 0.151]	[-0.034, 0.147]	[-0.038, 0.107]	[-0.116, 1.014]
Higher IQ receiver	0.048	-0.049	0.008	0.160
	(0.055)	(0.042)	(0.033)	(0.234)
	[-0.060, 0.156]	[-0.131, 0.033]	[-0.058, 0.073]	[-0.301, 0.621]
Female receiver	0.014	-0.014	0.009	-0.139
	(0.034)	(0.037)	(0.026)	(0.199)
	[-0.053, 0.081]	[-0.088, 0.059]	[-0.042, 0.061]	[-0.531, 0.254]
Dictator IQ FE	✓	✓	✓	✓
Round FE	✓	✓	✓	✓
Social distance FE	✓	✓	✓	✓
Dictator controls	✓	✓	✓	✓
Receiver controls	✓	✓	✓	✓
Baseline Mean	0.355	0.359	0.373	3.621
Baseline SD	0.262	0.256	0.261	1.008
Adj. R-squared	0.080	0.021	0.042	0.047
Observations	260	298	558	197
Clusters	91	104	195	104

Notes: This table presents the regression results of equation 1. Column 1 shows that when we do not control for dictators' IQ, dictators allocate more to higher IQ receivers, which suggests that lower IQ dictators allocate more to higher IQ receivers, although the difference is only statistically marginally significant. Columns 2-5 gradually add more controls and show that coefficient estimates are roughly stable across different specifications, especially after controlling for dictator characteristics some of which are ex-post unbalanced, suggesting irregularities in the data is unlikely to drive the results. Columns 6 presents the same specification as column 5 but for female dictators and 7 for all dictators. Column 8 shows beliefs about paired receivers' IQ. The standard error (in parenthesis) and the 95% confidence interval (in bracket) are reported below each coefficient estimate. The standard errors are clustered at the dictator level with Pustejovsky and Tipton (2018)'s small cluster bias adjustment. Baseline mean and standard deviation are that of lower-IQ male receivers. Significance levels: * 10%, ** 5%, and *** 1%.

5.2 Distribution results

Figure 3: Dictators' allocation to higher-IQ female receivers – Distribution



Notes: These figures show the empirical CDF of residualized dictators' allocation by receiver types for male dictators (panel A) and female dictators (Panel B). The randomization inference p-value is calculated with the Kruskal-Wallis test with 2000 random draws.

Although OLS only picks up the average effect, Figure 3 shows that the results in section 5.1 also hold in distribution. Panel A of Figure 3 presents empirical CDFs of male dictators' allocation for each receiver type, residualized with the dictator IQ fixed effects to give a causal interpretation to the differences.[10] The figure shows that the CDFs of male dictators' allocation for each receiver type almost coincide; if anything, male dictators allocate less to lower-IQ male receivers (the purple dot-dashed line) and more to higher-IQ female receiver (the blue solid line). The randomization inference (Young 2019) using the Kruskal-Wallis test shows that the p-value of the differences among

10. Residualized allocation is residual from regression of dictators' allocation on dictator IQ fixed effects.

the CDFs is 0.669, which is far above the conventional 5% cutoff.[11]

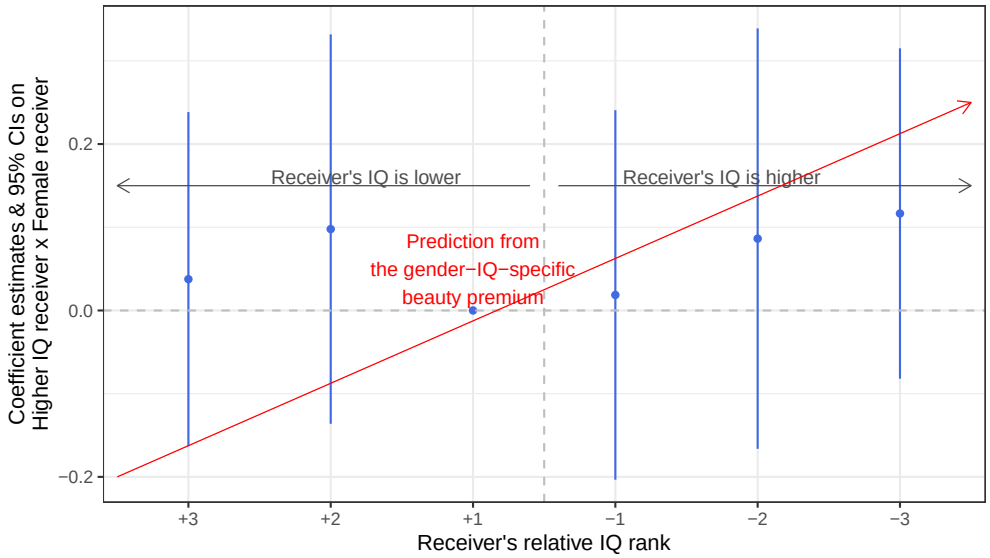
Turning to female dictators' allocation, Panel B of Figure 3, all the empirical CDFs almost coincide, again presumably because female dictators prefer equal allocation more than male dictators. and the empirical CDF of allocation to higher-IQ female receivers (the blue solid line) is not on the left of other empirical CDFs, suggesting female dictators do not allocate less to higher-IQ female receivers.

Thus, the results from the OLS hold across the whole distribution of male (and female) dictator allocation, which suggests that men (or women) are not less generous to a woman with higher IQ than them.

5.3 Robustness of the results

Robustness to the "beauty premium"

Figure 4: Male dictators' allocation to higher-IQ female receivers – Robustness to the "beauty premium"



Notes: This figure plots the coefficient estimate on the interaction between higher-IQ receiver and female receiver using male dictators' allocation, separately for each IQ rank difference between dictator and receiver, along with the 95% confidence intervals. The red arrow is a relationship one should expect in the presence of the gender-IQ-specific beauty premium. The standard errors are clustered at the dictator level with Pustejovsky and Tipton (2018)'s small cluster bias adjustment.

Note that the so-called "beauty premium" – that people are more generous to physically attractive people (Landry et al. 2006) and hence allocate more to those people in dictator game (Rosenblat 2008) – is not driving my results. First, my analysis compares higher-IQ and lower-IQ receivers of the same gender, so even if male dictator perceive female receivers to be more attractive than male receivers, this effect is differenced out. Second, even if higher-IQ people are more physically attractive

11. I use randomization inference to address arbitrary dependency among allocations. The null hypothesis is that all CDFs coincide. The number of random draw is 2000.

because they tend to look more confident (Mobius and Rosenblat 2006), it is not driving the results. Figure 4 plots the the coefficient estimate on the interaction between higher IQ receiver and female receiver using male dictators' allocation, separately for each IQ rank difference between dictator and receiver, along with the 95% confidence intervals, and the the prediction from the gender-IQ-specific "beauty premium" (the red line). The data is inconsistent with the gender-IQ-specific "beauty premium" prediction.

Robustness to male dictators' possible wrong belief about female receivers' IQ

Male dictators allocate not less to female receivers may be because they believe female receivers' IQ is lower than male receivers' IQ conditional on those receivers have higher IQ than them; remember that the more one solves IQ test question, the more they earn in part 1 and people may be inequality averse. To address this concern, column 8 of Table 2 presents the regression results of equation 1 but with male receivers' beliefs about paired receivers' IQ as the dependent variable. As discussed in section 2.1, random desk assignment ensures that the receivers' belief proxies the dictators' belief. Appendix Table C3 shows the ex-post balance of this comparability. Column 8 shows that none of the coefficient estimates are statistically significant, may be because people avoid information that damages their ego-relevant belief even at the cost of reducing their payoff (Castagnetti and Schmacker 2022). However, the coefficient estimate on the higher IQ receiver is positive, consistent with that people correctly believe that male and female receivers with higher IQ solved a larger number of IQ questions. The coefficient estimate on female receiver is negative albeit statistically insignificant, which might be because that men believe women to have lower IQ. Yet, the coefficient estimate on the interaction between higher-IQ receiver and female receiver is positive although statistically significant, suggesting that the main results are not driven by male dictators' wrong belief about higher-IQ female receivers' IQ.

Robustness to other concerns

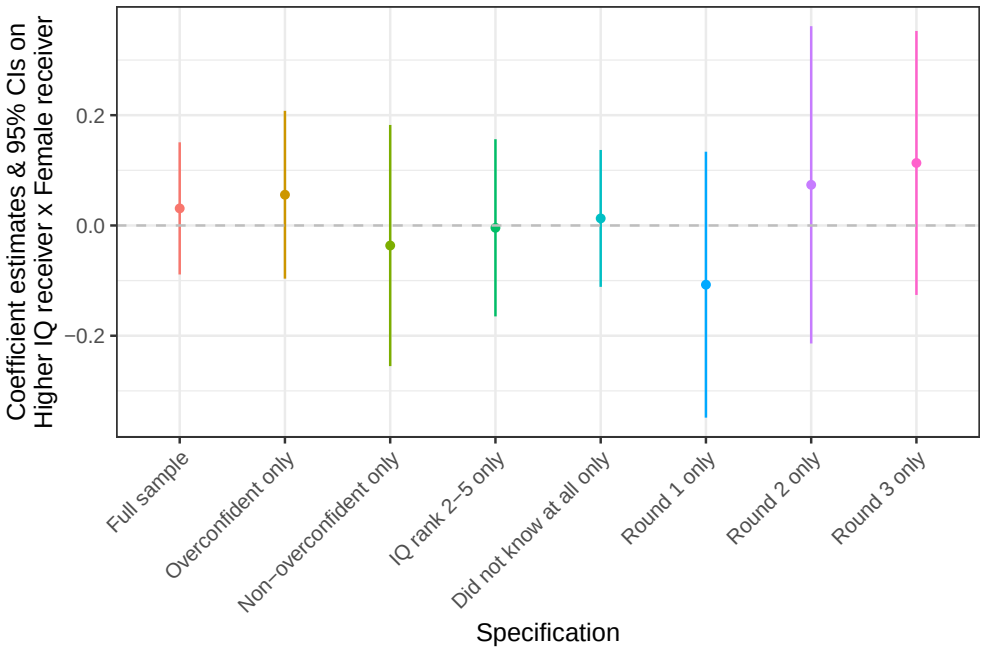
In Figure 5, I re-estimate equation 1 with various sub-samples of male dictators and plot the coefficient estimates along with their 95% confidence intervals to show the robustness of the main results to the remaining concerns. I plot the estimate of column 5 of Table 2 with the red dot and line labeled as "Full sample" as a reference.

First, overconfident male dictators may dislike higher IQ receivers more and hence allocate less. However, the estimates with overconfident (the brown dot and line) and non-overconfident male dictators (the dark green dot and line) are very similar to the full sample estimates.

Second, since dictators with IQ rank 1 only face lower IQ receivers and IQ rank 6 only face higher IQ receivers, they may behave differently from other dictators. However, the estimates with male dictators of IQ rank 2-5 only (the green dot and line) provide very similar estimates as the full sample estimates.

Third, although I excluded allocations where dictators knew the paired receivers "very well," knowing the paired receivers even a little may still affect the allocation. However, the estimates

Figure 5: Male dictators' allocation to higher-IQ female receivers – Robustness to other concerns



Notes: This figure re-estimates equation 1 with various male dictator sub-samples and plots the coefficient estimates along with their 95% confidence intervals to show the robustness of the findings in Table 2. The standard errors are clustered at the dictator level with Pustejovsky and Tipton (2018)'s small cluster bias adjustment for specifications from "Full sample" to "Did not know at all only" and heteroskedasticity-robust with Bell and McCaffrey (2002)'s small sample bias adjustment for specifications "round 1 only," "round 2 only," and "round 3 only."

with allocations where dictators did not know at all the paired receivers (the light green dot and line) are very similar to the full sample estimates.

Last, dictators play three-rounds of dictator games, and there can be across-round heterogeneity. The blue dot and line are estimates with round 1 only, the purple dot and line with round 2 only, and the pink dot and lines with round 3 only. There is some heterogeneity; especially, in round 1, male dictators allocate less to higher-IQ female receivers, but they are statistically insignificant and male dictators allocate more to higher-IQ female receivers in rounds 2 and 3.

Thus, the main results are robust to these other concerns.

6 Conclusion

This paper demonstrate that men (or women) are not less generous to a woman with IQ higher than them even in a non-romantic setting using dictator game experiment where the gender and the relative IQ of the receivers are exogenously varied. I show that the results hold across the whole distribution of the dictators' allocation and are robust to various concerns including the so-called "beauty premium" and male dictators' possible wrong belief about women's IQ. Thus, although men (and women) care about their IQ very much and that men dislike women smarter than them

in the marriage market, the men's dislike of smarter women does not manifest outside the marriage market. Although men dislike to be led by women even in non-romantic settings, my results rule out the IQ-related explanation to the men's dislike.

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Appendix

Appendix A The main change to the pre-analysis plan

In the initial design, receivers finished all the tasks except the post-questionnaire and left the laboratory before dictators received their IQ rank so that dictators could play the dictator game without receivers in the same room. The allocation to the receivers was paid electronically as a "participation fee" for the online post-questionnaire, which was sent to receivers via email after the session was over. However, as I ran the 1st session with this initial design with 24 participants, dictators had to wait idly for about 20-30 minutes until receivers left the laboratory, and dictators seemed to have lost concentration during this waiting time: about half of the dictators could not answer the comprehension questions about their IQ rank. Thus, I changed the design and let receivers stay in the laboratory while dictators played the dictator game. I looked at the 1st session data before making this change. I exclude the 1st session data in the analysis, but results are robust to including the 1st session data. The oTree code and instructions used for the 1st session are available upon request.

Appendix B Description of covariates

X_{ij} in equation 1 includes the following variables:

Dictator characteristics

- $Age_i \in \mathbb{N}$: dictator i's age.
- $FromEmiliaRomagna_i \in \{0, 1\}$: an indicator variable equals 1 if dictator i is from the Emilia-Romagna region where the experiment was conducted, 0 otherwise.
- $SocialSciences_i \in \{0, 1\}$: an indicator variable equals 1 if dictator i majors in social sciences, 0 otherwise.
- $STEM_i \in \{0, 1\}$: an indicator variable equals 1 if dictator i majors in natural sciences/mathematics, engineering, or medicine; 0 otherwise.
- $PostBachelor_i \in \{0, 1\}$: an indicator variable equals 1 if dictator i is either a master or post-bachelor student, a student in the 4th year or beyond in a bachelor-master combined program (bachelor is a 3 year program in Italy), or PhD student, 0 otherwise.
- $OverConfidence_i \in \{-1, 0, 1\}$: degree of dictator i's overconfidence. It is equal to -1 if dictator i's guess about the number of IQ test questions they have solved correctly is lower than the actual number, 0 if equal to the actual number, and 1 if higher than the actual number.

receiver characteristics

- $Age_j \in \mathbb{N}$: receiver j's age.

- $FromEmiliaRomagna_j \in \{0, 1\}$: an indicator variable equals 1 if receiver j is from the Emilia-Romagna region where the experiment was conducted, 0 otherwise.

Fixed effects

- $\sum_{k=2}^{3} \mathbb{1}[\text{round}_{ij} = k]$: fixed effects for dictator game or belief elicitation round. $\mathbb{1}$ is the indicator variable.
- $\sum_{k=2}^{3} \mathbb{1}[\text{social distance}_{ij} = k]$: fixed effects for social distance between dictator i and receiver j. $\text{social distance}_{ij} = 1$ means dictator i did not know receiver j at all, $= 2$ knew but not well, and $= 3$ saw before. $\mathbb{1}$ is the indicator variable.

Appendix C Additional tables

Table C1: Exogeneity of male dictator IQ rank conditional on dictator IQ fixed effects

Outcome:	Age	From Emilia-Romagna	Human-ities	Social sciences	STEM	Post bachelor	Over-confidence
Sample:				Male dictators			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IQ rank = 2	-0.744	0.024	-0.316**	0.099	0.217	0.038	0.304
	(0.950)	(0.128)	(0.153)	(0.145)	(0.177)	(0.174)	(0.242)
IQ rank = 3	-0.449	0.055	-0.123	0.155	-0.032	0.141	0.350
	(0.883)	(0.148)	(0.198)	(0.180)	(0.192)	(0.192)	(0.320)
IQ rank = 4	-0.059	0.051	-0.232	0.175	0.058	0.163	0.339
	(1.167)	(0.145)	(0.169)	(0.176)	(0.193)	(0.188)	(0.321)
IQ rank = 5	-0.056	0.300	-0.133	0.165	-0.031	-0.100	-0.057
	(1.231)	(0.184)	(0.230)	(0.192)	(0.217)	(0.190)	(0.367)
IQ rank = 6	-1.563	0.495*	-0.476*	0.638***	-0.162	-0.232	0.227
	(1.886)	(0.251)	(0.271)	(0.220)	(0.296)	(0.318)	(0.629)
Dictator IQ FE	✓	✓	✓	✓	✓	✓	✓
F statistic	0.354	0.951	1.575	2.219*	0.540	0.667	0.802
Adj. R-squared	-0.023	-0.023	-0.027	0.027	-0.047	-0.023	-0.046
Observations	91	91	91	91	91	91	91

Notes: This table shows male dictator IQ rank is uncorrelated with their characteristics conditional on dictator IQ fixed effects. The F statistic shows the joint significance of IQ rank = 2 to IQ rank = 6 dummies. Heteroskedasticity-robust standard errors with Bell and McCaffrey (2002)'s small sample bias adjustment are reported below each coefficient estimate. Significance levels: * 10%, ** 5%, and *** 1%

Table C2: Exogeneity of the main regression's covariates conditional on dictator IQ fixed effects: Male dictators

Outcome:	Age	From Emilia-Romagna	Human-ities	Social sciences	STEM	Post bachelor	Over-confidence	
Sample:				Male dictators				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Higher IQ receiver x Female receiver	0.452	-0.342***	-0.098	-0.073	0.171	0.155	0.021	
	(0.678)	(0.091)	(0.112)	(0.097)	(0.124)	(0.120)	(0.156)	
Higher IQ receiver	-0.337	0.216***	-0.064	0.163*	-0.099	-0.102	-0.082	
	(0.513)	(0.075)	(0.094)	(0.086)	(0.092)	(0.092)	(0.148)	
Female receiver	-0.581	0.156***	0.032	0.048	-0.080	-0.099	-0.001	
	(0.415)	(0.058)	(0.072)	(0.063)	(0.079)	(0.078)	(0.091)	
Dictator IQ FE	✓	✓	✓	✓	✓	✓	✓	
F statistic	0.707	4.780***	1.171	1.299	0.680	0.678	0.132	
Adj. R-squared	0.048	0.044	-0.002	0.056	0.018	0.040	-0.010	
Observations	260	260	260	260	260	260	260	
Clusters	91	91	91	91	91	91	91	

Outcome:	Age (receiver)	From Emilia-Romagna (receiver)	Dictator game round 1	Dictator game round 2	Dictator game round 3	Did not know at all	Saw before	Knew but not very well
Sample:				Male dictators				
	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Higher IQ receiver x Female receiver	0.224	-0.064	0.183	-0.245**	0.062	-0.012	-0.013	0.025
	(0.773)	(0.103)	(0.128)	(0.104)	(0.131)	(0.034)	(0.040)	(0.041)
Higher IQ receiver	-0.079	0.194**	-0.158*	0.057	0.101	0.034	-0.029	-0.006
	(0.560)	(0.077)	(0.086)	(0.085)	(0.082)	(0.036)	(0.030)	(0.034)
Female receiver	-0.263	-0.002	-0.135	0.058	0.077	0.049	-0.032	-0.017
	(0.518)	(0.053)	(0.087)	(0.080)	(0.083)	(0.032)	(0.028)	(0.017)
Dictator IQ FE	✓	✓	✓	✓	✓	✓	✓	✓
F statistic	0.092	2.983**	1.262	2.216*	1.739	1.163	1.627	1.175
Adj. R-squared	-0.006	0.012	-0.015	-0.011	-0.009	0.178	0.060	0.134
Observations	260	260	260	260	260	260	260	260
Clusters	91	91	91	91	91	91	91	91

Notes: This table shows receiver gender, receiver's IQ rank relative to dictator's, and their interaction are uncorrelated with male dictator or paired receiver characteristics, dictator game rounds, or social distance between dictators and paired receivers. The F statistic shows the joint significance of all covariates. Cluster-robust standard errors with Pustejovsky and Tipton (2018)'s small cluster bias adjustment are reported below each coefficient estimate. Significance levels: * 10%, ** 5%, and *** 1%.

Table C3: Balance between male dictators and male receivers

	Male receivers		Male dictators		Difference (Receivers – Dictators)		
	Mean	SD	Mean	SD	Mean	SE	P-value
Panel A: Own characteristics							
IQ level	7.12	1.05	6.89	1.24	0.23	0.17	0.18
IQ rank	2.98	1.65	3.31	1.73	-0.33	0.24	0.18
Age	23.30	2.82	23.23	2.81	0.07	0.40	0.87
From Emilia-Romagna	0.22	0.42	0.19	0.39	0.03	0.06	0.55
Humanities	0.25	0.44	0.32	0.47	-0.07	0.07	0.29
Social sciences	0.26	0.44	0.24	0.43	0.02	0.06	0.78
STEM	0.49	0.50	0.44	0.50	0.05	0.07	0.48
Post bachelor	0.49	0.50	0.37	0.49	0.12	0.07	0.10
Overconfidence	0.63	0.62	0.56	0.72	0.07	0.10	0.45
Time on feedback (sec.)	88.95	82.00	107.52	102.26	-18.56	13.40	0.17
Observations	104		91				
Panel B: Paired receivers' characteristics							
IQ level	6.77	1.18	6.91	1.12	-0.15	0.10	0.15
IQ rank	3.59	1.73	3.45	1.74	0.15	0.12	0.23
Higher IQ	0.38	0.49	0.48	0.50	-0.10	0.05	0.08
Age	23.44	2.76	23.55	2.98	-0.11	0.28	0.69
Female	0.54	0.50	0.43	0.50	0.11	0.04	0.01
From Emilia-Romagna	0.18	0.38	0.25	0.43	-0.07	0.04	0.10
Observations	197		260				
Panel C: Social distance with paired receivers							
Did not know at all	0.98	0.14	0.95	0.23	0.03	0.02	0.13
Knew but not well	0.02	0.14	0.03	0.18	-0.01	0.02	0.41
Saw before	0.00	0.00	0.02	0.14	-0.02	0.01	0.06
Observations	197		260				
Panel D: Belief on paired receiver's IQ level (fraction of baseline SD)							
Belief on IQ level	3.50	1.01					
Belief on IQ level (residualized)	0.00	1.00					
Observations	197		260				

Notes: This table shows that male receivers and male dictators are comparable also ex-post. P-values for the difference between male receivers and male dictators are calculated with heteroskedasticity-robust standard errors with Bell and McCaffrey (2002)'s small sample bias adjustment for Panel A and with Pustejovsky and Tipton (2018)'s small cluster bias adjustment for Panels B-D.

Appendix D Experimental instructions

To the experimenter:

- *Before subjects arrive:*
- *Clear image cache from the browser.*
- *Put on each desk (i) a scratch paper and (ii) a pencil.*
- *Have a printed instructions ready.*
- *Set up photo booth. The brightness of the camera should be 172 and resolution 0.7 mb with 4:3 aspect ratio.*
- *Leave a paper in which participants write down their desk number on the photo booth.*
- *After registration:*
- *Give them photo taking instructions.*
- *Ask them to take photo at the photo booth, then take seat.*
- *After subjects took photo:*
- *Check that all the participants' photos are neutral: they must not signal nothing other than their gender.*
- *Make sure that the photos are saved as Pxx.jpg where xx is participant's desk number.*
- *After reserve participants left the room:*
- *Rename the photo name to the new desk number's for those who moved to new desks.*
- *Store photos in _static/photo folder.*
- *Startup Chrome & oTree*

App: personal_info

Page: DeskNumber

Please enter your desk number and click "Next"

[Your desk number:]

Page: PersonalInfo

Please check that the photo is yours

[Participant's photo]

The photo you took is displayed above. Please check that the photo is yours. Please also enter your first name. We will come to each desk and check the photo and the first name.

[Your first name:]

[Digital signature (please wait for us to sign you in):]

To the experimenter: before type in the password, do the followings:

- *Check that the photo and the first name correspond to the participant.*

Then click "Next" to let participants to proceed.

Page: Introduction

To the experimenter: read the instructions aloud.

Welcome!

You are participating in a study of the BLESS. For your participation, you will receive a fixed amount of [Participation fee]€. There are 2 parts in which you can earn additional earnings. The expected length is 1 hour.

During the study, we use your photo and first name to identify you. Your photo and the first name will only be used in this session and deleted immediately afterwards. However, we may ask some of you to allow us to use their photo in another study, which you can opt out.

The study is computerized, meaning that the computer program will give you precise instructions in each task. In the following you will find general instructions of the study, which you can always find in the bottom of the screen.

General instructions

- Please turn off your mobile phone.
- Please do not communicate with other participants.
- Please only use paper and pencil.
- Once you understand the instructions or enter your decisions, please click "Next" to proceed unless instructed otherwise.
- If you have any questions, please raise your hand at any time.

If there is no question, we will start the study.

To the experimenter:

- *Confirm that everyone turned off their mobile phone.*
- *Then, if there is no question, click "Advance slowest user(s)."*

After that, just sit in the experimenter area unless someone raises her or his hand. Do not read instructions aloud unless this document says to do so.

App: iqtest

Page: Introduction

Part 1: Instructions

In part 1, you will work on an IQ test, which is frequently used to measure intelligence. The IQ test you will work on is the Raven's Standardized Progressive Matrices Test.

You will solve the IQ test as follows: for each question, you will see an image in which a piece is missing. Below the image there will be several options. Choose the correct option among them to complete the image. There will be only one correct option.

An example is provided below. In the image, there are 9 large white squares each containing a small black square. In the first column, the small black square is located on the left; in the second column, in the middle; in the third column, on the right. In the first row, it is located on the top; in the second row, in the middle; in the third row, in the bottom. Thus, in the third

column of the third row, the small black square must be located in the right bottom, thus the correct option is 5.

[Raven matrix no. 31 here]

There are 9 questions in total and you have 9 minutes. Once the time is over, you will automatically be directed to the next page. You will earn [Payoff per IQ test]€ for each correct answer. There is no penalty for wrong answers. You can use paper and pencil on your desk.

Page: IQTest (9 minutes)

Please complete the image by choosing the correct option

[Raven IQ test]

Page: Guess

Guess the number of questions you solved

The IQ test is over.

We have randomly formed a group of 6 participants including you in this room and constructed a ranking among the 6 group members based on their IQ test performance.

A group member with rank 1 performed the best in the IQ test, followed by a group member with rank 2, 3, 4, 5, and 6. In case of a tie between group members, the computer randomly decided who receives the higher rank.

How many questions do you think you have solved correctly? If your guess is correct, you will additionally earn [Earnings from guess]€.

[Guess]

[Dictator] ***Page: Feedback***

Feedback

Among your 6 group members including you, you received **Rank [Participant's rank]**.

[Among your 6 group members, how many people performed better than you in the IQ test?:]

[Among your 6 group members, how many people performed worse than you in the IQ test?:]

App: dictator

[Dictator] ***Page: IntroductionDict***

Part 2: Instructions

In this part, half of you will be active participants who will work on the task described in the next page, and the remaining half will be passive participants who will NOT work on the task described in the next page.

[Dictator] ***Page: IntroductionDictCont***

Part 2: Instructions

You are assigned to a role of **active participant**.

Part 2 consist of 3 rounds. In each round, you will first receive an endowment (money). After that, you will be paired with a passive participant in your group.

Your task in this part is to allocate the endowment to yourself and the paired passive participant. The passive participants, other active participants, or anyone else other than us will never know who allocated how much.

At the end of the study, the computer will randomly select 1 out of 3 rounds and the amount you allocated to you in that round will be your earnings in this part.

The computer will also randomly select 1 out of 3 rounds for the paired passive participants and the amount you allocated to him or her in that round will be his or her earnings in this part.

[Recipient] ***Page: IntroductionRecip***

Part 2: Instructions

In part 2 consists of 2 rounds. In each round, you will be paired with another participant in your group.

Your task in this part is to guess how many questions the paired participant has solved correctly in the IQ test. For each correct guess, you will earn [Earning from guess other]€.

[Dictator] ***Page: PrepEndow***

Round [Round number] of 3

Please wait.

[Dictator] ***Page: OfferDict1-3***

Round [Round number] of 3

[Paired participant's photo]

[Paired participant's first name]

Rank [Paired participant's rank]

You have received **[7/5/7]€** for this round.

You have been paired with **[Paired participant's first name].**

Please allocate the endowment between yourself and [Paired participant's first name]. When you click the line below, a cursor appears. You can move the cursor by dragging it. Please move the cursor to your preferred position to determine the allocation.

[Slider from 0 to endowment that moves with increment of 0.5]

[Recipient] ***Page: GuessOther1-3***

Round [Round number] of 2

[Paired participant's photo]

[Paired participant's first name]

Rank [Paired participant's rank]

You have been paired with **[Paired participant's first name].**

How many questions do you think [Paired participant's first name] has solved correctly?

[Guess]

[Dictator] **Page: AnonymityCheckDict**

Round 3 of 3

Below we display the participants whom you were paired with. How well did you know him/her before participating in this study?

[Paired participant 1's photo]	[Paired participant 2's photo]	[Paired participant 3's photo]
[Paired participant 1's first name]	[Paired participant 2's first name]	[Paired participant 3's first name]
[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]	[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]	[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]

[Recip] **Page: AnonymityCheckRecip**

Round 2 of 2

Below we display the participants whom you were paired with. How well did you know him/her before participating in this study?

[Paired participant 1's photo]	[Paired participant 2's photo]
[Paired participant 1's first name]	[Paired participant 2's first name]
[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]	[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]

Page: ShowResults

Results

The study is over. The results are provided below.

- In part 1, you solved [**Number of IQ test questions solved**] questions and earned [**Earnings from IQ test]€.** [If guess is correct] You have additionally earned **[Earnings from guess]€** because your guess about the number of questions solved was correct.
- [Dictator] In part 2, computer selected **round [1/2/3]** in which you allocated **[Allocation to self]€** to yourself.
- [Recipient] In part 2, you made **[Number of correct guesses on others]** guesses correct. So you earned **[Earnings from guesses other]€**.
- [Recipient] You additionally earned a top-up of **[Allocation from dictator]€**.

So, your total earnings are **[Participant's earnings]€** including [Participation fee]€ of participation fee.

Thank you for participating in this study! We will prepare your payment soon. Meanwhile, please answer a short questionnaire by clicking "Next." Your answer will be kept anonymous and will not affect your payment.

Page: Questionnaire1

Questionnaire 1 of 3

[Your study program: Agricultural and Food Sciences; Economics and Management; Education; Engineering and Architecture; Humanities; Languages and Literatures, Interpreting and Translation; Law; Medicine; Pharmacy and Biotechnology; Political Sciences; Psychology; Sciences; Sociology; Sport Sciences; Statistics; Veterinary Medicine]

[Please also type your full study program name in Italian:]

If you are enrolled in a specialized or professional program, please choose the closest study program. If you are enrolled in a post-bachelor vocational program, please choose the study program of your bachelor's degree. If you are an exchange student, please choose the study field closest to the one in your home university.

[Your degree program: Bachelor, Master/Post-bachelor, Bachelor-master combined (ciclo unico), Doctor]

[Your year in the degree program: 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th]

[Your age:]

[Your gender: Male, Female]

[Are you from Emilia-Romagna region?: Yes, No]

[Recipient] In another study, we'd like to use your photo. We will show your photo to some people in the University of Bologna only in this room, but no other people except us will see

your photo. Your photo will be deleted immediately after we finish another study. For your cooperation, we will pay you gratuity of [Gratuity for photo use]€. May we use your photo in another study?

[Yes, I allow the researcher to use my photo in another study; No, I do NOT allow the researcher to use my photo in another study]

[What do you think the study you participated was about?]

[Was there anything unclear or confusing about the study you participated?]

[Do you have any other comments? (optional)]

Page: Questionnaire2

To the experimenter:

- *Prepare payment.*

Questionnaire 2 of 3

Below we display the participants whom you were paired with. How well did you know him/her before participating in this study?

[Dictator]

[Paired participant 3's photo]	[Paired participant 1's photo]	[Paired participant 2's photo]
[Paired participant 3's first name]	[Paired participant 1's first name]	[Paired participant 2's first name]
[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]	[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]	[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]

[Recipient]

[Paired participant 2's photo]	[Paired participant 1's photo]
[Paired participant 2's first name]	[Paired participant 1's first name]
[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]	[I didn't know him/her at all, I saw him/her before, I knew him/her but not very well, I knew him/her very well]

Page: Questionnaire3

Questionnaire 3 of 3

[What do you think this study was about?]

[Was there anything unclear or confusing about this study?]

[Do you have any other comments? (optional)]

[Participants with payment less than 5€] ***Page: ExtraTask***

Extra task

Please solve the additions below and click next to earn [5€ – Participant's earnings]€.

84	33	64

[Sum of the above numbers:]

19	65	97

[Sum of the above numbers:]