Giving Money to the Inca: Experiments and Theory on Social Norms and Tax Compliance in Peru

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Giving Money to the Inca: Experiments and Theory on Social Norms and Tax Compliance in Peru [1]

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ABSTRACT: We report data from an experiment in Peru where subjects anonymously decide how much of their endowment they donate to the Peruvian government. The standard rational choice model and several well-known models of non-selfish preferences predict zero giving. Yet we observe that around 75% of the subjects give something (N = 164), with substantial heterogeneity. Further, individual donations depend negatively on (a) beliefs about corruption in Peru and positively on (b) level of support of the actual government and (c) beliefs about the average donation by other subjects. Our data is consistent with a theory based on consequentialist norms, which we develop in detail. This paper contributes to a recent literature on tax morale emphasizing the importance of non-standard motivations on tax compliance, and suggests that taxpayers are willing to give money to the government (e.g., paying taxes) if they believe that enough others give as well and that taxes are not wasted or 'stolen' by the government, but used to promote social welfare.

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RESUMEN: Realizamos un experimento en Perú en el que los sujetos, de forma anónima, deciden cuánto de su dotación inicial donan al gobierno peruano. El modelo estándar del agente económico racional, así como varios otros modelos de preferencias no egoístas predicen que la donación será cero. Sin embargo, observamos que aproximadamente 75% de los sujetos donan positivamente, aunque con alta heterogeneidad. Más aún, las donaciones dependen negativamente de (a) sus creencias acerca de la corrupción en el Perú, y positivamente de (b) el nivel de apoyo que muestran al gobierno actual, y (c) de las creencias acerca de la donación promedio de los demás sujetos. Nuestros resultados son consistentes con teorías basadas en normas consecuencialistas, es decir aquellas cuyo valor moral se mide por si sus acciones generan resultados buenos o malos. Este trabajo contribuye con la reciente literatura sobre moral fiscal enfatizando la importancia de motivaciones no estándar en el cumplimiento tributario, y sugieren que los contribuyentes están dispuestos a dar dinero al gobierno (por ejemplo, pagando impuestos) si creen que muchos otros también dan, así como si creen que los impuestos no serán desperdiciados o apropiados por corruptos, pero sí usados para promover el bienestar social.

Keywords: Corruption, Evasion, Peer Effects, Social Norms, Tax Compliance, Tax Morale.

JEL classification codes: C91, D91, H26, H30.

1. Introduction

The question of why people evade or pay their taxes is a crucial one for economic research and public policy because taxes support most of public investment and expenditures around the world (Andreoni et al., 1998). Indeed, tax evasion has been an important research topic for many years, starting from the seminal paper by Allingham and Sandmo (1972), who adapted the Becker (1968) model of crime deterrence to study tax evasion. Their model assumes that taxpayers are standard economic agents focused on their own material interest and hence stresses dissuasion as the main reason behind tax compliance. In other words, people pay taxes if the expected punishment for evasion is large enough, that is, if the probability of detection and the ensuing material sanction are sufficiently high.

While the model by Allingham and Sandmo (1972) is remarkable for its parsimony, its empirical validity has been often contested (Alm et al, 1992; Andreoni et al., 1998; Frey, 2003; Luttmer and Singhal, 2014). In effect, since prevailing sanctions and detection probabilities around the world are arguably low, the model seems to be inconsistent with the relatively low levels of tax evasion observed in most developed economies (Alm et al. 1992; Torgler, 2002). In short, dissuasion cannot explain by itself the actual levels of voluntary tax compliance. This fact has caused the birth of an abundant literature that analyzes the importance of psychological and cultural elements to explain taxpayers' behavior (Scholz and Witte, 1989; Alm et al, 1993; Pommerehne et al, 1994; Feld and Frey, 2002; Torgler, 2002; Luttmer and Singhal, 2014, Mascagni, 2018, Alm, forthcoming).

These not-related-to-the-dissuasion arguments have been grouped under the ample concept of "Tax Morale", which includes varied non-standard motivations like loss aversion, peer effects, reciprocity, and social norms, to name a few, but also cognitive aspects like biased perceptions, bounded rationality, and the application of mental heuristics. One of the appeals of a better understanding of these elements is that they might suggest ways to reduce tax evasion at a relatively low cost for the tax administration, which often has limited resources to pursue a very strict control strategy (for examples, see Del Carpio, 2014 and Hallsworth et al., 2017).

Focusing on the motivational side, <u>what drives citizens to comply with their tax obligations?</u> This paper offers some insights on this point by means of a utility model of tax morale and data from a lab experiment. The model extends the approach in López-Pérez (2008) and makes two key hypotheses.[4] First, there is a social norm that commends to act so as to maximize social welfare. If people deviate from this consequentialist norm, second, they suffer a utility cost that depends directly

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[4] López-Pérez (2008) and López-Pérez (2010) discuss in length the psychological underpinnings of the model. In addition, López-Pérez (2008) shows that the model can explain a large number of robust experimental facts, including some at odds with other models of non-selfish preferences like Rabin (1993) and Fehr and Schmidt (1999).

on (a) the magnitude of the deviation, i.e., the expected 'harm' or decrease in social welfare that the deviation causes and indirectly on (b) the average deviation among the reference group members (peer effects). Some of these hypotheses are in line with ideas emphasized by previous studies. To start, Slemrod (2002), Fellner et al. (2013), Luttmer and Singhal (2014), and Alm et al. (2016) provide or review evidence on the importance of peer effects and social influences on tax compliance –consult also Del Carpio (2014), who reports experimental field evidence from Peru in this line.[5] These effects have also been observed in experimental lab studies on deception, of which false filling of tax forms is an instance; see Gino et al. (2009), Fosgaard et al. (2013), Innes and Mitra (2013), and López-Pérez and Spiegelman (2013). In turn, the role of moral rules and long-run cultural effects reflecting internalized social norms has been also stressed by Andreoni et al. (1998), Luttmer and Singhal (2014), DeBacker et al. (2015), and Dulleck et al. (2016).

We use experimental methods to test our model in a controlled manner. The experiment was run in Peru and is very simple: Each subject is endowed with 30 Soles (around $10) and can voluntarily and anonymously donate some of this endowment to the Peruvian government. Somehow surprising to us, a very substantial share of our subjects gives something (around ¾ of them). Moreover, giving is correlated with a number of variables, as predicted by our model. First, we elicit each subject's beliefs about the average donation by other subjects and find it significantly correlated with her/his donation (peer effects). The reader might object that this could be due to a false consensus effect, so that subjects believe that others tend to donate as much as them –Ross, Greene, & House (1977). Evidence from a treatment in which *reference* beliefs are arguably fixed, however, suggests that beliefs do affect donations. Second, we predict that giving will be (non-linearly) correlated with the subject's perceptions about how efficient and competent the government is. Intuitively, people would feel no remorse for not giving if they thought that most taxes are stolen or squandered. We ask subjects at least two questions that approximate those perceptions: (a) the ranking of Peru in the International Transparency index of corruption,[6] and (b) the level of support of the current president. A non-linear regression analysis shows that donations are significantly correlated with the responses to these two questions: Within the group of subjects who are (relatively) more positive about the government and the public sector, donations co-move *ceteris paribus* with their positive perceptions. To our knowledge, we are the first to report controlled experimental evidence on this point. On the other hand,

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[5] Similarly to our assumption (b), Myles and Naylor (1996) and Traxler (2010) develop models where a taxpayer's utility depends on the share of tax evaders, so as to explain a number of phenomena that the standard model cannot account for. These models do not explicitly incorporate our other assumptions mentioned above.

[6] Peru is a country with relatively high levels of perceived corruption. Indeed, in the International Transparency report of 2017, Peru has the 96th position out of 180 analyzed countries, worsening its position of the previous three years and below the regional average. On a different topic, we note that the public sector in Peru is relatively small, as government spending amounted to around 16.5% of total output (GDP) over the years 2014 to 2017 (source: Central Bank of Peru).

we do not find a correlation between donations and other variables like gender, political ideology, religiosity, age, income level, and education. Although correlation does not imply causation, the consistency of the model with the data seems remarkable, particularly given that other models of non-selfish preferences have problems to explain some of our findings (as we explain later).

While due caution is warranted in extrapolating our evidence to the realm of tax compliance, the data hence *suggests* that consequentialist norms affect tax evasion. As the subjects in our study, taxpayers might be willing to give (some) money to the government –e.g., voluntarily paying (part of) their taxes–, particularly if they have *relatively* positive perceptions about its performance and believe that other taxpayers comply as well. It must be stressed that participants in our study were a representative sample of the population of taxpayers in Lima, and not just university students. Furthermore, the external validity of our results seems supported as well by previous survey evidence from Latin America –Torgler (2005) uses data sets from Latinobarómetro and the World Values Survey to analyze the determinants of tax morale in this region, and Ortega et al. (2016) study citizens' attitudes to tax obligations by means of surveys implemented in 17 cities of Latin America.[7] On the other hand, our results are in line with the remarks by many researchers on tax compliance –e.g., Andreoni et al. (1998) reckon that citizens' perceptions about government spending and level of corruption are relevant elements in understanding compliance.

The rest of the paper proceeds as follows. The experimental design and procedures described in Section 2 aim to test some predictions of our model. The basics of the utility model are presented in Section 3, which reports as well the experimental data. In turn, section 4 concludes with a discussion of our main contributions. Note also that we present in Appendix I a formal and detailed exposition of the model.

2. Experimental Design and Procedures

The main goal of our experiment is to test our utility model in a controlled manner. For this, we focus on a very simple one-shot decision problem where each subject is endowed with 30 soles (around US\$ 10) and can voluntarily donate some of this endowment to the Peruvian government. This donation is implemented by means of an actual bank deposit to an account of the Peruvian Public Treasury (Banco de la Nacion account number 00000-299294), made anonymously by two of the

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[7] Several Latinobarómetro reports also find that the payment of taxes has a high statistical relationship with the citizens' perception that governments work for the well-being of all. It must be noted that such perceptions tend to be negative in most Latin American countries, particularly in Argentina, Dominican Republic and Peru. In this respect, while we find that Peruvian taxpayers differ in their willingness to give money to the government, our model also hints that, in a cross-country comparison, aggregate evasion will be relatively high in countries where the average or modal perception is negative, like Peru. Similarly, the model implies that the differences in the rates of tax evasion normally observed between developed and other economies are partly due to differences in these perceptions and peer effects.

experimenters after all participants have finished their choices (with two subjects acting as witnesses). Any subject's payoff equals the initial endowment minus the donation, plus a 20 soles (around $US7) show-up fee.

Each session was conducted as follows. Before it started, the instructions and a decision sheet were distributed in conveniently separated seats across the room so as to avoid communication between subjects. Then every subject entered the room and chose one of those seats. They first read the instructions at their own pace; subsequently, the experimenter read them aloud to ensure common knowledge.[8] Questions were privately clarified. All decisions were taken with pencil and paper. Any subject was identified by an individual ID number, included in her/his decision sheet.

Instructions attempted to diminish potential demand effects or other confounds. For instance, we used neutral language and stated that there were no tricky questions, so that subjects should choose as they preferred. A potential motivation by any subject to behave so as to 'please' the experimenters, therefore, arguably put no constraints on her choice. The instructions also recalled that the Peruvian government offers different public services, collecting taxes to finance them. In this respect, the experimenter noted verbally, while reading aloud the instructions, that the subject's donation would be used by the Public Treasury to finance similar expenditures as those taxes do; subjects were also informed in this manner about the Banco de la Nación account number mentioned above, writing as well that number in a blackboard.

When subjects had decided on their donation, decision sheets were collected and an elicitation sheet given. Here we elicited some beliefs that were designed so as to test several predictions, to be presented in detail in Section 3. Two of these beliefs are particularly relevant. First, we asked each subject to estimate the average donation among all participants in the session. Second, we also elicited beliefs about the position of Peru in the corruption index of 2015 by Transparency International. After all subjects had their beliefs elicited, we collected the corresponding sheet. Then subjects answered a brief questionnaire on socio-demographics, frequency of use of public services, support to the current presidential team, concern for inequity, etc.; many of these questions appear in similar terms in the World Values Survey (www.worldvaluessurvey.org). The experiment ended with the completion of this questionnaire. Subjects were then paid in private by an assistant who was not informed about the details of the experiment.

Anonymity was guaranteed since any sheet was identified only by the corresponding subject's ID number, thus containing no personal information. Additionally, to further subjects' confidence in our procedures, they were told that at the end of the experiment two subjects would be asked to

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[8] The translated instructions, decision forms and questionnaires can be found in Appendix II.

volunteer as witnesses. After all subjects had been paid, these witnesses checked the decision sheets and recorded the sum of all individual donations. Afterwards, the experimenters and the witnesses went to the bank office situated in the commercial center in front of the University campus, where an anonymous deposit was made for the total amount donated.

We run two sessions (1 and 2) at Universidad de Lima with 60 and 50 participants in each, respectively. Subjects were between 25 and 55 years old and economically active. In Session 1, they were selected by Imasen following precise instructions,[9] so that the random sample was representative of the taxpayer population of Metropolitan Lima regarding age, gender, and socio-economic conditions. University of Lima's market research department selected with a similar methodology the participants for Session 2, run approximately one year later than Session 1 (the gap allows us to check the robustness of the model). In any case, recruiters did not disclose any detail about the experiment to the subjects, except that this was a 'focus group' meeting to collect opinions about government, institutions and other social issues. Each session lasted approximately 90 minutes, including paying the subjects individually. The average payoff in Sessions 1 and 2 was 45.33 soles and 46.86 soles, respectively, including always the mentioned show-up fee of 20 soles.

Aside from the control treatment described above, our design included an NGO Treatment with other 60 subjects (selected by Imasen again; this experiment was run approximately at the same time as Session 1 of Control). This NGO treatment was identical to the Control except that the donation was not made to the Public Treasury but to the Liga contra el Cancer (Peruvian League Against Cancer), a private, well reputed NGO that helps cancer patients all around Peru.[10] The average payoff for the participants in NGO was 46.78 soles. The deposit of 193 soles was made in the Banco de Credito del Peru, account number 193-110188-0-80. Finally, a third treatment called INFO consisted of a slight variation of Control, as we included in the decision form the rounded average donation made by the participants in Session 1 of Control. This INFO treatment was run at the same time as Session 2 of Control. The 54 participants in INFO earned in average a total payoff of 45.30 soles.[11] We note that no subject attended more than one session or treatment.

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[9] IMASEN is a Peruvian research-based consulting company, well-known for its market studies, surveys and polls: http://www.imasenperu.com/

[10] The League was founded in 1950. It has received important awards and prizes in Peru and Latin America as recognition of its accomplishments; see http://www.ligacancer.org.pe/reconocimientos.html.

[11] The questionnaire in INFO and Session 2 of Control was a small variation of the one we used in Session 1 of Control and NGO, as we elicited the subjects' beliefs about the eventual donations of members of some of their daily-life reference groups e.g. family, co-workers, classmates, neighbors, close friends and even members of the same church if applicable. In addition, we omitted some questions that appeared in the former questionnaire because subjects had apparently problems to fully understand them; the full questionnaire is available under request.

3. Research Hypotheses & Data Analysis

In this section, we start with a brief summary and discussion of the subjects' decisions in each treatment. Afterwards, we explore several potential explanations for these results, including most prominently the model presented in Appendix I. More precisely, we present the key intuitions of the model in 3.2 and then proceed in 3.3 with the test of several predictions regarding donations to the government, i.e., in the Control and INFO treatments. In 3.4 we consider donations in our NGO treatment. We close this section with a comparison of our model with two alternative utility theories (altruism and reciprocity).

3.1 Summary of results

Table 1 presents some descriptive data regarding the distribution of donations in each treatment and session.

Table 1

Descriptive Statistics of each Treatment and Session

Treatments and Sessions		Number of Subjects	Average Donation	Standard Deviation	Subjects by Interval of Donation (% in parentheses)				
					0	**[1,4]**	**[5,9]**	**[10,15]**	**[16,30]**
NGO		60	3.22	2.92	13 (21.7)	25 (41.7)	18 (30.0)	4 (6.7)	0 (0.0)
Control	**Session 1**	60	4.67	4.67	10 (16.7)	20 (33.3)	18 (30.0)	10 (16.7)	2 (3.3)
	Session 2	50	3.14	5.94	23 (46.0)	13 (26.0)	10 (20.0)	1 (2.0)	3 (6.0)
INFO		54	4.7	4.66	9 (16.7)	12 (22.2)	25 (46.3)	7 (13.0)	1 (1.9)
Control + INFO		164	4.21	5.1	42 (25.6)	45 (27.4)	53 (32.3)	18 (11.0)	6 (3.7)
All treatments and sessions		224	3.95	4.64	55 (24.6)	70 (31.3)	71 (31.7)	22 (9.8)	6 (2.7)

We observe the highest average donations in Session 1 of Control and the INFO treatment, whereas the lowest are found in the NGO treatment and Session 2 of Control. We also find differences across sessions/treatments in the distribution of donations. For instance, the fraction of subjects who donate less than 5 soles is above 60% in NGO and Session 2 of Control, but below 40% in INFO and Session 1 of Control.

We also note that the average subject (N = 224) for all treatments (i) was around 40 years-old, slightly oriented to the right side in politics (5.63 out of 10), and more religious than the half line (5.3 out of 10). Further, she tends to distrust others (in a scale from 0 to 10, 0 being the minimum, average

trust is 3.19), believes that Peru is a rather corrupt country (position 126 out of the 168 countries analyzed in 2015), and thinks that personal income depends more on personal effort than luck or influences: If 0 (10) means that income depends on luck (effort), the average subject evaluates in 7.49 the relative importance of both factors. The average subject also believes that the Peruvian government mostly pursues individual and selfish interests instead of working for the people (3.36 in a scale from 0 to 10, 0 being the most pessimistic opinion). We provide more details below.

3.2 Norms & tax compliance: Some theoretical insights

We consider a taxpayer (called Zoe) whose utility function depends on norms, i.e., *exogenous* rules that select acts in choice scenarios and can be interpreted as prescriptions about how one should behave in them.[12] More precisely, Zoe's utility consists of two terms: (i) her monetary wealth and (ii) a psychological cost that she suffers when she deviates from any binding or internalized norm.

To describe the determinants of this cost, we posit that Zoe has a metric for deviations so that some are 'worse' than others; compliance with internalized norms implies a nil deviation. The core of our theory consists then of three assumptions, numbered A1, A2, and A3. **A1**: the cost partly depends on how 'bad' or deviated Zoe's choice is. **A2**: Zoe has a reference group with which she compares her choice; the cost depends as well on how negative this comparison is. More precisely, Zoe considers what any referent *would do if he were in her position* and the cost inversely depends on the referents' aggregate deviation. Intuitively, if others are expected to act in a very normative manner, Zoe feels very badly for deviating. **A3**: decision makers can be heterogeneous in their regard for norms, i.e., given the same deviations by a decision maker and her referents, the utility cost can be different for different Zoes. To sum up, Zoe wants to get a high material payoff but also not to deviate, particularly if others do not deviate 'much' (where this amount depends on how strongly Zoe has internalized the norms).

The model is flexible and allows many specifications regarding (i) the norms that Zoe has internalized, (ii) the metric for deviations, and (iii) the reference group and the measure of their aggregate deviation. While this flexibility permits the formalization of many insights, a test of the model obviously requires being more specific. In this regard, we introduce the following three operational assumptions: (i) Zoe has internalized a single norm, i.e., 'choose the act that maximizes aggregate wealth' (e.g., social surplus); (ii) how deviated an act is depends on the reduction that it induces on the social surplus, relative to the normative choice(s), and (iii) Zoe compares herself with

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[12] This view is basically consistent with Talcott Parson's. In his own words, a norm is "a verbal description of a concrete course of action, […] regarded as desirable, combined with an injunction to make certain future actions conform to this course" (Parsons, 1937: 75).

the referents' average deviation.[13] Intuitively, Zoe is a utilitarian who believes that aggregate utility coincides with the social surplus, and feels negative emotions (guilt, shame?) if her actions harm others, particularly if her referents are acting normatively.

Two remarks are due. *First*, we assume that Zoe follows a consequentialist norm, i.e., a norm prescribing acts with explicit consideration of their *actual* (expected) consequences. One example of a non-consequentialist norm is 'follow the law under any circumstances'. In its simplest form, any act expressly forbidden by the law constitutes a deviation from this 'legalistic' norm, whereas any other acts respect the norm. Another is of course Kant's Categorical Imperative –i.e., 'act only according to that maxim whereby you can, at the same time, will that it should become a universal law'. As we will see later, non-consequentialist norms have problems to explain some of our evidence –e.g., subjects donate less if they (i) have negative perceptions about corruption or (ii) hardly support the current president. *Second*, the utilitarian norm considered prescribes acts based *only* on their effects on the social surplus. Aspects like equity, justice or effort are hence left out, e.g., suppose that Zoe made a lot of effort for the common good before; this is per se irrelevant for what the norm prescribes now. While the model can be extended to include these aspects (see López-Pérez, 2010, for examples), we have opted in a first stage to keep it as simple as possible, focusing on some implications of the utilitarian norm that, we believe, are implied as well by more realistic but complex norms.

Having discussed Zoe's utility function, the rest of the model formally describes the taxpayer's problem. More specifically, Zoe has some initial wealth and tax liability, and must decide the optimal amount of taxes, i.e., how much of her money she will give to the government.[14] This maximization problem is formally explored in Appendix I. For the moment, nonetheless, we stress that such decision problem resembles our experiment, in that subjects choose how much of their endowment they donate to the government (or an NGO). Contrary to a real tax evasion problem, of course, subjects in our experiment have no law indicating what they should give to the government, and cannot be sanctioned for giving zero. But this is in fact what allows us to cleanly analyze how consequentialist norms motivate (some) people to give money to the government (our focus here), without any confounds due to potential sanctions or non-consequentialist, legalistic norms. This is what we do in the next subsection.

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[13] Unless otherwise noted, we will assume in our experiments that the subjects' referents are the rest of participants in the experiment.

[14] A point that we leave for further research is whether the tax liability is perceived as fair by Zoe (i.e., in line with her norms), and how these perceptions affect tax compliance.

3.3 Testing several potential explanations of donations to government

Observe first that the standard neoclassical model is a special case of ours: A selfish Zoe only cares about her own wealth, suffering no psychological cost. Similarly, if a participant in our experiment cares *only* about the legalistic norm described in 3.2, she suffers no cost whatever she does (obviously, the law does not forbid a zero donation). The following result is hence immediate:

Hypothesis 1: If all subjects are selfish or have internalized the legalistic norm, nobody donates anything in any treatment.

Evidence: As Table 1 above indicates, 42 subjects donate nothing to the government (around 26%) and 13 to the NGO (22%). The fact that most subjects do not act as the standard model predicts suggests the importance of tax morale. Indeed, a Wilcoxon signed-rank test indicates that the donation to the NGO is statistically significant (p-value > 0.0001), and the same is true for the donation to the government in Control (sessions 1 and 2 pooled; p-value > 0.00001) and INFO (p-value > 0.00001). In summary, we reject Hypothesis 1.

The conclusion is straightforward: People give money to the government even if no formal law prescribes so and no sanctions are expected for not giving. Since the evidence strongly suggests that not all subjects are selfish, we consider alternative motivations for giving. A priori, natural candidates are several utility theories of other-regarding preferences. Models of inequity aversion like Fehr & Schmidt (1999), for instance, predict that some individuals may sacrifice part of their material payoff to reduce differences in monetary gains between themselves and other individuals. However, Fehr & Schmidt (1999) cannot explain donations in any treatment, as donating only increases the disadvantageous inequity with those subjects who do not donate.[15] For another model, Dufwenberg and Gneezy (2000) and Battigalli and Dufwenberg (2007) assume that people suffer a utility cost if they believe they have let down the payoff expectations of another. Yet this hypothesis of belief-based guilt-aversion cannot explain either any donations because, arguably, donations are totally unexpected by the receptor (the government or the NGO).

Potentially more promising approaches are reciprocity models like Rabin (1993) and (unconditional) altruism and warm-glow as in Andreoni (1998), which we will discuss later in more detail. For the moment, however, let us focus on an explanation based on norms as sketched in 3.2. Since giving money in our experiment reduces the subject's wealth, it must be the psychological cost what induces them to give. Now, we have seen before that this cost depends on three factors (associated to assumptions A1 to A3 in section 3.2). To organize our exposition, we will consider each one in order (Appendix I formally studies the comparative statics of the model).

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[15] More formally, our experimental decision problem has the payoff structure of a VCM public good game with a marginal per capita return of the public good equal to zero. Proposition 4 in Fehr and Schmidt (1999) then implies no donations.

Before considering the determinants of the cost, however, it is crucial to state clearly what the utilitarian norm commends in our experiment, a relatively subtle point. In effect, since the norm says 'choose the act that maximizes the social surplus', we must distinguish two cases. If the government uses the money in an efficient manner, first, the norm says that all the endowment should be given, as that act maximizes the social surplus. If on the contrary the government is perceived as corrupt or wasteful, second, the norm recommends keeping the money in the subjects' pockets. If we suppose that subjects have heterogeneous expectations about how effective the government is on promoting the social surplus, we can then distinguish two groups of subjects. Those with sufficiently negative perceptions ('skeptics') have no normative reason to give in our experiment, and hence will give nothing. To clarify, consider a utilitarian subject who believes that public funds are embezzled/wasted by corrupt/inept politicians, high-rank public officers or public workers –e.g., she might believe that public employees like those working in social programs waste resources. Since she believes that the government does not promote economic growth, she suffers a nil psychological cost by giving nothing[16]. The implicit, plausible assumption here is that subjects believe that corruption does not further economic growth. Hypothesis 2 below does not apply for subjects who believe otherwise, which arguably should be a minority.

For those subjects with relatively more positive expectations, in turn, the norm recommends giving the whole endowment, and hence can give something. How much do these 'believers' exactly give? Our first core assumption enters here. In effect, A1 states that the cost of breaking the norm depends on the magnitude of the subject's deviation, which in turn depends on the 'damage' caused. Having heterogeneous expectations on how efficient the government is, however, subjects can also differ in their perceptions about how damaging not giving is. Optimistic believers who consider the government to be rather efficient, say, will conclude that not giving makes a relatively large damage. Under convenient conditions (see Appendix I), in conclusion, the model implies a non-linear relation between a subject's expectation and her donation: Skeptics give nothing, and believers give more the more optimistic they are about the government's performance. The intuition in this latter case is simple: If a subject believes that the expected effect of her donation on the social surplus is large, she feels more remorse for not donating.

Hypothesis 2: A subject's decision to donate to the government indirectly (but non-linearly) depends on her perceptions about the level of waste, incompetence, and corruption in the public sector. The amount donated analogously depends on these variables.

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[16] The implicit, plausible assumption here is that subjects believe that corruption does not further economic growth. Hypothesis 2 below does not apply for subjects who believe otherwise, which arguably should be a minority.

Evidence: The answers to several items in our questionnaire should be correlated with these perceptions; most obviously, the belief about Peru's position in the Transparency International ranking. Other things equal, we indeed expect a non-linear negative correlation between that belief and the amount donated to the Peruvian government.

On the other hand, we expect a positive, non-linear relation between the subject's donation and her/his support to the current presidential team, as it is plausible that most people who sympathize with a president and her/his ministers tend to believe that they are relatively competent. In the questionnaire, finally, subjects were also asked their agreement with the following two statements: (i) The Peruvian government is controlled by a few interests who are only concerned with themselves, and (ii) the Peruvian government governs for the benefit of all. Answers were numerical, from 0 (complete agreement with the first statement) to 10 (indicating complete agreement with the second one). This question, while possibly highly collinear with the corruption question, can be used as a further robustness test of our model. We predict a positive relation between the subject's answer and her/his donation.

To check these predictions, we conduct a regression analysis, pooling the data from Control and INFO. Models 1 and 2 in Table 2 are *linear* OLS models where the dependent variable is a subject's donation to the Government, in Soles, provided that it is strictly positive. Hence, these models study the determinants of the donation among those subjects who donate something, assuming a linear relation. Model 1 includes several key variables, and in particular those related to Hypothesis 2 (variables 1 to 3 in the left-hand column). Model 2 adds some other variables collected in the experiment.[17] In these models, we observe that the coefficients of the variables (1) corruption and (2) support to current president have the expected sign (negative and positive, respectively). Only the second variable is however significant.

Variable 3, measuring trust in the government, has not the expected sign and is never significant. In turn, Model 3 is a logistic regression where the dependent variable is a dummy taking value 1 if the subject donates zero. We observe that such decision is not correlated with Variables 1 to 3; a potential reason is that some significant share of the subjects who donate zero are selfish agents, for whom our model predicts no correlation between these variables and their choice.

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[17] We do not report the whole analysis here, as models (2) and (4) also control for the subject's age, gender, general trust on others (0: never, 10: always), perceptions about the government's performance in the last 5 years (0: Lousy, 10: Excellent), willingness to pay more taxes if government improves public services (0: No, 1: Yes), car ownership (no:0, yes:1), and whether he/she has children (0: No, 1: Yes). Neither of these variables is significant in any model (not even marginally).

Table 2

Regression analysis of determinants of donation to government

Dependent variable	Donation (D) > 0		Dummy D = 0	Log (D + 1)	D
Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5
1. Corruption (1: least - 168: most)	-0.0062	-0.0089	0.0037	-0.00341**	-0.001
	(0.011)	(0.011)	(0.004)	(0.002)	(0.005)
2. Support to current president (0: not at all, 10: entirely)	0.5505***	0.3378*	-0.0591	0.0556*	0.378***
	(0.163)	(0.2004)	(0.0699)	(0.029)	(0.104)
3. Government is controlled by (0: few interests, 10: works only for the people)	-0.1924	-0.1179	-0.0721	0.0162	0.036
	(0.189)	(0.216)	(0.089)	(0.034)	(0.127)
4. belief average donation others	0.1905***	0.214***	-0.1394***	0.0461***	0.201***
	(0.063)	(0.067)	(0.047)	(0.01)	(0.045)
5. Weekly frequency of watching news (in tv, internet, and others)		-1.352**		-0.137	-1.085***
		(0.584)		(0.085)	(0.407)
6. Political preferences (0: extreme left, 10: extreme right)		0.248		0.046	
		(0.279)		(0.042)	
7. Education		-0.412		0.038	
		(0.597)		(0.084)	
8. Socio-economic level		0.881		-0.026	
		(0.655)		(0.095)	
Intercept	2.498	4.297	-0.197	0.787	5.141***
	(1.928)	(4.298)	(0.901)	(0.681)	(1.49)
Obs.	122	120	163	160	164
R-square	0.103	0.143	0.109	0.252	0.191

Note: Robust standard errors in parentheses. All models except 3 are estimated by OLS. The median dummy model 5 uses the medians of the variables to generate binary variables (if variable < median, then dummy = 0, whereas dummy = 1 otherwise). Models 1, 2 and 5 do not satisfy homocedasticity, while Model 4 does. Model 3 is estimated by a logistic regression, where the dependent variable is donation (nil donations take value 1, otherwise 0). ***, **, and * indicate significance at 1%, 5 %, and 10% levels, respectively.

None of the models in Table 2 seem to present multicollinearity problems, based on the analysis of variance inflation factors (VIF) –the mean VIF is never larger than 1.33. In Models 1 and 2, however, we reject the null hypothesis of constant variance of errors then questioning linearity (Breusch-Pagan test, p-value < 0.0001). Since our theory also predicts a non-linear relation between these variables and the donation, we hence run regression 4. This is a non-linear model where the dependent variable is $D^* = Ln(D+1)$, D being the subject's actual donation to the government. In short, we assume an exponential relation between the donation and each explanatory variable. Hence any estimated coefficient can be interpreted as a growth rate, i.e., if the coefficient of X equals β, the donation changes at a rate of $100 \cdot \beta$% as X marginally increases. In this model, Variables 1 to 3 all have the hypothesized sign. Moreover, the first and second variables (corruption and support for

current president) are significant in both models (either at 5% or 10% levels).[18] Variable 3 is never statistically significant, possibly indicating that its net effect is not relevant once variables 1 and 2 are taken into account.

While we postpone for the moment the discussion on variable 4, we make a brief comment on the other variables that appear in Models 2 and 4. First of all, we find that political ideology and education have no significant effect on the donation in the model. In turn, the socio-economic level is a variable constructed by the Peruvian Market Research Firms' Association (APEIM) that depends on the subject's income but also on her/his neighborhood of residence, the number of vehicles that he/she owns, the education level, having a (private) health insurance, and other characteristics.[19] It seems a fairly good approximation to the level of wealth and income of the subject's household, and we find it not to be correlated with the amount donated (in fact, other variables that we elicited to measure wealth are also non-significant in our sample). Finally, we find that a subject's weekly frequency of watching the news (see appendix I for the exact wording of the question) *negatively* correlates with the donation in some regressions: More informed subjects donate less. Hence it seems that some factors not considered by our model might play an explanatory role; we leave them for future research.

We have also considered an alternative non-linear model, where D is the dependent variable. For any explanatory variable X, moreover, we assume a nil effect until X reaches some threshold X*. From that point on we hypothesize a significant linear relationship between D and X, as Figure 1 below indicates for an increasing case.

While many potential values for threshold X* can be considered, we find that a possibly natural one is the median $m(X)$ of the distribution of X for all subjects in Control and INFO. If only one variable X were considered, formally, the model would be therefore of the type:

$$D_i = \alpha + \beta \cdot Z_{Xi} \cdot X_i$$

Where D_i is subject's i donation, X_i is the value that variable X takes for subject i (e.g., her/his perceived ranking of Peru in the Transparency International Index), Z_{Xi} is a dummy variable taking value zero if X_i is lower than $m(X)$, and value one otherwise, and α and β are the coefficients to be estimated. As we see in Model 5 of Table 2, variables 1 to 3 have the hypothesized sign, but only support for the president is significant. We overall interpret the evidence in Table 2 as not rejecting
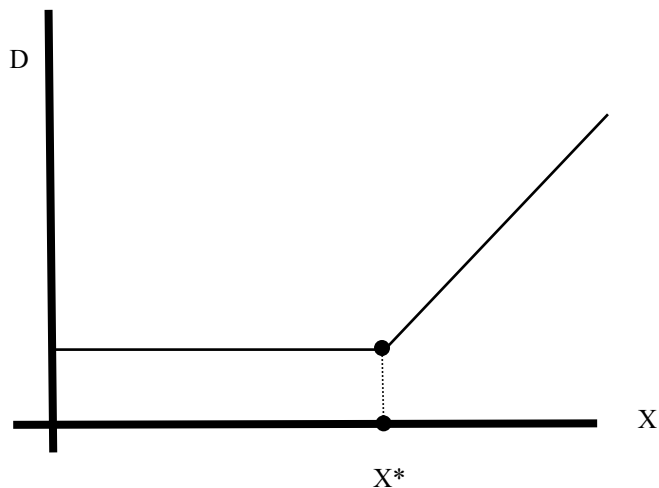
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[18] We note that both variables become marginally significant when we control for religiosity and the size of the subject's home (in square meters). A problem here however is that we lose around 50 observations, as many subjects did not respond at least one of these questions.

[19] This variable takes five possible values (A, B, C, D and E), A being the highest; for more methodological details, see http://www.apeim.com.pe/wp-content/themes/apeim/docs/nse/APEIM-NSE-2016.pdf. Our recruiters chose our sample of participants so that it was representative of the taxpayers' population also with respect to this variable.

Hypothesis 2, but suggesting a complex non-linear relation between donations and perceptions. The following result summarizes our discussion so far.

Figure 1

A non-linear relation between donation and X

Result 1: Donations depend non-linearly on the subject's perceptions about the competency of the government. That is, among those subjects who have more positive perceptions in this respect, donations increase as perceptions improve. In contrast, donations are not explained by the subject's age, gender, religiosity, political ideology, wealth, and education level.

We make two remarks. *First*, we have received the comment that the correlation between beliefs and donations might be due to reverse causation: Subjects adjust their beliefs in response to the amount they have just given, to avoid cognitive dissonance. For instance, a subject who donates x Soles and is later asked about her support to the president, might feel uncomfortable if she states a very low support. To prevent this feeling, she might state a higher support. In our opinion, however, the premises of our model are somehow implicit in this argument. In effect, if the subject feels dissonant when she gives *and* has a bad opinion of the government, does not this mean that she considers this opinion a relevant conditional of choice? In other words, if the subject finds uneasy by giving money to an incompetent government, this seems a signal that perceptions affect donations.[20] *Second*, the differences in the average donation between Sessions 1 and 2 of Control, which were run approximately with one year of difference, can be explained *in part* by our model. In effect, we have seen that support for the current president is a significant explanatory variable, and this variable has a

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[20] We do not exclude however the possibility that cognitive dissonance might have reinforced the *strength* of the correlations. Further research is warranted.

significantly lower median value in Session 2 (median support in Sessions 1 and 2 was 7 and 5, respectively; Mann-Whitney, p > 0.017), possibly reflecting the fall in popular support that president Kuczynski's government suffered during his first year of mandate (note that Session 1 was run shortly afterwards the president was elected).[21] Yet we also note that there seems to be some idiosyncratic effect in Session 2: If we include two dummy variables in Model 4 of Table 2 above, one for the INFO treatment and another for Session 2, we observe that the last dummy is negative and significant at the 1% level.[22]

We turn now to another goal of our study, which is to explore peer effects, or more precisely assumption A2 of the model (see 3.2). Our starting hypothesis is that subjects compare with each other, so that a subject's reference group contains all the other participants in the session. In this case, the average donation appears to be a natural benchmark.

Hypothesis 3: The amount donated directly depends on the subject's belief about the average donation from others.

Evidence: As we can see in Table 2, this hypothesis is largely vindicated by the data. In effect, the estimated coefficients for this variable are positive in all regressions and moreover significant at 1% level. For further illustration, Figure 2 below includes graphs for Session 1, Session 2 and the INFO treatment. In each graph, a dot corresponds to a participant in the corresponding session/treatment, located according to her/his beliefs and donation to the government (vertical axis). We can observe in the three graphs a regression line, showing that beliefs and donations positively correlate in all sessions and treatments considered. The reader can also possibly perceive that such correlation is far from perfect. In fact, donations are often smaller than beliefs. Indeed, the coefficients of Models 1 and 2 in Table 2 above indicate that an increase in the beliefs in one unit leads to an increase in the donation of around 0.21 Soles, which is significantly smaller than 1 (with such a null hypothesis, the p-value happens to be 1).

A problem in the previous analysis is that the correlation between beliefs and donations can be spurious. A potential reason is the so-called false consensus effect, which captures the tendency of an individual to think that others are similar to her –Ross et al. (1977), Marks & Miller (1987). That is, donations might not be affected at all by the subject's beliefs and yet be co-linear with them, just because people tend to think that others are like themselves and hence donate similar amounts. For a
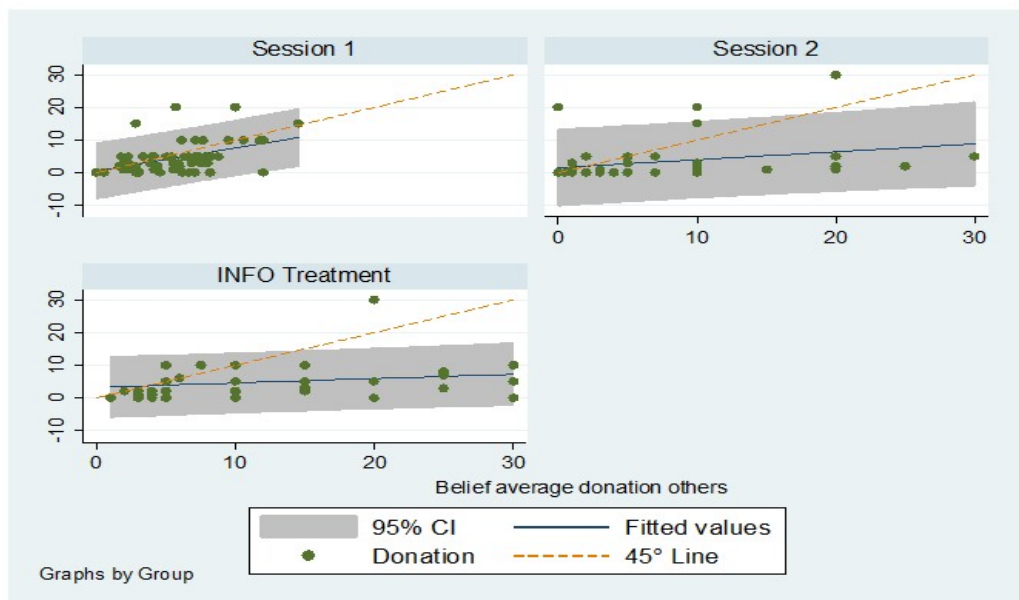
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[21] His support at the time of Session 1 in November 2016 was 51% but decreased to 27% by the time of Session 2 in November 2017 (source: IPSOS Market Research). By March 21st, 2018 President Kuczynski resigned his presidency after being involved in a vote-buying scandal.
[22] The INFO dummy is non-significant. In comparison to Model 4 in Table 2, further, the level of significance of the other explanatory variables remains unchanged in this expanded model. Detailed results are available upon request from the authors.

number of reasons, we believe that our results are not driven by the false consensus (at least entirely). To start, we recall that donations are systematically lower than beliefs (see Figure 2 above): Subjects tend to believe that others give more. In addition, the results from the INFO treatment, which we conducted to explore further whether beliefs affect donations, are at odds with the idea that beliefs are irrelevant for choice. Recall that subjects in INFO were informed in the donation sheet –that is, before choosing– about the (rounded) average donation to the government in Session 1 of Control, i.e., 5 Soles (the actual average was of 4.67 Soles).

Figure 2

The relation between donations and beliefs.

Graphs by Group

The rationale behind this treatment is twofold. On one hand, the *distribution* of donations in INFO and Control should not be statistically different if beliefs are *inconsequential* for behavior, other things equal. Note that the last proviso indicates that some caution must be taken when comparing data from both treatments. For instance, Session 1 of Control and the INFO session were run with a year of difference, and a significant variable like the support for the president changed during that time. Hence, the proper comparison is that between Session 2 of Control and the INFO session, as both were run at a similar time. In this respect, a two-sample Kolmogorov-Smirnov test indicates that the two donation distributions are statistically different ($p > 0.001$). This is therefore evidence that beliefs do affect behavior.

In this vein, a second rationale for the INFO treatment is that our model predicts a specific change in the distributions across treatments, at least under certain ancillary assumptions. In effect, suppose that a significant fraction of subjects in INFO use the average donation in Session 1 of Control as the reference point, and not the average donation by other subjects in INFO.[23] In this case, many subjects in INFO would have the same reference point. In Session 2, in contrast, we suppose that subjects compare with each other; in principle, reference beliefs should be more heterogeneous. Since reference beliefs affect donations by assumption and they are more heterogeneous in Session 2, a contraction of the distribution of donations is expected in INFO ceteris paribus. When we compare this distribution in INFO and Session 2, in fact, a Levene's test for differences in variances indicates a lower dispersion in INFO ($p > 0.0432$).

Note well that we predict a difference in the dispersion, but not *necessarily* in the median or average donation. Although the average donation in Session 2 happened to be smaller than that in INFO, other results were theoretically possible –e.g., if subjects in Session 2 had beliefs systematically higher than 5, they would give more.[24] Yet we can say something when comparing Session 1 and INFO: *If subjects in INFO tend to move towards a donation of 5 Soles*, the average donation in INFO and Session 1 of Control should be similar. In this respect, we note that the median donation in INFO is indeed not significantly different than that in Session 1 (Mann-Whitney k-sample test; $p > 0.854$). Since this result follows from the italicized assumption just cited, which in turn is implied only by some specific parameterizations of our model, we view it as less relevant though than the dispersion result in the previous paragraph.

In summary, the core of our argument is that the reference point in INFO is fixed (at least for a substantial share of subjects), whereas subjects in Control do not have such fixed reference.[25] The effect on dispersion follows. A subtle, although collateral, point in this respect is whether subjects in INFO anticipate this phenomenon, that is, do people anticipate peer effects? The answer seems to be

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[23] In this account, the reference group G is not fixed, but shaped by the context: Zoe does not always compare with the same people, but with those who happen to be salient (see Gino et al., 2009, for a similar idea and evidence). Alternatively, we could assume that subjects in INFO compare among themselves, but that their expectations are influenced by the information provided, so that they tend to believe that others donate in average an amount similar to that in Control, Session 1. As we report later, however, this latter idea seems in contradiction with our data on beliefs.
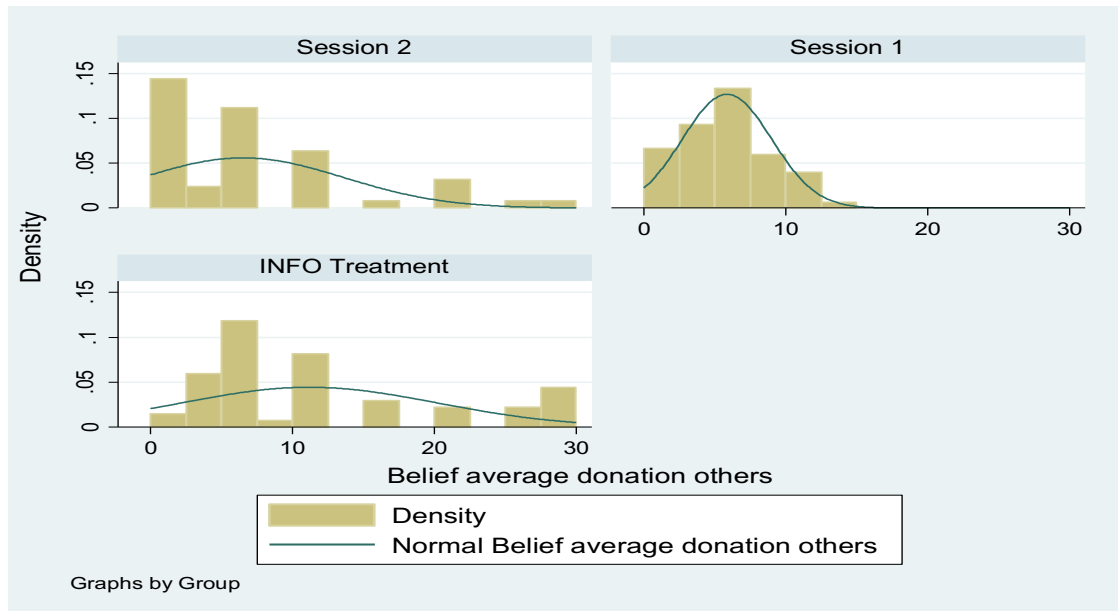
[24] The discussion thus stresses that peer effects may operate through other statistics than the median or the mean. This is perhaps related to the results by Del Carpio (2014) in a field experiment on property tax collection in Peru. She sent letters to taxpayers (a) including only payment reminders, and (b) containing as well information about previous peer compliance, and found a small and statistically insignificant increase in tax compliance in condition (b).

[25] Playing again devil's advocate, one could insist that beliefs do not shape behavior, arguing instead that the 5 Soles reference in INFO acts as an anchor (Tversky and Kahneman, 1974). Anchoring occurs when someone who has to estimate an unknown quantity observes a number, to the effect that the posterior estimation orbits around that number. However, what estimation could be shaped by the 5 Soles reference, other than that of some reference belief, irrelevant by assumption in this argument?

negative, which is somehow paradoxical: Behavior is apparently shaped by the fixed reference point, but then subjects fail to capture this treatment effect.

Figure 3

Distribution of beliefs about average donation to government

Graphs by Group

To illustrate the point, Figure 3 above depicts the distribution of beliefs about the average donation to the government in each session and treatment. If many participants in INFO anticipated the effects, the distribution of beliefs would be less dispersed than in Session 2, with a mean around 5 Soles. To the contrary, we find that the standard deviation equals 7.13 in Session 2 but equals 9 in INFO; the difference is marginally significant according to Levene's test (p-value = 0.0504). In Session 2, further, the average and median belief equals 6.49 and 5, respectively, while they respectively amount to 11.18 and 9 in INFO, again a marginally significant difference (p = 0.068). We yet stress that the subjects' failure to anticipate the peer effects does not invalidate from our point of view the argument about the existence of such effects: A person can be affected by the reference point and yet believe that others are not. Even more, the effect of such reference on her decision might be somehow unconscious to her

Result 2 (peer effects): Donations co-move with beliefs about the average donation in the reference group, and the relation is highly significant. Beliefs seem to play a causal role because the distribution of donations changes if subjects tend to have homogeneous reference beliefs, as arguably occurs in INFO. As hypothesized, we observe less dispersion in the donations when subjects have a common reference belief. Further, the average donation seems to be shaped by that reference point. Subjects apparently do not anticipate peer effects.

On a different topic, our third core assumption A3 (see 3.2) predicts that those subjects who have strongly internalized the norm should donate more, other things equal. In order to test this prediction, we could have asked subjects what they consider normative in the donation decision, or some similar question. We were afraid, however, that their responses could be biased, possibly in a self-serving manner. Therefore, we have used a more indirect alternative. In effect, the post-decision questionnaire in INFO and Session 2 included questions about the hypothetical average donation of relatives, co-workers, university or college partners, close friends and neighbors if they had chosen in the donation decision.[26] Now, it can be argued that social norms are partly internalized during infancy and adolescence within the family, and that people tend to share their normative values with close friends. In contrast, norms are less likely shared with co-workers, classmates, and neighbors, who are not 'chosen' as friends are. The larger a subject's expectations about relatives' or close friends' average donation, therefore, the larger the subject's donation because he/she is likely to find the same norms binding. On the opposite, we hypothesize no *specific* relation between a subject's donation and his/her beliefs about the average donation by co-workers, classmates or neighbors, who need not share the same norms (leaving aside family business). Regarding members of the subject's church (if any), further, one might expect them to have similar norms as the subject, although the relation would be possibly less strong than the relation with relatives or friends.

To check our hypotheses, Table 3 below reports the results of a regression analysis. Most of the models are non-linear, of an exponential character as Model 4 in Table 2. The dependent variables always include the subject's belief about the average donation by other participants in the session, which remains always significant in Models 1 to 6. The other variables have also a positive effect on donations, but only significant for the beliefs about the average donation by relatives, close friends and co-workers. Hence our hypotheses are not rejected. When we consider models with several beliefs like Models 7 and 8, however, some of the mentioned variables fail to have a significant effect. We can venture at least two potential reasons. The first one is the low number of observations (due in turn to the reduced number of responses to some of our questions). A second one is multicollinearity, as some of the independent variables seem highly correlated –the VIF of some predictors is around 5 in regressions 7 and 8; we note that such problem does not exist at all in regressions 1 to 6 (the maximum VIF never surpasses 1.2). In short, our preliminary evidence is in line with our hypotheses, although further research is warranted.

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[26] More precisely, the question was: "How much do you think would be the average donation (between 0 and 30 soles) of your: a) Co-workers, b) College / University classmates, c) Neighbors, d) closest friends, e) family, and f) Church members?" Depending on their personal circumstances, subjects could leave some answers unanswered.

Table 3

Regression Analysis of the 'Shared-norms' Argument

Independent variable: Beliefs about average donation by…	Non-Linear Models. Dependent Variable: Log (Donation + 1)							Linear model
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
1. Other subjects	0.0267** (0.012)	0.0363*** (0.009)	0.0371*** (0.011)	0.342** (0.016)	0.0331*** (0.011)	0.0493*** (0.015)	0.0394** (0.018)	0.131 (0.092)
2. Co-workers	0.0334** (0.015)						0.00986 (0.032)	0.315* (0.159)
3. Family members		0.0386*** (0.011)					-0.0146 (0.04)	-0.068 (0.199)
4. Neighbors			0.0202 (0.014)				0.071 (0.042)	0.476** (0.209)
5. University / college mates				0.0101 (0.022)			-0.0403 (0.035)	-0.451** (0.176)
6. Close friends					0.0284** (0.014)		0.0465 (0.039)	0.394* (0.195)
7. Same church members						0.0151 (0.013)	-0.0376 (0.028)	-0.430*** (0.144)
Intercept	0.721*** (0.164)	0.526*** (0.138)	0.710*** (0.151)	0.821*** (0.21)	0.688*** (0.153)	0.742** (0.182)	0.620** (0.224)	0.592 (1.118)
Obs.	78	99	95	47	96	65	36	36
R-square	0.19	0.248	0.157	0.133	0.161	0.177	0.45	0.61

Note: Data comes from Session 2 and INFO. Robust standard errors in parentheses. All models are estimated by OLS. All non-linear models satisfy homocedasticity, and models 1, 3, 4, 5, and 7 accomplish the residual error's normal distribution assumption, all models satisfy the non-multicollinearity (VIF less than 2.52). *** = $p < 0.01$, ** = $p < 0.05$, * = $p < 0.1$.

Result 3: People give more if they expect close relatives and friends to give substantially as well. Groups whose members are not chosen by the subject or do not play a role in her education have no systematic effect.

As a final remark, the correlations observed admit at least another interpretation aside from the 'shared norms' argument just cited. In effect, we have assumed so far that subjects compare with other subjects when deciding their donations. However, it could be that subjects have in mind additional reference groups when deciding, like family members or co-workers. This could create additional peer effects to those in Hypothesis 3.

Still, this argument cannot explain why some groups happen to be significant in the regression analysis and others do not, particularly when we focus on those groups for which the number of observations is relatively large.

3.4 The NGO treatment

We run this treatment as a further test of our model, which makes here similar predictions as in Control. Again, a subject's donation depends on (i) how competent she expects the NGO to be, (ii) her beliefs about the average donation by others, and (iii) the intensity with which she has internalized the norm. Although we expected that subjects would donate more to the NGO than the Government, Table 1 above indicated this not to be the case (the difference is not significant, though; Mann-Whitney test, $p = 0.319$).

Several reasons could explain this. Even if subjects trust the NGO and believe that their donations will not be stolen or wasted, first, they might think that the expected increase of the social surplus per Sol donated is not as high as we expected. In particular, they might consider that a Sol donated to the government is more effective because, although part of it is wasted, the rest goes to fund a diverse list of goods and services that are much needed (including attention to cancer patients). Briefly, the government is more "important" than the NGO. Another possibility (although one we do not find very convincing) is that the NGO does not actually enjoy a good reputation. A third one, that subjects expected a low average donation in this treatment, seems not to be valid because median beliefs are not lower in NGO (Mann-Whitney test, $p = 0.880$).

Our model predicts ceteris paribus a positive relation between a subject's donation and her/his beliefs, and this is indeed supported by the data.[27] Table 4 reports the results of a regression analysis focused on this treatment. Models 1 and 2 are OLS linear regressions where the dependent variable is the subject's donation to the League against Cancer. We can see that the sign of the estimated coefficient of variable 2 (beliefs) is positive, as predicted, and the coefficient itself highly significant. Our model does not predict other correlations, and hence the (marginally) significant correlations additionally observed in these models are left unexplained. Note however that some of these correlations become non-significant in Model 3, a non-linear model of an exponential character (as Model 4 in Table 2 above).

In contrast, beliefs are still highly significant in this non-linear model. Observe as well that the coefficient of determination or R-squared is larger in these models than in the models used to analyze donations to the government.

Result 4 (NGO; peer effects): A subject's beliefs about the average donation to the NGO by other subjects co-move with her donation.

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[27] The ceteris paribus clause assumes that subjects have similar perceptions regarding the effectiveness of one Sol donated to the NGO; this is implicit in our analysis. If subjects were heterogeneous, in contrast, a subject with low beliefs but a perception that the effectiveness is high might donate more than another who expects a large average donation but thinks that the effectiveness is low.

Table 4

Regression Analysis of Determinants of Donation to NGO

Independent Variable	Dependent Variable		
	Donation	Donation	Log (Donation + 1)
	(1)	(2)	(3)
1. Corruption (1: Least - 168: Most)	-0.010*	-0.015**	-0.003
	(0.005)	(0.006)	(0.002)
2. Support to current president (0: Not at all, 10: Entirely)	0.124	0.151	0.058*
	(0.097)	(0.103)	(0.032)
3. Government is controlled by (0: Few interests, 10: Works only for the people)	-0.063	0.039	(0.025
	(0.108)	(0.144)	(0.045)
4. Belief average donation others	0.395***	0.413***	0.087***
	(0.088)	(0.091)	(0.028)
5. Beliefs in a just world (0: Only luck, 10: Only personal effort)	-0.192*	-0.243**	-0.0275
	(0.106)	(0.119)	(0.037)
6. Equality preferences (0: None - 10: Maximum equality)	0.045	0.075	0.009
	(0.093)	(0.092)	(0.029)
7. Weekly frequency of watching news (in TV, internet, and others)		-0.0968	-0.0091
		(0.299)	(0.094)
8. Gender (0: Male, 1: Female)		0.153	0.106
		(0.643)	(0.203)
9. Age		0.0746	0.0276*
		(0.048)	(0.015)
10. Political preferences (1: Extreme left, 10: Extreme right)		0.0925	0.0379
		(0.156)	(0.049)
11. Trust others (1: Never, 10: Always)		-0.257*	-0.095**
		(0.141)	(0.044)
12. Education		-0.721*	-0.188
		(0.415)	(0.131)
13. Socio-economic level		1.102**	0.317**
		(0.429)	(0.135)
Intercept	2.691*	-0.192	-0.818
	(1.382)	(2.292)	(0.722)
Obs.	58	54	54
R-squared	0.36	0.62	0.56

Note: Robust standard errors in parentheses. All models are estimated by OLS. Models 2 and 3 control as well for the subject's perceptions about the government's performance in the last 5 years (0: Lousy, 10: Excellent), willingness to pay more taxes if government improves public services (0: No, 1: Yes), car ownership (no:0, yes:1), and whether he/she has children (0: No, 1: Yes). Neither of these variables is significant in any model (not even marginally). All models accomplish homocedasticity (Breusch-Pagan Test) and residual error's normal distribution assumptions. The mean VIF equals 1.7 in models 2 and 3. ***, **, and * indicate significance at 1%, 5 %, and 10% levels, respectively.

3.5 What about altruism, warm-glow, and reciprocity?

We finish with a brief discussion about some other utility models. Note first that altruistic subjects should condition their donation on the efficiency of the government in the provision of public goods, as they care about social efficiency ('size of the cake'). For the same reasons, altruistic subjects

should condition the donation on their perceptions of corruption, at least if they believe that corruption does not foster growth. Hence Result 1 above seems well in line with a theory of altruism.

Models of reciprocity like Rabin (1993), in turn, predict that people will be kind (unkind) towards someone who treated them kindly (unkindly). If we analyze our experiment as a one-shot decision problem, this general idea of reciprocity predicts zero donations to the government. Alternatively, one could find more sensible to embed the donation decision into a 'super-game' in which subjects first interact with some other 'players' (public sector employees, taxpayers, etc.) and then decide how much to donate. In this setting, one might argue that if a reciprocal subject had 'bad' prior interactions with corrupt government employees or politicians then she would treat them unkindly, i.e., donate nothing. Although we tend to view this argument too vague to be falsifiable, Result 1 seems basically consistent with it. Note yet that this type of argument hardly explains donations to the NGO, as interactions with the League are likely to be infrequent in our sample.

In any case, the main problem of these two theories is that they cannot anticipate the correlation between beliefs and donations (Results 2 to 4). Altruistic or reciprocal people should give money (or not) independently of what others are expected to do. For instance, a reciprocal subject with a good record of interactions with government officials and employees would like to reward them, hence giving money to the government in the hope that some of that money helps those employees. This behavior would not be affected by the expectation, say, that other subjects are not giving anything to the government. In this respect, Results 2 and 4 are therefore the strongest evidence in favor of a social norms account.

4. Conclusions

This paper makes three main contributions to the literature on tax compliance and tax morale. First of all, we formally explore how social norms, and a dislike to deviate (much) from them, affect tax evasion. Consistent with much of the literature on social norms (e.g., Bicchieri, 2005), the model incorporates norms both in a descriptive and prescriptive sense, i.e., people care about what the norm prescribes or commends but also whether others respect the norm. The model helps to explore in a precise manner the several forces that shape tax compliance together with their net effects. Further, it suggests several ways in which governments could affect tax compliance, although they may not be easy to implement. For instance, a straightforward moral from the model is that evasion would *ceteris paribus* decrease if taxpayers improve their perceptions about how efficient, corrupt or wasteful the public sector is, or about how generalized tax evasion is. For granted, improving such perceptions can be extremely difficult. But knowing that it might pay in terms of higher tax receipts is not irrelevant. Another implication is that transparency in how government revenues are spent is not irrelevant: If

taxpayers are ensured that some taxes will be used to fund specific public goods that they deem socially beneficial, we predict that evasion will be relatively diminished. The model also suggests that some of the differences in the levels of tax evasion observed across countries are due to differences in the taxpayers' perceptions.

As our second contribution, we run experiments in Peru and offer evidence in line with the model. We observe that people are very heterogeneous in their behavior, conditioning their donations on their perceptions about competency and corruption in the public sector, but also on how others behave. Again, we believe that our model helps to understand the complexities that derive from heterogeneity and the existence of difference channels affecting compliance. We stress that our subjects were representative of the taxpayer population in Lima, which might be an important point in evaluating the external validity of our results. Further, our results complement those from field experiments like Blumenthal et al. (2001), who study whether including messages about (descriptive) social norms in letters sent to taxpayers before the filing deadline affect compliance. They find no effect of a message that 93% of the taxpayers report their taxes correctly. Perhaps the remaining 7% were simply unconcerned about norms, as our model concedes, or maybe they thought that tax receipts were inefficiently used by the state. Lab studies like ours can offer insights into this literature, as they allow to control the many factors that might affect compliance.

Third, our results provide an additional test of the standard, *homo economicus,* model together with several models of non-selfish preferences. While the standard model is valuable because it is extremely parsimonious, it seems to provide a limited account of the phenomenon of tax evasion. Of course, it is a natural question whether our results would hold as well if the subject's endowment was much larger. In our experiment, for instance, around half of the people give more than 16% of their endowment to the government, would *exactly* the same happen as well if, say, income taxes were voluntary? Although we do not have controlled data on this point, we nevertheless tend to doubt so: material incentives are indeed not to be under-estimated. But even if social norms are (possibly) less strong determinants of tax compliance than material interest for most taxpayers, our analysis suggests that they affect behavior. This means that governments can use these levers to reduce evasion, sometimes at a reduced cost –e.g., Hallsworth et al., 2017. Future research should anyway analyze the strength of these normative concerns.

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Appendix I: A utility model with norms

A. General setting

To study the choice under uncertainty of a decision maker (called Zoe), let Ω denote a finite state space, where a state $\omega \in \Omega$ fully specifies all relevant features of Zoe's environment, and O denote the set of outcomes. An act is defined as a function $t: \Omega \to O$. Zoe's choice set $\mathbb{C}$ is a subset of the set of all acts, or mappings from Ω to O. Zoe has prior beliefs on Ω, quantified by a finitely additive probability measure π mapping each state ω to a probability $\pi(\omega) \in [0, 1]$. Pair $(\mathbb{C}, \pi)$ is the *choice scenario*.

Definition 1 (norm): A norm is a correspondence ψ that assigns a nonempty subset of $\mathbb{C}$ to any choice scenario $(\mathbb{C}, \pi)$.

Act $t \in \mathbb{C}$ respects norm ψ in scenario $(\mathbb{C}, \pi)$ if $t \in \psi[(\mathbb{C}, \pi)]$, where $\psi[(\mathbb{C}, \pi)] \subseteq \mathbb{C}$ is the image of $(\mathbb{C}, \pi)$ according to ψ. If act $t \in \mathbb{C}$ is not selected by ψ in $(\mathbb{C}, \pi)$, in contrast, it constitutes a *deviation* (of ψ) in that scenario. Without loss of generality, we assume that Zoe has internalized some norm ψ_U (to be described later), which means that she dislikes deviating from it. More than this, Zoe has a metric for deviations so that some are 'worse' or 'more deviated' than others.

Definition 2 (deviation function): For any scenario $(\mathbb{C}, \pi)$ and norm ψ, a deviation function $d: \mathbb{C} \to [0, 1]$ is such that $d(t) = 0$ if t respects ψ in $(\mathbb{C}, \pi)$, and $d(t) \geq 0$ for any other $t \in \mathbb{C}$.

Zoe cares about the deviation d_z of her choice, but also about others'. More precisely, there is a reference group $G = \{1,.., g,.., n\}$ and Zoe considers what any g *would do if he were in her position*. Further, Zoe compares her deviation with the deviations of the members of G. To formalize this last idea, let $d_g \in [0, 1]$ be g's deviation from ψ_U (according to function d) and d_G some function of vector $[d_1,.., d_g,.., d_n]$, increasing in each d_g. In short, d_G is a measure of the aggregate deviation in G; while other specifications are possible, our applications assume that d_G is the average deviation in G. Note that Zoe might be uncertain about d_G; to make this point clear, we use sometimes the more specific notation $d_G(\omega)$.

To specify Zoe's utility function, let x_z denote her material payoff at outcome $o = t(\omega)$. That is, x_z represents the material utility that Zoe gets from consumption and leisure if o is achieved (or, equivalently, if act t is chosen when state is ω); for simplicity, we take x_z to be equal to Zoe's monetary wealth. Zoe's utility function $u: O \to \mathbb{R}$ on the set of outcomes takes then the form

$$u[t(\omega)] = x_z - \gamma \cdot [1 - d_G(\omega)] \cdot d_z \tag{1}$$

Since $d_G(\omega) \in [0, 1]$ by construction, note that $1 - d_G(\omega)$ represents average *compliance* in G. Parameter $\gamma \in \mathbb{R}$ represents how deeply Zoe has internalized the norm.[28] Finally, we postulate that Zoe's preference relation $\gtrsim$ over the set of acts can be represented by a subjective expected utility evaluation $E[u(t)] = \sum_{\omega \in \Omega} u[t(\omega)] \cdot \pi(\omega)$, where π is the probability over the states of Ω.

B. Examples of norms and deviation functions

For some summary illustration, consider a society, group or set of agents $S = \{1,.., i,.., I\}$; Zoe belongs to S. Further let $x = [x_1,.., x_i,.., x_I]$ denote an allocation of material payoffs in S, where x_i denotes agent i's material/monetary payoff, and X the set of material allocations. A social welfare function (or SWF) $W: X \to \mathbb{R}$ assigns a number to each material allocation according to its 'social desirability'. While infinite examples can be considered, a prominent SWF in this paper will be:

$$W^U(x) = \sum_{i \in S} x_i \tag{2}$$

If we make the simplifying assumption that subjects are risk-neutral (which does not seem very restrictive in our experiment), this is a utilitarian SWF, as it increases with the social surplus (i.e., the sum of material payoffs) of allocation x. Thus we refer to SWF (2) as the 'utilitarian' SWF. See López-Pérez (2008, 2010) for additional examples of SWFs.

Importantly, Zoe's choice need not only affect her own material payoff x_z but also x_i ($i \in S$). Let $x(t, \omega)$ denote the allocation of material payoffs in S if Zoe chooses t and state is ω. Given any social welfare function W, the expected social welfare of act t is then defined as

$$E[W|t] = \sum_{\omega \in \Omega} W[x(t, \omega)] \cdot \pi(\omega) \tag{3}$$

Definition 3: The fairness norm ψ_W selects in scenario $(\mathbb{C}, \pi)$ the act(s) that maximize the expected social welfare (3). Non-optimal acts constitute deviations.

The definition implicitly assumes that the choice set $\mathbb{C}$ is compact, so that an optimum is well defined. A fairness norm that will be pivotal in our analysis is one based on SWF (2) above; this was called before ψ_U and we will refer to it as the *utilitarian norm* too. Note also that fairness norms allow the introduction of very natural deviation functions. In effect, if act t_ψ respects norm ψ_W in some scenario, rendering an expected social welfare of $E[W|t_\psi]$, the difference

$$E[W|t_\psi] - E[W|t] \tag{4}$$

represents the (expected) decrease in social welfare if Zoe instead chooses t. A deviation function d(t) that positively depends on this difference (a *remorse function* hereafter) hence models the idea that a norm breaker's feelings depend on the 'social damage' caused by her actions.

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[28] We will posit that γ is positive, so that Zoe does not want to be a 'rebel', deviating from the norm when others respect it. We note also that our model extends the model in López-Perez (2008), who assumes a 0-1 deviation function, i.e., any deviation is equally worse. One reason to relax this assumption is that it cannot explain interior solutions in the optimization problem to be analyzed below.

C. Application: A toy model of tax compliance with norms

Zoe is a taxpayer with initial wealth w_0 and tax liability T and must decide the amount t of taxes that she will pay. The choice set $\mathbb{C}$ is the interval [0, T], so that t = 0 means full evasion. In principle, Zoe has access to public goods financed with taxes and may receive transfers; let $m(\omega, t) \geq 0$ denote the monetary value of the services and transfers enjoyed in state ω if she pays t units in taxes –implicitly, this term depends on the taxes paid by her and other contributors. Further, she can be sanctioned; let $p(\omega, t)$ denote the sanction or penalty given choice t and state ω –this includes any potential payment: evaded taxes, fines, interest payments, etc. If Zoe chooses $t \in [0, T]$, therefore, her monetary wealth in state ω is $w_0 - t + m(\omega, t) - p(\omega, t)$. To derive predictions, however, we simplify and posit that the marginal effect of each unit of taxes paid by Zoe on the amount of public services enjoyed by her is negligible, so that $m(\omega, t)$ does not vary with t. In addition, we also assume $p(\omega, t) = 0$ for any ω and t. These assumptions are not realistic in general but simplify the analysis of tax morale (our focus here) and are plausible in our experiment.

Without loss of generality, assume that Zoe has internalized the utilitarian norm and her deviation function takes the form of a remorse function. We also posit for simplicity that taxes have a linear effect on social welfare. That is, each unit of taxes paid increases SWF (2) in Δ units (*net of taxes*). Further, there are just two states of the world. In state 1 (probability π_1), the government is inefficient and taxes squandered so that Δ takes on a low (possibly negative) value, Δ_1. In state 2, in contrast, the government delivers and $\Delta = \Delta_2 > \Delta_1$. The probability of state 2 is $\pi_2 = 1 - \pi_1$.

To derive predictions, observe first that the utilitarian norm selects act t = T if $E[W^U | t] = (\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2) > 0$, and act t = 0 if $(\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2) < 0$ –any choice is normative if the expected effect on the social surplus of any Sol donated is nil. Case $(\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2) < 0$ corresponds to the case of a 'skeptic' (see 3.2), and its analysis is direct: Since paying no taxes entails no normative deviation and a nil monetary cost, it is the optimal choice. The most complex case appears therefore when $(\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2) > 0$. Since the value of difference (4) when the act chosen is t equals $(T - t)(\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2)$, the remorse function can be represented as $d[(T - t)(\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2)]$, and Zoe's utility if she chooses t in state ω is:

$$u = w_0 - t + m(\omega) - \gamma \cdot [1 - d_G(\omega)] \cdot d_z[(T - t)(\Delta_1\pi_1 + \Delta_2\pi_2)] \qquad (5)$$

Zoe's goal is to choose t so as to maximize the *expectation* of (5). We make two remarks in this respect. On one hand, we simplify and assume that the aggregate deviation $d_G(\omega)$ gets the same value in the two states of the world; i.e., Zoe is not uncertain in this respect. Further, the remorse

function d_z depends on an expectation and hence takes on the same value in any state of the world. Assuming function d_z to be twice differentiable, we hence get the following first order condition:

$$d'_z(\cdot) = \frac{1}{\gamma \cdot (1-d_G) \cdot (\Delta_1 \pi_1 + \Delta_2 \pi_2)} \tag{6}$$

where $d'_z(\cdot)$ is the first derivative of the remorse function with respect to the (expected) decrease in social welfare, i.e., $[(T - t)(\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2)]$. We assume $d'_z(\cdot) > 0$, which implies that Zoe suffers a higher psychological cost or remorse as t decreases, that is, when she evades more taxes. If we moreover posit that d_z is strictly convex, so that 'large' deviations from the norm are relatively more painful than 'small' deviations, the second order condition

$$-\gamma \cdot (1 - d_G) \cdot (\Delta_1 \pi_1 + \Delta_2 \pi_2)^2 \cdot d''_z(\cdot) < 0$$

is sufficient for a local maximum, which moreover happens to be an interior solution if we also assume $d_G < 1$ and $d'_z(\cdot) = 0$ when t = T. Figure A below may help to better understand the determination of the optimum level of tax compliance t*, graphically located where function $d'_z(\cdot)$ and the horizontal line at level (6) intersect. Note that the critical point about $d'_z(\cdot)$ is that it decreases as compliance, i.e., choice variable t, increases. The illustrative shape chosen in Figure A plays no role in the analysis.
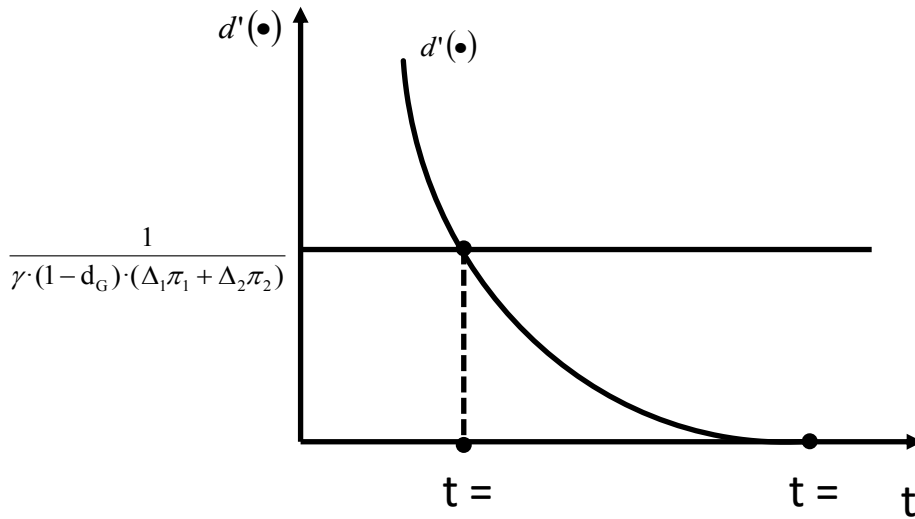

Figure A: Determination of the optimal level of tax compliance

Comparative statics are straightforward from condition (6). Assume for instance that taxpayers have heterogeneous perceptions about the effectiveness of their taxes, that is, about parameters Δ_1, π_1, and Δ_2. Clearly, the value of t satisfying (6) decreases when $\Delta_1 \cdot \pi_1 + \Delta_2 \cdot \pi_2$ decreases. In other words, evasion increases if Δ_1, π_2 or Δ_2 decrease (or π_1 increases) as we can also check with Figure A (graphically, the horizontal line moves upwards, thus changing the optimal choice t*). Other things equal, intuitively, tax evasion increases when taxpayers believe that corruption and inefficiency are rampant.

Appendix II: Instructions, decision sheet, & questionnaires

(Those parts that appeared only in Control, NGO or INFO treatment are in brackets)

Instructions

Thank you for participating in this Experimental Economics study, financed by a research project. There are no tricky questions here and hence we ask you to answer any questions according to your own preferences. The decisions that you make in this experiment are anonymous; in other words, no participant will know what you or any other participant has decided. We please ask you to turn off your cell phones or other electronic communication devices for a few minutes so that they do not interfere with the experiment.

At the end you will receive a money payoff. It is important that you do not speak with any other participant so that the data which will be collected remains valid. If you have any questions, please raise your hand and one of the people in charge of the experiment will gladly help you.

Description of the Experiment

All participants in this experiment will receive a fixed sum of S/. 20 for simply taking part in the experiment; this remuneration compensates for the transportation costs involved in arriving here.

The experiment is composed of three parts (1, 2 and 3). In part 1, each of you will be endowed with S/. 30 and must decide how much he/she wishes to voluntarily donate to the [**Control & INFO**: Peruvian Government] [**NGO**: Peruvian League Against Cancer, LPLC]. In order to do so, you will anonymously and independently choose an integer number between 0 and 30 (both included) and write it on the first page of your booklet. The remainder of the money will be your payoff for part 1. That is, if you decide to donate X Soles to the [**Control & INFO**: government] [**NGO**: LPLC], you will receive a payment of 30-X Soles at the end of the experiment.

At the end of the experiment, moreover, the sums donated by the participants will be added, and the total amount subsequently deposited in an account belonging to the [**Control & INFO**: public treasury] [**NGO**: LPLC] in an entirely anonymous manner. To do so, the researcher will go to the nearest bank and make an anonymous cash deposit for this amount, without giving any information concerning the origin of the money. This deposit will be made in the presence of any participants who wish to accompany the researcher; should there be no volunteers, he will personally select two participants at random to be witnesses.

[**Control & INFO**: Keep in mind that the public sector carries out tasks such as the development of infrastructure, the provision of public goods and services such as education, health and security, or the redistribution of wealth through social programs.]

[**NGO**: Keep in mind that the Peruvian League Against Cancer (LPLC) is an institution that helps to fund the medical treatment of cancer patients with limited recourses.]

Parts 2 and 3 of the experiment are questionnaires containing various questions. Those in part 2 require some estimations, and those in part 3 involve socio-demographic information. All are completely anonymous.

In summary, your final payoff will include 20 Soles for transportation plus 30 Soles minus the amount donated by you to the [**Control & INFO**: Peruvian government] [**NGO**: LPLC]. You will be paid in private in an adjoining room by an assistant who will know only your final payoff in the experiment, but not your decisions during the experiment.

Now, please complete part 1 (the first sheet of the booklet) and give it to one of the people in charge of the experiment before starting part 2.

Decision sheet

Part 1   ID number:

[**INFO: Important**: Before making your decision, we must inform you that we have already done a similar experiment with 60 people in November 2016. Average donation of those people was **5 (five soles)**]

How much are you willing to contribute to the [**Control & INFO**: Peruvian Government] [**NGO**: Peruvian League Against Cancer]?

S/. _____

Note: You must write an **integer number** (no decimals) between 0 and 30 Soles, inclusive; otherwise, you will not be paid. Your pay for part 1 will be equal to 30 Soles minus the amount you indicate on this sheet.

Belief elicitation sheet

Part 2   ID Number:

General instructions: Please answer numerically the following questions:

1**. [INFO:** What do you think would be the average contribution (between 0 and 30 soles) of your:

    a) Co-Workers S/._____   d) Close friends S/._____
    b) University/College mates S/._____   e) Family members S/._____
    c) Neighbors S/._____   f) Church members S/._____

Note: Answer only those questions you consider are relevant for your case, for example, if you are a student and do not work leave blank ¨Co-workers¨ but fill University/College mates.**]**

Direction: Questions 2 and 3 must be answered with integers from 0 to 30.

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2. What do you believe to be the average donation of the participants present here (between 0 and 30 soles)?

    S/. _____

3. Of every 100 Soles that enter to the Peruvian Government, what part do you estimate end up wasted or in corrupt hands? Answer with an integer number from 0 to 100, where 0 indicates nothing and 100 indicates everything.

    S/. _____

Direction: Transparency international (TI) is a global non-governmental and non-profit organization
that annually publishes an index of the perceived corruption in the public sector of each of
countries studied, based on the judgment of experts around the world. In 2015, it analyzed
countries and stated its findings in such a way that 1st place indicates the least level of corru
and the country that ranks 168thhas the highest level of corruption.

Indicate what you believe to be the position of Peru in the TI ranking for the year 2015:

N° **_____**

Part 3   ID number:

Direction: Please answer the following anonymous questions that will help guide our investigation. Indicate your choice with a cross (X), or the corresponding number or word.

General questions:

Gender: M___F___   **Age:**   _____   **Occupation:**   _____

Place of Birth:

District   _____   Province   _____

City   _____   Region   _____

Place of Residence:

District   _____   Province   _____

City   _____   Region   _____

Religion:

Catholic ( ) Evangelical ( ) Other _____ None ( )

Level of religiosity on a scale from 1 (not at all religious) to 10 (very religious):

_____

Marital State:

Married _____ Single _____ Stable Relationship _____ Divorced _____ Widow(er) _____

Living Situation:

Own _____ Rent _____ Room_____ I have no housing _____

If you know the answer, please give the approximate size of your main residence:

_____ m²

Do you have a vehicle?

Yes _____ No _____

Do you have children?

Yes _____ No _____

How many children do you have?

_____

Level of Education:

Primary School incomplete _____ Completed Primary School _____ Completed Secondary School _____

Technical Higher Education _____   University Higher Education _____

Current job:

Student _____ Business Admin./Owner _____ Housewife _____

 Employed _____ Currently unemployed _____

How many times per week do you follow national political news in the media (TV, radio, newspapers, internet, etc.)?

0 _____   1-3 _____   4-6 _____   7 _____

In politics, reference is usually made to the "left" and "right." Overall, where would you place yourself on a scale of 0 (extreme left) to 10 (extreme right)?

o　o　o　　o　o　o　o　　o　o　o　o

Far Left   Far Right

0　1　2　3　4　5　6　7　8　9　10

Opinion-type questions:

1. Which do you believe to be the factor upon which someone's personal income depends –chance and influences of other people or the extent to which he strives to work hard in life? Indicate your opinion using a number between 0 and 10, the number 0 signifying that chance or external influences are the only important factor, and 10 signifying that personal endeavor is the only important factor. Make a mark (X) in the circle corresponding to the number that represents your opinion.

resulting from chance or
influences of others

o　o　o　　o　o　o　o　　o　o　o　o

0　1　2　　3　4　5　6　　7　8　9　10

resulting from
one's endeavor to
work hard in life

2. Would you say that it is advisable to trust people under any circumstances, or rather is it advisable to be very cautious in trusting others? Answer using a number from 0 (we should never trust anyone) to 10 (we may trust anyone under any circumstance):

We should never trust
anyone

o　o　o　o　o　o　o　o　o　o　o

0　1　2　3　4　5　6　7　8　9　10

We may trust
anyone under any
circumstance

3. In general, do you believe that the distribution of income in a society should be as egalitarian as possible? Answer using a number from 0 (completely disagree) to 10 (completely agree):

Completely disagree

o　o　o　o　o　o　o　o　o　o　o
0　1　2　3　4　5　6　7　8　9　10

Completely
agree

4. To what extent do you agree that the State should directly participate in the Economy, whether through public companies, banks, or industry? From 0 (completely disagree) to 10 (completely agree):

Completely disagree

o　o　o　o　o　o　o　o　o　o　o

0　1　2　3　4　5　6　7　8　9　10

Completely
agree

5. From 0 (completely disagree) to 10 (completely agree), to what extent do you agree with the following statement: In a democracy, the economy grows less than in other political systems?

o o o o o o o o o o o

Completely disagree   Completely agree

0   1   2   3   4   5   6   7   8   9   10

6. Consider the following two statements: The Peruvian government is controlled by a few interests who are only concerned with themselves; the Peruvian government governs for the benefit of all. With 0 indicating complete agreement with the first and 10 indicating complete agreement with the second, make a mark (X) in the circle corresponding to the number that represents your opinion.

o o o o o o o o o o o   Governs for the
Controlled by selfish interests   benefit of the
0   1   2   3   4   5   6   7   8   9   10   people

7. Do you believe that the Peruvian government adequately provides free public education services?
Yes _____ No____

8. Do you believe that the Peruvian government adequately provides free public health services?
Yes _____ No____

9. Do you believe that the Peruvian government adequately provides public security?
Yes _____ No____

10. In comparison with those who have a low income, how much should those with a high income pay from their personal income? (Indicate only one answer):

 Much less _____ Less _____ Equal _____ More _____ Much more _____

11. Overall, how would you rate the performance of the Peruvian government during the previous 5 years? From 1 (dismal) to 10 (excellent):_____

12. In general, do you support the new government in Peru, which was chosen in the election a few months ago? From 1 (do not support at all) to 10 (support entirely): _____

13. Would you be willing to pay a little more in taxes if the government were to make substantial improvements in the free public services it provides (such as education, health, and safety)?
Yes _____ No____

(End, please await further instructions)