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Some (Mis)facts about 2D:4D, Preferences and Personality*

Judit Alonso, Roberto Di Paolo, Giovanni Ponti and Marcello Sartarelli**

Abstract

We study how the ratio between the length of the second and fourth digit (2D:4D) correlates with choices in risk and social preferences elicitation tasks by building a large dataset from six experimental projects with more than 900 subjects. We find that social preferences are weakly significantly lower when 2D:4D is above the median value and, in addition, we find that they vary significantly with cognitive ability. When we look at risk preferences, we find that a high 2D:4D is not significantly associated with the frequency of subjects' risky choices. Finally, when we look at personality traits, we find no significant association, except for some significant association with individual questions used to obtain personality proxies.

Keywords: 2D:4D, cognitive reflection, gender, personality, risk, social preferences.

JEL classification numbers: C91, C92, D8.

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1 Introduction

Research both in the hard sciences (e.g., Neurology and Physiology) and in the social sciences (e.g., Economics and Psychology) has increasingly focused on biological markers to improve our understanding of the biological basis of social behavior. Recent research has shown that prenatal exposure to sexual hormones has an effect on brain development that may, in turn, influence individuals' decision making routines (see for a survey Manning, 2002). Motivated by this evidence, a growing number of experimental studies has tested the relationship between the ratio between the second and fourth hand digit (2D:4D hereafter) - a marker which has been shown to be negatively related to prenatal exposure to testosterone - and behavior in a wide variety of cognitive domains, including social and risk preferences.

Social preferences are a ubiquitous phenomenon in everyday life and have gained increasing attention in the social sciences. While there is robust evidence that shows that females exhibit more pronounced social concerns, only few studies have looked at their relationship with 2D:4D. Within this small set, Millet and Dewitte (2006) find a negative relationship between 2D:4D and giving in the dictator game. Using a variety of games, such as public good and dictator, Buser (2012) finds, instead, a positive relationship with giving. In related studies using the ultimatum game, Brañas-Garza *et al.* (2013) find that the relationship with giving follows an inverted U-shape while Van den Bergh and Dewitte (2006) find a negative relationship with rejection rates.

The relationship between 2D:4D and risk-taking has been widely studied experimentally to quantify the role played by innate traits in this type of decisions However, the evidence is not conclusive, as some studies find a negative relationship with the frequency of risky choices (e.g., Garbarino *et al.*, 2011; Brañas-Garza *et al.*, 2014) while others do not find a statistically significant relationship (e.g., Apicella *et al.*, 2008; Sapienza *et al.*, 2009).

We contribute to this literature by assembling a meta-dataset consisting of six experimental projects involving 959 subjects in total. With this large dataset collecting evidence on behavioral tasks of a different nature, we first assess the relationship between 2D:4D and *inequity aversion* (Fehr and Schmidt, 1999), a proxy for social preferences whose advantage is that it identifies the role of "envy" (i.e., *negative inequity aversion*) in comparison with "guilt" (i.e., *positive inequity aversion*). Secondly, we re-assess the relationship between 2D:4D and risk attitudes, which were elicited by presenting subjects with risky decisions shown as a Multiple Price List (Holt and Laury, 2002). In addition, we assess the role played by cognitive ability in the relationship between 2D:4D and subjects' decisions as it has been shown to be significantly associated with subjects' decisions in individual or strategic decisions (Cueva *et al.*, 2016; Brañas-Garza *et al.*, 2015). Finally, we estimate the relationship between 2D:4D and individual characteristics distilled by our debriefing questionnaire, with specific reference to the classic "Big Five" personality test (John *et al.*, 1991).

We briefly summarise here our main results, that have been obtained by defining right hand 2D:4D high if it is greater than the gender-specific median value. When we look at social preferences, we find that subjects with high 2D:4D have weakly significantly lower guilt, whereas the relationship with envy is not significant. If we, instead, use 2D:4D we find no significant association with social preferences. In addition, we find that subjects with high 2D:4D and low cognitive ability exhibit significantly lower envy. When we look at risk preferences, we find that the association between high 2D:4D and the frequency of risky choices is negative but not significant, with similar results holding if we use 2D:4D. Finally, when we look at personality traits, we find that a high 2D:4D tends not to be associated with Big Five personality traits. However, when we look at individual questions in the Big Five, it is significantly negatively associated with "emotional stability", a question in the *neuroticism* index.

The remainder of the paper is structured as follows. Section 2 reviews the related literature while section 3 describes the layout of our meta-dataset. In section 4, we report correlations between 2D:4D, gender and cognitive ability distilled from the debriefing questionnaire. In section 5 we report our findings on social preferences, in Section 6 we look at risk attitudes and in section 7 we report results on personality. Finally, section 8 discusses our results and concludes.

2 Literature Review

The ratio between the length of the second ("index" finger) and fourth ("ring" finger) digit, also called second-to-fourth digit ratio (2D:4D), has been used as a proxy for prenatal exposure to testosterone, with a lower ratio indicating higher exposure both for children and for adults (Manning *et al.*, 1998). Related studies find a positive correlation between sex hormones at birth and 2D:4D measured at age 2 (Lutchmaya *et al.*, 2004; T *et al.*, 2013). Hollier *et al.* (2015) find, instead, that the relationship between a measure of exposure to testosterone obtained using umbilical cord blood and 2D:4D measured at age 19-22 is not significant. However, this result may be due by the fact that testosterone peaks between 12 and 18 weeks of gestation and decreases thereafter (Xie *et al.*, 2017). In addition, in a replication study Hönekopp *et al.* (2007) find no systematic evidence of a relationship between 2D:4D and circulating sex hormones in adults. On the one hand, this result suggests that estimating the relationship between 2D:4D and proxies for decision-making without accounting for circulating testosterone does not lead to omitted variable bias. On the other, it suggests that additional research is awaited to obtain conclusive evidence on the relationship between 2D:4D and testosterone subjects are exposed to from gestation to adulthood.

Several studies have also shown that 2D:4D is a sexually dimorphic measure with, on average, males having lower 2D:4D than females (Putz *et al.*, 2004). Moreover, earlier studies have reported that 2D:4D varies not only by gender, but also by ethnicity (Manning, 2002). It has also been found that these differences emerge prenatally and are stable during the developing years (Trivers *et al.*, 2006). Voracek *et al.* (2007) carry out a wide replication study of published results on the relationship between 2D:4D and a variety of outcomes and, overall, confirm the results.

The literature on the relationship between 2D:4D and social preferences is scant and, again, results are mixed. Buser (2012) finds that in public good, dictator, trust and ultimatum games subjects with higher 2D:4D are more generous. By contrast, Brañas-Garza and Kovárík (2013) argue that, since 2D:4D measures in Buser (2012) are self-reported, his results may be affected by measurement error and biased if the error is correlated with one or more subjects' characteristics.

As for the experimental evidence on the dictator game, Millet and Dewitte (2006) find, instead, a negative relationship between 2D:4D and giving. In related experimental studies using ultimatum games, Van den Bergh and Dewitte (2006) find a negative relationship between 2D:4D and rejection rates while Brañas-Garza *et al.* (2013) find evidence of non-linearities in the relationship, with subjects with either high or low 2D:4D giving less. A non-linear relationship is also found by Sanchez-Pages and Turiegano (2010) for the one-shot prisoner's dilemma, with men with intermediate 2D:4D being more likely to cooperate.[1]

As for the relationship between 2D:4D and risk-taking behaviour, results are mixed (see for a survey Apicella *et al.*, 2015). Dreber and Hoffman (2007); Garbarino *et al.* (2011); Brañas-Garza *et al.* (2014) find a negative relationship for both genders, with Brañas-Garza *et al.* (2014) also finding that the relationship with a self-assessed and subjective measure of risk attitudes is not significant. Similarly, Ronay and von Hippel (2010); Stenstrom *et al.* (2011); Brañas-Garza and Rustichini (2011) find a negative relationship although only for males, with Brañas-Garza and Rustichini (2011) also finding that this result is mediated by a negative relationship between 2D:4D and abstract reasoning ability, an aspect of cognitive ability that was measured using the Raven Progressive Matrices task. In contrast, a number of studies find that the relationship is not significant at any conventional level (Apicella *et al.*, 2008; Sapienza *et al.*, 2009; Schipper, 2012; Aycinena *et al.*, 2014; Drichoutis and Nayga, 2015).[2]

The relationship between 2D:4D and personality traits has been studied using the so-called "Big Five factors", which are described in detail in Section 3. In this

[1]Related studies manipulate experimentally hormones levels and estimate their relationship with proxies for social preferences. Zak *et al.* (2009) increase the level of circulating testosterone and find that it decreases giving in ultimatum games. Kosfeld *et al.* (2005); Zak *et al.* (2007) increase, instead, levels of oxytocin, a hormone that is hypothesized to increase empathy in humans, and find that it has a positive impact on giving in ultimatum games but not in dictator games, which they interpret as evidence of generosity. In addition, neuroeconomic evidence shows that exposure to prenatal hormones (testosterone or estrogen) may affect the activity in specific brain areas that are associated with individuals' behaviour in several settings and with their personality (Fehr and Camerer, 2007; Fehr and Krajbich, 2009; Lee, 2008).

[2]In a non-experimental setting Coates *et al.* (2009) find a negative relationship between 2D:4D, profitability and tenure on the job for a sample of 49 financial traders in the City of London. In a related although different experimental setting that involves strategic interactions among subjects, Pearson and Schipper (2012) find no significant association between 2D:4D, bids in sealed bid first-price auctions and subjects' total payoffs. A positive relationship is also found between 2D:4D, risky choices and criminality using field data, although with a low number of observations in Hanoch *et al.* (2012).

respect, Fink *et al.* (2004) find a positive and significant correlation between 2D:4D and neuroticism and, in addition, a negative and significant correlation with agreeableness. In addition, Lippa (2006) finds a weak relationship between 2D:4D and personality: a positive one with extraversion and a negative one with openness. Austin *et al.* (2002) test the relationship between 2D:4D and various personality traits using the Eysenck questionnaire. They find a positive and significant correlation between left hand 2D:4D and neuroticism, especially in the females subsample. In addition, they find only for females a negative and significant correlation between 2D:4D and disinhibition, a subscale in sensation seeking measured using Zuckerman *et al.* (1978)'s scale.[3]

3 Data and Methods

We collect data from six experimental projects that were carried out at the Laboratory of Theoretical and Experimental Economics (LaTEx) of the Universidad de Alicante, from 2014 to 2017. The objects of these studies include, among others, risk and social preferences, which will be discussed in section 5 and 6 respectively. All experimental protocols are also endowed with a debriefing questionnaire from which we obtained information on subjects' gender and cognitive ability. Table 1 lists the projects in our meta-dataset and summarizes their structure.[4]

3.1 Behavioral evidence

The behavioural content of the six projects is as follows. Social preferences are elicited in projects 4 and 5 (432 subjects) and risk preferences are elicited in projects

[3] Bailey and Hurd (2005) study the relationship between 2D:4D and aggression, defined through a questionnaire consisting of four susbscales: hostility, anger, verbal aggression and physical aggression and find that men with lower 2D:4D exhibit higher physical aggression while the correlation for females is not significant. In related work, Hanoch *et al.* (2012) study the relationship between 2D:4D and criminality by using a small sample of 90 males, approximately balanced in the number of offenders and non-offenders, and find that offenders have a smaller 2D:4D and score higher in impulsivity, measured using the Eysenck questionnaire. Finally, related experimental evidence shows that the relationship between 2D:4D and tax compliance is not significant (Kastlunger *et al.*, 2010).

[4] Approval for the experiment was given by the LaTEx Ethics Committee. Participants gave their consent to participate in social experiments when they signed up in ORSEE (Greiner, 2004), the online recruitment tool used at LaTEx. When, before the experiment started, instructions about its content were read aloud to all participants, they were informed that they could leave the experiment at any stage. Separate approvals were obtained for each of the six experimental studies used in the paper.

2 to 6 (497 subjects).

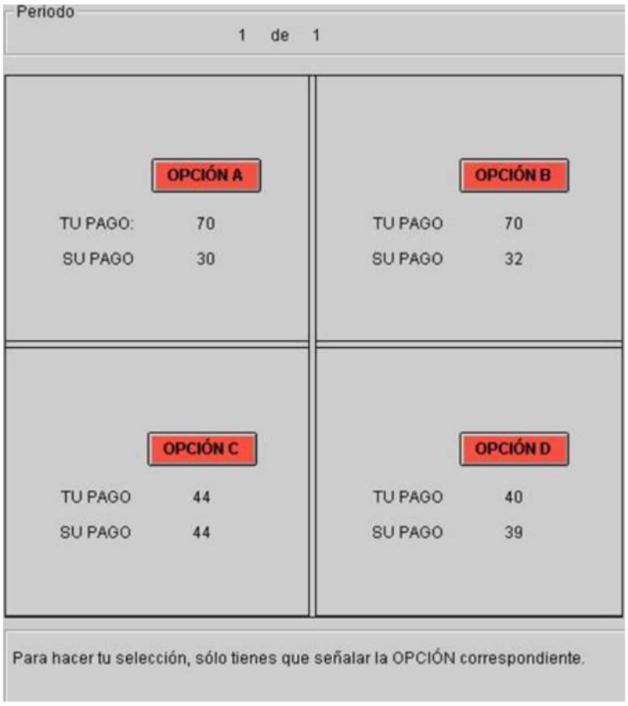
Table 1: Summary of experimental projects in the meta-dataset

Project	Reference	N	Topic	Social preferences	Risk	2D:4D	Big Five
1	Albano *et al.* (2014)	80	Procurement	No	No	Yes	Yes
2	Albarran *et al.* (2017)	279	Risk and uncertainty	No	Yes (89)	Yes	Yes
3	Cueva *et al.* (2016)	96	Behavioral finance	No	Yes	Yes	Yes
4	Ponti *et al.* (2014)	288	Entrepreneurship	Yes	Yes (96)	Yes	Yes
5	Ponti *et al.* (2017)	144	Agency	Yes	Yes	Yes	Yes
6	Zhukova (2017)	72	Investment	No	Yes	Yes	Yes
		959		432	497	959	959

3.1.1 Social preferences

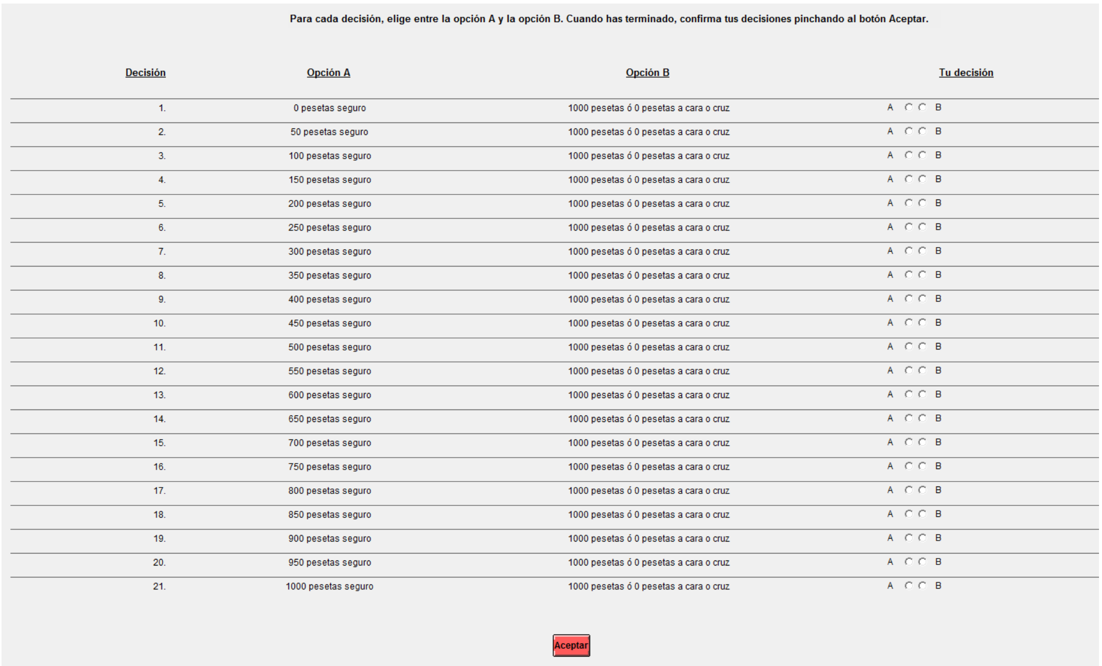
As for social preferences, the elicitation protocol consists in a sequence of 24 distributional decisions, whose basic layout is borrowed from Cabrales *et al.* (2010). Subjects are matched in pairs and must choose one out of four options, as shown in Figure 1. An option corresponds to a pair of monetary prizes, one for each subject within the pair. At the beginning of each round $t = 1, ..., 24$, subjects are informed about the option set $C_t = \{b^k\}, k = 1, ..., 4$. Each option $b^k = (b_1^k, b_2^k)$ assigns a monetary prize, b_i^k, to player $i = 1, 2$, with $b_1^k \geq b_2^k$ for all k. In other words, player 1 (player 2) looks at the distributive problem associated with the choice of a specific option k from the viewpoint of the advantaged (disadvantaged) player, respectively.

Figure 1: User interface for distributional decisions in projects 4 and 5



Once choices are made, a "Random Dictator" protocol (Harrison and McDaniel, 2008) determines the payoff relevant decision, that is, an i.i.d. draw fixes the identity of the subject whose choice determines the monetary rewards for that pair and round. This design feature is particularly efficient when estimating inequity aversion in that, for roughly half of the observations we can identify separately, within-subject, individuals' attitudes toward *envy* (i.e., social preferences from a disadvantageous position) and *guilt* (i.e., social preferences from an advantageous position), respectively. After subjects have selected their favorite options, all payoff relevant information is revealed, and round payoffs are distributed.

Figure 2: User interface for the Multiple Price List in projects 3 to 6



Para cada decisión, elige entre la opción A y la opción B. Cuando has terminado, confirma tus decisiones pinchando al botón Aceptar.

Decisión	Opción A	Opción B	Tu decisión
1.	0 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
2.	50 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
3.	100 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
4.	150 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
5.	200 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
6.	250 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
7.	300 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
8.	350 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
9.	400 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
10.	450 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
11.	500 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
12.	550 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
13.	600 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
14.	650 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
15.	700 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
16.	750 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
17.	800 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
18.	850 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
19.	900 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
20.	950 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B
21.	1000 pesetas seguro	1000 pesetas ó 0 pesetas a cara o cruz	A ○ ○ B

Aceptar

3.1.2 Risk preferences

Risk preferences have been elicited with a Multiple Price List (MPL, Holt and Laury, 2002) protocol in all projects, for a total of 497 subjects. In projects 3 to 6 our MPL protocol consists of a sequence of 21 binary choices. As Figure 2 shows, "Option" A corresponds to a sure payment whose value increases along the sequence from 0 to 1000 pesetas in steps of 50 while "Option B" is constant along the sequence and corresponds to a 50/50 chance to win 1000 pesetas. In project 2, instead, the list consists of 16 binary choices: "Option" A is increasing from 0 to 15 euros in steps of 1 while option B is a fixed lottery over three prizes drawn from Hey and Orme (1994). Subjects are asked to elicit their certain equivalent for 50 such lotteries. In both protocols one of the binary choices is selected randomly for payment at the end of the experiment.[5]

3.2 Individual characteristics

In all studies, we scanned both hands and we measured 2D:4D following the protocol set up by Neyse and Brañas-Garza (2014). By using this procedure, we avoid measurement errors usually associated with self-reported statements (Brañas-Garza and Kovářík, 2013). The 2D:4D measure reported in what follows is a dummy equal to 1 for subjects with a right hand 2D:4D above the gender-specific median value, high 2D:4D hereafter, and equal to 0 otherwise. This choice is based on the non-linear relationship between 2D:4D and behavioural outcomes that is reported in Brañas-Garza *et al.* (2013) among others. Gender difference in 2D:4D, with men exhibiting a lower 2D:4D as shown in Figure 3, have been taken into account by defining our binary measure of high or low 2D:4D by computing median values separately by gender. An additional advantage of using a dummy to discriminate between high and low 2D:4D rather than 2D:4D, that takes values in a very small interval around 1, is that it tends to simplify the interpretation of coefficients of interactions between the high 2D:4D dummy and other covariates in regressions.[6]

The Cognitive Reflection Test (CRT hereafter, Frederick, 2005) was administered in our debriefing questionnaire. It is a simple test of a quantitative nature especially designed to elicit the "predominant cognitive system at work" in respondents' reasoning:

CRT1. A bat and a ball cost 1.10 dollars. The bat costs 1.00 dollars more than the ball. How much does the ball cost? (Correct answer: 5 cents).

CRT2. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take

[5]The interested reader in the estimation of risk preferences in a setting with several identical rounds, in which subjects may learn over rounds, can refer to Albarran *et al.* (2017).

[6]In section 5 we discuss the advantages and disadvantages of using the high 2D:4D dummy rather than 2D:4D itself. For the sake of robustness, we also report results of our analysis with 2D:4D in the Appendix.

100 machines to make 100 widgets? (Correct answer: 5 minutes).

CRT3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? (Correct answer: 47 days).

The CRT provides not only a measure of cognitive ability, but also of *impulsiveness* and, possibly, other individuals' unobservable characteristics. In this test, the "impulsive" answer (10, 100 and 24, respectively) is shown to be the modal answer (Frederick, 2005). These answers, although incorrect, may have been selected by those subjects who do not think carefully enough. Following Cueva *et al.* (2016), we partition individuals into three groups. *Impulsive* subjects answer the erroneous intuitive value at least in two questions, *reflective* ones answer correctly at least two questions, and *others* are the residual group.

We measure subjects' personality traits by using the Spanish version of the "Big Five" inventory (John *et al.*, 1991; John and Srivastava, 1999). The Big Five is among the most relied-upon measures of personality in psychology (see, e.g., Digman, 1990; John *et al.*, 2008). It measures personality according to five broad dimensions, or "traits": *agreeableness*, *conscientiousness*, *extraversion*, *neuroticism* and *openness*. Each of these five dimensions summarizes a large number of distinct, more specific individuals' personality characteristics.

We use in all six projects a reduced version of 26 out of the original 44 questions in the Big Five, including the 10 questions in the Big Five short version proposed in Rammstedt and John (2007). The variables measuring the extent to which subjects agree with a statement on personality in each question are defined on an integer scale from 1 for subjects agreeing the least with a statement and 7 for those agreeing the most. Variables measuring traits are constructed as the mean over the answers to the set of questions on a trait and, by construction, take as values integers or decimals in the same interval.[7]

[7] 26 items from the Big Five were included in the debriefing questionnaire at the end of all experiments whose data are used in the manuscript. They were chosen by starting from the items in the short Big Five (Rammstedt and John, 2007) and by selecting individual items that were assessed meaningful to complement the experimental tests of the hypothesis in Ponti *et al.* (2014).

4 Results I: Descriptive statistics

In this section we report descriptive statistics of 2D:4D and estimates of its correlation with the CRT score and with CRT categories dummies, our proxies for cognitive ability by way of pairwise correlations and personality traits.

Figure 3: 2D:4D histograms

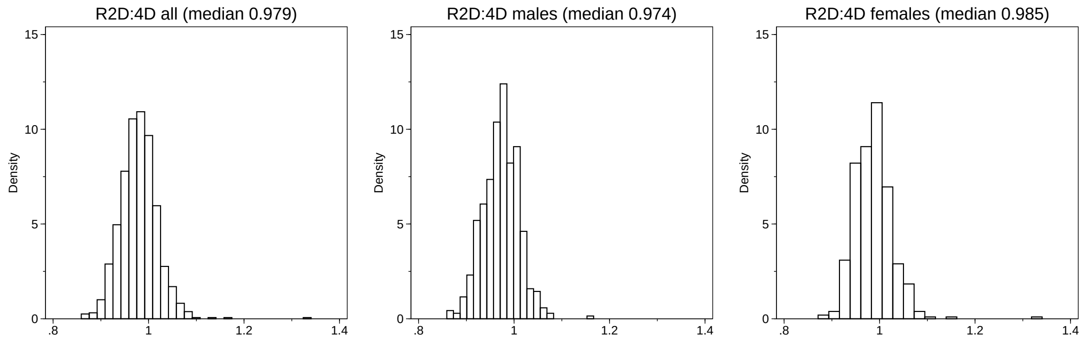


Figure 3 reports the distribution of 2D:4D in our meta-dataset for the full sample and separately for subsamples by gender. The distribution tends to be symmetric and the median value is slightly smaller than one for the full sample as well as for subsamples by gender. In addition, Figure 3 shows that 2D:4D tends to be smaller for males, in line with evidence that 2D:4D is sexually dymorphic in related studies.

Table 2 shows the correlations between 2D:4D, gender and proxies of cognitive ability. In addition, it report correlations using as a measure of prenatal exposure to testosterone a dummy equal to 1 if 2D:4D is greater than the gender-specific median and, also, a dummy equal to 1 if 2D:4D is either in the top or in the bottom tercile of the 2D:4D distribution by gender. The correlation between 2D:4D and the female dummy is positive and highly significant for both hands. 2D:4D is instead, weakly significantly negatively correlated with the CRT reflective group dummy for both hands and only for the left hand when using the top-bottom tercile dummy. In addition, the correlation between the CRT residual group dummy and the left hand top-bottom tercile dummy is positive and significant. Finally, Table 2 shows that correlations between 2D:4D and the frequency of risky choices, our proxy for risk attitudes, are negative and, hence, qualitatively in line with results in related studies. However, estimates are not significant, even when using binary measures of prenatal exposure to testosterone. Since our proxies for social preferences are estimated parameters of Fehr and Schmidt (1999) model, the estimation procedure and their relationship with prenatal exposure to testosterone are reported in section 5.[8]

Table 2: Correlations

	2D:4D in level		*Above median dummy*		*Top-bottom tercile dummy*	
	L2D:4D	R2D:4D	LH2D:4D	HR2D:4D	TBL2D:4D	TBR2D:4D
L2D:4D	1.000	0.634***	1.000	0.468***	1.000	0.163***
Female	0.154***	0.186***	0.001	-0.005	-0.050	0.005
CRT	-0.053	-0.038	-0.021	0.003	-0.048	0.001
CRT Impulsive	0.032	0.025	0.009	-0.004	0.008	0.015
CRT Reflective	-0.056*	-0.058*	-0.039	-0.025	-0.074**	-0.004
CRT Other	0.019	0.031	0.029	0.032	0.069**	-0.015
Freq. of risky choices	-0.043	-0.034	-0.004	-0.026	-0.011	0.029
BF Agreeableness	-0.002	0.009	-0.037	-0.047	-0.003	0.017
BF Conscientiousness	-0.004	0.051	-0.023	-0.001	-0.006	0.055*
BF Extraversion	-0.018	0.038	-0.033	0.016	0.061*	0.063*
BF Neuroticism	0.062*	0.063*	0.030	0.048	-0.034	-0.045
BF Openness	-0.064*	-0.019	-0.073**	-0.018	-0.008	0.054*

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Finally, when we look at Big Five (BF) indices, Table 2 shows a positive and weakly significant correlation between right hand 2D:4D and neuroticism for both hands and a negative and weakly significant one with openness only for the left hand. When we look at the high 2D:4D dummy (above median), we find that the only significant correlation is between left hand high 2D:4D dummy and openness. Finally, when we look at the dummy equal to 1 if 2D:4D is in the top-bottom tercile, we find a positive and weakly significant correlation between the right hand top-bottom tercile dummy, conscientiousness, extraversion and openness, with the correlation with extraversion being also weakly significant for the left hand.

5 Results II: Social preferences

This section frames Dictators' behavior in projects 4 and 5 within the realm of Fehr and Schmidt (1999), one of the most popular models of social preferences. According to it, the Dictator's utility associated to option k, $u(k)$, does not only depend on the Dictator's own monetary payoff, x_D^k, but also on that of the Recipient, x_R^k, as follows:

[8]Out of our 959 subjects CRT reflective, with 2 or more correct answers are 149 (16.7%), CRT impulsive, with at least one incorrect and impulsive answers, are 531 (60.4%) and the residual group contains 199 (22.6%).

$$u(k) = x_D^k - \alpha \max[x_R^k - x_D^k, 0] - \beta \max[x_D^k - x_R^k, 0], \tag{1}$$

where the values of α and β determine the Dictator's *envy* (i.e., aversion to inequality when receiving less than the Recipient) and *guilt* (i.e., aversion to inequality when receiving more than the Recipient), respectively.

In what follows we shall estimate by maximum likelihood, for each participant, the two coefficients of equation (1) by way of a standard multinomial logit model.

Figure 4: Social preferences: individual estimates

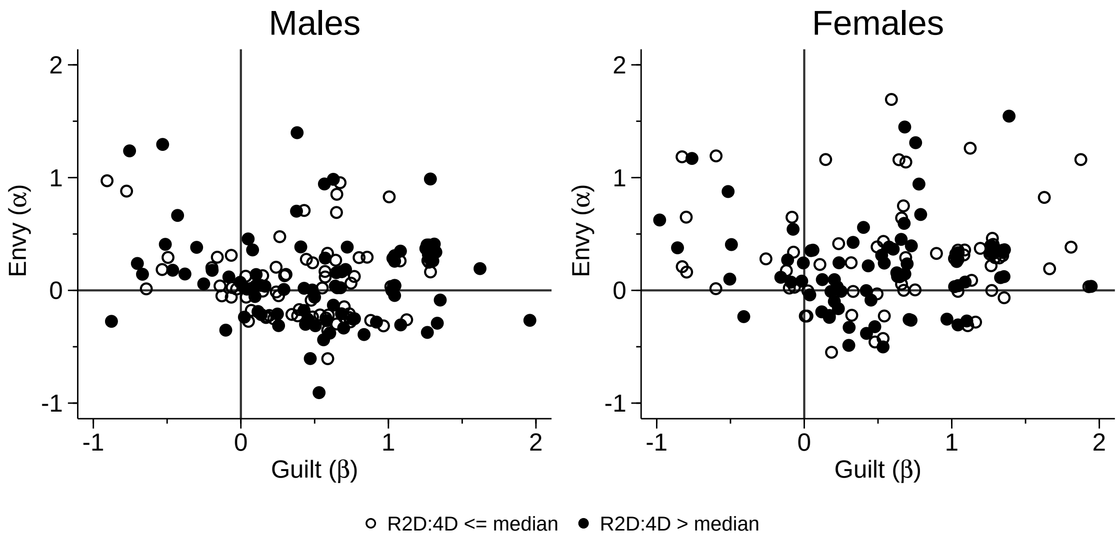


Figure 4 reports the estimated coefficients of equation (1) for each subject participating in the experiment, disaggregated by gender and by whether the right hand 2D:4D is above the gender-specific median. By conditioning on the gender-specific median, we control for the correlation between gender and 2D:4D that we detected in Table 2. As Figure 4 shows, *i*) estimates for males are less dispersed with respect to the origin (corresponding to more "selfish" preferences) and *ii*) inequity aversion appears to be the modal distributional type, with specific reference to females with low 2D:4D. The pooled estimates of α and β for the full sample (clustered at the subject level) are 0.288 (std. err. 0.001, $p = 0.000$) and 0.684 (std. err. 0.008, $p = 0.000$), respectively.[9]

[9]These figures are consistent with previous results (take, e.g., Cabrales *et al.*, 2010).

In order to quantify the relationship between 2D:4D and inequity aversion, we follow a semi-parametric approach. First, for both α and β, we partition our subject pool into three subsets, depending on whether the corresponding individual-level estimates are significantly smaller than zero (53 and 28 for α and β respectively), not significantly different (130 and 160), or significantly greater (159 and 154). We then set up an ordered probit regression by which the probability of falling in each category is a function of high 2D:4D dummy, gender and the CRT groups, with the reflective group as omitted category. Our choice of using a dummy equal to 1 if 2D:4D is above the gender-specific median, rather than 2D:4D itself, may be subject to problems, such as a lower statistical power and a higher probability of type I or II errors (Irwin and McClelland, 2003; McClelland *et al.*, 2015). However, by using non-linear models to estimate the relationship between 2D:4D and social preferences in this section, our estimates are unlikely to suffer from such problems.[10]

Table 3 reports the estimated coefficients, with alternative sets of covariates being used. We start estimating the relationship between social preferences and the high 2D:4D dummy (HR2D:4D) in model (1) without adding any additional control and then, in model (2) and (3) we add female and CRT categories dummies to assess if they play a mediating role. In model (4) we use an interaction term between HR2D:4D and the female dummy to account for the positive correlation between gender and 2D:4D we observed in Table 2. Finally, in model (5) we use an interaction term between the CRT categories dummies and HR2D:4D. In addition, we report in Table 3 marginal effects (MFX) of HR2D:4D, evaluated at the sample mean, while MFX wrt gender and CRT are shown in the Appendix.[11]

Table 3 shows that the relationship between HR2D:4D and negative inequity aversion, i.e., envy, is negative and the same holds for the relationship with positive inequity aversion, i.e., guilt. MFX, which are reported at the bottom of the table, show that the relationship with envy is not significant while the one with guilt is weakly significant. The table also shows that envy is higher for females while the impulsive group (CRTI) is characterized by higher envy and higher guilt than the

[10] We also set up a bivariate ordered probit estimation in which we allow error terms in the equations of α and β to be jointly distributed. We find the covariance parameter is not significant.

[11] The number of observations shown at the bottom of Table 3 is lower than the total number of subjects in projects 4 and 5 since we dropped those subjects for whom maximum likelihood estimation of α and β did not converge.

Table 3: Ordered probit regressions of social preferences individual estimates

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
HR2D:4D (HR)	-0.064	-0.235*	-0.066	-0.236*	-0.068	-0.213*	0.018	-0.185	0.395	-0.562**
	(0.123)	(0.125)	(0.124)	(0.125)	(0.124)	(0.126)	(0.168)	(0.172)	(0.249)	(0.254)
Female (F)			0.376***	0.097	0.326***	0.062	0.423**	0.093	0.326**	0.069
			(0.124)	(0.125)	(0.126)	(0.127)	(0.180)	(0.181)	(0.127)	(0.127)
CRT Imp (CRTI)					0.359**	0.333**	0.355**	0.332**	0.604***	0.111
					(0.149)	(0.151)	(0.149)	(0.151)	(0.208)	(0.214)
CRT Others (CRTO)					0.269	-0.120	0.269	-0.121	1.034***	-0.441
					(0.215)	(0.214)	(0.215)	(0.214)	(0.351)	(0.330)
HR × F							-0.189	-0.060		
							(0.249)	(0.251)		
HR × CRTI									-0.494*	0.440
									(0.294)	(0.300)
HR × CRTO									-1.298***	0.579
									(0.449)	(0.433)
MFX P($\alpha > 0$) of HR	-0.025		-0.026		-0.027		-0.029		-0.034	
S.e.	0.049		0.049		0.049		0.049		0.050	
MFX P($\beta > 0$) of HR		-0.093*		-0.093*		-0.084*		-0.084*		-0.082*
S.e.		0.049		0.049		0.050		0.050		0.050
N	342		342		342		342		342	

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

reflective group, which is the excluded CRT category. These estimates are significant as shown by MFX in the Appendix. These results hold for the five econometric specifications reported in Table 3, as shown by MFX in the Appendix. Finally, when we interact the HR2D:4D dummy with CRT categories to assess if the influence of 2D:4D differs by subjects' cognition, we find that subjects with high 2D:4D and low cognitive ability, proxied by the CRT impulsive dummy, exhibit weakly significantly lower envy than subjects with high 2D:4D in the CRT reflective group, with similar and significant results when considering the CRT residual group dummy.[12,13]

6 Results III: Risk attitudes

In this section we study the relationship between 2D:4D and proxies for risk preferences by using data on 497 subjects from all projects. Risk preferences are elicited by way of a Multiple Price List (MPL, Holt and Laury, 2002), in which individuals

[12]Marginal effects are the same when we estimate using as alternative measure than 2D:4D in levels or the top-bottom tercile dummy except the estimated relationship with guilt.

[13]As a sensitivity analysis, we replicated our main experimental results by using a dummy equal to 1 if 2D:4D is either in the bottom tercile of the distribution or in the top one and obtained similar results, except a positive and significant relationship between envy and the top-bottom tercile dummy, as shown in in the Appendix. Most of the results shown in this section on the relationship between 2D:4D and social preferences tend to lose significance when they are obtained with the high 2D:4D dummy defined using left hand 2D:4D, as shown in the Appendix.

have to choose between two alternatives: a list of increasing sure payments and a lottery. Since the same protocol has been used in projects 3 to 6 while the number of decisions, lottery prizes, the experimental currency and their probability distribution differ in project 2, we choose two proxies for risk preferences that we believe are not affected by these differences.

Following Cueva *et al.* (2016), we define *consistent* those individuals whose decisions satisfy two conditions: *i*) start by choosing the lottery option, as it stochastically dominates the sure payment of 0, and *ii*) switch only once at some point along the price list to the sure payment and stick to it up to the end. We can use data from all projects in our empirical analysis as none of the differences between our MPL protocols has an impact on the consistency definition. We also define a dummy equal to 1 if the proportion of risky choices made by a subject, i.e. the ratio between the number of lotteries chosen in the list and the total number of decisions, is greater than the median value. By using the proportion rather than the number of risky choices, we control for the difference in the design of the MPL in project 2.

Table 4: Subjects' consistency in risky choices

	(1)	(2)	(3)	(4)	(5)
HR2D:4D	0.071*	0.072*	0.069*	0.047	-0.039
	(0.037)	(0.037)	(0.036)	(0.049)	(0.055)
Female (F)		-0.057	-0.025	-0.048	-0.023
		(0.037)	(0.038)	(0.056)	(0.038)
CRT Imp. (CRTI)			-0.164***	-0.163***	-0.240***
			(0.039)	(0.039)	(0.053)
CRT Other. (CRTO)			-0.152***	-0.152***	-0.202***
			(0.052)	(0.052)	(0.073)
HR2D:4D × F				0.047	
				(0.073)	
HR2D:4D × CRTI					0.149**
					(0.074)
HR2D:4D × CRTO					0.095
					(0.104)
Project 2	0.066	0.069	0.066	0.066	0.067
	(0.044)	(0.044)	(0.044)	(0.044)	(0.045)
Constant	0.737***	0.764***	0.879***	0.889***	0.934***
	(0.029)	(0.032)	(0.034)	(0.038)	(0.036)
MFX of F				-0.025	
S.e.				0.039	
MFX of CRTI					-0.166***
S.e.					0.039
MFX of CRTO					-0.155***
S.e.					0.052
MFX of HR				0.069*	0.069*
S.e.				0.037	0.036
N	497	497	497	497	497

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4 shows linear probability estimates of subjects' consistency dummy. In addition to the high 2D:4D dummy, our covariates include dummies for females and for the CRT groups, as well as for the interaction between the high 2D:4D dummy, female and CRT groups dummies. The top panel of the table shows regression estimates while the bottom one marginal effects (MFX) for those specifications in which we used interaction terms, evaluated at the sample mean. Because of the differences in the experimental protocol of project 2 with respect to the others, we also include a dummy equal to 1 for subjects in project 2 in order to absorb project-specific effects.

When we look at estimates in Table 4, we find that the probability of being consistent in their decisions is weakly significantly higher for subjects with a high 2D:4D, that there is no significant gender difference and that it is significantly lower for subjects in the impulsive (CRTI) or in the residual (CRTO) group than for

Table 5: Consistent subjects' relative frequency of risky choices above median

	(1)	(2)	(3)	(4)	(5)
HR2D:4D (HR)	0.005	0.006	0.006	-0.009	-0.041
	(0.017)	(0.017)	(0.017)	(0.020)	(0.031)
Female (F)		-0.058***	-0.056***	-0.073***	-0.056***
		(0.017)	(0.018)	(0.025)	(0.018)
CRT Imp. (CRTI)			-0.007	-0.006	-0.036
			(0.020)	(0.020)	(0.028)
CRT Other. (CRTO)			0.007	0.007	-0.030
			(0.025)	(0.025)	(0.037)
HR2D:4D × F				0.033	
				(0.034)	
HR2D:4D × CRTI					0.058
					(0.038)
HR2D:4D × CRTO					0.072
					(0.050)
Project 2	-0.064***	-0.058***	-0.058***	-0.057***	-0.056***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	0.453***	0.478***	0.480***	0.487***	0.503***
	(0.012)	(0.013)	(0.018)	(0.019)	(0.023)
MFX of F				-0.057***	
S.e.				0.018	
MFX of CRTI					-0.007
S.e.					0.020
MFX of CRTO					0.006
S.e.					0.025
MFX of HR				0.007	0.008
S.e.				0.017	0.017
N	390	390	390	390	390

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

the reflective group. We see no changes when we include the interaction between female and the high 2D:4D variable, suggesting that they do not play a mediation role. When we add interaction terms between the high 2D:4D dummy and the female dummy, we find no significant gender differences in the relationship between 2D:4D and consistency. When we add interactions between high 2D:4D and cognitive ability dummies, the high 2D:4D dummy coefficient is no longer significant while the coefficient of the interaction with the CRTI dummy is positive and significant, suggesting that subjects in the CRT impulsive group and with high 2D:4D are more consistent. When looking at MFX, we find that consistency is significantly lower for subjects with low cognitive ability and it is weakly significantly higher for subjects with a high 2D:4D.[14]

[14]Estimates of the same regression except for using, rather than the high 2D:4D dummy, 2D:4D itself or the top-bottom tercile dummy are reported in the Appendix. We can see some differences depending on the measure used: the probability of consistency is weakly significantly lower for females when we use 2D:4D although when we use the top-bottom tercile dummy its coefficient

Table 5 shows linear probability estimates for consistent subjects of a dummy equal to 1 if the proportion of risky choices is greater than the median. We find no significant relationship with the high 2D:4D dummy while the probability is significantly lower for females. Results are unchanged when using 2D:4D or the top-bottom tercile dummy, as shown in the Appendix.[15,16,17]

7 Results IV: Personality

Finally, we look at the relationship between the high 2D:4D dummy and subjects' personality. Figure 5 shows means of Big Five indices separately for subjects by whether 2D:4D is high or low and by gender. Subjects with high 2D:4D tend to be less agreeable although this result is only weakly significant for the males subsample. While no other result is statistically significant at any conventional level, subjects with high 2D:4D tend to be more neurotic and less open.

After looking at subjects' scores in Big Five indices, we now assess whether scores in individual questions vary with 2D:4D. Figure 6 reports scores in the questions used to construct the agreeableness index and shows that males with a high 2D:4D are weakly significantly more likely to "start quarrels with others". Similarly, they are weakly significantly more likely to be "less considerate and kind with others".

Although we do not observe a highly significant relationship between 2D:4D and neuroticism in Figure 5, when we look in Figure 7 at the questions used to construct the neuroticism index, we find that female subjects with high 2D:4D are less relaxed, although the difference is only weakly significant. In addition, the figure shows that subjects with high 2D:4D are significantly less "emotionally stable", with this results

loses significance.

[15]Estimates of Table 5 obtained using the full sample are not reported as they are in line with those obtained using only observations of consistent subjects.

[16]Results are qualitatively unchanged when using a logit model or when the dummy equal to 1 if the frequency of risky choices is above the median, one of the dependent variables, is defined using median values separately for projects 2 since the certain equivalent is different from projects 3-6. They are not reported although they are available upon request. As a sensitivity analysis, we replicated our main experimental results by using 2D:4D and a dummy equal to 1 if 2D:4D is either in the bottom tercile of the distribution or in the top one and obtained similar results and obtain similar results. This seems to suggest that, at least in our case, estimates of regressions using the high 2D:4D dummy are not severely biased, as suggested by Irwin and McClelland (2003); McClelland *et al.* (2015).

[17]Most of the results shown in this section on the relationship between 2D:4D and risk attitudes do not hold when they are obtained with the high 2D:4D dummy defined using left hand 2D:4D, as shown in the Appendix.

Figure 5: Big 5 indices by whether R2D:4D is greater than median

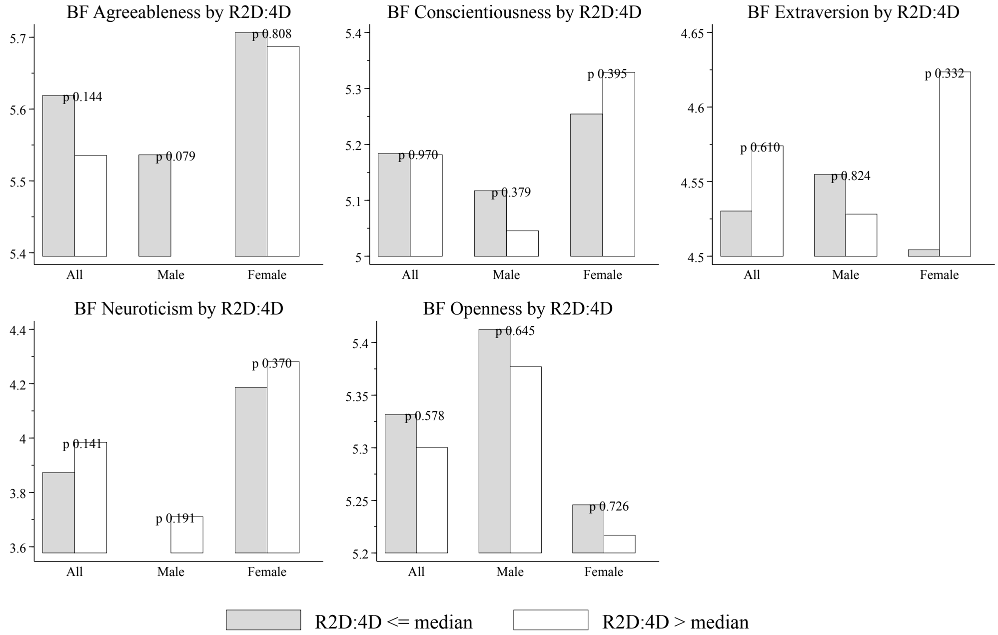
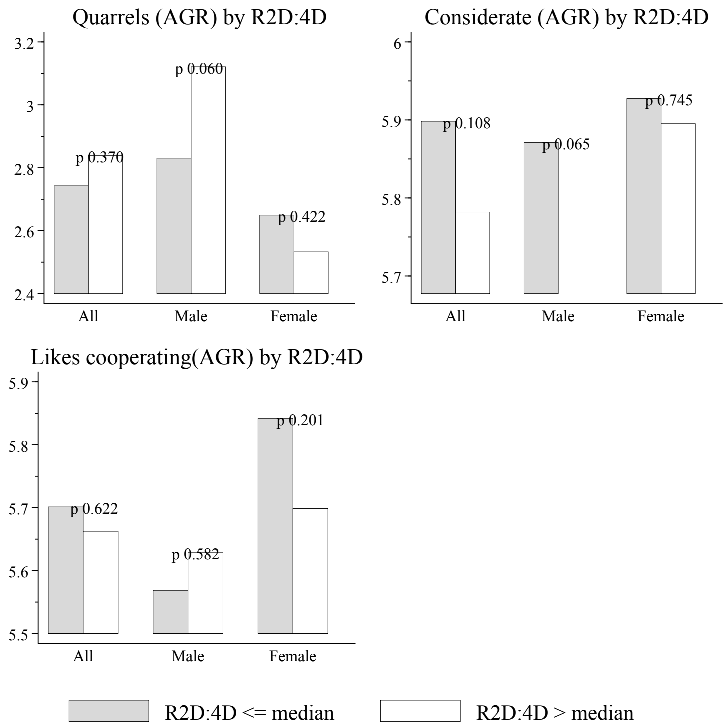


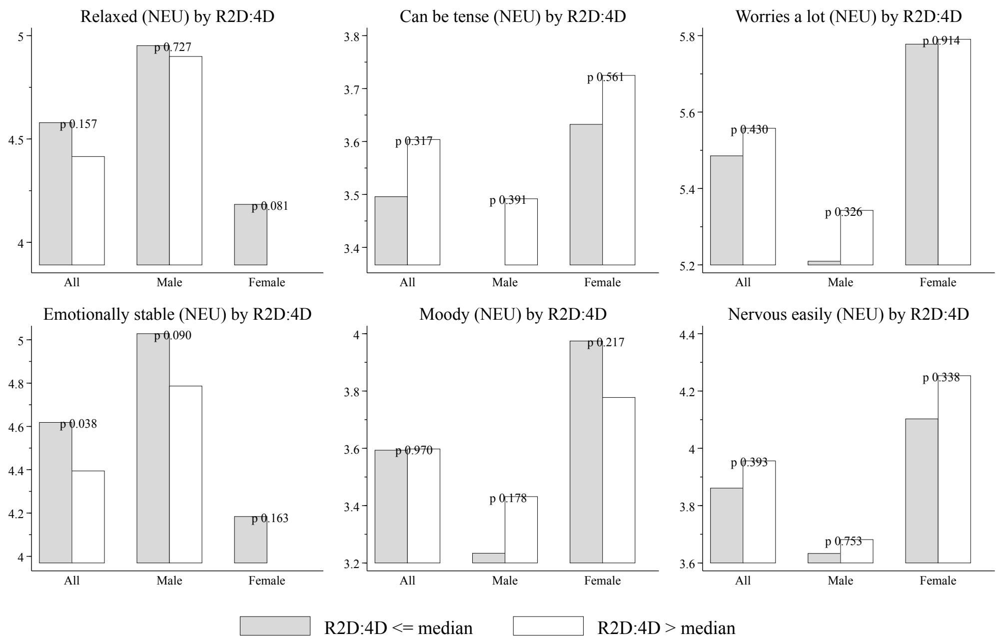
Figure 6: Big 5 Agreeableness questions by whether 2D:4D is greater than median



driven by the males subsample.[18]

[18] We only report significant associations between the 2D:4D dummy and individuals Big Five questions although results that are not reported are available upon request. The results shown in this section tend to lose significance when they are obtained with the high 2D:4D dummy defined using left hand 2D:4D. These results are not reported although they are available upon request.

Figure 7: Big 5 Neuroticism questions by whether 2D:4D is greater than median



8 Discussion

When we look at social preferences, we contribute to the literature that has almost entirely focused on giving as a proxy for social preferences in a variety of experimental settings (e.g. Buser, 2012; Brañas-Garza *et al.*, 2013) by isolating two aspects underlying the incentives to give, i.e., guilt when a subject is in advantageous position in terms of payoffs, and envy when (s)he is in a disadvantageous position. Finding a negative although weakly significant relationship between 2D:4D and guilt, i.e., less generous behaviour by subjects when they play in the advantaged role, and a non-significant one with envy offers some support to the negative relationship between 2D:4D and giving that is found in the literature (Millet and Dewitte, 2006). However, giving and inequity aversion are not fully comparable proxies for social preferences as they are used in different experimental settings.

Although evidence of heterogeneity by ability in the relationship between 2D:4D and subjects' decision-making has been documented in risky choices (Brañas-Garza and Rustichini, 2011), we are the first to do so in the realm of social preferences, to the best of our knowledge. Finding that subjects with high 2D:4D and low cognitive ability exhibit significantly lower envy than subjects with low 2D:4D and high cognitive ability shows evidence of heterogeneity by ability in the relationship between social preferences and 2D:4D. This result, by suggesting an attenuating role of low cognitive ability and high 2D:4D on inequity aversion contributes to related studies, for example Cueva *et al.* (2016) who find that the CRT impulsive category has higher inequity aversion and Ponti and Rodriguez-Lara (2015) who find that the CRT impulsive category exhibits higher inequity aversion.

When we look at risk attitudes, we find that the relationship between 2D:4D and the probability that the frequency of risky choices is above the median, shows a mixed sign, it is quantitatively small and never significant. These results contribute to the related literature as the sign and significance of the relationship is not conclusive. Overall, this may be due to the fact that there is genuinely no relationship between 2D:4D and risky decisions or, alternatively, to differences across studies. The composition of the subject pool may play a role if the willingness to participate in an experiment correlates with subjects' socio-economic background and risk aversion. In addition, the type of risk preferences elicitation task may also matter. For example, studies that, including ours, use a task in which subjects can choose a risk-free option tend to find a weakly or not significant association while studies in which subjects choose between two lotteries tend to find a negative and significant association.

When we look at the relationship between 2D:4D and Big Five personality traits, we find only weakly significant results: a negative relationship with agreeableness and a positive one with answers to the questions used to obtain the neuroticism index. These results are in line with some related studies that used a lower number of subjects (Austin *et al.*, 2002; Fink *et al.*, 2004) while not with a study with a greater sample size (Lippa, 2006). This difference may be due to a combination of the sample size and also to the fact that our proxies for personality traits were obtained by administering a subset of the full Big Five questionnaire.

After discussing our results relative to those in related studies, we now critically assess them in the light of potential methodological issues, that we believe all researchers wanting to contribute to this interdisciplinary literature should bear in mind. Studies in hard sciences of the relationship between direct measures of prenatal exposure to testosterone and 2D:4D find mixed results, whose sign and significance seem to depend critically on whether direct measures are obtained in an early stage in utero or, instead, close to the birth. Studies in social sciences on the relationship between 2D:4D and decision-making find mixed results that may depend on the accuracy of 2D:4D measurement and, in addition to the experimental tasks used to elicit subjects' preferences. Overall, this suggests both that additional research is awaited to reconcile existing differences across studies in the literature and that caution is used in the interpretation of results before these differences are better understood.

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Appendix A Additional results

Table A.1: Ordered probit regressions of social preferences individual estimates and marginal effects by using a dummy = 1 when the 2D:4D ratio higher than the gender specific median.

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
HR2D:4D (HR)	-0.064	-0.235*	-0.066	-0.236*	-0.068	-0.213*	0.018	-0.185	0.395	-0.562**
	(0.123)	(0.125)	(0.124)	(0.125)	(0.124)	(0.126)	(0.168)	(0.172)	(0.249)	(0.254)
Female (F)			0.376***	0.097	0.326***	0.062	0.423**	0.093	0.326**	0.069
			(0.124)	(0.125)	(0.126)	(0.127)	(0.180)	(0.181)	(0.127)	(0.127)
CRT Imp (CRTI)					0.359**	0.333**	0.355**	0.332**	0.604***	0.111
					(0.149)	(0.151)	(0.149)	(0.151)	(0.208)	(0.214)
CRT Others (CRTO)					0.269	-0.120	0.269	-0.121	1.034***	-0.441
					(0.215)	(0.214)	(0.215)	(0.214)	(0.351)	(0.330)
HR $\times$ F							-0.189	-0.060		
							(0.249)	(0.251)		
HR $\times$ CRTI									-0.494*	0.440
									(0.294)	(0.300)
HR $\times$ CRTO									-1.298***	0.579
									(0.449)	(0.433)
MFX P(α=0) of HR	0.010		0.011		0.011		0.012		0.015	
S.e.	0.020		0.020		0.021		0.021		0.022	
MFX P($\alpha > 0$) of HR	-0.025		-0.026		-0.027		-0.029		-0.034	
S.e.	0.049		0.049		0.049		0.049		0.050	
MFX P(α=0) of F			-0.062***		-0.054**		-0.055**		-0.057**	
S.e.			0.022		0.022		0.023		0.023	
MFX P($\alpha > 0$) of F			0.149***		0.129***		0.130***		0.129***	
S.e.			0.049		0.050		0.050		0.050	
MFX P($\alpha = 0$) of CRTI					-0.054**		-0.054**		-0.056**	
S.e.					0.022		0.022		0.023	
MFX P($\alpha > 0$) of CRTI					0.141**		0.140**		0.140**	
S.e.					0.058		0.058		0.058	
MFX P($\alpha = 0$) of CRTO					-0.051		-0.051		-0.079	
S.e.					0.046		0.046		0.053	
MFX P($\alpha > 0$) of CRTO					0.107		0.107		0.152	
S.e.					0.085		0.085		0.087	
MFX P(β=0) of HR		0.058*		0.058*		0.053*		0.053*		0.052
S.e.		0.031		0.031		0.032		0.032		0.032
MFX P($\beta > 0$) of HR		-0.093*		-0.093*		-0.084*		-0.084*		-0.082*
S.e.		0.049		0.049		0.050		0.050		0.050
MFX P(β=0) of F				-0.024		-0.016		-0.016		-0.017
S.e.				0.031		0.032		0.032		0.032
MFX P($\beta > 0$) of F				0.038		0.025		0.025		0.027
S.e.				0.049		0.050		0.050		0.050
MFX P($\beta = 0$) of CRTI						-0.079**		-0.079**		-0.079**
S.e.						0.035		0.035		0.035
MFX P($\beta > 0$) of CRTI						0.130**		0.130**		0.129**
S.e.						0.058		0.058		0.058
MFX P($\beta = 0$) of CRTO						0.029		0.029		0.036
S.e.						0.049		0.048		0.048
MFX P($\beta > 0$) of CRTO						-0.047		-0.048		-0.059
S.e.						0.083		0.083		0.084
N	342		342		342		342		342	

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Ordered probit regressions of social preferences individual estimates and marginal effects with 2D:4D in levels

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
main										
HR2D:4D (HR)	-0.097	-0.683	-1.237	-1.007	-1.426	-0.819	-1.746	-1.138	7.488**	-6.244*
	(1.638)	(1.656)	(1.688)	(1.698)	(1.700)	(1.711)	(2.234)	(2.266)	(3.513)	(3.526)
Female (F)			0.396***	0.112	0.348***	0.074	-0.395	-0.652	0.348***	0.082
			(0.128)	(0.128)	(0.129)	(0.130)	(3.366)	(3.381)	(0.130)	(0.130)
CRT Imp (CRTI)					0.364**	0.339**	0.365**	0.340**	10.304***	-5.576
					(0.149)	(0.151)	(0.149)	(0.151)	(3.957)	(3.962)
CRT Others (CRTO)					0.279	-0.134	0.280	-0.133	20.628***	-12.756**
					(0.216)	(0.214)	(0.216)	(0.214)	(6.234)	(6.136)
HR $\times$ F							0.757	0.740		
							(3.428)	(3.446)		
HR $\times$ CRTI									-10.208**	6.072
									(4.058)	(4.060)
HR $\times$ CRTO									-20.719***	12.859**
									(6.328)	(6.239)
MFX P($\alpha = 0$) of HR	0.015		0.202		0.237		0.229		0.295	
S.e.	0.261		0.276		0.283		0.283		0.307	
MFX P($\alpha > 0$) of HR	-0.039		-0.491		-0.566		-0.550		-0.657	
S.e.	0.651		0.669		0.673		0.677		0.682	
MFX P($\alpha = 0$) of F			-0.065***		-0.058**		-0.058**		-0.062**	
S.e.			0.023		0.023		0.023		0.025	
MFX P($\alpha > 0$) of F			0.156***		0.138***		0.137***		0.138***	
S.e.			0.050		0.051		0.051		0.051	
MFX P($\alpha = 0$) of CRTI					-0.055**		-0.055***		-0.052**	
S.e.					0.022		0.021		0.024	
MFX P($\alpha > 0$) of CRTI					0.143**		0.144**		0.125**	
S.e.					0.058		0.058		0.059	
MFX P($\alpha = 0$) of CRTO					-0.053		-0.053		-0.074	
S.e.					0.046		0.046		0.053	
MFX P($\alpha > 0$) of CRTO					0.111		0.111		0.141	
S.e.					0.085		0.085		0.088	
MFX P($\beta = 0$) of HR		0.167		0.246		0.205		0.196		0.183
S.e.		0.405		0.415		0.427		0.428		0.427
MFX P($\beta > 0$) of HR		-0.270		-0.398		-0.324		-0.311		-0.291
S.e.		0.655		0.671		0.676		0.679		0.679
MFX P($\beta = 0$) of F				-0.027		-0.019		-0.018		-0.020
S.e.				0.032		0.033		0.033		0.033
MFX P($\beta > 0$) of F				0.044		0.029		0.029		0.032
S.e.				0.051		0.051		0.051		0.051
MFX P($\beta = 0$) of CRTI						-0.080*		-0.080*		-0.085*
S.e.						0.034		0.034		0.034
MFX P($\beta > 0$) of CRTI						0.132**		0.133**		0.142**
S.e.						0.058		0.058		0.058
MFX P($\beta = 0$) of CRTO						0.032		0.031		0.040
S.e.						0.048		0.047		0.046
MFX P($\beta > 0$) of CRTO						-0.053		-0.052		-0.068
S.e.						0.083		0.083		0.084
N	342		342		342		342		342	

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: Ordered probit regressions of social preferences individual estimates and marginal effects by using a dummy = 1 if 2D:4D in the top-bottom tercile

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
main										
HR2D:4D (HR)	0.018	-0.102	0.013	-0.103	0.017	-0.100	0.128	-0.121	0.331	0.198
	(0.130)	(0.132)	(0.131)	(0.132)	(0.131)	(0.133)	(0.176)	(0.181)	(0.263)	(0.265)
Female (F)			0.375***	0.096	0.326**	0.062	0.490**	0.032	0.326***	0.065
			(0.124)	(0.125)	(0.126)	(0.127)	(0.216)	(0.218)	(0.127)	(0.127)
CRT Imp (CRTI)					0.359**	0.337**	0.360**	0.336**	0.652**	0.616**
					(0.149)	(0.151)	(0.149)	(0.151)	(0.255)	(0.258)
CRT Others (CRTO)					0.260	-0.141	0.269	-0.143	0.464	0.049
					(0.215)	(0.213)	(0.215)	(0.214)	(0.376)	(0.371)
HR × F							-0.247	0.045		
							(0.264)	(0.266)		
HR × CRTI									-0.440	-0.422
									(0.311)	(0.315)
HR × CRTO									-0.305	-0.289
									(0.457)	(0.453)
MFX P($\alpha = 0$) of HR	-0.003		-0.002		-0.003		-0.002		-0.002	
S.e.	0.020		0.021		0.022		0.022		0.022	
MFX P($\alpha > 0$) of HR	0.007		0.005		0.007		0.004		0.005	
S.e.	0.052		0.052		0.052		0.052		0.052	
MFX P($\alpha = 0$) of F			-0.061***		-0.054**		-0.055**		-0.055**	
S.e.			0.022		0.022		0.023		0.023	
MFX P($\alpha > 0$) of F			0.148***		0.129***		0.129***		0.129***	
S.e.			0.049		0.050		0.050		0.050	
MFX P($\alpha = 0$) of CRTI					-0.054**		-0.054**		-0.054**	
S.e.					0.022		0.022		0.022	
MFX P($\alpha > 0$) of CRTI					0.141**		0.141**		0.142**	
S.e.					0.058		0.058		0.058	
MFX P($\alpha = 0$) of CRTO					-0.049		-0.051		-0.050	
S.e.					0.045		0.046		0.046	
MFX P($\alpha > 0$) of CRTO					0.103		0.107		0.104	
S.e.					0.085		0.085		0.085	
MFX P($\beta = 0$) of HR		0.025		0.026		0.025		0.025		0.027
S.e.		0.033		0.033		0.034		0.034		0.035
MFX P($\beta > 0$) of HR		-0.040		-0.041		-0.040		-0.039		-0.042
S.e.		0.052		0.052		0.053		0.053		0.053
MFX P($\beta = 0$) of F				-0.024		-0.016		-0.016		-0.016
S.e.				0.031		0.032		0.032		0.032
MFX P($\beta > 0$) of F				0.038		0.025		0.025		0.026
S.e.				0.049		0.050		0.050		0.050
MFX P($\beta = 0$) of CRTI						-0.079**		-0.079**		-0.080**
S.e.						0.034		0.034		0.034
MFX P($\beta > 0$) of CRTI						0.132**		0.132**		0.132**
S.e.						0.058		0.058		0.058
MFX P($\beta = 0$) of CRTO						0.033		0.034		0.034
S.e.						0.047		0.047		0.047
MFX P($\beta > 0$) of CRTO						-0.055		-0.056		-0.056
S.e.						0.083		0.083		0.083
N	342		342		342		342		342	

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Ordered probit regressions of social preferences individual estimates and marginal effects by using a dummy = 1 when the Left 2D:4D ratio is higher than the gender specific median.

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
main										
HL2D:4D (HL)	-0.006	-0.106	-0.002	-0.107	-0.007	-0.088	-0.146	0.033	0.208	-0.075
	(0.123)	(0.125)	(0.124)	(0.125)	(0.125)	(0.126)	(0.168)	(0.172)	(0.248)	(0.252)
Female (F)			0.376***	0.095	0.326**	0.060	0.172	0.191	0.318**	0.080
			(0.124)	(0.125)	(0.126)	(0.127)	(0.177)	(0.180)	(0.127)	(0.128)
CRT Imp (CRTI)					0.359**	0.339**	0.360**	0.340**	0.452**	0.423**
					(0.149)	(0.151)	(0.149)	(0.151)	(0.204)	(0.208)
CRT Others (CRTO)					0.261	-0.129	0.269	-0.138	0.750**	-0.611*
					(0.216)	(0.214)	(0.216)	(0.214)	(0.350)	(0.333)
HL $\times$ F							0.307	-0.257		
							(0.249)	(0.251)		
HL $\times$ CRTI									-0.194	-0.174
									(0.294)	(0.298)
HL $\times$ CRTO									-0.800*	0.757*
									(0.448)	(0.437)
MFX P(α=0) HL	0.001		0.000		0.001		0.000		0.003	
S.e.	0.020		0.020		0.021		0.021		0.021	
MFX P($\alpha > 0$) HL	-0.002		-0.001		-0.003		-0.000		-0.007	
S.e.	0.049		0.049		0.050		0.050		0.050	
MFX P(α=0) F			-0.062***		-0.054**		-0.055**		-0.055**	
S.e.			0.022		0.022		0.023		0.023	
MFX P($\alpha > 0$) F			0.148***		0.129***		0.129***		0.126**	
S.e.			0.049		0.050		0.050		0.050	
MFX P($\alpha = 0$) CRTI					-0.054**		-0.054**		-0.055**	
S.e.					0.022		0.022		0.022	
MFX P($\alpha > 0$) CRTI					0.141**		0.141**		0.140**	
S.e.					0.058		0.058		0.058	
MFX P($\alpha = 0$ CRTO)					-0.050		-0.051		-0.070	
S.e.					0.046		0.046		0.051	
MFX P($\alpha > 0$ CRTO)					0.104		0.107		0.139	
S.e.					0.085		0.085		0.088	
MFX P(β=0) HL		0.026		0.026		0.022		0.022		0.022
S.e.		0.031		0.031		0.031		0.032		0.031
MFX P($\beta > 0$) HL		-0.042		-0.042		-0.035		-0.035		-0.035
S.e.		0.049		0.049		0.050		0.050		0.050
MFX P(β=0) F				-0.023		-0.015		-0.016		-0.020
S.e.				0.031		0.032		0.032		0.032
MFX P($\beta > 0$) F				0.038		0.024		0.025		0.032
S.e.				0.049		0.050		0.050		0.050
MFX P($\beta = 0$) CRTI						-0.080**		-0.080**		-0.079**
S.e.						0.034		0.034		0.034
MFX P($\beta > 0$) CRTI						0.132**		0.133**		0.131**
S.e.						0.058		0.058		0.058
MFX P($\beta = 0$) CRTO						0.031		0.033		0.052
S.e.						0.048		0.048		0.043
MFX P($\beta > 0$) CRTO						-0.051		-0.054		-0.090
S.e.						0.083		0.083		0.083
N	342	342	342	342	342	342	342	342	342	342

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Ordered probit regressions of social preferences individual estimates and marginal effects with Left 2D:4D in levels

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
main										
HL 2D:4D (HL)	-0.704	-1.312	-1.667	-1.612	-1.764	-1.592	-2.622	-1.521	1.173	-5.089
	(1.623)	(1.646)	(1.663)	(1.676)	(1.667)	(1.684)	(2.281)	(2.349)	(3.406)	(3.495)
Female (F)			0.393***	0.122	0.345***	0.088	-1.467	0.232	0.341***	0.106
			(0.127)	(0.127)	(0.129)	(0.129)	(3.284)	(3.316)	(0.129)	(0.130)
CRT Imp (CRTI)					0.360**	0.343**	0.359**	0.343**	2.460	-1.850
					(0.149)	(0.151)	(0.149)	(0.151)	(3.885)	(3.974)
CRT Others (CRTO)					0.275	-0.135	0.278	-0.136	12.973**	-15.726***
					(0.215)	(0.213)	(0.215)	(0.214)	(5.872)	(5.912)
HL $\times$ F							1.842	-0.147		
							(3.337)	(3.371)		
HL $\times$ CRT									-2.150	2.247
									(3.966)	(4.054)
HL $\times$ CRTO									-12.866**	15.839***
									(5.949)	(6.010)
MFX P(α=0) HL	0.112		0.271		0.291		0.286		0.314	
S.e.	0.257		0.271		0.276		0.273		0.286	
MFX P($\alpha > 0$) HL	-0.280		-0.661		-0.699		-0.694		-0.733	
S.e.	0.644		0.657		0.658		0.658		0.662	
MFX P(α=0) F			-0.064***		-0.057**		-0.056**		-0.058**	
S.e.			0.023		0.023		0.023		0.024	
MFX P($\alpha > 0$) F			0.155***		0.136***		0.135***		0.135***	
S.e.			0.050		0.050		0.050		0.051	
MFX P($\alpha = 0$) CRTI					-0.054**		-0.053**		-0.055**	
S.e.					0.022		0.021		0.022	
MFX P($\alpha > 0$) CRTI					0.141**		0.141**		0.138**	
S.e.					0.058		0.057		0.058	
MFX P($\alpha = 0$) CRTO					-0.052		-0.053		-0.069	
S.e.					0.046		0.046		0.050	
MFX P($\alpha > 0$) CRTO					0.109		0.111		0.137	
S.e.					0.085		0.085		0.087	
MFX P(β=0) HL		0.320		0.394		0.397		0.397		0.407
S.e.		0.401		0.408		0.419		0.419		0.427
MFX P(β >0) HL		-0.519		-0.637		-0.629		-0.629		-0.640
S.e.		0.650		0.660		0.663		0.664		0.669
MFX P(β=0) F				-0.030		-0.022		-0.022		-0.027
S.e.				0.031		0.033		0.033		0.033
MFX P($\beta > 0$) F				0.048		0.035		0.035		0.042
S.e.				0.050		0.051		0.051		0.051
MFX P($\beta = 0$) CRTI						-0.081**		-0.081**		-0.084**
S.e.						0.034		0.034		0.035
MFX P($\beta > 0$) CRTI						0.134**		0.134**		0.139**
S.e.						0.058		0.058		0.058
MFX P($\beta = 0$) CRTO						0.032		0.032		0.042
S.e.						0.047		0.048		0.046
MFX P($\beta > 0$) CRTO						-0.053		-0.053		-0.070
S.e.						0.083		0.083		0.083
N	341	341	341	341	341	341	341	341	341	341

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Ordered probit regressions of social preferences individual estimates and marginal effects by using a dummy = 1 if Left 2D:4D is in the top-bottom tercile

	(1)		(2)		(3)		(4)		(5)	
	α	β	α	β	α	β	α	β	α	β
main										
HL2D:4D (HL)	0.251*	-0.030	0.277**	-0.025	0.264**	-0.061	0.180	-0.126	0.565**	0.095
	(0.128)	(0.130)	(0.129)	(0.130)	(0.130)	(0.131)	(0.180)	(0.186)	(0.257)	(0.258)
Female (F)			0.393***	0.094	0.343***	0.058	0.232	-0.029	0.384***	0.065
			(0.125)	(0.125)	(0.127)	(0.127)	(0.210)	(0.215)	(0.130)	(0.130)
CRT Imp (CRTI)					0.345**	0.341**	0.356**	0.349**	0.499**	0.446*
					(0.149)	(0.151)	(0.150)	(0.152)	(0.246)	(0.250)
CRT Others (CRTO)					0.269	-0.145	0.255	-0.154	0.864**	0.070
					(0.215)	(0.213)	(0.216)	(0.214)	(0.339)	(0.330)
HL $\times$ F							0.175	0.134		
							(0.264)	(0.267)		
HL $\times$ CRTI									-0.262	-0.171
									(0.307)	(0.311)
HL $\times$ CRTO									-1.021**	-0.367
									(0.441)	(0.433)
MFX P(α=0) HL	-0.038**		-0.042**		-0.041**		-0.041**		-0.042**	
S.e.	0.019		0.019		0.020		0.020		0.020	
MFX P(α >0) HL	0.099**		0.109**		0.104**		0.104**		0.105**	
S.e.	0.050		0.050		0.051		0.051		0.051	
MFX P(α=0) F			-0.065***		-0.058**		-0.058**		-0.065***	
S.e.			0.023		0.023		0.023		0.024	
MFX P(α >0) F			0.155***		0.136***		0.137***		0.152***	
S.e.			0.049		0.050		0.050		0.051	
MFX P($\alpha = 0$) CRTI					-0.053**		-0.054**		-0.051**	
S.e.					0.022		0.022		0.022	
MFX P($\alpha > 0$) CRTI					0.136**		0.140**		0.130**	
S.e.					0.058		0.058		0.058	
MFX P($\alpha = 0$) CRTO					-0.052		-0.049		-0.038	
S.e.					0.046		0.046		0.045	
MFX P($\alpha > 0$) CRTO					0.107		0.101		0.081	
S.e.					0.085		0.085		0.086	
MFX P(β=0) HL		0.007		0.006		0.015		0.016		0.015
S.e.		0.032		0.032		0.033		0.034		0.034
MFX P(β >0) HL		-0.012		-0.010		-0.024		-0.025		-0.024
S.e.		0.052		0.052		0.052		0.052		0.052
MFX P(β=0) F				-0.023		-0.014		-0.014		-0.016
S.e.				0.031		0.032		0.032		0.033
MFX P(β >0) F				0.037		0.023		0.023		0.026
S.e.				0.049		0.050		0.050		0.051
MFX P($\beta = 0$) CRTI						-0.080**		-0.082**		-0.079**
S.e.						0.034		0.034		0.034
MFX P($\beta > 0$) CRTI						0.133**		0.137**		0.131**
S.e.						0.058		0.058		0.058
MFX P($\beta = 0$) CRTO						0.034		0.036		0.039
S.e.						0.047		0.047		0.046
MFX P($\beta > 0$) CRTO						-0.057		-0.060		-0.065
S.e.						0.083		0.083		0.083
N	342	342	342	342	342	342	342	342	342	342

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Subjects' consistency in risky choices using R2D:4D in level

	(1)	(2)	(3)	(4)	(5)
HR2D:4D (HR)	0.705	0.938*	0.970*	0.448	-0.283
	(0.480)	(0.500)	(0.502)	(0.696)	(1.050)
Female (F)		-0.074*	-0.041	-1.084	-0.040
		(0.039)	(0.040)	(0.963)	(0.039)
CRT Imp. (CRTI)			-0.167***	-0.165***	-2.019*
			(0.039)	(0.040)	(1.167)
CRT Other (CRTO)			-0.156***	-0.152***	-0.398
			(0.053)	(0.052)	(1.477)
HR × F				1.066	
				(0.979)	
HR × CRTI					1.899
					(1.197)
HR × CRTO					0.254
					(1.517)
Project 1	0.064	0.067	0.063	0.060	0.061
	(0.044)	(0.045)	(0.045)	(0.045)	(0.045)
Constant	0.084	-0.109	-0.024	0.481	1.194
	(0.470)	(0.485)	(0.484)	(0.674)	(1.016)
MFX of F				-0.042	
S.e.				0.040	
MFX of CRTI					-0.162***
S.e.					0.039
MFX of CRTO					-0.150***
S.e.					0.053
MFX of HR				0.958*	0.913*
S.e.				0.499	0.496
N	497	497	497	497	497

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.8: Subjects' relative frequency of risky choices for consistent subjects using R2D:4D in level

	(1)	(2)	(3)	(4)	(5)
HR2D:4D (HR)	-0.049	0.159	0.165	0.082	-0.129
	(0.204)	(0.217)	(0.217)	(0.272)	(0.460)
Female (F)		-0.061***	-0.059***	-0.230	-0.059***
		(0.018)	(0.019)	(0.433)	(0.019)
CRT Imp. (CRTI)			-0.007	-0.007	-0.245
			(0.020)	(0.020)	(0.515)
CRT Other (CRTO)			0.006	0.007	-0.697
			(0.025)	(0.025)	(0.575)
HR × F				0.174	
				(0.440)	
HR × CRTI					0.245
					(0.527)
HR × CRTO					0.722
					(0.588)
Project 1	-0.063***	-0.059***	-0.059***	-0.059***	-0.058***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	0.503**	0.327	0.323	0.404	0.608
	(0.199)	(0.210)	(0.211)	(0.263)	(0.448)
MFX of F				-0.060***	
S.e.				0.019	
MFX of CRTI					-0.005
S.e.					0.020
MFX of CRTO					0.008
S.e.					0.025
MFX of HR				0.165	0.158
S.e.				0.218	0.215
N	390	390	390	390	390

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: Subjects' consistency in risky choices using dummy = 1 if 2D:4D in top-bottom tercile

	(1)	(2)	(3)	(4)	(5)
HR2D:4D (HR)	-0.010	-0.003	0.002	0.024	0.009
	(0.039)	(0.039)	(0.039)	(0.050)	(0.056)
Female (F)		-0.057	-0.024	0.011	-0.028
		(0.037)	(0.039)	(0.065)	(0.039)
CRT Imp. (CRTI)			-0.166***	-0.168***	-0.137**
			(0.039)	(0.039)	(0.063)
CRT Other (CRTO)			-0.154***	-0.154***	-0.207**
			(0.052)	(0.052)	(0.089)
HR × F				-0.051	
				(0.078)	
HR × CRTI					-0.040
					(0.078)
HR × CRTO					0.084
					(0.109)
Project 1	0.070	0.074*	0.070	0.070	0.077*
	(0.044)	(0.045)	(0.045)	(0.045)	(0.044)
Constant	0.779***	0.801***	0.912***	0.899***	0.907***
	(0.033)	(0.036)	(0.037)	(0.042)	(0.045)
MFX of F				-0.023	
S.e.				0.039	
MFX of CRTI					-0.164***
S.e.					0.039
MFX of CRTO					-0.150***
S.e.					0.052
MFX of HR				0.000	0.000
S.e.				0.039	0.039
N	497	497	497	497	497

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.10: Subjects' relative frequency of risky choices for consistent subjects using dummy = 1 if 2D:4D in top-bottom tercile

	(1)	(2)	(3)	(4)	(5)
HR2D:4D (HR)	0.020	0.026	0.026	0.032	0.019
	(0.017)	(0.017)	(0.017)	(0.021)	(0.032)
Female (F)		-0.060***	-0.058***	-0.049*	-0.058***
		(0.017)	(0.018)	(0.029)	(0.018)
CRT Imp. (CRTI)			-0.008	-0.008	-0.013
			(0.020)	(0.020)	(0.031)
CRT Other (CRTO)			0.006	0.006	-0.003
			(0.025)	(0.026)	(0.042)
HR × F				-0.013	
				(0.035)	
HR × CRTI					0.009
					(0.040)
HR × CRTO					0.014
					(0.052)
Project 1	-0.063***	-0.056***	-0.056***	-0.056***	-0.056***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	0.442***	0.465***	0.467***	0.464***	0.471***
	(0.014)	(0.015)	(0.019)	(0.019)	(0.024)
MFX of F				-0.058***	
S.e.				0.018	
MFX of CRTI					-0.007
S.e.					0.020
MFX of CRTO					0.006
S.e.					0.026
MFX of HR				0.025	0.026
S.e.				0.017	0.017
N	390	390	390	390	390

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.11: Subjects' consistency in risky choices using L2D:4D in level

	(1)	(2)	(3)	(4)	(5)
HL2D:4D (HL)	0.424	0.633	0.703	0.818	0.820
	(0.556)	(0.566)	(0.567)	(0.765)	(1.117)
Female (F)		-0.068*	-0.035	0.197	-0.036
		(0.038)	(0.039)	(1.117)	(0.039)
CRT Imp. (CRTI)			-0.169***	-0.169***	-0.134
			(0.039)	(0.039)	(1.308)
CRT Other (CRTO)			-0.155***	-0.156***	0.298
			(0.052)	(0.052)	(1.657)
HL × F				-0.237	
				(1.133)	
HL × CRTI					-0.036
					(1.331)
HL × CRTO					-0.462
					(1.689)
Project 1	0.069	0.072	0.068	0.068	0.067
	(0.044)	(0.045)	(0.045)	(0.045)	(0.045)
Constant	0.356	0.182	0.230	0.119	0.117
	(0.547)	(0.554)	(0.555)	(0.749)	(1.094)
MFX of F				-0.035	
S.e.				0.039	
MFX of CRTI					-0.169***
S.e.					0.039
MFX of CRTO					-0.156***
S.e.					0.052
MFX pf HL				0.705	0.709
S.e.				0.567	0.569
N	496	496	496	496	496

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.12: Subjects' relative frequency of risky choices for consistent subjects using L2D:4D in level

	(1)	(2)	(3)	(4)	(5)
HL2D:4D (HL)	-0.117	0.072	0.079	0.038	0.529
	(0.248)	(0.256)	(0.255)	(0.315)	(0.465)
Female (F)		-0.060***	-0.058***	-0.145	-0.058***
		(0.018)	(0.018)	(0.515)	(0.018)
CRT Imp. (CRTI)			-0.007	-0.007	0.626
			(0.020)	(0.020)	(0.562)
CRT Other (CRTO)			0.007	0.007	0.380
			(0.025)	(0.025)	(0.674)
HL × F				0.088	
				(0.522)	
HL × CRTI					-0.646
					(0.572)
HL × CRTO					-0.383
					(0.686)
Project 1	-0.063***	-0.057***	-0.057***	-0.057***	-0.057***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	0.570**	0.410	0.406	0.446	-0.034
	(0.243)	(0.249)	(0.250)	(0.308)	(0.457)
MFX of F				-0.058***	
S.e.				0.019	
MFX of CRTI					-0.009
S.e.					0.020
MFX of CRTO					0.004
S.e.					0.025
MFX of HL				0.080	0.066
S.e.				0.257	0.254
N	389	389	389	389	389

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.13: Subjects' consistency in risky choices using dummy = 1 if Left 2D:4D in top-bottom tercile

	(1)	(2)	(3)	(4)	(5)
HL2D:4D (HL)	-0.008	-0.009	0.001	-0.021	-0.050
	(0.039)	(0.038)	(0.038)	(0.050)	(0.053)
Female (F)		-0.057	-0.024	-0.054	-0.020
		(0.037)	(0.038)	(0.065)	(0.039)
CRT Imp. (CRTI)			-0.166***	-0.161***	-0.213***
			(0.039)	(0.040)	(0.059)
CRT Other (CRTO)			-0.154***	-0.153***	-0.176**
			(0.052)	(0.052)	(0.084)
HL × F				0.044	
				(0.078)	
HL × CRTI					0.074
					(0.076)
HL × CRTO					0.037
					(0.107)
Project 1	0.071	0.075*	0.070	0.071	0.070
	(0.044)	(0.044)	(0.044)	(0.044)	(0.045)
Constant	0.777***	0.805***	0.913***	0.925***	0.942***
	(0.033)	(0.035)	(0.036)	(0.040)	(0.035)
MFX of F				-0.025	
S.e.				0.039	
MFX of CRTI					-0.164***
S.e.					0.040
MFX of CRTO					-0.151***
S.e.					0.053
MFX of HL				0.000	0.002
S.e.				0.038	0.039
N	497	497	497	497	497

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.14: Subjects' relative frequency of risky choices for consistent subjects using dummy = 1 if Left 2D:4D in top-bottom tercile

	(1)	(2)	(3)	(4)	(5)
HL2D:4D (HL)	-0.006	-0.005	-0.005	0.003	0.039
	(0.017)	(0.017)	(0.017)	(0.021)	(0.032)
Female (F)		-0.058***	-0.056***	-0.044	-0.059***
		(0.017)	(0.018)	(0.028)	(0.018)
CRT Imp. (CRTI)			-0.006	-0.007	0.035
			(0.020)	(0.020)	(0.031)
CRT Other (CRTO)			0.007	0.007	0.034
			(0.025)	(0.025)	(0.041)
HL × F				-0.018	
				(0.035)	
HL × CRTI					-0.064
					(0.040)
HL × CRTO					-0.045
					(0.052)
Project 1	-0.064***	-0.058***	-0.057***	-0.058***	-0.058***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	0.459***	0.484***	0.486***	0.481***	0.461***
	(0.013)	(0.014)	(0.019)	(0.019)	(0.024)
MFX of F				-0.056***	
S.e.				0.018	
MFX of CRTI					-0.008
S.e.					0.020
MFX of CRTO					0.004
S.e.					0.026
MFX of HL				-0.006	-0.009
S.e.				0.017	0.017
N	390	390	390	390	390

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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