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Alexander W. Cappelen, Ulrik H. Nielsen, Bertil Tungodden, Jean-Robert Tyran and Erik Wengström

Øster Farimagsgade 5, Building 26, DK-1353 Copenhagen K., Denmark
Tel.: +45 35 32 30 01 – Fax: +45 35 32 30 00
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Fairness is intuitive*

Alexander W. Cappelen[a] Ulrik H. Nielsen[b] Bertil Tungodden[a]
Jean-Robert Tyran[c,b] Erik Wengström[d,b]

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Abstract

In this paper we provide new evidence showing that fair behavior is intuitive to most people. We find a strong association between a short response time and fair behavior in the dictator game. This association is robust to controls that take account of the fact that response time might be affected by the decision-maker's cognitive ability and swiftness. The experiment was conducted with a large and heterogeneous sample recruited from the general population in Denmark. We find a striking similarity in the association between response time and fair behavior across groups in the society, which suggests that the predisposition to act fairly is a general human trait.

Keywords: Response Time; Dictator Game; Experiment; Fairness
JEL Codes: C90; D03; D60

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1 Introduction

A key question in the social sciences is whether it is intuitive to behave in a fair manner or whether fair behavior requires active self-control. One way to approach this question is to study how long it takes a person to make a decision when choosing between alternatives that are more or less fair. Since a decision that relies on intuition is typically made faster than a decision that relies on deliberation, the response time of a fair decision relative to a selfish decision provides an important indication of the intuitiveness of fair behavior; if fair behavior is intuitive, we would expect a fair decision to be made faster than a selfish decision.

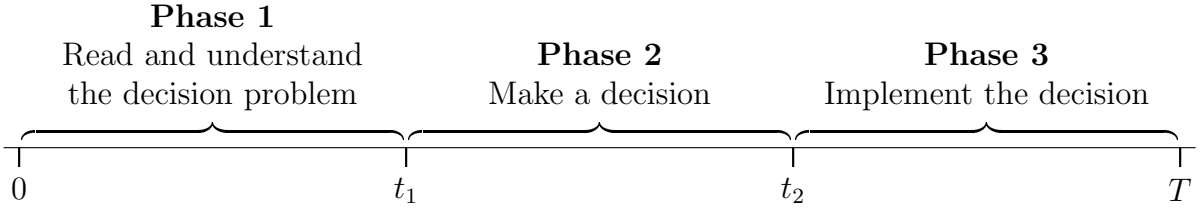
Recently, several experimental studies have used data on subjects' response time in economic games to argue that fair behavior is intuitive (Rubinstein, 2004, 2007; Rand et al., 2012; Lotito et al., 2013; Nielsen et al., 2014). In a series of public goods games, Rand et al. (2012) and Lotito et al. (2013) find that the contribution to the public good is decreasing in the participant's response time. A similar association has been documented in the ultimatum game where the response time of the proposer is negatively correlated with the share offered to the responder (Brañas-Garza et al., 2012). In line with these results, studies that exogenously manipulate the participant's response time show that people tend to contribute more to the public good under time pressure and less when they are forced to delay making their decision (Cappelletti et al., 2011; Grimm and Mengel, 2011; Rand et al., 2012; Rand and Kraft-Todd, 2004).[1] The negative association between response time and fair behavior in these experiments has been interpreted as showing that fair behavior is intuitive. It has been argued that the reason why fair behavior is intuitive in social dilemma experiments is that cooperation has proven a successful strategy in most social interactions outside the lab. This is known as the *Social Heuristics Hypothesis* (Rand et al., 2012; Rand and Kraft-Todd, 2004; Rand and Peysakhovich, 2004). A few studies have, however, challenged these findings. Tinghög et al. (2013) do not find that time pressure increases public good contributions and Piovesan and Wengström (2009) find that faster subjects more often than slower subjects make egoistic choices in distributive situations.

A key problem with the previous studies on response time and fairness, which could explain the conflicting results in the literature, is the fact that the overall response time in such experiments does not only depend on whether the decision is made intuitively. As illustrated in Figure 1, people can be seen as going through three phases when making a decision in an economic experiment. First, they have to read and understand the decision problem, then they have to make their decision (t_2), and, finally, they have to implement this decision on the computer screen (T). The response time T will thus not only depend on whether the decision itself is based on intuition or deliberation, but

[1] See also Rand et al. (forthcoming) for a meta-study.

also on the subject's cognitive ability and swiftness in implementing their decision. This introduces an important potential confound when a short response time is interpreted as indicating intuitive decision-making, since the short response time could also reflect that the participant easily grasps the decision problem (t_1) or is fast in implementing the decision ($T - t_2$). Hence, a negative association between the participant's response time (T) and the fairness of his or her behavior does not necessarily reflect that there is a negative association between decision time (t_1-t_2) and fair behavior; it might only reflect that there is a negative association between cognitive ability, swiftness, and the weight attached to fairness.

Figure 1: The components of response time



Note: The figure illustrates the three phases constituting a participant's response time.

In the present paper, we employ an experimental design with two features that allow us to more clearly identify the association between decision time and fair behavior. The first feature is that we focus on the dictator game.[2] The advantage of the standard dictator game is that it requires little cognitive effort to understand the game. In particular, it is easy to identify the most selfish alternative as well as the most fair alternative. Thus, the time it takes to understand the decision task (t_1) is minimized, which reduces the potential confound created by heterogeneity in cognitive ability. In contrast, the instructions for a public good game are clearly more demanding and it is also non-trivial to identify the selfish and the fair alternative in this game. In the ultimatum game, most people easily identify the fair alternative as a 50-50 split, but it is inherently difficult to identify the selfish alternative since it depends on the participant's belief about how the other participant will respond. The second crucial feature of our design is that we collect independent measures of each participant's swiftness and cognitive ability. This enables us to control for any remaining confound created by heterogeneity in subject's swiftness and cognitive ability.

Our experiment was carried out with a large and heterogenous sample of the Danish adult population recruited with the assistance of Statistics Denmark. This means that the participants in this experiment are much more diverse than a typical sample of college undergraduates. The collaboration with Statistics Denmark also allows us to match

[2]Two previous studies of response time and fair behavior have employed the dictator game, but these conducted either a non-incentivized experiment (Rubinstein, 2004) or a non-standard dictator game with a fairly complex decision problem (Piovesan and Wengström, 2009).

experimental data with data from the Danish population registers. This enables us to study whether there are systematic differences in the population with respect to what they find intuitive when making a distributional choice.

Our first main result, reported in Figure 2, is that there is indeed a close association between fair behavior and response time. The average response time among the selfish participants (i.e. those who shared nothing with the other participant) was 48.5 seconds, whereas it was only 38.4 seconds among the fair (i.e. those who split 50-50). We find considerable heterogeneity in both swiftness and cognitive ability among the participants in the experiment. In fact, we find that the observed variance in swiftness is as large as the observed variance in response time, and the differences in cognitive ability are also striking. The association between response time and fair behavior is, however, robust to controlling for these and other factors that could affect the subject's response time. We thus provide clean evidence of fairness being intuitive. Our second main result is that the association between fair behavior and short response time holds across groups in society when differentiating by age, gender, and length of education. Taken together, our two main results provide compelling evidence suggesting that the predisposition to act fairly is a general human trait.

The structure of the paper is as follows: Section 2 presents the experimental design and the sample. Section 3 reports the results, while Section 4 provides some concluding remarks.

2 The experiment

We here provide an overview of the sample and the experimental design.

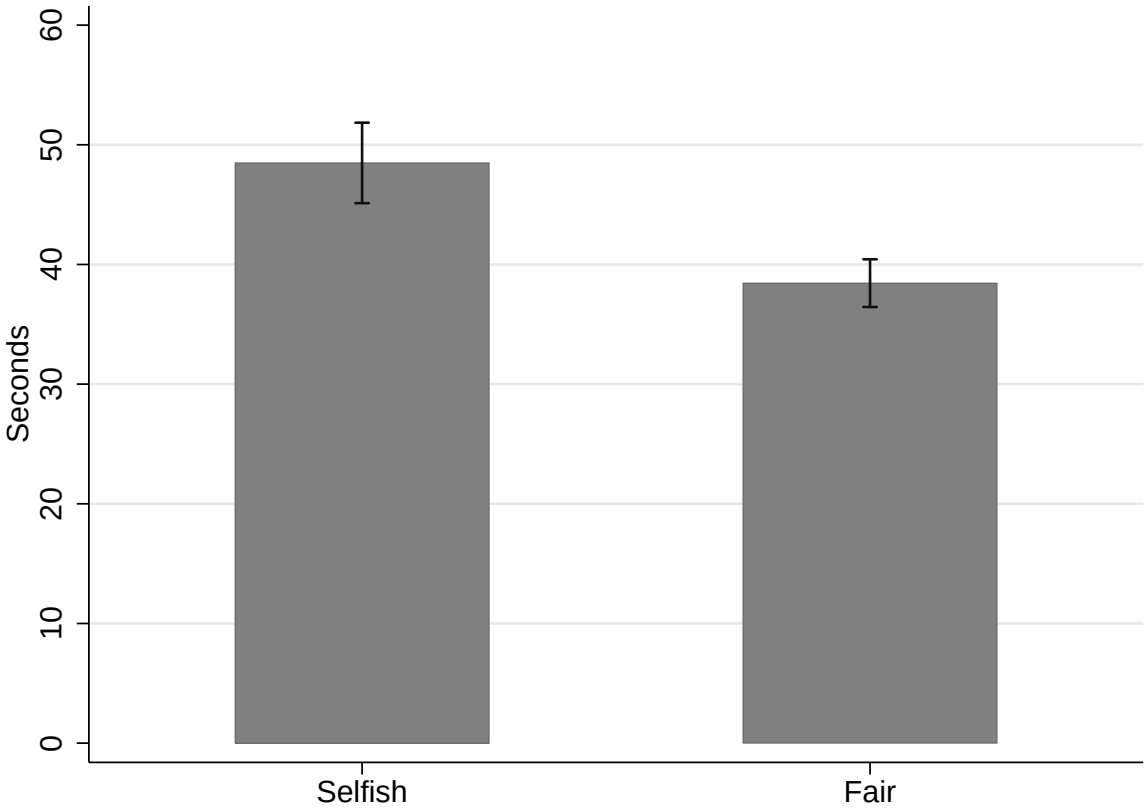
2.1 The sample and administrative procedures

The experiment was conducted using the Internet Laboratory for Experimental Economics (iLEE) at the University of Copenhagen, which provides an online platform for running large-scale experiments. The participants were recruited from the general Danish adult population and were randomly selected for invitation by Statistics Denmark.

Statistics Denmark provided official register data which can be matched with the experimental data. By using the official register data, we can compare the background characteristics of our participants with a fully representative group of adults from the general population in Denmark. We observe from Table 1 that our sample of 1,508 participants is similar to the general population with respect to age, gender, and length of education.[3]

[3] 1,565 participants took part in the dictator game, but background information is lacking for 57 participants. Our main analysis is therefore conducted on the 1,508 participants for which we have both experimental data and background data. In the Online Appendix, Figure A.4, we show that the asso-

Figure 2: Average response time of the selfish and the fair



Note: The figure reports the average response time in seconds (top-coded at 120 seconds) for participants who shared nothing (the selfish, 25% of the 1,508 participants) or shared equally (the fair, 52% of the 1,508 participants) with the other participant. Standard errors are indicated.

Table 1: Sample characteristics

	Participants		General population	
	Mean	*Std.dev.*	*Mean*	*Std.dev.*
Age	47.7	14.6	48.7	16.2
Male	0.515	0.500	0.495	0.500
Years of education	13.6	2.37	12.2	2.94

Notes: The table reports age, gender and years for education of the 1,508 participants in the experiment and for a representative sample of 40,000 individuals in the Danish adult population aged 18-80 years.

In order to ensure the participants' anonymity in the experiment, Statistics Denmark generated a unique and random six-digit id-number for each participant. The invitation

ciation between response time and fairness is robust to the inclusion of the 57 participants for whom background information is missing.

letter, which was distributed to the participants by Statistics Denmark, included a URL to the experiment's website, and a unique login code which the invitee had to enter on the website in order to access the experiment. The payments to the participants were made anonymously via electronic bank transfers to the subjects' bank accounts.

2.2 The design

The experiment was a standard one-shot dictator game with an endowment of 150 DKK (approximately 27 USD). Participants were matched in pairs and one of the participants, the dictator, was asked to decide how to split the money with the other participant, the receiver. The dictator could choose between 11 different amounts to give to the other participant: 0 DKK, 15 DKK,...., 75 DKK,...., 135 DKK, 150 DKK. Due to the simplicity of the experiment, it was not cognitively demanding to identify to identify the selfish alternative and the fair alternative. Each participant was involved in two situations, one as a dictator and one as a receiver, and was matched with a different participant in each situation.[4] After the experiment, one of the two situations was randomly drawn to determine payments to the participants.

In line with the existing literature, we measure the response time, T in Figure 1, as the time elapsed from opening the experiment's decision screen until closing it again by submitting a decision on the screen. A participant's response time, however, is likely to be affected by a wide range of personal characteristics unrelated to the participant's economic decision. In particular, a participant's cognitive ability and swiftness would affect the time used to read and understand the instructions as well as the time used to implement the decision. We therefore collect information that allows us to control for these factors.

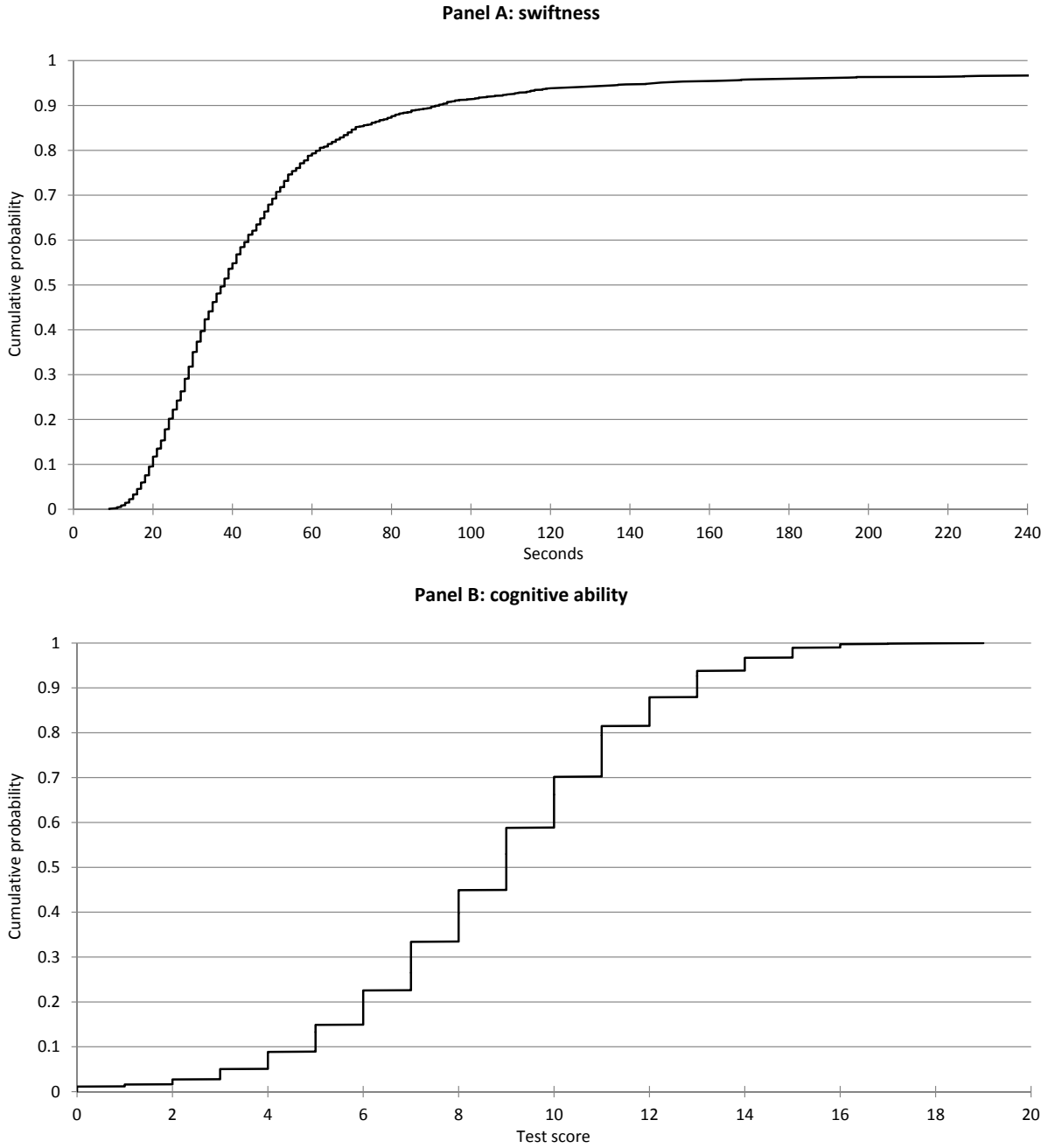
We measure the participant's swiftness as his or her response time on a screen with three background questions about age, gender, and educational attainment. Since these questions are easy to understand and require no deliberation, we view the response time on this screen as an inverse measure of the participant's swiftness (i.e. a short response time means a high degree of swiftness). We also measure the participant's cognitive ability using a 20-item progressive matrices test (Beauducel et al., 2010) which is a general intelligence test measuring the participant's ability to think logically in unfamiliar situations.

The cumulative distributions of swiftness and cognitive ability are provided in Figure 3. We observe from Panel A that there is a striking heterogeneity in the participants' swiftness; the fastest participants spent less than 20 seconds on answering the background questions, while the median response time is close to 40 seconds. As shown in Panel B, there is also considerable heterogeneity with respect to cognitive ability, with the average

[4]The translated instructions to the experiment are provided in the Online Appendix, Section A.1.

score of 8.77 being close to what is typically observed in samples with a similar age distribution (Beauducel et al., 2010). Taken together, the two panels in Figure 3 show that the potential confounds with swiftness and cognitive ability are serious when interpreting short response time as an indication of intuitive behavior.

Figure 3: Cumulative distributions of swiftness and cognitive ability

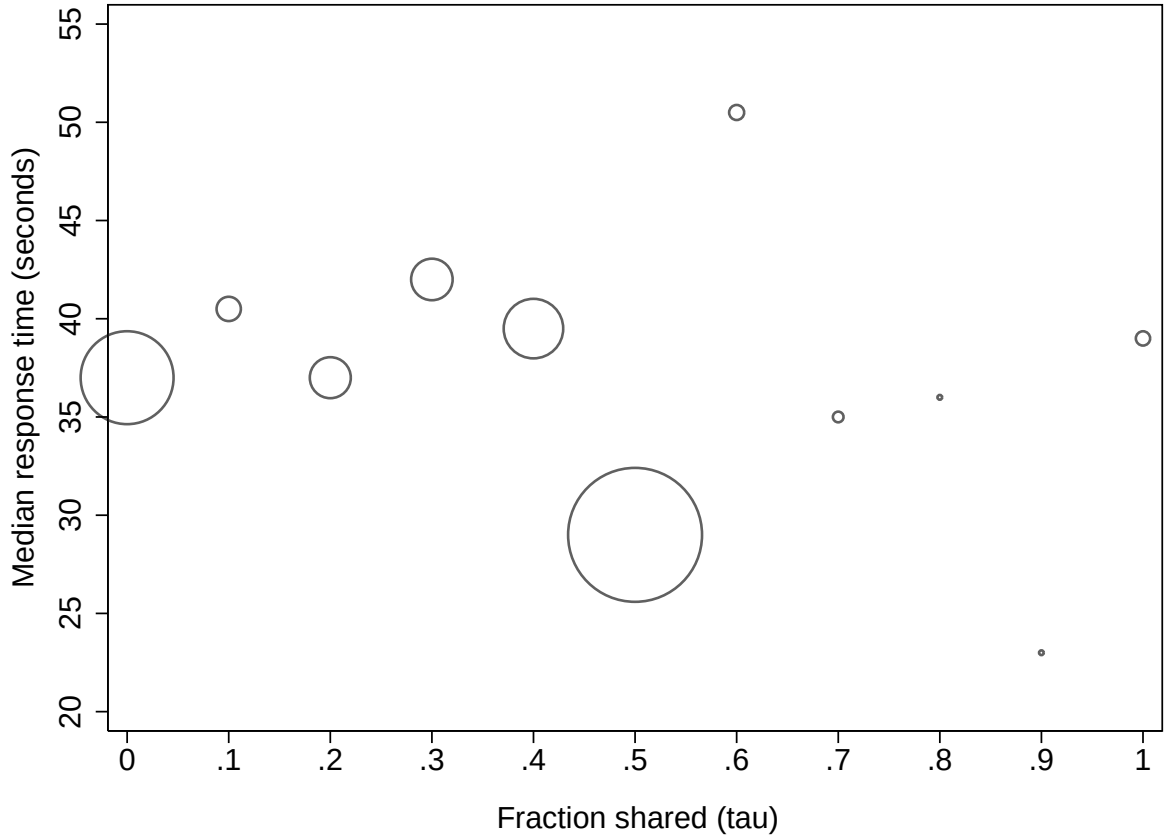


Note: The figure shows the cumulative distribution of swiftness (Panel A) and cognitive ability (Panel B) in the sample of participants (n = 1,508). Swiftness is measured as the response time on a three-item questionnaire on age, gender, and level of education. Cognitive ability is measured as the participant's score in a 20-item progressive matrices test (cognitive ability).

3 Results

Figure 4 provides an overview of the choice frequencies and median response time of the different alternatives in the choice set.[5] The average share given to the receiver was 0.34, which is somewhat higher than what is typically found in dictator game experiments with student samples (Engel, 2011). We observe that the majority of the participants chose either the selfish alternative (the selfish participants, 25%) or the fair alternative (the fair participants, 52%). The median response time among the selfish was 37 seconds, whereas it was only 29 seconds among the fair.[6] The median response time among the 23% of subjects who chose neither the selfish nor the fair alternative (the trade-off participants) was 39 seconds.

Figure 4: Choice frequencies and median response time



Note: The figure shows the median response time for each alternative in the choice set for the 1,508 participants. The circle sizes have been weighted by the choice frequencies.

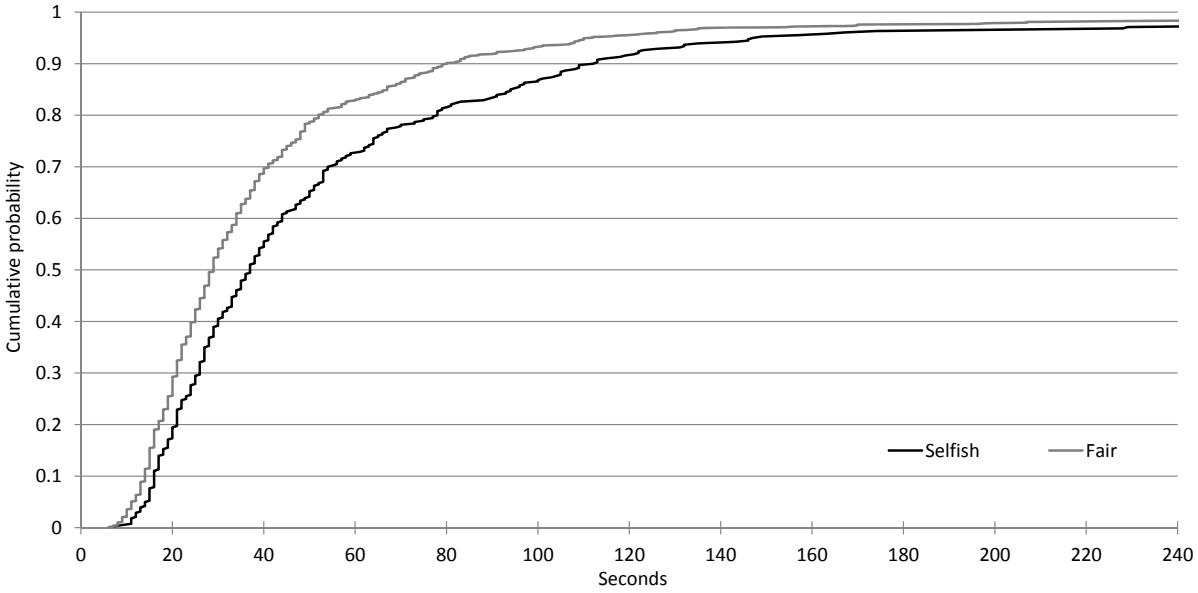
Our main focus is on whether the intuitive response to distributive behavior is to

[5]We did not enforce time restrictions in our experiment. This means that the distribution of response time in the experiment is heavily skewed to the right. Since more than 90% of the subjects submitted their decision within two minutes, however, we top-code the response time at 120 seconds. In the Online Appendix, Section A.2, we show that our results are robust to top-coding at 60 or 240 seconds.

[6]The median response times are lower than the average response times because the distribution of response time is skewed to the right.

behave selfishly or fairly, and we thus start by comparing the response time of the two groups. In Figure 5 we report the cumulative distributions of response time of the selfish and the fair participants. We observe that the cumulative distribution of the fair participants strictly dominates the cumulative distribution of the selfish participants, and we can clearly reject that the two distributions are the same (Mann-Whitney test, $p < 0.001$).

Figure 5: Cumulative distribution of response time



Note: The figure shows the cumulative distribution of the response time in seconds for the selfish (25% of the 1,508 participants) and the fair participants (52% of the 1,508 participants). A selfish participant is defined as someone who gives nothing to the other participant; a fair participant is defined as someone who gives 50

Table 2, column (1), reports the corresponding OLS regression, where we again observe that the fair participants have significantly shorter response time than the selfish participants ($p < 0.001$).[7] In columns (2)-(5), we include different background variables as controls. From column (5) we observe that the association between fairness and response time holds when all controls are included. The estimated coefficient for being fair implies that the average response time of the fair participants is 0.45 standard deviations lower than the average response time of the selfish participants. From column (5), we also observe that swifter participants respond significantly faster. This association highlights the danger of interpreting a short response time (T in Figure 1) as a short decision time ($t_2 - t_1$ in Figure 1). When including all controls we do not find any significant association between response time and cognitive ability. Finally, we find that older people tend to have a longer response time than younger people, while we do not find any association between response time and gender or education.

Participants who chose neither the fair nor the selfish alternative were engaged in

[7]In the Online Appendix, Section A.2, we show that the results also hold for Tobit regressions.

Table 2: Regressions of response time, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)
Fair	−0.316***	−0.412***	−0.377***	−0.437***	−0.450***
	(0.059)	(0.056)	(0.059)	(0.060)	(0.058)
Swiftness		−0.012***			−0.010***
		(0.001)			(0.001)
Intelligence			−0.050***		−0.014
			(0.009)		(0.009)
Age				0.016***	0.005**
				(0.002)	(0.002)
Male				−0.016	0.000
				(0.054)	(0.052)
Education				−0.019*	0.003
				(0.011)	(0.011)
Constant	1.522***	2.441***	2.009***	1.126***	2.212***
	(0.049)	(0.086)	(0.099)	(0.183)	(0.222)
Observations	1,154	1,154	1,154	1,154	1,154
R^2	0.024	0.142	0.050	0.078	0.149

Notes: OLS regressions. The dependent variable is the response time (top-coded at 120 seconds) divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) to answer a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers in a 20-item progressive matrices test, "Age" is the participant's age in years, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

an active trade-off between fairness and self-interest. From Table 3, column (1) we find that there is no significant association between response time and the share given for this group. This finding is robust to the inclusion of the full set of controls in column (5). We also observe that the estimated effect of cognitive ability is highly significant for the trade-off group; the estimated difference between the response time of the participants in the bottom and top 10% of the cognitive ability distribution is more than 60 seconds. We interpret this result as showing that those who engage in an active trade-off between fairness and self-interest rely on deliberation and not on intuition when they make their decision. The estimated effect of swiftness is, however, in line with what we observe in Table 2, which is as expected since swiftness would primarily affect the implementation of the decision.

The fair participants also have a shorter response time than the trade-off participants ($p < 0.001$).[8] Thus, overall, our analysis provides evidence of fair behavior being intuitive

[8]A OLS regression of response time for all participant is included in the Appendix.

Table 3: Regressions of response time, trade-off participants only

	(1)	(2)	(3)	(4)	(5)
Share given	−0.458	−0.270	−0.366	−0.381	−0.273
	(0.331)	(0.305)	(0.315)	(0.324)	(0.298)
Swiftness		−0.015***			−0.013***
		(0.002)			(0.002)
Cognitive ability			−0.096***		−0.063***
			(0.016)		(0.016)
Age				0.017***	0.001
				(0.004)	(0.004)
Male				−0.135	−0.077
				(0.107)	(0.099)
Education				0.024	0.050**
				(0.023)	(0.022)
Constant	1.751***	2.810***	2.529***	0.702*	2.510***
	(0.125)	(0.175)	(0.174)	(0.366)	(0.411)
Observations	354	354	354	354	354
R^2	0.005	0.161	0.101	0.066	0.215

Notes: OLS regressions. The dependent variable is the response time (top-coded at 120 seconds) divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included participants who chose neither the selfish nor the fair alternative (354 participants). "Share given" is the share of the money given to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) to answer a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers in a 20-item progressive matrices test, "Age" is the participant's age in years, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

and requiring a short decision-time, whereas any deviation from fair behavior seems to trigger deliberation and a longer decision-time.

3.1 Heterogenous effects

We now turn to the question of whether there are systematic differences across society with respect to how people intuitively respond to a distributive problem. We address this question by examining how the association between fair behavior and response time interacts with the participant's characteristics.

In Table 4, we report OLS regressions of response time on interaction effects for those participants who chose either the selfish or the fair alternative. We observe no significant interaction effect between the fair behavior and swiftness or between fair behavior and cognitive ability. We also observe that the association between fair behavior and response time is strikingly similar for participants of different age, gender, and educational attain-

ment. Taken together, these results show that the intuitive response to the dictator game is the same across society which suggests that fair behavior being intuitive is a general human trait.

4 Concluding remarks

We find that participants in a large and heterogenous sample use significantly less time to make a decision in the dictator game when they act fairly than when they act selfishly. This is robust to controlling for a rich set of background information about the participants, including independent measures of their swiftness and cognitive ability.

Our analysis sheds light on the conflicting results observed in the previous literature. We find significant heterogeneity in swiftness and cognitive ability among the participants, and we show that these characteristics matter when explaining response time. We argue that this, at least partly, reflects that response time consists of more than decision time; it also captures the time spent on reading and understanding the instructions as well as the time spent on implementing the decision. None of the previous studies on response time and fair behavior controlled for these personal characteristics, which means that the mixed results may reflect confounds related to associations between cognitive ability, swiftness, and the importance attached to fair behavior. Further, it follows from our analysis that an exogenous manipulation of response time does not necessarily map into an exogenous manipulation of decision time (Rand et al., 2012; Tinghög et al., 2013), it may as well affect the other components of response time, and thus does not cleanly identify the effect of increased reliance on intuitive behavior.

We also find a striking similarity in the relationship between fair behavior and response time in the Danish society across gender, age groups, and educational attainment. Taken together our results provide compelling evidence suggesting that the predisposition to act fairly is a general human trait.

Table 4: Heterogeneity across age, gender, and education, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fair	−0.316***	−0.396***	−0.433***	−0.432***	−0.375***	−0.411***	−0.656***
	(0.059)	(0.086)	(0.097)	(0.091)	(0.089)	(0.086)	(0.145)
Swift		−0.531***					−0.442***
		(0.095)					(0.103)
Fair× Swift		0.015					−0.015
		(0.116)					(0.126)
High cognitive ability			−0.357***				−0.240**
			(0.103)				(0.104)
Fair× High cognitive ability			0.113				0.135
			(0.123)				(0.125)
Young				−0.382***			−0.157
				(0.100)			(0.107)
Fair× Young				0.078			0.076
				(0.121)			(0.130)
Male					−0.062		−0.046
					(0.098)		(0.095)
Fair× Male					0.110		0.074
					(0.119)		(0.115)
Low education						−0.097	−0.139
						(0.097)	(0.094)
Fair× Low education						0.180	0.150
						(0.119)	(0.115)
Constant	1.523***	1.842***	1.764***	1.769***	1.559***	1.571***	2.150***
	(0.049)	(0.074)	(0.084)	(0.080)	(0.075)	(0.068)	(0.124)
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,154
R^2	0.024	0.098	0.045	0.053	0.025	0.026	0.110

Note: OLS regressions. The dependent variable is the response time (top-coded at 120 seconds) divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving 50% of the money to the other participant, "Swift" is a dummy for being at or above the median of the swiftness distribution, "High cognitive ability" is dummy for scoring at or a dummy for being at or above the median of the 20-item progressive matrices test distribution, "Young" is a dummy for being at or below the median age distribution, "Male" is a dummy for being a male, and "Low education" is a dummy for being at our below the median of the educational attainment distribution (in years).

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Online Appendix: Fairness is intuitive

Alexander W. Cappelen Ulrik H. Nielsen Bertil Tungodden
Jean-Robert Tyran Erik Wengström

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Abstract

Section A.1 presents our experimental instructions translated into English. Section A.2 provides robustness checks of the results presented in the paper.

A.1 Instructions

In this section, we present translated instructions from the experiment. The instructions were originally written in Danish. Subjects were able to review the instructions on later screens by clicking the respective button on the screen.

[Screen 1: Instructions for part 1]
Instructions for the experiment's first part

All participants in the experiment initially receive 75 DKK.

You are now involved in **2** decision situations.

In each situation, you will be randomly matched with another participant. (It will not be the same participant.)

Your decision

In one situation, you are the decision maker. **You must decide how you wish to divide the total amount that you and the other participant have been given (75 + 75 = 150 DKK) between the two of you.**

The initial situation is shown below.

[Continue]

[Screen 2: Instructions for part 2]
The other situation

In the other situation, he or she is the decision maker. He or she must make a similar decision about how he or she wants to divide the total amount that you have initially been given.

Figure A.1: Illustration explaining the initial situation in the Dictator Game

Translated text: "Udgangspunkt"=Initial situation. "Dig"=You. "Den anden"=The other one.

Outcome

Only one of the situations will be selected for payments. Both you and that other participant will be paid according to the decision made in that situation. It is equally likely that you will be paid according to the situation in which you are the decision maker as it is that you will be paid according to the situation in which the other participant is the decision maker.

[Go back] [Continue]

[Screen 3: Decision screen]
Your decision

Pick one of the options below and click **Submit decision**.

[See the instructions again] [Submit decision]

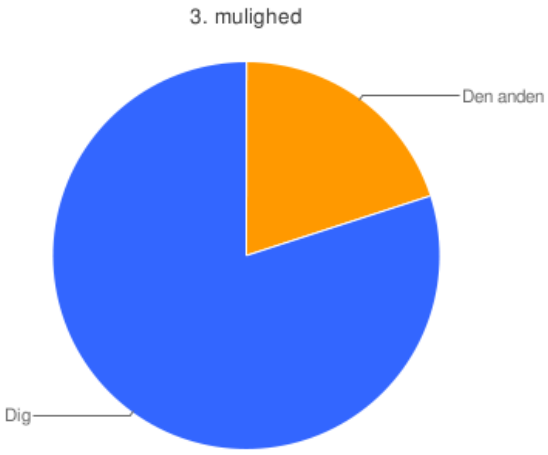
Figure A.2: Screenshot of the decision screen in the Dictator Game

	Fordeling (dig - den anden)	Du får	Den anden får	Din beslutning
1	100% - 0%	150 kr.	0 kr.	○
2	90% - 10%	135 kr.	15 kr.	○
3	80% - 20%	120 kr.	30 kr.	○
4	70% - 30%	105 kr.	45 kr.	○
5	60% - 40%	90 kr.	60 kr.	○
6	50% - 50%	75 kr.	75 kr.	○
7	40% - 60%	60 kr.	90 kr.	○
8	30% - 70%	45 kr.	105 kr.	○
9	20% - 80%	30 kr.	120 kr.	○
10	10% - 90%	15 kr.	135 kr.	○
11	0% - 100%	0 kr.	150 kr.	○

Translated text: "Fordeling (dig - den anden)"=Division (you - the other). "Du får"=You get. "Den anden får"=The other gets. "Din beslutning"=Your decision

Figure A.3: Screenshot of the decision screen in the Dictator Game after clicking 80-20

	Fordeling (dig - den anden)	Du får	Den anden får	Din beslutning
1	100% - 0%	150 kr.	0 kr.	
2	90% - 10%	135 kr.	15 kr.	
3	80% - 20%	120 kr.	30 kr.	
4	70% - 30%	105 kr.	45 kr.	
5	60% - 40%	90 kr.	60 kr.	
6	50% - 50%	75 kr.	75 kr.	
7	40% - 60%	60 kr.	90 kr.	
8	30% - 70%	45 kr.	105 kr.	
9	20% - 80%	30 kr.	120 kr.	
10	10% - 90%	15 kr.	135 kr.	
11	0% - 100%	0 kr.	150 kr.	



Translated text: "Fordeling (dig - den anden)"=Division (you - the other). "Du får"=You get. "Den anden får"=The other gets. "Din beslutning"=Your decision. "3. mulighed"=3rd option. "Dig"=You. "Den anden"=The other one.

A.2 Robustness checks

In this section, we provide robustness checks of the results presented in the main paper. We make the following robustness checks:

Figure A.4: Figure 2 in the main paper, but with participants about whom we do not have background information included, too.

Table A.1: Regressions from Table 2 in the main paper, but with top-coding at 60 seconds.

Table A.2: Regressions from Table 2 in the main paper, but with top-coding at 240 seconds.

Table A.3: Regressions from Table 2 in the main paper, but with top-coding at 120 seconds and Tobit regression methods.

Table A.4: Regressions from Table 3 in the main paper, but with top-coding at 60 seconds.

Table A.5: Regressions from Table 3 in the main paper, but with top-coding at 240 seconds.

Table A.6: Regressions from Table 3 in the main paper, but with top-coding at 120 seconds and Tobit regression methods.

Table A.7: Regressions from Table 4 in the main paper, but with top-coding at 60 seconds.

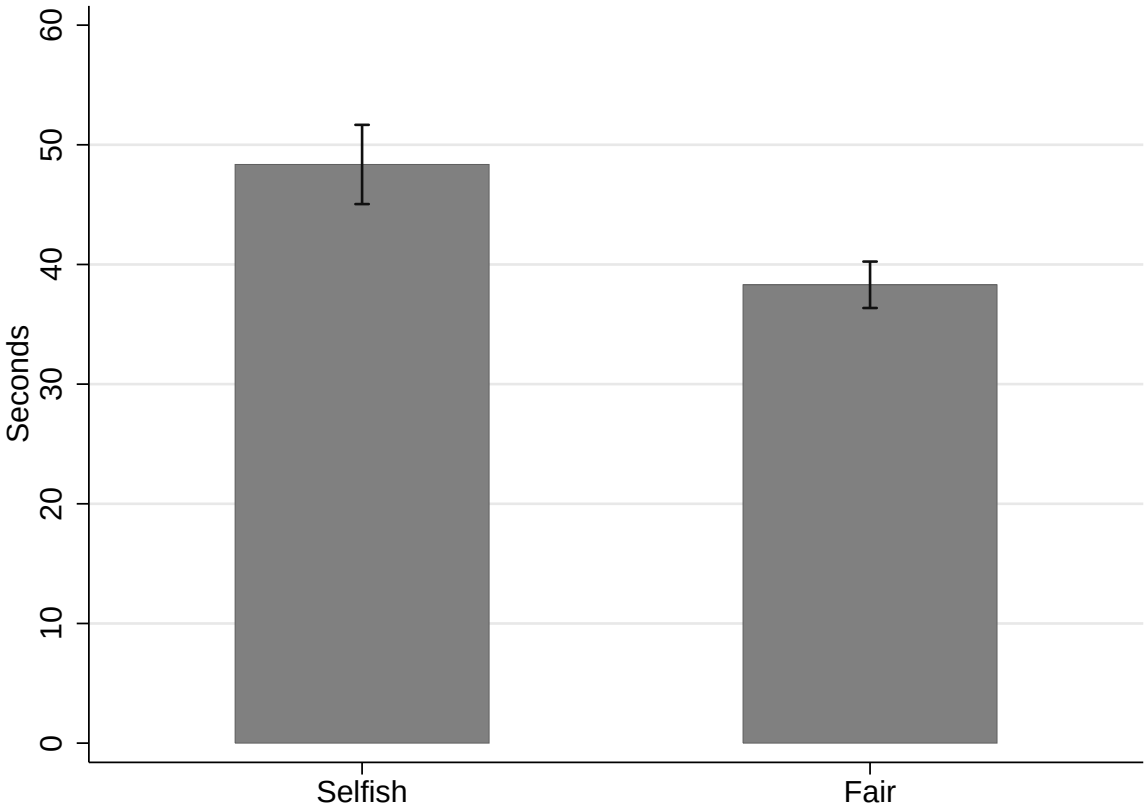
Table A.8: Regressions from Table 4 in the main paper, but with top-coding at 240 seconds.

Table A.9: Regressions from Table 4 in the main paper, but with top-coding at 120 seconds and Tobit regression methods.

For Tables A.1, A.4, and A.7 we note that the mean response time when top-coding at 60 seconds was 36.2 seconds ($\sigma = 16.9$). Likewise, for Tables A.2, A.5, and A.8 we note that the mean response time when top-coding at 240 seconds was 48.1 seconds ($\sigma = 44.7$). Tables A.3, A.6, and A.9 use the actual response time as the dependent variable, and not the normalized response time used in the main paper and in the other tables presented in this Appendix.

In Table A.10, we compare the response time of fair participants to all the others' response time, i.e. both the selfish participants and the trade-off participants. Similar to what was found in Table 2 in the main paper, we find that the average response time of the fair participants is 0.45 standard deviations lower than the average response time of the other participants.

Figure A.4: Average response time of the selfish and the fair



Note: The figure reports the average response time in seconds (top-coded at 120 seconds) for participants who shared nothing (selfish) or shared equally (fair) with the other participant. Standard errors are indicated. We have included all 1,565 participants' choices and response times for this figure. 25% of these shared nothing, while 52% shared half.

Table A.1: Regressions of response time, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)
Fair	-0.336***	-0.445***	-0.413***	-0.482***	-0.499***
	(0.062)	(0.058)	(0.062)	(0.062)	(0.060)
Swiftness		-0.013***			-0.011***
		(0.001)			(0.001)
Cognitive ability			-0.063***		-0.021**
			(0.009)		(0.010)
Age				0.019***	0.006***
				(0.002)	(0.002)
Male				-0.014	0.004
				(0.056)	(0.054)
Education				-0.026**	-0.002
				(0.012)	(0.012)
Constant	2.272***	3.298***	2.880***	1.848***	3.081***
	(0.051)	(0.089)	(0.103)	(0.190)	(0.230)
Observations	1,154	1,154	1,154	1,154	1,154
R^2	0.025	0.159	0.062	0.095	0.172

Notes: OLS regressions. The dependent variable is the response time top-coded at 60 seconds divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money sum to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.2: Regressions of response time, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)
Fair	-0.245***	-0.324***	-0.292***	-0.337***	-0.347***
	(0.055)	(0.053)	(0.056)	(0.056)	(0.055)
Swiftness		-0.010***			-0.009***
		(0.001)			(0.001)
Cognitive ability			-0.038***		-0.010
			(0.008)		(0.009)
Age				0.012***	0.003
				(0.002)	(0.002)
Male				-0.032	-0.019
				(0.051)	(0.050)
Education				-0.013	0.006
				(0.011)	(0.011)
Constant	1.098***	1.845***	1.470***	0.785***	1.691***
	(0.045)	(0.082)	(0.093)	(0.173)	(0.212)
Observations	1,154	1,154	1,154	1,154	1,154
R^2	0.017	0.107	0.034	0.051	0.110

Notes: OLS regressions. The dependent variable is the response time top-coded at 240 seconds divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money sum to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.3: Regressions of response time, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)
Fair	-10.49***	-13.67***	-12.50***	-14.54***	-14.90***
	(2.00)	(1.89)	(2.00)	(2.01)	(1.94)
Swiftness		-0.39***			-0.34***
		(0.03)			(0.04)
Cognitive ability			-1.66***		-0.45
			(0.30)		(0.31)
Age				0.52***	0.16**
				(0.07)	(0.07)
Male				-0.74	-0.20
				(1.83)	(1.76)
Education				-0.61	0.13
				(0.38)	(0.38)
Constant	49.40***	79.96***	65.46***	35.94***	72.03***
	(1.64)	(2.91)	(3.35)	(6.16)	(7.48)
Observations	1,154	1,154	1,154	1,154	1,154

Notes: Tobit regressions. The dependent variable is the response time in seconds top-coded at 120 seconds. Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money sum to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.4: Regressions of response time, trade-off participants only

	(1)	(2)	(3)	(4)	(5)
Share given	-0.179	0.003	-0.100	-0.056	0.033
	(0.306)	(0.280)	(0.294)	(0.296)	(0.276)
Swiftness		-0.015***			-0.012***
		(0.002)			(0.002)
Cognitive ability			-0.083***		-0.044***
			(0.015)		(0.015)
Age				0.018***	0.006*
				(0.003)	(0.004)
Male				-0.091	-0.037
				(0.098)	(0.092)
Education				-0.012	0.011
				(0.021)	(0.020)
Constant	2.452***	3.477***	3.123***	1.766***	3.232***
	(0.116)	(0.160)	(0.163)	(0.334)	(0.381)
Observations	354	354	354	354	354
R^2	0.001	0.172	0.085	0.086	0.209

Notes: OLS regressions. The dependent variable is the response time top-coded at 60 seconds divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included participants who did not choose either the selfish or the fair alternative (354 participants). "Share given" is the share of the endowment given to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.5: Regressions of response time, trade-off participants only

	(1)	(2)	(3)	(4)	(5)
Share given	-0.435	-0.261	-0.345	-0.390	-0.282
	(0.326)	(0.304)	(0.311)	(0.322)	(0.295)
Swiftness		-0.014***			-0.013***
		(0.002)			(0.002)
Cognitive ability			-0.095***		-0.070***
			(0.015)		(0.016)
Age				0.013***	-0.002
				(0.004)	(0.004)
Male				-0.129	-0.075
				(0.107)	(0.099)
Education				0.036	0.061***
				(0.023)	(0.021)
Constant	1.309***	2.290***	2.077***	0.271	2.136***
	(0.124)	(0.174)	(0.172)	(0.364)	(0.407)
Observations	354	354	354	354	354
R^2	0.005	0.143	0.101	0.048	0.207

Notes: OLS regressions. The dependent variable is the response time top-coded at 240 seconds divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included participants who did not choose either the selfish or the fair alternative (354 participants). "Share given" is the share of the endowment given to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.6: Regressions of response time, trade-off participants only

	(1)	(2)	(3)	(4)	(5)
Share given	-15.68	-9.13	-12.54	-13.17	-9.28
	(11.44)	(10.52)	(10.88)	(11.15)	(10.21)
Swiftness		-0.52***			-0.46***
		(0.07)			(0.07)
Cognitive ability			-3.35***		-2.24***
			(0.55)		(0.56)
Age				0.56***	0.03
				(0.12)	(0.13)
Male				-4.89	-2.87
				(3.71)	(3.42)
Education				0.90	1.81**
				(0.80)	(0.74)
Constant	57.30***	94.22***	84.43***	20.81*	84.59***
	(4.34)	(6.11)	(6.07)	(12.61)	(14.14)
Observations	354	354	354	354	354

Notes: Tobit regressions. The dependent variable is the response time in seconds top-coded at 120 seconds. Standard errors in parentheses. We have only included participants who did not choose either the selfish or the fair alternative (354 participants). "Share given" is the share of the endowment given to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.7: Heterogeneity across age, gender, and education, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fair	-0.336***	-0.361***	-0.436***	-0.396***	-0.402***	-0.403***	-0.557***
	(0.062)	(0.089)	(0.101)	(0.095)	(0.093)	(0.090)	(0.149)
Swift		-0.559***					-0.466***
		(0.098)					(0.106)
Fair× Swift		-0.117					-0.118
		(0.119)					(0.130)
High cognitive ability			-0.398***				-0.277***
			(0.107)				(0.107)
Fair× High cognitive ability			0.062				0.128
			(0.128)				(0.128)
Young				-0.378***			-0.138
				(0.104)			(0.110)
Fair× Young				-0.053			-0.005
				(0.125)			(0.134)
Male					-0.062		-0.046
					(0.103)		(0.098)
Fair× Male					0.122		0.077
					(0.125)		(0.118)
Low education						-0.033	-0.085
						(0.102)	(0.097)
Fair× Low education						0.121	0.059
						(0.124)	(0.119)
Constant	2.272***	2.608***	2.541***	2.515***	2.308***	2.289***	2.896***
	(0.051)	(0.076)	(0.088)	(0.083)	(0.078)	(0.072)	(0.128)
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,154
R^2	0.025	0.126	0.055	0.066	0.026	0.026	0.143

Notes: OLS regressions. The dependent variable is the response time top-coded at 60 seconds divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money sum to the other participant, "Swift" is a dummy for being at or above median swift, "High cognitive ability" is dummy for scoring at or above the median in a 20-item progressive matrices test, "Young" is a dummy for being at or below the median age, "Male" is a dummy for being a male, and "Low education" is a dummy for having at or below the median years of education.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.8: Heterogeneity across age, gender, and education, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fair	-0.245***	-0.343***	-0.352***	-0.373***	-0.312***	-0.340***	-0.611***
	(0.055)	(0.082)	(0.091)	(0.086)	(0.083)	(0.080)	(0.138)
Swift		-0.460***					-0.382***
		(0.090)					(0.098)
Fair× Swift		0.074					0.034
		(0.109)					(0.120)
High cognitive ability			-0.300***				-0.200**
			(0.096)				(0.098)
Fair× High cognitive ability			0.112				0.109
			(0.115)				(0.118)
Young				-0.338***			-0.147
				(0.094)			(0.102)
Fair× Young				0.128			0.109
				(0.113)			(0.124)
Male					-0.092		-0.078
					(0.092)		(0.090)
Fair× Male					0.121		0.093
					(0.112)		(0.109)
Low education						-0.119	-0.157*
						(0.091)	(0.089)
Fair× Low education						0.183*	0.154
						(0.111)	(0.109)
Constant	1.098***	1.374***	1.301***	1.315***	1.151***	1.157***	1.680***
	(0.045)	(0.070)	(0.079)	(0.075)	(0.070)	(0.064)	(0.118)
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,154
R^2	0.017	0.069	0.032	0.037	0.018	0.019	0.081

Notes: OLS regressions. The dependent variable is the response time top-coded at 240 seconds divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money sum to the other participant, "Swift" is a dummy for being at or above median swift, "High cognitive ability" is dummy for scoring at or above the median in a 20-item progressive matrices test, "Young" is a dummy for being at or below the median age, "Male" is a dummy for being a male, and "Low education" is a dummy for having at or below the median years of education.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.9: Heterogeneity across age, gender, and education, selfish and fair participants only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fair	-10.49***	-13.35***	-14.43***	-14.66***	-12.55***	-13.87***	-22.37***
	(2.00)	(2.91)	(3.27)	(3.09)	(2.99)	(2.89)	(4.89)
Swift		-17.72***					-14.71***
		(3.22)					(3.47)
Fair× Swift		0.85					-0.20
		(3.90)					(4.25)
High cognitive ability			-11.86***				-7.92**
			(3.47)				(3.50)
Fair× High cognitive ability			3.80				4.40
			(4.13)				(4.19)
Young				-13.03***			-5.48
				(3.38)			(3.61)
Fair× Young				3.11			2.86
				(4.07)			(4.38)
Male					-2.34		-1.79
					(3.32)		(3.19)
Fair× Male					3.75		2.56
					(4.03)		(3.86)
Low education						-3.62	-5.15
						(3.28)	(3.17)
Fair× Low education						6.37	5.07
						(4.00)	(3.87)
Constant	49.40***	60.02***	57.40***	57.79***	50.76***	51.20***	70.70***
	(1.64)	(2.50)	(2.85)	(2.71)	(2.53)	(2.31)	(4.19)
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,154

Notes: Tobit regressions. The dependent variable is the response time in seconds top-coded at 120 seconds. Standard errors in parentheses. We have only included the selfish and the fair participants (1,154 participants). "Fair" is a dummy for giving half of the money sum to the other participant, "Swift" is a dummy for being at or above median swift, "High cognitive ability" is dummy for scoring at or above the median in a 20-item progressive matrices test, "Young" is a dummy for being at or below the median age, "Male" is a dummy for being a male, and "Low education" is a dummy for having at or below the median years of education.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.10: Regressions of response time, all participants

	(1)	(2)	(3)	(4)	(5)
Fair	-0.350***	-0.428***	-0.388***	-0.439***	-0.454***
	(0.049)	(0.046)	(0.049)	(0.049)	(0.047)
Swiftness		-0.012***			-0.011***
		(0.001)			(0.001)
Cognitive ability			-0.062***		-0.027***
			(0.008)		(0.008)
Age				0.016***	0.004*
				(0.002)	(0.002)
Male				-0.039	-0.011
				(0.048)	(0.046)
Education				-0.011	0.014
				(0.010)	(0.010)
Constant	1.558***	2.511***	2.123***	1.020***	2.291***
	(0.036)	(0.072)	(0.078)	(0.160)	(0.192)
Observations	1,508	1,508	1,508	1,508	1,508
R^2	0.032	0.158	0.072	0.086	0.171

Notes: OLS regressions. The dependent variable is the response time (top-coded at 120 seconds) divided by the standard deviation of the response time (31.0 seconds). Standard errors in parentheses. We have included all the 1,508 participants. "Fair" is a dummy for giving half of the money to the other participant, "Swiftness" is measured as 120 seconds minus the time used (top-coded at 120 seconds) on answering a three-item questionnaire about age, gender, and educational attainment, "Cognitive ability" is the number of correct answers on a 20-item progressive matrices test, "Age" is the participant's age in years, "Male" is a dummy for the participant being a male, and "Education" is the length of the participant's education in years.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$