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# Are we more honest than others think we are?

Claire Mouminoux, Jean-Louis Rullière

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## Résumé

While the laws are justified on the basis of the efficiency they provide to society, policy makers and researchers focus on the reasons why people violate the law. Crimes and violations induce directly costs. But there is another indirect costs that is generally ignored : the fact that a person can violate the law (whether it does or not) can reduce trust in one's honesty. Thus, even if the economic agent is honest and respects the law, this loss of confidence, which could be unfounded, is also a source of inefficiency. We introduce in an experiment, a normative rule of "decision" in order to elicit both honesty and beliefs about honesty from subjects in the lab. There is no direct transfer of money between both part to avoid any inequality aversion or altruism aversion. The main question remains how individuals trust in the honesty of an anonymous group. Subjects are split into two groups : those who are subject to the temptation of (unverifiable) dishonesty and those who value the dishonesty of others. We inform each participant that we cannot identify defection. We find an important heterogeneity of trust in honesty through subjects. On average, subjects A suggests that participants B are more honest than they are. Moreover, we identify distortion of effective honesty and beliefs about other honesty when the environment of players A is unfavorable.

**Keywords:** Behavioral economics, Trust measurement, Honesty, Experiment.

## 1 Introduction

Honesty and beliefs about others honesty are central in many economic and social interactions. Above the fact that dishonesty leads to direct cost, inadequacy of honesty on the one hand and beliefs in others honesty on the other hand, is also a source of indirect cost and inefficiency. For instance, under-estimating people's honesty leads to useless and costly control of population, or self-privation of value added services. Why hire ticket inspector if everyone is traveling with valid ticket? Why do not rent our houses if they remains intact? At contrary, over-estimating people's honesty can lead to the creation of non-efficient exchange, as investment based on dishonest information. It can also support existence of non-efficient actors such insurance broker advising for most profitable instead of most appropriate contracts.

An important number of researches are devoted to the understanding of social background effects on honesty and confidence. Berg et al. (1995) were the first to shed on light importance of social background into trust reciprocity in particular when subjects already get social history. Along the

same lines, Glaeser et al. (2000) show how common social characteristics raise trust and trustworthiness among individuals. More recently, Ermisch et al. (2009) analyze population characteristics impact on trust and trustworthiness by showing, for instance, that individual with “comfortable” situation are more likely to trust. In another study, Hugh-Jones (2016) show in what extent honesty and beliefs about others honesty is significantly different across countries.

Previous results demonstrate the lively interest of the scientific community in understanding relationship between honesty behaviors and beliefs about others honesty. Above the analysis of social interaction, background and individuals characteristics effects, a large part of studies are also dedicate to the analysis of incentive and environment effects. For instance, Mazar et al. (2008), Fischbacher & Föllmi-Heusi (2013), Abeler et al. (2016) find that the increase of financial incentive does not significantly impact honesty level. However, Kajackaite & Gneezy (2017) show that this result does not hold when we considered “deception game”, where lying possibility is explicitly exposed to subjects. The fact that lying is an explicit rule of the game may conduct subjects to put more importance of the possibility to be caught as a liar, and can lead subjects to deeper analyze cost-benefits trade off. It can thus explain increase in cheating when an incentive rises. To support this result, Yaniv & Siniver (2016) show that in a safe environment people would cheat in a large extent. Hence, previous results seem to indicate that people honesty is mainly driven by the consequences of their acts on their social ethics. In addition, Houser et al. (2012) as well as Galeotti et al. (2017) highlight the importance of perception of a given environment on honesty behaviors. Indeed, subjects tend to be less honest in unfair condition. Unequal situations reduce the social ethics consideration of subject in their honesty decision-making.

The objective of this paper is to deeper understand relationship between effective honesty and people beliefs about others honesty, depending on different conditions more or less favorable. We do not address concern about the relationship between social interaction of a group and degree of honesty in relationship, but we rather focus our analyses on honesty in anonymous subjects. Indeed, as previously mentioned, honesty behaviors (i.e. honesty actions and expectations) depend on feeling to belong to a social group. However, many economic relationships and decisions, based on honesty, take place in anonymous environment without social knowledge or history between interested parts.

We thus design an original experiment in laboratory in order to elicit honesty and beliefs about others honesty, including different level of favorable context. While standard trust game of Berg et al. (1995) is mainly used for studying trust relationship, the lack of normative rule for both sides does not allow us to answer our questions. Indeed, in the standard trust game, there is no rule asking people to transfer money or to reward transfer. Hence, game condition implies subjective rule, leading to inequality aversion and altruism effect. However, the objective here, is to reveal honesty and beliefs in others honesty in an exogenous context (i.e. more or less favorable). In other words, by implicitly adding a normative rule to the game we are able to define a similar measure for those who are subject to the temptation of (unverifiable) dishonesty and those who value the dishonesty of others.

Our experiment also differs from others honesty and cheating game in two ways. First, we inspire our game from repeated coin flip experiment (Cohn et al. (2015)), but we introduce diversity

on players' environment. Players who are subject to the temptation of rule violation do not face same "severity" conditions. Last and contrary to others honesty games (Fischbacher & Follmi-Heusi (2013), Hugh-Jones (2016)) we collect data at the individual level for both sides, while ensuring anonymity of choices. This last point allows us to measure effective deviation with respect to the rule, allowing us to introduce different dishonesty temptation at the individual level.

We find that people are less honest than others think they are, particularly when rule conditions are favorable. We also catch a distortion effect of honesty behaviors, that is people honesty decreases when they face unfavorable conditions. Interestingly, this distortion effect is anticipated by subjects valuating honesty of an anonymous group. While literature results remain mixed about the correlation between honesty beliefs and risk aversion of subjects, we find that the average level of honesty expectation is not correlated to risk aversion level. In lines with Corcos et al. (2012), we find that believe in others honesty is not assimilated to a risky decision. However, our results can also support the existence of correlation between trust and risk aversion (Naef & Schupp (2009)). Indeed, we show that risk aversion of subjects in the gain domain is a determinant of honesty expectations distortion. When subjects are risk-averse, the beliefs about others honesty decrease more significantly when conditions become unfavorable.

We also investigate impact of subject's characteristics (such as gender and age) on beliefs in others honesty. While Grolleau et al. (2016) show that men are more likely to cheat, we find that they are also more likely not to believe in others honesty. Finally, we find that the age is not a determinant of honesty beliefs level. However, oldest subjects are more likely to change their expectation when conditions become favorable and, they tend to belong to more extreme profile (i.e. those who do not believe at all or those who entirely believe in others honesty).

The remainder of the paper is organized as follows. We set out the experimental design and procedure in Section 2. Section 3 then describes the detailed results, and Section 4 concludes.

## 2 Experiment Design and Procedure

We design an experiment to identify honesty and beliefs about other's honesty. This design has four main advantages. First, dishonest behaviors cannot be detected at the individual level, which reduces potential demand effect. Second, even after controlling anonymity of honesty choices, we collect data at the individual level. Third, we introduce different favorable condition levels to analyze responding deviation. Finally, the method is easy to implement in a laboratory. We also control for subject's attitude towards risk according to MPL (Multiple Price List) method of Holt & Laury (2002).

## 2.1 Elicitation of honesty and beliefs in others' honesty

During this first experimental part, each subject is assigned to a group, either A or B. This part involves a potential exchange of coins between a wallet and a padded envelope.

Before the session starts, a wallet is put on the table of each participant. This wallet either contains 10 coins of 0.50€ and a small card showing the result of 10 independent draws, or nothing. The 10 draws are of a red or green ball without replacement from a bag containing 7 red balls and 7 green balls (so that there are five possible draws, corresponding to 3, 4, 5, 6 or 7 red balls).

The content of wallets defines the group of participants. If the wallet is not empty, subject belongs to group B. We ask them to discretely apply the following rule. For each green ball draw on the small cardboard, they can collect 0.50€ in the wallet and put these 0.50€ in the padded envelope. Coins put on the envelope represent their gain for this part. The remaining euros in the wallet should correspond to 0.50€ times the number of red balls. Nevertheless, we inform them that no one in the room, including the other participants and the experimenter, are able to know if they have applied the rule or not.

To guarantee anonymity as well as to collect data according to more or less favorable situation, we also ask subject B to let into the wallet the small cardboard. Then, we scrutinize indistinguishable wallets after putting them in the same bag at the end of this part.

If the wallet is empty, subject belongs to group A. We display on their screen the different series distributed to subjects B. Series displayed order is random for each participant. They have to indicate in front of each of them how much, in euros, do they think that subject B have let in her wallet. For this part, to calculate the gain of participant A, we randomly select one of these sequences (i.e. to avoid portfolio effect) and participants A receive 5 euros minus their estimation error.

Our honesty measure is defined as the difference between the amount left in the wallet and the amount which should be left according to the rule.

## 2.2 Elicitation of risk aversion

In this part, all gains are expressed in ECU (Experimental Currency Unit). ECUs are converted at the end of the session according to the following rate :  $50 \text{ ECU} = 1\text{€}$ . Risk preferences have been measured for all subjects in the gain and loss domain. Subjects have to make two series of 10 decisions between an alternative "A" and an alternative "B". First 10 questions concerns risk attitude towards gain. For instance, they have to choose between receiving 50 ECU with a probability of 10% and receiving 20 ECU with a probability of 90% (alternative "A") or receiving 85 ECU with a probability of 10% and receiving 5 ECU with a probability of 90% (alternative "B").

The next questions concern risk attitude towards loss. We attribute to each subject and for each question an initial endowment. Then, they have to choose one alternative more or less risky. For instance, they should choose between the two following alternatives : loss 50 ECU over their 100 ECU (i.e. initial endowment) with a probability of 10% and loss 80 ECU with a probability of 90% (alternative “A”) or loss 15 ECU over their 100 ECU with a probability of 10% and loss 80 ECU with a probability of 95% (alternative “B”).

In addition, to compare risk aversion in loss and gain domain we fit payoff such that the expected payoff for each level of question in the gain and loss are equal. In other words, if the alternative “A” of the first questionnaire is the following : win 10 ECU with a probability of 10% then alternative “A” of the second one is : over 100 ECU losses 90 ECU with a probability of 10%.

We measure risk aversion among participants with respect to the first switch from a safe to a risky option, for both series of questions. A subject who switches at Question 5 is considered to be more risk-averse than a subject switching at the Question 2.

## 2.3 Procedure

An HTML web interface and a server database were designed especially for this experiment. Subjects were students from the University of Lyon 1 – Claude Bernard. 217 subjects participated in the experiment, 27 in average for each session including 5 participants of Type B for a total of 8 different sessions.

The honesty game was played first ; all subjects received identical instructions, including comprehension questions. Then, they made their decision for this part. Afterwards, subjects received written instructions for the risk elicitation task and made their choices. Finally, we asked them to answer some general questions about age, gender and education degree. All treatments were framed in a neutral manner. The sessions lasted about 35 minutes. The average payoff was about 8 euros including a show up fee of 3€.

## 3 Results

### 3.1 Descriptive Statistics

We define here the deviation of B-type subjects receiving draw  $t$  as

$$dev_{i|t} = RB_t - L_i,$$

where  $RB_t$  corresponds to the number of red ball of the draw  $t$  times 0.50€ and  $L_i$  corresponds to the observe amount left into the wallet by subject  $i$ .

Thus,  $dev_{i|t} = 0$  if B-type subject  $i$  is fully honest and perfectly follow the rule while  $dev_{i|t} > 0$  if we observe dishonesty.

We detail in Table 1 some general descriptive statistics. The average deviation of B is 0.99€ (std. dev. 1.26). Over the 40 B-type subjects, 19, or 47% respect the rule and 14, or 35%, fully deviate. Others 18% (i.e. 7 subjects) take in average 0.71€.

TABLE 1 – Descriptive Statistics

Participant Type	Deviation	% of subjects who respect the rule	% of subjects who fully deviate	Others	% of men	Average Age	Risk Aversion Level in the gain (loss) domain*
A-type (Expectation)	0.49€	15%	33%	52%	72%	21.1	5.6 (4.9)
B-type	0.99€	47%	35%	18%	70%	20.6	5.5 (4.4)

\* Question number of the first switch from a safe to a risky option

We also define beliefs in others honesty  $HB_{i,t}$  (i.e. deviation expectation) of a A-type subject  $i$  for draw  $t$  as

$$HB_{i,t} = RB_t - A_{i,t}$$

, where  $A_{i,t}$  corresponds to the answer of subject  $i$  (i.e. “How much do you think that B have left into the wallet?”) for draw  $t$ .

Thus,  $HB_{i,t} = 0$  when A-type subject  $i$  believes in others honesty, otherwise beliefs in  $HB_{i,t} > 0$  when A-type subjects  $i$  do not trust other’s honesty.

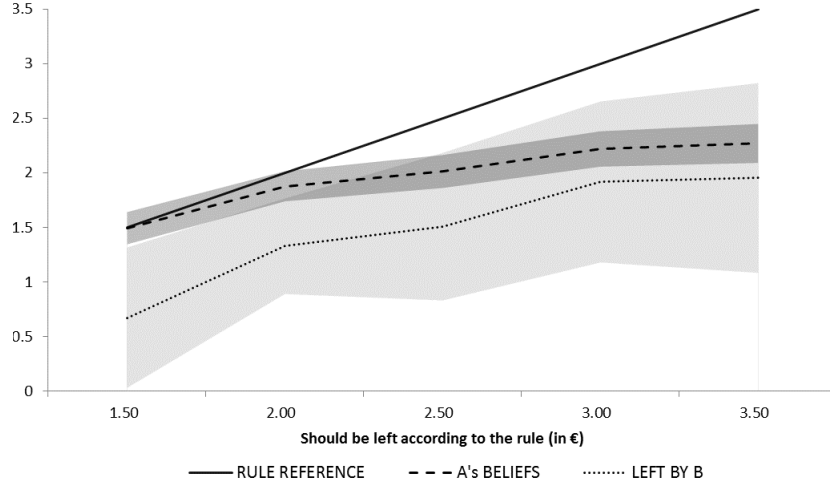
The average deviation expectation of A is 0.49€ (std. dev. 1.29). Over the 177 A subjects 27, or 15%, believe in other’s honesty and 104, or 59%, have positive value of deviation expectation. Using a non-parametric signed-rank Wilcoxon test ( $p - value < 2.09^{-9}$ ), we show that subjects are significantly less honest than others think they are.

TABLE 2 – Correlation Analysis under Draw Condition

Draw Condition	Average Expected Deviation Type A	Average Deviation Type B	p-value - H0 :Expected Deviation < Deviation (signed ranked Wilcoxon Test)	% of fully Confident Type A	% of fully Honest Type B	% of full Expected Deviation Type A	% of full Deviation Type B
Favorable	0.14	0.73	< 0.001	36.7%	46.5%	15.3%	31.6%
Unfavorable	1.01	1.32	0.17	28.5%	50.3%	10.7%	36.2%
H0 :Favorable < Unfavorable	< 0.001	< 0.001	-	-	-	-	-

Interestingly, results seem to be highly dependent on draws’ conditions. It reminds us Fehr et al. (1993) and more recently Galeotti et al. (2017) results, where subjects who are paid more are more likely to reciprocate by shirking less. Indeed, in Figure 1, the difference between the amount which should be left according to the rule and the amount estimated by A-type subjects increases with unfavorable draw condition. We observe the same effect with respect to the effective amount left by B-type subjects.

FIGURE 1 – Average behavior w.r.t the rule



We thus classify draw condition into 2 types : favorable (i.e. amount  $RB_t \leq 2.5$ ) vs unfavorable (i.e. amount  $RB_t > 2.5$ ). In Table 2, we find significant positive difference in deviation and expected deviation under favorable with respect to unfavorable conditions. A-type subjects anticipate the strongest deviation of B-type subjects in front of unfavorable conditions. However, while under favorable conditions A-type subjects over estimate honesty ( $p - value < 0.001$ ), this result does not hold anymore for unfavorable draw ( $p - value > 0.17$ ) . These results suggest that subjects are able to anticipate distortion of honesty with respect to incentive conditions but overestimate honesty when incentives to be dishonest are lowest.

## 3.2 Econometrics Modelling Specification

### 3.2.1 Honesty Beliefs Distortion

We previously see how draw condition affect both honesty and beliefs about others honesty. We thus propose in this section some econometric regressions in order to better understand the distortion effects, and in what extent subjects anticipate dishonest behavior. We focus our analysis on beliefs in others honesty by performing a linear regression.

We specify the following relationship, where  $A_{i|t}$  is answer of subject  $i$  for draw  $t$  :

$$A_{i,t} = f(X_i, X_t) \times RB_t + \epsilon_{i,t},$$

and  $f(X_i, X_t)$  is a linear combination of individual ( $X_i$ ) and draw ( $X_t$ ) explanatory variables. Hence,  $E(f(X_i, X_t)) = 1$  means that subject  $i$  fully believes in others honesty. However, when  $E(f(X_i, X_t))$  decreases, it means that subject  $i$  has lowest expectations with respect to others honesty.



TABLE 3 – Ordinary Least Squares Regression

Explanatory Variable	A's Expectation				
	Model 1	Model 2	Model 3	Model 4	Model 5
Coefficients					
<i>Std. error</i>					
Should be left	0.77*** <i>0.01</i>	0.84*** <i>0.05</i>	1.47*** <i>0.08</i>	1.48*** <i>0.15</i>	1.49*** <i>0.15</i>
Should be left × Risk Aversion (loss)		0.08 <i>0.08</i>			
Should be left × Risk Aversion (gain)		-0.02** <i>0.00</i>	-0.01** <i>0.00</i>	-0.01** <i>0.00</i>	-0.01** <i>0.00</i>
Should be left × Should be left			-0.21*** <i>0.02</i>	-0.21*** <i>0.02</i>	-0.20*** <i>0.02</i>
Should be left × Age				-0.01 <i>0.01</i>	-0.01 <i>0.01</i>
Should be left × Gender (Ref. level : Female)				0.04 <i>0.03</i>	0.04 <i>0.03</i>
Should be left × B's Deviation					-0.02** <i>0.01</i>
Nb. Observations	885	885	885	885	885
Nb. Subjects	177	177	177	177	177
$R^2$	0.721	0.723	0.744	0.744	0.745
Adjusted $R^2$	0.721	0.722	0.743	0.742	0.744

Signif. codes for p-values : 0.01 '\*\*\*', 0.05 '\*\*', 0.1 '\*'

We show in Model 1 of Table 3 that, in average, subjects do not believe in others honesty. Indeed, the average level of honesty beliefs is significantly lower than 1. A believe that B are going to take 23% more than according to the rule.

In Model 2 (Table 3), we find that risk-averse subjects in the gain domain tend to have less honesty expectations when the draw conditions of B-type subjects are unfavorable. This result is particularly interesting since we find in Model 6 of Table 4 that risk aversion in the loss and gain domain are not significant on the average level of honesty beliefs. Indeed, we model the Average Honesty Beliefs (i.e. deviation expectation) of each subject  $i$ , defined as following

$$AHB_i = \frac{1}{T} \sum_{t=1}^T HB_{i,t},$$

where  $t$  is the different draw distributed during a session to each B-type participants (i.e.  $T = 5$ ). Thus and in lines with Eckel & Wilson (2004), we do not find correlation between the level of trust (in our case Average Honesty Beliefs) and risk aversion. Hence, confidence in others honesty is not a risky decision. While risk aversion level (i.e. in the gain domain) does not explain the base level of subjects honesty beliefs, it explains why some people change their expectations when incentives to be dishonest are highest. Risk-averse participants reduce more their honesty expectations when B-type participants face unfavorable conditions.

Because we are interesting on the shape of honesty beliefs given draw conditions, we add in Model 3 (Table 3) the square of the amount who should be left according to the rule. As previously seen, A's expectations significantly depend on B draws : favorable condition reduces rule violation expectation.

Elsewhere, we check in Model 4 of Table 3 and Model 6 of Table 4 eventual subjects' characteristics effects (i.e. Age and Gender). We want to explain both : the average level of honesty beliefs and the distortion effect with respect to draw conditions. We do not find significant effect of such variables in both models and others results remain true.

However and because of the weak dispersion of subjects age into our sample, we decide to create a categorical variable with few values. Thus, we split our sample into three classes : subjects being the same age as the median (i.e. 21 years old) who represent 20% of our sample and subjects being a higher (resp. lower) age than the median, representing 41% (resp. 39%) of our sample. We find in Model 5 bis of Table 3 bis of Appendix that youngest subjects have lowest distortion beliefs effect. While this method allows us to catch information from tails distribution of age, we find in model 6 bis of Table 4 bis (Appendix) that age does not explain global honesty beliefs level of subjects (in lines with Model 6 of Table 4).

TABLE 4 – Ordinary Least Squares Regression

Explanatory Variable	A's Average Honesty Beliefs
Coefficients	<b>Model 6</b>
<i>Std. error</i>	
Risk Aversion (loss)	-0.02 <i>0.04</i>
Risk Aversion (gain)	0.06 <i>0.03</i>
Age	0.03 <i>0.02</i>
Gender (Ref. level : Female)	0.14 <i>0.16</i>
B's Average Deviation	0.13 <i>0.11</i>
Constant	-0.04 <i>0.66</i>
Nb. Observations	177
Nb. Subjects	177
$R^2$	0.02
Adjusted $R^2$	-0.04
Signif. codes for p-values : 0.01 '***', 0.05 '**', 0.1 '*',	

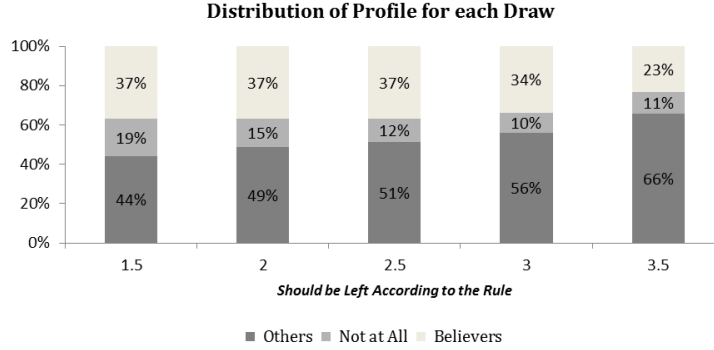
Last, we add in Model 5 (Table 3) the effective deviation observed for each draw, in order to better catch anticipation effects. While the rule enforced to B remains the more important effects on expectation, we show that A-type subjects significantly anticipate B's deviation distortion.

### 3.2.2 Honesty Beliefs Profile

After analyzing distortion of honesty beliefs, we now focus our study on more global honesty belief profiles. In Figure 2, we split our subjects into three different profiles. First, subjects who do not expect any deviation from B-type subjects, named the "Believers". "Believers" profile represent in average 33% of our sample, and Figure 2 displays a decreasing percentage when draw conditions becomes less favorable. Second, we classify subjects with no honesty beliefs into a "Not at All" profile, they represents around 13%. We regroup all others subjects into a last group called "Others",

representing in average 53% of subjects.

FIGURE 2



We carry out a multinomial logistic regression including random effects (Table 5, Model 7 and 8) with the honesty beliefs group as the dependent variable (i.e. “Believers”, ”Not at All” and “Others”). Random effects allow us to control for the relationship between errors in our panel data (Croissant (2018)).

TABLE 5 – Multinomial Logistic Regression including Random Effect

Explanatory Variable	Honesty Beliefs Profile			
	Model 7		Model 8	
	“NOT AT ALL”	“OTHERS”	“NOT AT ALL”	“OTHERS”
Coefficients				
<i>Std. error</i>				
Should be left	-0.64**	0.65***	-0.62**	0.66***
	0.27	0.16	0.27	0.17
Risk Aversion (gain)			0.16*	-0.03
			0.09	0.06
Age			-0.26	-0.08*
			0.18	0.04
Gender (Ref. level : Female)			1.90**	-0.75**
			0.59	0.25
Constant (Ref. level : “Believers”)	-3.15***	-0.95***	0.25	1.48
	0.99	0.42	2.35	1.10
Nb. Observations	885		885	
Nb. Subjects	177		177	
$R^2$	0.259		0.263	
Adjusted $R^2$	0.254		0.253	

Signif. codes for p-values : 0.01 ‘\*\*\*’, 0.05 ‘\*\*’, 0.1 ‘\*’,

As previously seen in Figure 2, we show in Model 7 (Table 5) that the percentage of “Believers” is decreasing when conditions become unfavorable. Under stable coefficients with respect to Model 7, we catch in Model 8 additional information on subjects honesty beliefs profile by adding some subjects variables (i.e. risk aversion level, age and gender).

According to Models 2, 3, 4 and 5 of Table 3, subjects more risk-averse in the gain domain get higher probability to belong to “Not at All” profile.

Gender of subjects do not appear as a significant determinant of distortion in honesty beliefs (Models 4 and 5 of Table 3). It does not explain global honesty beliefs level either (see Model 6 of Table 4). However, by analyzing more global profile in Model 8 (Table 5), we find that men have highest probability to belong to extreme profile (i.e. “Believers” or “Not at All” profile). Last, using the extent of coefficient of gender variable, men have significantly lower expectation than women about others honesty.

As a reminder, we find in Model 6 (6 bis) of Table 4 (4 bis) that age does not explain global level of honesty beliefs but explains expectation distortion beliefs (Model 5 bis of Table 3 bis). We find here, in Model 8 (8 bis) of Table 5 (Table 5 bis) that oldest subjects tend to belong to more extreme profile. However and according to Table 4, results do not allow us to determine difference in the honesty beliefs level.

## 4 Conclusion

We detail in this paper the design of a new honesty elicitation game. The objective consists on the measure of adequacy between honesty and honesty beliefs in an anonymous context. We introduce different level more or less favorable and avoid any inequality aversion or altruism effect by defining a normative rule to determine honest behavior. These new metrics defined by  $dev_{i|t}$  for B-type subject and  $HB_{i,t}$  for A-type subjects is relatively quick and easy to implement.

We distinguish the honesty concept from that of trust, which is widely explored in the behavioral economics. We are interested not only in honesty and its measure, but especially in the question of beliefs about the supposed honesty of others. Economists are agree to say that rise of economic agents honesty lead to an increase to social welfare. For instance, Fethenhauer & Van der Vegt (2001) argue that honesty lead to reduce transaction cost and thus stimulates economics growth.

However, this approach do not take into account adequacy between honesty and beliefs. Indeed, even in a fully honest world, transaction costs could no be reduced if no one believes in others honesty. Hence, the level of honesty remains important to explain sources of inefficiency of economic relationship, yet an interaction decision is also mainly determined by beliefs about others honesty.

We globally find that people are less honest than other think they are. However, this measure should be used with caution. Indeed, we show an important increasing pattern regarding honesty (i.e. and beliefs) and favorable condition. Peoples defect more when they are in an unfavorable environment and others anticipate. However, in a “safety” context, expectation are lower than effective dishonesty.

Second, we find that beliefs in others honesty is not a risky decision. Indeed, risk aversion (in the gain and loss domain) does not explain average level of honesty beliefs. However and regarding

to the distortion of beliefs in unfavorable condition, we show that risk-averse subjects in the gain domain downgrade more significantly their expectations about other honesty.

Last, while individuals characteristics do not allow us to determine average beliefs about others honesty, they explain more general profile. Indeed, we find that oldest subjects are more likely to change their expectations depending on condition and belong to extreme profile. Besides, a larger part of men than women do not believe at all in others honesty and expect a full deviation (i.e. no remaining euros in the wallet).

The relevance of our measure has been verified in Mouminoux et al. (2018) to explain delegation decisions in insurance markets. We find that beliefs in other honesty is a major determinant of intermediaries choices. Indeed, even under an high degree of brokers dishonesty, because of their own financial incentives, (i.e they do not propose the most optimal contract), some consumers prefer to ask for advice. This is a good example of consequences of gap between honesty and beliefs about others honesty.

Elsewhere people seems to allow themselves to do something bad (i.e. dishonest) because of injustice feeling. The fact that expectations are relatively closed to effective behaviors in bad conditions reinforced the idea that its cognitive bias is globally anchored in decision making. This results may have important consequences in fraud behaviors for instance. We can imagine that an insurance policyholder who never declared claims while paying their insurance premium for many years will miss-declared her first claims.

We do not adress here issues about repetitive interactions and consequences of the observation on honesty behaviors. It could be interesting to add a dynamic part into our honesty elicitation gain in order to better understand how individuals adjust their beliefs. We can imagine that dishonesty observation in favorable condition may have significant effect on honesty expectation in unfavorable one.

Another interesting approach, and in lines with Yaniv & Siniver (2016), could consist in adding in our experiment potential punishment of dishonest behaviors. For instance, we can add a probability to be detected and may expect difference in both : honesty behavior and beliefs about honesty. It could also be interesting to analyze, under punishment condition, if distortion of honesty resulting from eventual feelings of injustice keeps hold.

TABLE 3 bis – Ordinary Least Squares Regression

Explanatory Variable	A's Expectation	
	Model 5	Model 5 bis
Coefficients		
<i>Std. error</i>		
Should be left	1.49*** 0.15	1.42*** 0.09
Should be left × Risk Aversion (gain)	-0.01** 0.00	-0.02** 0.01
Should be left × Should be left	-0.20*** 0.02	-0.20*** 0.03
Should be left × Age	-0.01 0.01	
Should be left × Age < Median Age <sup>i</sup>		0.09** 0.04
Should be left × Age > Median Age <sup>i</sup>		-0.01 0.04
Should be left × Gender (Ref. level : Female)	0.04 0.03	0.04 0.03
Should be left × B's Deviation	-0.02** 0.01	-0.03** 0.01
Nb. Observations	885	885
Nb. Subjects	177	177
$R^2$	0.745	0.748
Adjusted $R^2$	0.744	0.746

Signif. codes for p-values : 0.01 '\*\*\*', 0.05 '\*\*', 0.1 '\*',

<sup>i</sup> ref. level : Age = Median Age

TABLE 4 bis – Ordinary Least Squares Regression

Explanatory Variable	A's Average Honesty Beliefs
	Model 6 bis
Coefficients	
<i>Std. error</i>	
Risk Aversion (loss)	-0.02 0.04
Risk Aversion (gain)	0.06 0.04
Age < Median Age <sup>i</sup>	-0.26 0.20
Age > Median Age <sup>i</sup>	0.03 0.21
Gender (Ref. level : Female)	0.14 0.17
B's Average Deviation	0.12 0.11
Constant	-0.04 0.66
Nb. Observations	177
Nb. Subjects	177
$R^2$	0.043
Adjusted $R^2$	-0.003

Signif. codes for p-values : 0 '\*\*\*', 0.001 '\*\*', 0.05 '\*', 0.1 '·', 1

<sup>i</sup> ref. level : Age = Median Age

TABLE 5 bis – Multinomial Logistic Regression including Random Effect

Explanatory Variable	Honesty Beliefs Profile			
	Model 8		Model 8 bis	
	“NOT AT ALL”	“OTHERS”	“NOT AT ALL”	“OTHERS”
Coefficients				
<i>Std. error</i>				
Should be left	−0.62** <i>0.27</i>	0.66*** <i>0.17</i>	−0.62** <i>0.27</i>	0.66*** <i>0.17</i>
Risk Aversion (gain)	0.16* <i>0.09</i>	−0.03 <i>0.06</i>	0.37*** <i>0.01</i>	−0.05 <i>0.07</i>
Age	−0.26 <i>0.18</i>	−0.08* <i>0.04</i>		
Age<Median Age <sup>i</sup>			−0.52 <i>0.54</i>	−0.25 <i>0.29</i>
Age>Median Age <sup>i</sup>			0.72 <i>0.54</i>	−0.74** <i>0.29</i>
Gender (Ref. level : Female)	1.90** <i>0.59</i>	−0.75** <i>0.25</i>	1.35** <i>0.54</i>	−0.75** <i>0.25</i>
Constant (Ref. level : “Believers”)	0.25 <i>2.35</i>	1.48 <i>1.10</i>	−6.42*** <i>1.70</i>	0.22 <i>0.62</i>
Nb. Observations	885		885	
Nb. Subjects	177		177	
$R^2$	0.259		0.263	
Adjusted $R^2$	0.254		0.253	

Signif. codes for p-values : 0.01 ‘\*\*\*’, 0.05 ‘\*\*’, 0.1 ‘\*’,

<sup>i</sup> ref. level : Age = Median Age

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