Journal of Economic Behavior & Organization 116 (2015) 379–386

Contents lists available at ScienceDirect

Journal of Economic Behavior & Organization

journal homepage: www.elsevier.com/locate/jebo

# Context-dependent cheating: Experimental evidence from 16 countries

David Pascual-Ezama[a,*], Toke R. Fosgaard[b], Juan Camilo Cardenas[c], Praveen Kujal[d], Robert Veszteg[e], Beatriz Gil-Gómez de Liaño[f], Brian Gunia[g], Doris Weichselbaumer[h,i], Katharina Hilken[j], Armenak Antinyan[k], Joyce Delnoij[l], Antonios Proestakis[m], Michael D. Tira[n], Yulius Pratomo[o], Tarek Jaber-López[p], Pablo Brañas-Garza[d]

[a] Department of Financial Economy and Accounting, Universidad Complutense Madrid, Campus Somosaguas, Madrid 28223, Spain
[b] Department of Food and Resource Economics, University of Copenhagen, Rolighedsvej 23, 1958 Frederiksberg C, Denmark
[c] Facultad de Economia, CEDE, Universidad de Los Andes, Calle 19A No. 1-37 Este, Bloque W (W-803), Bogotá, Colombia
[d] Economics Department, Business School, Middlesex University London, The Burroughs, NW4 4BT, London, UK
[e] School of Political Science and Economics, Waseda University, 1-6-1 Nishiwaseda Shinjuku-ku, Tokyo 169-8050, Japan
[f] Department of Social Psychology and Methodology, Universidad Autónoma de Madrid, Campus de Cantoblanco s/n, Madrid 28049, Spain
[g] The Johns Hopkins Carey Business School, 100 International Drive, Baltimore, MD 21202-1099, USA
[h] Department of Economics, University of Linz, Altenbergerstr. 68, 4040 Linz, Austria
[i] Department of Women's and Gender Studies, University of Linz, Altenbergerstr. 68, 4040 Linz, Austria
[j] Department of Applied Economics, Vrije Universiteit Brussel (VUB), Pleinlaan 2, 1050 Brussels, Belgium
[k] University of Erlangen-Nuremberg, Chair of Economic Theory, Lange Gasse 20, 90403 Nuremberg, Germany
[l] Utrecht University School of Economics, Utrecht University, Kriekenpitplein 21-22, 3584 EC Utrecht, The Netherlands
[m] Institute for Health and Consumer Protection, Joint Research Centre, European Commission, Via Enrico Fermi 2749, 21027 Ispra (VA), Italy
[n] Department of General Psychology, University of Padua, Via Venezia 12, 35131 Padova, Italy
[o] Department of Economics, Faculty of Economics and Business, Satya Wacana Christian University, Jalan Diponegoro 52-60, Salatiga 50711, Indonesia
[p] Laboratorio de Economía Experimental, Department of Economics, Universitat Jaume I, Castellón, Spain

ARTICLE INFO

*Article history:*
Received 25 September 2014
Received in revised form 24 February 2015
Accepted 25 April 2015
Available online 21 May 2015

*Keywords:*
Honesty
Corruption
Cultural differences

ABSTRACT

Policy makers use several international indices that characterize countries according to the quality of their institutions. However, no effort has been made to study how the honesty of citizens varies across countries. This paper explores the honesty among citizens across 16 countries with 1440 participants. We employ a very simple task where participants face a trade-off between the joy of eating a fine chocolate and the disutility of having a threatened self-concept because of lying. Despite the incentives to cheat, we find that individuals are mostly honest. Further, international indices that are indicative of institutional honesty are completely uncorrelated with citizens' honesty for our sample countries.



* Corresponding author at: Department of Financial Economy and Accounting, Universidad Complutense Madrid, Campus Somosaguas, Madrid, 28223, Spain. Tel.: +34 630176315; fax: +34 910102708.

*E-mail addresses:* david.pascual@ccee.ucm.es (D. Pascual-Ezama), tf@ifro.ku.dk (T.R. Fosgaard), jccarden@gmail.com (J.C. Cardenas), pkujal@gmail.com (P. Kujal), rveszteg@gmail.com (R. Veszteg), bgil.gomezdelianno@uam.es (B. Gil-Gómez de Liaño), brian.gunia@jhu.edu (B. Gunia), Doris.Weichselbaumer@jku.at (D. Weichselbaumer), khilken@vub.ac.be (K. Hilken), armenak.antinyan@fau.de (A. Antinyan), J.M.J.Delnoij@uu.nl (J. Delnoij), antonios.proestakis@ec.europa.eu (A. Proestakis), michael.d.tira@gmail.com (M.D. Tira), yulius.pratomo@staff.uksw.edu (Y. Pratomo), tarekjaberlopez@gmail.com (T. Jaber-López), branasgarza@gmail.com (P. Brañas-Garza).

http://dx.doi.org/10.1016/j.jebo.2015.04.020

## 1. Introduction

Imagine yourself on a university campus. You see the following announcement: "*Is this your lucky day? Flip a coin and win a Chocolate*". You approach the desk and receive the opportunity to win a delicious and beautifully wrapped Lindt Lindor chocolate truffle by flipping a coin with a black and a white side. You flip the coin in a box at a nearby table; the box protects your anonymity. You win a chocolate if you report that the white side came up and nothing if you report black. If you actually rolled black, the only thing keeping you from enjoying the truffle is your moral compass. You face a tradeoff between the joy of eating a fine chocolate and the individual disutility of having a threatened self-concept because of lying. There is no social shaming or ostracism. We ran this experiment (three treatments) in 16 countries to test how some regular citizens around the world behave in such a situation. Interestingly, we did not find any significant differences across an otherwise very heterogeneous set of countries.

Most studies about cultural differences regarding dishonest behavior have used the survey methodology. Transparency International reports large differences in corruption around the world and the World Value Survey documents cross-cultural differences in opinions regarding how "justifiable" it is to cheat on taxes or public transportation fares. However, corruption indices measure perceptions and not actual behaviors. Further, variations across countries in academic dishonesty (Rawwas et al., 2004) and tax evasion (Alm et al., 1995; Cummings et al., 2009) reinforce the impression that cheating is both abundant and diverse around the world. In the same line, recent research in behavioral and experimental economics has shown that a large fraction of individuals are prone to cheating (Ariely, 2012; Gneezy, 2005). An exception to this trend is Abeler et al. (2014) who report a phone-based incentivized experiment with a representative sample in Germany. They find that most people report honestly after flipping a coin in absolute privacy with a 50% chance of getting a payoff of 15 euros in cash or through an Amazon gift certificate. Abeler and colleagues also complemented their study with a laboratory experiment and find that there is a slightly higher level of dishonest reporting in this setting.

The dominant view in the literature is that individuals engage in dishonest behavior as long as they can maintain a positive self-image while obtaining the maximum payoffs from their dishonesty (Mazar et al., 2008). Further, research has shown that creating a justification of a positive self-image while behaving dishonestly is context specific (Fosgaard et al., 2013; Gino and Galinsky, 2012; Pascual-Ezama et al., 2013).

In this paper, we examine precisely this. That is, whether cheating per se differs across different countries and whether the context[1] influences this behavior. We conducted an experiment in which participants reported the outcome of a coin toss to win a prize. We replicated the experiment in a diverse set of 16 countries around the world with 1440 subjects, 90 in each country (30 per treatment). We used a simple cheating task based on Bucciol and Piovesan (2011). We took great care to run each session under similar conditions. The location of the experiment was always a busy common areas on university campuses (see Table 1 for an overview). Participants had to flip a black/white coin; if the outcome was reported white, they obtained a red Lindt Lindor Truffle; if reported black, they obtained nothing. As our sample includes substantial cultural variation – including participants from Anglo-Saxon, Latin, Germanic, Nordic and Asiatic countries – one would expect substantial heterogeneity in cheating. In addition, and consistent with a social constructionist view, the effects of culture depend on the specifics of the choice context (Gelfand et al., 2013; Kramer and Messick, 1995).

In the first treatment (the *Self-Reported* Treatment, SRT) each participant flipped a coin in a private area without the presence of the researchers or other participants. Afterwards the subject filled a report sheet – indicating sex and the white/black coin-toss result. It was clearly indicated that the filled form should be left in the box nearby. No interaction with the experimenters occurred in this task.

Taking into account that there are heterogenous types of dishonest people (Gneezy et al., 2013), this task is a good measure of dishonesty for several reasons. Firstly, as a growing body of research suggests that in completely anonymous settings, where the risk of being caught is inexistent, finding 100% cheating is not unusual (Pascual-Ezama et al., 2013; Shu et al., 2012), however, people may also restrict the amount of cheating (Ayal and Gino, 2011; Gneezy, 2005).

In our task there is no possibility to restrict the amount of cheating, the decision is simply to be honest or not (report black or white). Further, decision making is immediate and intuitive, instead of deliberative and meditative in a cognitive dual system (Bazerman and Tenbrunsel, 2011; Kahneman, 2011). In our experiment, cheating is an automatic response and the need for justification matters only when people have enough time to deliberate (Shalvi et al., 2012). Finally, the reward is a simple chocolate that gives instant gratification.

The two other treatments were the Written and the Verbal Reported Treatments (WRT and VRT, respectively). In WRT, participants completed a report sheet in private and submitted it to the experimenter. The experimenter made a note of the reported outcome, and, if due, handed the chocolate to the participant. In VRT, participants were not asked to fill any form. They verbally reported the outcome of the coin flip to the experimenter. If reported white, the experimentalist handed a chocolate to them.

Our different treatments allow us to understand how the level of cheating is shaped by context, i.e. the differences in reporting across treatments. Building on the theory of self-image maintenance (Mazar et al., 2008), we predict that our three treatments will have different implications with regard to the moral processes of reporting incorrect outcomes. We

[1] The context defines the strength of the moral compass in our experiment.

**Table 1**
Summary of countries studied.

| Country | City | University |
|---|---|---|
| Austria | Linz | Johannes Kepler University Linz |
| Belgium | Brussels | Vrije Universiteit Brussel (VUB) |
| Colombia | Bogotá | Universidad de los Andes |
| Denmark | Copenhagen | Copenhagen University |
| Finland | Oulu | University of Oulu |
| Germany | Nuremberg | University of Erlangen-Nuremberg |
| Greece | Rethymno | University of Crete |
| India | Delhi | Hansraj College, University of Delhi |
| Indonesia | Salatiga | Universitas Kristen Satya Wacana |
| Italy | Padova | Università di Padova |
| Japan | Tokyo | Waseda University |
| Netherlands | Utrecht | Utrecht University |
| Spain | Madrid | Universidad Autónoma Madrid |
| Turkey | Istanbul | Bahçeşehir Üniversitesi |
| USA | Baltimore | Johns Hopkins University |
| UK | London | Middlesex University |

conjecture that misreporting in the SRT is the least morally difficult decision since reporting does not involve any kind of social interaction and, subsequently, no social pressure from the experimenter. Consequently, the decision to be dishonest is only a tradeoff between the internal moral pressure (and the consequent guilt experienced) against the pleasure of enjoying a Lindt chocolate.

In WRT, an additional moral pressure originates from the fact that the decision is documented on paper and handed to another person. This additional social process is likely to involve shame (on top of guilt) in case of dishonesty, and hence we expect less dishonesty occurring in this treatment. Relative to verbal reports, we conjecture that written reports are more distant and make it easier to take away internal moral control (Shu et al., 2012). Therefore, we expect the VRT to bring even stronger self-image erosion in case of cheating, since the untruthful decision now must be stated face-to-face. In this situation we expect the most moral pressure to be present and hence the least dishonest behavior. This is consistent with Bandura et al. (1996) who find that verbal reports are likely to be less prone to dishonest behavior than written reports. Given this we hypothesize that self-reporting with no interaction (with the experimenter) increase the temptation to be dishonest.

## 2. Experimental design

We replicate a simple coin task by Bucciol and Piovesan (2011). As noted before, participants had to flip a black/white coin. If the reported toss was white they obtained a red Lindt Lindor chocolate and nothing otherwise.

At first glance, the choice of chocolate as an incentive might seem as unusual compared to the conventional choice of money. We believe that chocolates are a good solution for studying decision-making across countries, given that our study is in a field setting and not in the laboratory. In fact, we believe that it is advantageous to tell students you have a chance of winning a chocolate, rather than telling them you have a chance to win a dollar (or any corresponding local currency). Consuming a small snack in such a situation is simply much more of an everyday event, and hence feels more natural. And a more natural setting enables greater experimenter control and external validity. Furthermore, a chocolate is a chocolate anywhere, and subjects never have to calculate the monetary value of the good, just receive a small delicious snack. Clearly, there are many other potential incentive approaches one could apply. A monetary prize could be scaled based on Big Mac prizes, GDP, or any purchasing power index. Although there might be country differences in chocolate preference (as indicated by Messerli, 2012), the choice of chocolate as payment constitutes just as many or just as few concerns as any other cross-country payment vehicle, including country-adjusted monetary compensations. Another possible concern is the very small size of the incentive. We acknowledge the small size, yet we want to emphasize that considering the extremely short duration of the experiment (perhaps 1 or 2 min), our payment translates into an hourly payment similar to what is used in most laboratory studies.

Our participants are university students.[2] The coin was flipped only once and by one person at a time. The task was performed in a private area at a safe distance from the experimenters or other participants. The location of the experiment was within the college/university campus, for example, in a hallway in the cafeteria area, hence ensuring a steady flow of potential participants. To ensure that we do study country differences, we ensured that only native people participated in the various locations. The importance of ensuring this is supported by evidence of the effect of immigrants' original country

[2] Recent papers show that typical experimental subjects are not really different from ordinary people (see for instance Exadaktylos et al., 2013 for social dilemmas).

social norms in ethical behavior (Kountouris and Remoundou, 2013). The experiment was carried out in the local working language for both the verbal and the written part.[3]

The whole study comprises three different treatments according to the level of proximity between the participant and the experimenter:

- Self-Reported Treatment (SRT): A student approached the experimenter (at table A, see Figure A1 in the appendix for details), he/she was handed a report sheet, and was guided to table B (far enough away from the researcher area) to flip the black/white coin privately (see B in Fig. A1). The coin flip was carried out inside a small cardboard box to make it truly private. The student noted gender and the result of the coin flip on the report sheet at table B. After filling out the report sheet, the student walked over to a third table (table C in another private area at a distance from the experimenter, see C in Fig. A1) to deposit the report sheet in a box, and to take the chocolate him/herself in case of a white toss.
- Written Reported Treatment (WRT): Exactly the same as SRT, but now with the filled out report sheet in hand, the student went back to table A, gave the report sheet to the experimenter and received the chocolate if a white toss was reported. Table C is therefore not used (see Fig. A1, Appendix).
- Verbal Reported Treatment (VRT): Exactly the same as WRT, but now the student did not have to fill out the report sheet (only report gender) and had to inform the experimenter verbally about the outcome of the coin toss.

We ran the experiment with 90 participants in each country. There were 10 students for each treatment and this was repeated three times: 10 (WRT), 10 (VRT), 10 (SRT), 10 (WRT), 10 (VRT), 10 (SRT), 10 (WRT), 10 (VRT), 10 (SRT). We started each treatment with ten chocolates on a plate on table B (VRT and WRT) or table C (SRT). When we changed the treatment we refilled the chocolates taken by the participants and registered the exact number of chocolates replaced[4]. At the beginning of each treatment we started with ten chocolates in the plate. At the end of the experiment we compared the numbers in our records with the reports by the participants. In WRT and SRT participants wrote the color on the report sheet. In VRT participants only wrote the gender. In this case, when participants gave us the report sheet and told us the color we tore a little corner of the report sheet when they told us black so at the end we could know how many blacks and whites were declared.

Note that, as we kept no names or individual-specific records, we had to be very careful about whether someone returned. Experimenters were instructed to inform anyone who tried to return to flip the coin again that it was only possible to participate once. In case, faculty members showed up for participation, it was emphasized that it was intended to be a student event. Completing the experiment took about a minute or two.

## 3. Results

### 3.1. Differences by treatments

To our great surprise, overall only 57% of the participants reported white across all three treatments and countries. Since the probability of obtaining white is 50%, this result indicates that 86% resisted the temptation to lie [100% − 2(57%–50%)]. We conclude that little dishonesty is observed across all countries and treatments. Looking at the different treatments, the degree of dishonest behavior, listed as the percentage of white outcomes, confirms our initial conjectures. We observe a greater amount of lying in the SRT, with WRT in the middle, and with VRT having the smallest amount of lying.

$$62\%(\text{SelfRT}) > 57\%(\text{WrittenRT}) > 53\%(\text{VerbalRT})$$

The differences between SRT and WRT are not statistically significant ($\chi^2 = .316$; *p-value* = .574), although the average across the sixteen societies were 5 percentage points higher for the former. However, using a contingency table (Pearson $\chi^2$) the difference between SRT and VRT was larger (9 percentage points) and significant at the 5% level ($\chi^2 = 4.479$; *p-value* = 0.034). Further, we do not find any significant differences between WRT and VRT ($\chi^2 = 2.422$; *p-value* = 0.120). Thus, comparing the different treatments we find that the verbal reports are likely to be less prone to dishonest behavior than written reports in line with previous literature (Bandura et al., 1996; Festinger and Carlsmith, 1959; Mazar et al., 2008) and we further find that self-reporting the answers (and not having to deliver it to the experimenter) increases this effect.

[3] A few students asked why the coin-chocolate event was carried out. Our prepared explanation was that the purpose was to understand the students' interest for chocolates. This statement was intentionally made imprecise, such that students did not think this was a test but rather saw it as a chocolate promotion (we never said it was a Lindt promotion).

[4] Note that having more or less chocolates on the plates is not an issue for participants as they never get to know the total. What they see (on the plate) is the only reference they have.

**Table 2**
Results by condition and country.

| Country | Self-Report (SRT) ($n$ = 30 p/t) | Written Reported (WRT) ($n$ = 30 p/t) | Verbal Reported (VRT) ($n$ = 30 p/t) | All ($n$ = 90) |
|---|---|---|---|---|
| Austria | 40% | 77%*** | 60% | 59%* |
| Belgium | 57% | 47% | 53% | 52% |
| Colombia | 57% | 67%** | 43% | 56% |
| Denmark | 70%** | 43% | 40% | 51% |
| Finland | 63%* | 67%** | 53% | 61%** |
| Germany | 73%*** | 50% | 53% | 59%* |
| Greece | 60% | 60%** | 37% | 52% |
| India | 47% | 67% | 50% | 54% |
| Indonesia | 60% | 57% | 40% | 52% |
| Italy | 60% | 47% | 57% | 54% |
| Japan | 57% | 60% | 57% | 58%* |
| Netherlands | 67%** | 60% | 50% | 59%* |
| Spain | 77%*** | 67%** | 63%* | 69%*** |
| Turkey | 53% | 67%** | 57% | 59%* |
| USA | 70%** | 53% | 63%* | 62%** |
| UK | 63%* | 33% | 70%** | 56% |

*Notes*: Columns show the percentages of participants who have taken chocolates in each treatment (denoted "p/t").
* *p-value* < 0.10.
** *p-value* < 0.05.
*** *p-value* < 0.01.

### 3.2. Differences by countries

A second important result is that we find no statistically significant differences across the 16 countries across any treatment: SRT ($\chi^2$ = 16.953; *p-value* = 0.322); VRT ($\chi^2$ = 15.691; *p-value* = 0.403) and WRT ($\chi^2$ = 22.674; *p-value* = 0.091). This suggests that there is a high level of homogeneity in behavior across our sample countries.

Additional interesting results show up from a closer examination of the data. Since tossing a coin follows a binomial distribution, we looked for those countries where there is an anomalous number of white (awarded) coins reported. Table 2 reports detailed information by country and treatments.[5] At the country level, the share of whites reported in excess of 50% (across all treatments), is significant (at a 5% significance level) in three out of sixteen countries. Yet, the overall country level effects can mask underlying effects at the treatment level. We therefore focus on the treatment effects at the country level. Obviously a sample size of 30 per treatment allows us only to make rough assessment of the degree of cheating, but we still believe this rough measure provides a useful comparison across countries and treatments.[6]

Result from the Self-report treatment (SRT) is displayed in Fig. 1. In SRT we find that the null hypothesis of honest behavior is rejected for a number of countries. This figure shows that UK and Finland reject the null at $\alpha$ = 10% (dotted line labeled with *). Most importantly, Germany and Spain reject at $\alpha$ = 1% (continuous line labeled with ***). Finally, Netherlands, Denmark and the US reject for 1% < $\alpha$ < 10%.

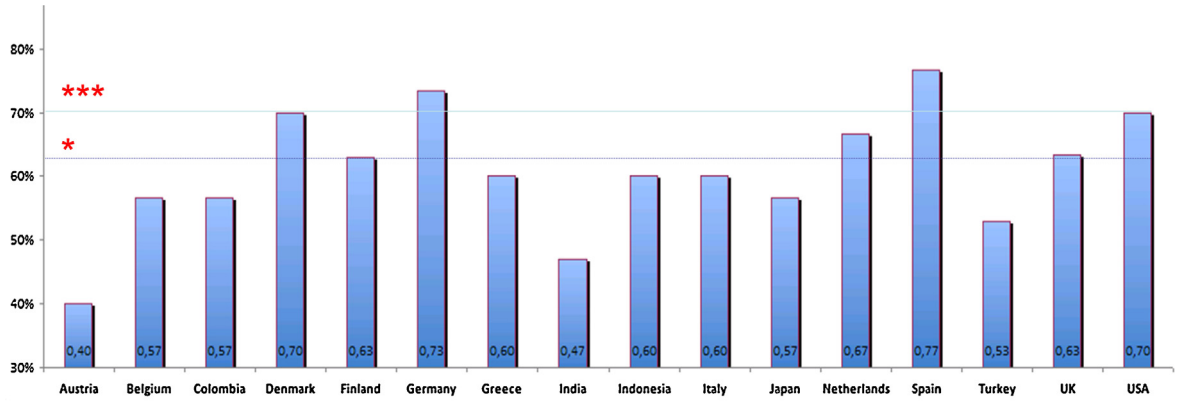
Fig. 2 displays data from Table 2 for the written and the verbal treatments. Blue (left side) bars in Fig. 2 refer to WRT (written). The number of countries that reject the null is reduced to six and they are not the same as in SRT: Colombia, Finland, Turkey and India reject at 1% < $\alpha$ < 10% while Austria does so at $\alpha$ = 1%. Spain weakly rejects ($\alpha$ = 10%). Data from VRT (verbal) are shown in the red bars (right side) of Figure 2. Only two countries appear significant: Spain rejects at 1% < $\alpha$ < 10% while the UK rejects at the 1% level. The US weakly rejects ($\alpha$ = 10%).

There are some interesting issues to emphasize: Spain also rejected the null in all treatments. Unexpectedly UK appears under the verbal and the self-reported treatment but not in the written. The latter case is exactly the complementary of Austria which appears in the written case only. Also the US and Finland appear in two treatments. It is also important to remark that Belgium, Greece, Italy, Indonesia and Japan never appear as dishonest.[7] Although it is interesting to note that these difference at the condition level do not aim at explaining each country-specific effects, we simply want to highlight that besides our overall conclusion of no significant across-country effects, we do observe some variation in the data.

[5] We have also conducted a Logit analysis to explain the outcome of individual coin tosses. In the regression, among other factors, we controlled for different income levels across countries (with the help of per-capita GNI) and for country-level per-capita cocoa consumption. While income does not seem to have a significant impact, per-capita cocoa consumption has a negative effect on cheating, i.e. the higher the per-capita consumption the lower is cheating.

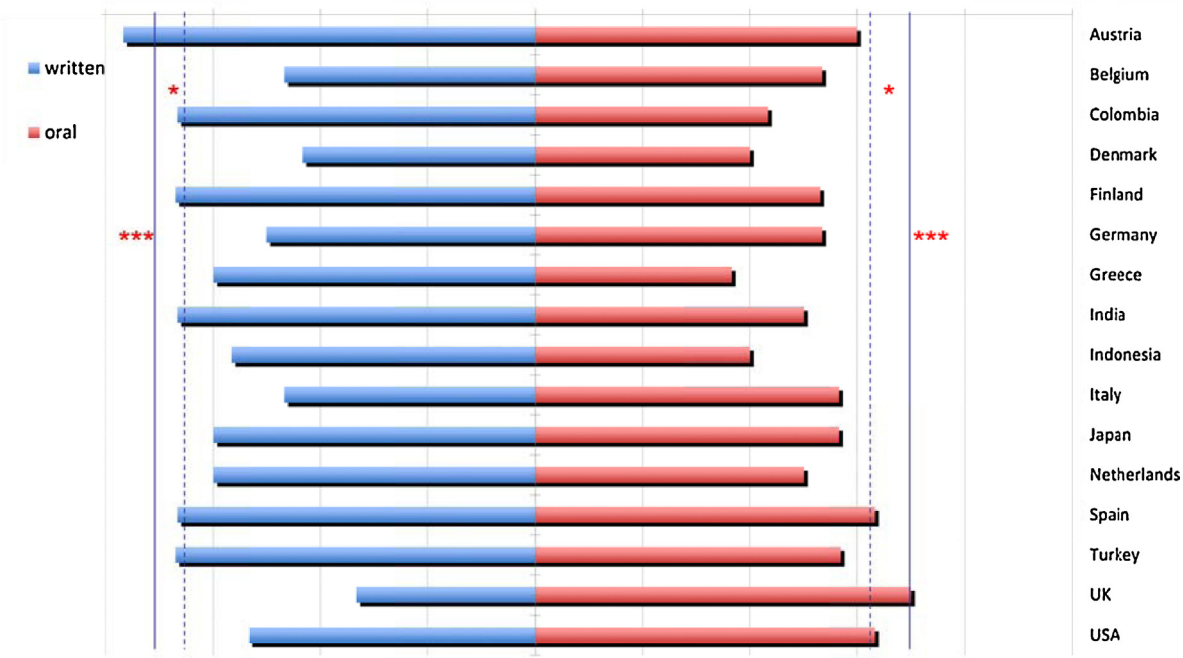
[6] We also conduct the analysis by using Inglehart-Welzel cultural categories (based on the World Value Surveys). Again we do not find any robust effect of culture on cheating behavior.

[7] It is also interesting the case of Denmark. Significant differences for SRT vs. WRT ($\chi^2$ = 4.344; *p-value = 0.037*) and VRT ($\chi^2$ = 5.445; *p-value* = 0.020) are found.




* *p-value<0.10; *** p-value<0.01.*

**Fig. 1.** Percentage of chocolates taken in the SRT. **p-value* < 0.10; ****p-value* < 0.01.




* *p-value<0.10; *** p-value<0.01.*

**Fig. 2.** Percentage of chocolates taken in the WRT and VRT. **p-value* < 0.10; ****p-value* < 0.01.

### 3.3. Gender differences

On an exploratory basis, we also analyzed the effect of gender (see Croson and Gneezy, 2009, for a review). Although previous studies have found correlations between gender and cheating (e.g., Dreber and Johannesson, 2008; Fosgaard et al., 2013), no statistically significant differences between the countries were found for the male ($\chi^2 = 15.898$; *p-value* = 0.389) or for female ($\chi^2 = 10.679$; *p-value* = 0.775) participants in line with very recent studies (Abeler et al., 2014). Analyzing by treatment, no differences were found in the SRT [($\chi^2 = 16.374$; *p-value* = 0.358) ($\chi^2 = 17.051$; *p-value* = 0.316)], WRT [($\chi^2 = 19.872$; *p-value* = 0.177) ($\chi^2 = 19.341$; *p-value* = 0.199)] or the VRT [($\chi^2 = 8.581$; *p-value* = 0.898) ($\chi^2 = 12.618$; *p-value* = 0.632)] treatments. Clearly, studying gender further reduces data size and our lack of results could be due to this. Our results indicate that that males and females do not behave differently in our sample.

**Table 3**
Pearson correlations of the four indexes with the three treatments.

| | BSI 2011 (11 countries) | PCI 2012 (16 countries) | GCB 2013 (14 countries) | AOC 2014 (16 countries) |
|---|---|---|---|---|
| SRT | 0.057 | −0.334 | −0.590** | −0.096 |
| *p*-value | 0.868 | 0.205 | 0.026 | 0.725 |
| WRT | 0.232 | 0.317 | 0.340 | 0.115 |
| *p*-value | 0.492 | 0.231 | 0.235 | 0.673 |
| VRT | −0.483 | −0.381 | −0.339 | −0.336 |
| *p*-value | 0.132 | 0.146 | 0.236 | 0.203 |

*Notes*: (.) indicates the number of countries in the sample. Some countries of our sample are missing in the BSI (Austria, Colombia, Denmark, Finland, Greece) and in the GCB (Austria, Netherlands); *p-value* is 2-tailed.
** *p-value* < 0.05.

### 3.4. Comparison with other evidence of unethical behavior

The analysis of our result can be complemented with a comparison of the (published) rankings of corruption. Note that the link between cheating and corruption has been reported as strong (Magnus et al., 2002). Therefore, we have tested whether our experimental data correlate with any of the following international corruption indexes from *Transparency International and WJR Rule of Law Index*: i.e. the BSI 2011: *Bribery Paying Index (from Transparency International)*; the PCI 2012: *Perception of corruption Index*; the GCB 2013: *Global Corruption Barometer (average of all sectors)* and AOC2014: *Absence of corruption*.[8] Table 3 summarizes all the correlations (12 comparisons: 4 indices × 3 treatments), for the countries in our sample that are also represented in the indices.

As shown in Table 3, only one correlation is statistically significant (GCB2013 vs. SRT; $p < 0.05$). On top of that, the sign of the correlations do not follow any pattern: we get 7 negatives and 5 positives. We can safely say that international indices indicative of institutional honesty are not correlated with our experimental data.

As a further robustness check we also analyzed the relation between the behavior in the experiments and answers to the world value surveys questions about morality attitude.[9] We find that neither the answer of individual item (all $p > 0.100$) nor the average ($p = 0.179$) of them is correlated with our experimental evidence.

## 4. Conclusions

Why people cheat and how it varies across cultures is an important policy question. Most of the studies regarding this have focused on institutional dishonesty (or corruption). However, whether institutional honesty directly maps into its citizens (innate) honesty has not been explored. Note that, while institutional honesty is a function of its (self) rules, individual honesty is much more primal, and hence different from its more popular counterpart, i.e. institutional honesty. Interestingly, there is little work in this regard. This papers attempts to study citizen's honesty in a multi-country study. To our knowledge this is the first study of this kind due to the span of countries and the incentivized mechanism used.

Most studies on institutional honesty rely on non-incentivized self-reported surveys. In our study, we use chocolates as an incentive and temptation device. The reward is announced and is the main motivator to prospective participants in our experiment. They hope to win a chocolate by taking part in the experiment. This self selection also implies that they have a preference for the reward and have fallen for the "temptation of winning a chocolate." By using this mechanism we thus study the innate tendency to lie amongst citizens of 16 countries.

Our main finding is that there are no statistically significant differences across our sample countries regarding their honesty levels. In fact we observe a high level of honesty and some important culture-specific interactions. Recall that in our task we compare honest behavior across countries when subjects can report the outcome under three conditions, i.e. Self, Written or Verbal. We argue that these three conditions differ in terms of the moral weight of lying. That is, under Self reporting and no interaction with the experimenter, the moral weight of lying is the least, meanwhile, it increases as we move from the Verbal to the Written condition.

Overall, we do find support for our initial hypothesis in that there is greater deception under the Self reporting condition followed by Written and Verbal. However, we observe no differences across countries. Our lack of results in this regard could be due to the smaller data size at the treatment level in each country. We have additionally looked whether we observe significant differences across countries by grouping the according to common characteristics (i.e. European, Asian, etc.). Again we find no significant differences across our sample countries. Finally, though handicapped by even smaller number of observations, we do not find any gender differences across the three conditions or countries.

As mentioned earlier we measure the innate tendency of citizens to cheat and would like to stress that this is very different from studying institutional honesty. Our results should not be confounded with those studying institutional honesty as the

[8] Note that, countries were ordered from least to most corrupt for all indices for the analysis.
[9] Justifiable: Someone accepting a bribe in the course of their duties; Justifiable: Claiming government benefits to which you are not entitled; Justifiable: Cheating on taxes if you have a chance; Justifiable: Avoiding a fare on public transport; Justifiable: Stealing property.

factors that determine one are different from the other. Further, the kind of cheating we study is instinctive. That is, subjects do not get time to deliberate their actions. The same applies to their participation in the experiment. That is, we explicitly state the reward and hence expect that we attract participants that have an affinity toward chocolate consumption. Given this, the high levels of honesty we observe across countries is indeed surprising. Further, our results show that apparently this is true across our sample countries.

We look at the side of citizens and not at the supply side of corruption in the private and public sector of the economy. Survey studies suffer from empirical issues such as confounding factors and hypothetical biases that are inherent in questionnaires (Falk and Heckman, 2009). Further, reliable data on issues such as corruption, dishonesty, cheating, etc. are hard to come by. It is in this context that the experimental methodology is very useful. We tested ordinary citizens' behavior, as opposed to subjective perceptions of national institutions. Importantly, however, our data suggest that ordinary citizens are much more honest than implied by surveys focused on national institutions. Perhaps it is the corrupting nature of these institutions that is reflected in these survey studies, but not the corruption of the average citizen. The lack of connection between the supply of corruption and the honesty of individual citizens also requires further inquiry. Our results suggest that the variation in honesty across countries is not correlated with corruption indices, opening questions about the accountability of private and public institutions and the poor connection with the citizens' behavior and preferences for honesty in their private decision. Our results clearly show the need for further incentivized and controlled experiments to explore the issue of ordinary citizens' honesty across countries.

## Acknowledgements

Financial support from the following: Ministry of Science from Spain: ECO2013-44879-R and Junta de Andalucia Excelllent Groups P12-SEJ-1436 (Spain).

## Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jebo.2015.04.020.

## References

Abeler, J., Becker, A., Falk, A., 2014. Representative evidence on lying costs. J. Public Econ. 113, 96–104.
Alm, J., Sanchez, I., de Juan, A., 1995. Economic and noneconomic factors in tax compliance. Kyklos 48 (1), 3–18.
Ariely, D., 2012. The Honest Truth About Dishonesty: How We Lie to Everyone – Especially Ourselves. Harper; Honest edition, Boston, MA.
Ayal, S., Gino, F., 2011. Honest rationales for dishonest behavior. In: Mikulincer, M., Shaver, P.R. (Eds.), The Social Psychology of Morality: Exploring the Causes of Good and Evil. American Psychological Association, Washington, DC.
Bandura, A., Barbaranelli, C., Caprara, G.V., Pastorelli, C., 1996. Mechanisms of moral disengagement in the exercise of moral agency. J. Personal. Soc. Psychol. 71 (2), 364–374.
Bazerman, M.H., Tenbrunsel, A.E., 2011. Blind Spots: Why We Fail to Do What's Right and What to Do about It. Princeton University Press, UK.
Bucciol, A., Piovesan, M., 2011. Luck or cheating? A field experiment on honesty with children. J. Econ. Psychol. 32 (1), 73–78.
Croson, R., Gneezy, U., 2009. Gender differences in preferences. J. Econ. Lit. 47 (2), 1–27.
Cummings, R.G., Martinez-Vazquez, J., McKee, M., Torgler, B., 2009. Tax morale effects tax compliance: evidence from surveys and an artefactual field experiment. J. Econ. Behav. Organ. 70, 447–457.
Dreber, A., Johannesson, M., 2008. Gender differences in deception. Econ. Lett. 99 (1), 197–199.
Exadaktylos, F., Espín, A.M., Brañas-Garza, P., 2013. Experimental subjects are not different. Sci. Rep. 3 (1231), http://dx.doi.org/10.1038/srep01213.
Falk, A., Heckman, J., 2009. Lab experiments are a major source of knowledge in the social sciences. Science 326 (5952), 535–538.
Festinger, L., Carlsmith, J.M., 1959. Cognitive consequences of forced compliance. J. Abnorm. Soc. Psychol. 58, 203–210.
Fosgaard, T., Hansen, L.G., Piovesan, M., 2013. Separating will from grace: an experiment on conformity and awareness in cheating. J. Econ. Behav. Organ. 93, 279–284.
Gelfand, M.J., et al., 2013. Toward a culture-by-context perspective on negotiation: negotiation teams in the United States and Taiwan. J. Appl. Psychol. 98 (3), 504–513.
Gino, F., Galinsky, A.D., 2012. Vicarious dishonesty: when psychological closeness creates distance from one's moral compass. Organ. Behav. Hum. Decis. Process. 119 (1), 15–26.
Gneezy, U., 2005. Deception: the role of consequences. Am. Econ. Rev. 95 (1), 384–394.
Gneezy, U., Rockenbach, B., Serra-García, M., 2013. Measuring lying aversion. J. Econ. Behav. Organ. 93, 293–300.
Kahneman, D., 2011. Thinking: Fast and Slow. Farrar Straus and Giroux, New York.
Kountouris, Y., Remoundou, K., 2013. Is there a cultural component in tax moral? Evidence from immigrants in Europe. J. Econ. Behav. Organ. 96, 104–119.
Kramer, R.M., Messick, D., 1995. Negotiation as a Social Process. Sage, Thousand Oaks, CA.
Magnus, J.R., Polterovich, V.M., Danilov, D.L., Savvateev, A.V., 2002. Tolerance to cheating: an analysis across cultures. J. Econ. Educ. 33, 125–135.
Mazar, N., Amir, O., Ariely, D., 2008. The dishonesty of honest people: a theory of self-concept maintenance. J. Mark. Res. 45 (6), 633–644.
Messerli, F.H., 2012. Chocolate consumption, cognitive function, and Nobel laureate. N. Engl. J. Med. 367, 1562–1564.
Pascual-Ezama, D., Prelec, D., Dunfield, D., 2013. Motivation, money, prestige and cheats. J. Econ. Behav. Organ. 93, 367–373.
Rawwas, M.Y.A., Al-Khatib, J.A., Vitell, S.J., 2004. Academic dishonesty: a cross-cultural comparison of U.S. and Chinese marketing students. J. Mark. Educ. 26, 89–100.
Shalvi, S., Eldar, O., Bereby-Meyer, Y., 2012. Honesty requires time (and lack of justifications). Psychol. Sci. 23, 1264–1270, http://dx.doi.org/10.1177/0956797612443835.
Shu, L., Mazar, N., Gino, F., Ariely, D., Bazerman, M.H., 2012. Signing at the beginning makes ethics salient and decreases dishonest self-reports in comparison to signing at the end. Proc. Natl. Acad. Sci. 109 (38), 15197–15200.