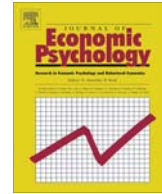


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Tax compliance depends on voice of taxpayers



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ABSTRACT

Reducing the social distance between taxpayers and tax authorities boosts taxpayers' acceptance of tax load and tax compliance. In the present experiment participants had the opportunity to pay their tax due either as one single compliance decision or as separate compliance decisions for each type of requested contribution (coined voice on contributions). In addition, contributions were either distributed according to a fixed scheme exogenously chosen, or participants had the possibility to change the distribution pattern (coined voice on distribution). Furthermore information about participants' contributions was either clearly related to the tax context or related to government public expenditures (coined context). Besides analyzing the effect of voice and context on compliance, order of tax payments was controlled for in the analyses. Results show that having voice on tax contributions and on tax distribution leads to higher compliance. Moreover, compliance was higher in the context avoiding tax framing.

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1. Introduction

"I do not care to trace the course of my dollar, if I could, till it buys a man, or a musket to shoot one with - the dollar is innocent - but I am concerned to trace the effects of my allegiance."

These are the words with which Henry David Thoreau justified, in the essay *Civil Disobedience* first published in 1849,¹ his evasion of a poll tax – which resulted in a night in jail – meant to finance the American campaign in the Mexican–American War (1846–1848). Although this is not the time to analyze Thoreau as a thinker, his refusal to pay the poll tax represents a good example of how disapproval towards a specific policy may trigger evasion.

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¹ The essay is contained in several monographs on Thoreau; see for instance Thoreau, Henry David (1986) *Walden and Civil disobedience*. New York: Penguin books.

It is widely accepted that, among other factors, taxpayers' behavior "depends on the interaction of taxpayers with tax authorities" (Feld & Frey, 2002, p. 97). Indeed, tax compliance can be sustained, for example, by a cooperative relationship between taxpayers and tax authorities, which leads to the perception of a fair tax system (Erard & Feinstein, 1994) or citizens' involvement in the constitution of the tax system (Feld & Frey, 2002).

Recent attempts to reduce the distance between taxpayers and tax authorities are the Personal Tax Statements sent, starting from 2014, to the British taxpayers by HMRC and the Taxpayer Receipts implemented in the US by the White House. Both programs consist in detailed personal summaries on how taxpayers contributed to public expenditure with their taxes.² The main purpose of these programs is to show taxpayers that their money is not wasted and, regardless the lack of opportunity to address their payments, these contributions are needed for financing specific priorities like education or health care.

Thoreau and the example of his evasion shed light on the psychological and ethical relationship between tax compliance and the use of taxes to finance specific public policies. More precisely, Thoreau justified his evasion on the base of "wrong policies" like to move war on Mexico and to the lack of promoting "good policies", like abolishing slavery. In other words, tax compliance can be triggered either by active policies or by a lack of political intervention.³

May programs like those in the US and UK backfire if the provided information injects negative psychological or ethical reactions like those in Thoreau's example? A possibility to overcome this risk could be to associate some forms of taxpayers' involvements in the resources' allocation decision process. Does the opportunity of paying separately different taxes decrease the level of evasion since it allows taxpayers to evade only those taxes that are disliked (as Thoreau decided to evade the poll tax but not the one aimed to finance education)?

In this paper, we focus on taxpayers' knowledge and involvement in the tax system by introducing the factor voice on distribution. Voice on distribution may affect the tax allocation to different public expenditures domains and the relative weight of a tax in the total tax burden of participants. In addition, we check the impact of different methods of tax collection by manipulating our second factor voice on contributions. This factor may be used, together with voice on distribution, as a tool to disclose taxpayer's dislike towards a specific tax or a government's public spending domain. In addition, we modify the information framing by introducing two factors: context and order. Before describing the four factors and the experimental design (Section 3), we summarize the related empirical and experimental literature. Section 4 presents experimental data and analyses. Section 5 concludes with a discussion of the results.

2. Related literature

When speaking of tax compliance it is impossible not to refer to the concepts of audits and fines: these are two of the tools, probably the most common and most used, that tax authorities apply to fight tax evasion. Bénabou and Tirole (2003, 2005) analyze the effect of external intervention (both incentives and disincentives) on individuals' behavior finding that external actions of both kinds may backfire: this suggests that deterrence measures may crowd out intrinsic willingness to comply if these are perceived as something imposed and enforced (cf. Boyer, Dwenger, & Rincke, 2014). In addition, when tax authorities collect taxes, the use of the fiscal levy is imposed and taxpayers have no opportunities to drive their contributions towards projects or components of public expenditure they prefer to finance. Indeed, acts of evasion can, as emphasized by Erard and Feinstein (1994), be considered as signs of disapproval toward the rules, as well as toward the destinations of the collected funds, imposed by tax authority and not only mere attempts of maximizing the taxpayer's utility, as predicted by the neoclassical model.

Gneezy, Gneezy, Nelson, and Brown (2010) and Gneezy, Gneezy, Riener, and Nelson (2012) show that when individuals have some degree of freedom on the choice of contribution to a good or service, the paid amounts statistically increase. Thus, apart from the case of a profit maximizing evader, tax evasion can be triggered by both external imposition and not having the freedom to choose where to address the money collected.

In laboratory experiments, perceived fairness of a tax system and procedural justice have been often studied by allowing participants (taxpayers) to modify tax system rules via voting mechanisms. In addition, there is experimental evidence that individual participation - through voting procedures - in the design of institutions, such as the tax system, affects social norms and tax morale (Torgler, 2004) in particular when participation goes along with a process of public discussion: the sense of civic duty seems to be fostered by the awareness of contributing to the public goods (Torgler & Schaltegger, 2005).

Thus, the more individuals are involved in the development of the fiscal rules, the higher their perceptions of procedural justice. A high level of fairness perception should enhance trust in authorities and it should, finally, result in a higher level of tax compliance. In the literature, there is a consensus with regard to the positive relationship between participation and compliance: having the right to vote, for instance on features of the tax system, increases taxpayers' willingness to comply.

Alm, Jackson, and McKee (1993) found that when the experimenter imposes the use of the resources collected via a tax game within a group, tax compliance is statistically lower than in the case in which participants are allowed to reach an agreement, via a voting mechanism, with regard to the use of the taxes collected. Wahl, Muehlbacher, and Kirchler

² Visit <https://www.whitehouse.gov/2014-taxreceipt> for more information on the American program or <https://www.flickr.com/photos/hmtreasury/> for an official example of Personal Tax Statement issued by HMRC (last access: 29 June 2016).

³ Thoreau was, in fact, not against the general idea of taxes ("I have never declined paying the highway tax, because I am as desirous of being a good neighbor as I am of being a bad subject; and, as for supporting schools [...]", Thoreau, 1849) but he was not willing to sustain specific positions (as the military intervention in Mexico or the practice of slavery) of the government.

(2010) modified this setting (and one with a similar structure; cf. Alm, McClelland, & Schulze, 1999) by introducing voting alternatives designed to be “equally attractive” for participants. The results confirm the findings of Alm et al. (1993), even though the difference in compliance between voting and no-voting conditions is only marginally significant.

Feld and Tyran (2002) slightly deviated from a standard tax game by setting the probability of audit equal to one: they introduced, in some treatments, the opportunity for participants to agree with a fine for non-compliant behavior before the start of the experiment. They found higher compliance rates when the fine is imposed by the group compared to when it is decided by the experimenter. The significant increase in compliance is, for the authors, the result of a modification in taxpayers’ fairness perceptions: they claim that taxpayers find the fine more legitimate when it is the result of the endogenous process of voting.

Allowing participants to decide whether to introduce a penalty recalls the concept of direct democracy which is also discussed by Torgler (2005) in the example of the Swiss cantons: direct participation in political decisions as well as in the development of the tax system may increase taxpayers’ fairness perceptions. If taxpayers are consulted, for example, in the distribution of collected resources, the general level of perceived fairness increases via a boost in procedural justice or, in other words, because of the higher weight of citizens’ opinions (MacCoun, 2005; Tyler, 2006). If taxpayers could express their consent concerning the tax system and the tax authority respected the voice of taxpayers, the likelihood of full compliant behavior would increase (Vihanto, 2003).

Altogether, it seems clear that direct participation, perceived fairness and procedural justice directly influence trust in authorities and approval of the tax system, which are unavoidable elements for voluntary cooperation (Kirchler, Hoelzl, & Wahl, 2008).

In the present paper, we investigate taxpayers’ compliance with and without direct participation by introducing (i) justification of taxes by showing the components of the public expenditure or the relative weight of a tax on the total tax burden, (ii) the opportunity of modifying the components of the public expenditure or the taxes’ relative weights and (iii) different methods of tax collection. In addition to the mentioned studies, other works have recently contributed to understanding the impact of trust and knowledge on tax compliance by experimentally manipulating taxpayers’ power in deciding about government budget spending (cf. Abbiati, Antinyan, & Corazzini, 2014; Djawadi & Fahr, 2013; Lambertson, De Neve, & Norton, 2014).

Unlike these papers, one crucial difference of our experimental design is the possibility of checking for taxpayers’ disapproval on two dimensions: participants’ disapproval of the rules of the tax system as well as their disapproval on the allocation of the tax burden (with a specific link to the use of collected resources made by the Austrian government). Here it is important to emphasize a fundamental disparity between the aforementioned studies and the present experimental design: whereas in most studies the possibility to vote is connected to a real voting mechanism, which means that actual decisions are influenced by both the possibility to vote and the outcome of the vote, we target the effect of the self-perception of having an active part in the decision process about the government spending. Our specific aim is to mimic a situation as close as possible to real life: large and mid-sized nations – like Austria – have millions of voters and it is totally unrealistic to design an experiment where the decision of a single taxpayer should produce a direct impact on the general welfare. On the contrary, the taxpayer may have a real contribution in electing the government and thus, indirectly, in determining the tax agenda: for this reason we keep participants’ involvement in the process of expressing their preferences for the allocation of tax revenues. In experiments, a common tool, aimed at replicating real consequences of participants’ decisions, is financing some “external” purposes (university library, student unions, charities, etc.) with the resources collected as taxes during the experimental session. Nevertheless, addressing the money to these standard experimental uses cannot be assumed to be representative of real destinations of the tax collected (defense, health care, education, etc.) which, given also the attention we put on tax aversion, would have been necessary for our scope.

As shown in previous studies, tax evasion can be triggered by tax aversion since taxpayers seem to dislike taxes more than other equivalent costs. Sussman and Olivola (2011) find in five different experiments, conducted with different methods, subject pools and in a period of over two years, a clear desire to avoid taxes: in almost every setting studied by the authors participant were willing to incur in equivalent (or even higher) costs in order not to pay a tax of the same amount. The authors define tax aversion as an “irrational propensity to avoid taxes”: This triggers completely irrational behaviors such as the strict preference for less remunerative tax-exempt investments to much more profitable taxable financial products. It is clear that framing plays an important role in this context and compliance rates can be influenced in this vein. For this reason, since the difference in the framing might decrease tax evasion, *ceteris paribus*, our exercise has been done not only within a frame focused on taxes per se (by justifying the tax levy with taxes that taxpayers face in reality) but also within a tax-free frame (by justifying the tax levy with components of government’s public expenditure). Another novelty we introduce is the method of collection of the total amount of required taxes either as an all-embracing payment (very common in tax experiments) or as sequence of sub-divided payments. If evasion can be interpreted as an act of disapproval towards some impositions (Erard & Feinstein, 1994), the sequence of collections may allow participant to evade only those payments that are considered as not acceptable.

3. Method

3.1. Participants

Overall, 123 students of the University of Vienna (83 females and 40 males) with a mean age of 26.66 (SD = 4.90) were recruited using the ORSEE system (Greiner, 2004). Most of the students took courses in social sciences and the vast majority were Austrian (62.6%) or German citizens (17.1%); 11.4% came from other countries of the European Union.

3.2. Design and procedure

The experiment was conducted in the Social Science Research Lab at the Faculty of Psychology at the University of Vienna and programmed with the experimental economics software z-Tree (Fischbacher, 2007). Upon their arrival in the laboratory, participants were assigned to cubicles and presented with written instructions for the experiment. After privately reading the instructions, participants were asked to answer control questions on the rules of the experiment. Subsequently, an effort task was conducted: a text about the life of the Austrian painter Gustav Klimt was presented. Participants had six minutes to read it, and afterwards they answered ten multiple choice questions about the content of the text. Performance in this task determined the individual income in the experiment which was the sum of the initial endowment of 500 experimental currency units (ECU) and 100 ECU for each correct answer. Income varied between 500 and 1500 ECU.

The effort task is a simplified version of the tasks implemented in Rauhut and Winter (2010) and in Becker (2013). Participants' previous knowledge of Klimt's life might have influenced the performance, however, this is not essential as the task was used to determine individual incomes which should differ on the base of individual achievement. We implemented the effort task also to highlight that the tax authority does not know the exact income of taxpayers.⁴ In addition, participants did not interact during the experiment and had therefore no information about others' income.

After the effort task, the tax experiment started. The design was a $2 \times 2 \times 2 \times 2$ mixed between-within subjects design with order and voice on contributions as between subjects factors, and context and voice on distribution as within subjects factors. A detailed description of factors follows below. The dependent variable was tax compliance in four consecutive rounds.⁵ The experimental design is presented in Fig. 1.

Participants were requested to pay 50% tax on their respective income; audit probability was 10%, and the fine in case of detected evasion was 1.5 times the evaded amount. Participants had to indicate how much tax they were willing to pay. Pay-off in each round was then computed accordingly:

$$\Pi = \begin{cases} E - T_p & \text{in case of no audit} \\ E - T_p - 1.5(T_r - T_p) & \text{in case of an audit} \end{cases}$$

where E stands for *Endowment*, T_p stands for *paid Tax* and T_r stands for *required Tax*.

Feedback on audits and fines was provided at the end of the experiment, i.e. after round 4, in order to avoid unwanted effects of audits interfering with the experimental manipulations (cf., Guala & Mittone, 2005; Kastlunger, Kirchlner, Mittone, & Pitters, 2009; Mittone, 2006). The increase in the evasion rate immediately after an audit (bomb-crater effect) and a sustained level of compliance in the following rounds (echo effect) are robust results in tax experiments (Mittone, 2006). To rule out the possibility that a potential increase in evasion was driven by audits – which were not the focus of this study – rather than our experimental manipulations, we decided to delay communication of the results of the audit process.

At the end of the experiment, participants were presented a questionnaire including one general item on risk aversion (e.g., “Generally speaking, would you characterize yourself as someone who is willing to take risks, or as someone who is avoiding risks?”) and a scale consisting of 7 items to assess risk aversion in different domains (e.g., driving, financial decisions, tax evasion). Answers were given on Likert-type scales ranging from 1 (absolute risk aversion) to 9 (absolute risk seeking). Finally, demographic information was collected. Experimental sessions lasted between 30 and 45 min. To determine the final payoff for participation, one of the four rounds was randomly selected. The exchange rate was 200 ECU = 1 €. Furthermore, an additional show-up fee of 5.00 € was paid, and in total average earnings amounted to 8.80 €.

3.3. Experimental factors

Order was manipulated as between-subjects factor and regards the presentation of information on public expenditures and different types of taxes, respectively. Domains of expenditures and types of taxes were either presented (see Table 1) with increasing or decreasing amounts to control for possible anchoring effects.

Context was manipulated as within-subjects factor. In two subsequent rounds (either the first two or the second two) all information referred to public expenditures (see the upper part of Table 1) whereas in the other two the wording was related to tax payments (see the bottom part of Table 1). Some participants faced context in the sequence of public expenditure first and taxes afterwards, for the others the sequence of context was just the vice versa.

Voice on contributions regards participants' possibility to decide whether to pay the requested contribution (labeled either contributions for public expenditures or taxes) which was presented either as one single decision or as separate decisions for each type of requested contribution (e.g., either local services, social security and health, pension system, etc.; or dividend tax, corporate tax, income tax etc.). When participants have no voice on contributions, they are informed about the use of contributions or taxes and they indicate whether they comply overall or not (see Fig. 2). When they have voice on contributions they indicate their compliance with each expenditure or tax (see Fig. 3).

⁴ Random allocation of income is sometimes implemented to replicate tax authority's inability to observe incomes. Our setting allows participants to perceive their endowments as something deserved rather than something randomly earned.

⁵ It is important to stress the fact that, regardless the use of the term “round” our experiment is not a repeated tax game. In each round, in fact, we measure tax compliance under different conditions as the result of the combination of the four experimental factors.

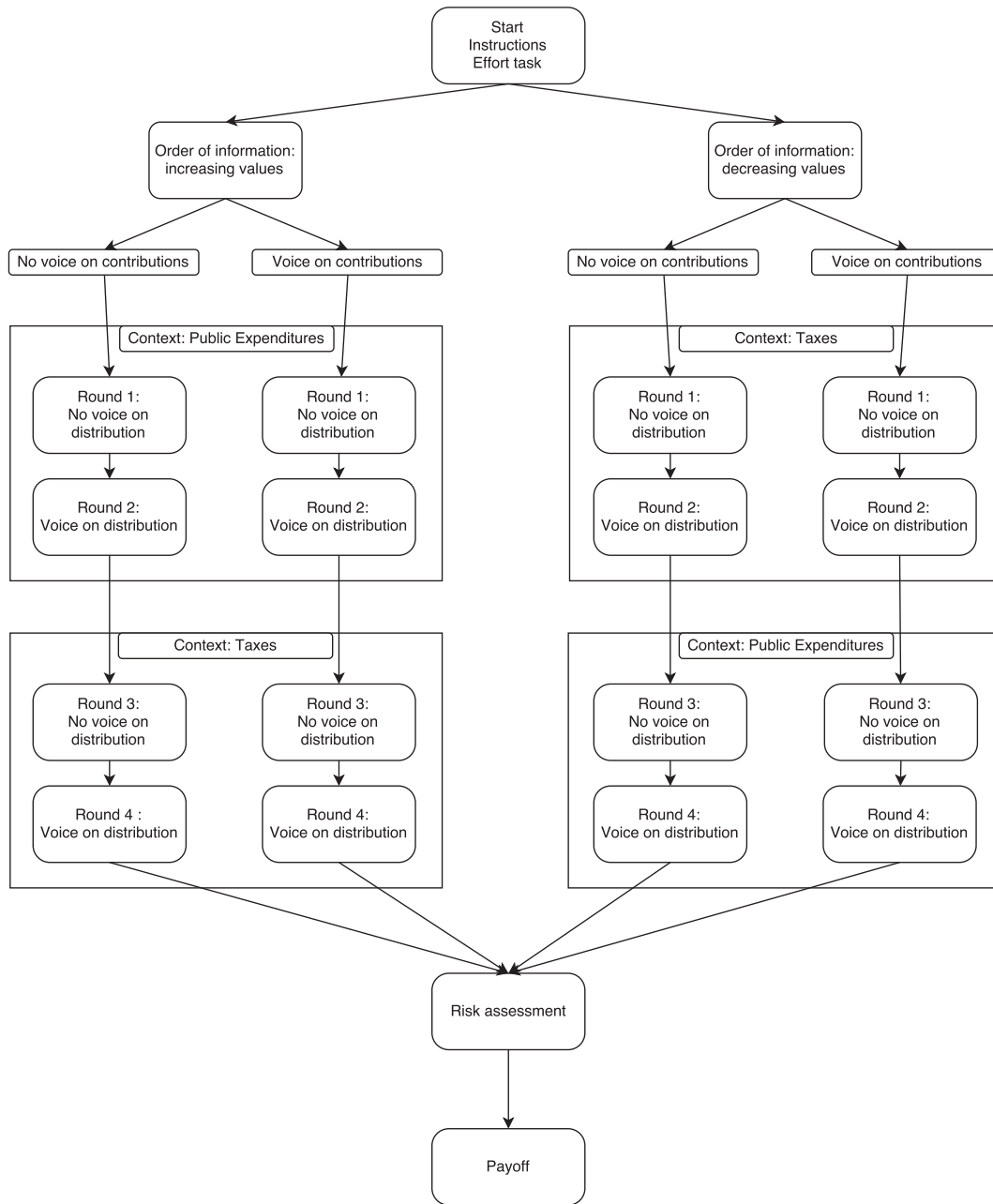


Fig. 1. Experimental design.

Consider, for instance, two participants, A and B, who receive the same information about their total tax requirements in the domain of public expenditures (see Panel A of Figs. 2 and 3): e.g., 57.5 ECU are used for financing local services, 45 ECU for social security and health, and 37.5 ECU for the pension system, etc. Suppose that Participant A has no voice on contributions: she is asked to pay tax over all domains of expenditures (arranging from 0 to the total amount due of 250 ECU; see Fig. 2 Panel A). In contrast, Participant B has voice on contributions and thus she is required to pay taxes twelve times (beginning with local services, where a payment of 0 up to the due amount of 57.5 ECU is possible; then social security and health (0–45 ECU); then pension system (0–37.5 ECU), etc. As an example of the first three payments, see Fig. 3 – Panel B, C, and D).

Voice on distribution regards the distribution of revenues. Contributions are either allocated to various public expenditures domains in a fixed way or the participants are allowed to change the distribution schemes according to their subjective preferences. In the tax context, participants faced either a fixed scheme of tax rates or they were allowed to change the amount of various taxes according to their preferences. The overall burden of contributions and taxes, respectively, remained

Table 1
Domains of public expenditures and taxes, and percentages of fixed distributions by order of presentation.

Decreasing	Increasing
<i>Public expenditure domain</i>	
Local community (23%)	Defense (2%)
Social Security and Health (18%)	Agriculture (2%)
Pension (15%)	State Security and Justice System (3%)
Education and Science (13%)	Fees for the European union (3%)
Interest of government debt (6%)	Public administration (4%)
Traffic and Transports (6%)	Economy and housing (5%)
Economy and housing (5%)	Traffic and Transports (6%)
Public administration (4%)	Interest of government debt (6%)
Fees for the European union (3%)	Education and Science (13%)
State Security and Justice System (3%)	Pension (15%)
Agriculture (2%)	Social Security and Health (18%)
Defense (2%)	Local community (23%)
<i>Tax domain</i>	
Dividend tax (25%)	Mineral oil tax (1%)
Corporate tax (25%)	Car tax (1%)
Income tax (25%)	Capital tax (1%)
VAT/Sales tax (10%)	Property tax (1%)
Inheritance tax (5%)	Local tax (3%)
Local tax (3%)	Land acquisition tax (3%)
Land acquisition tax (3%)	Inheritance tax(5%)
Property tax (1%)	VAT/Sales tax (10%)
Capital tax (1%)	Income tax (25%)
Car tax (1%)	Corporate tax (25%)
Mineral oil tax (1%)	Dividend tax (25%)

(a) Panel A.

(b) Panel B.

Fig. 2. Payment without voice on contributions in the domains of public expenditures and tax.

invariant. For reasons of external validity, the fixed distribution of contributions and taxes, respectively, corresponded to the current pattern of tax expenditures in Austria.⁶ Table 1 shows the current pattern of both public expenditures and taxes with their respective proportions.

For instance, in the condition of no voice on distribution, a participant receives information that 23% of collected tax payments are spent for local services provision, 18% for social security and health, 15% for the pension system, etc. This scheme of distribution is fixed and participants have no opportunity to change it. In the condition of voice on distribution, participants face the same information but are allowed to express their subjective preference by changing the pattern of expenditures. Thus, a participant can decide to finance, for instance, only education (100% of collected taxes) and set the financing for the other eleven items to 0%; another participant can equally finance the twelve items by setting 8.3% to each voice of

⁶ For what concerns the Public Expenditure context, the items of the list and their shares were adopted from the official website of the Austrian government. For the Tax context, official data on average shares of taxes on total tax burden was not available. For this reason, we used an approximation of real values. Although at the moment of the experiment (June 2013), Inheritance tax was not included in the Austrian tax system, given the ongoing debate on the reintroduction of this tax, we decide to introduce it.



Fig. 3. Payment with voice on contributions.

expenditure etc. We presented always the fixed distribution pattern first (rounds 1 and 3), and the voice-condition afterwards (rounds 2 and 4).

4. Results

Table 2 shows mean compliance for all levels of the four treatment variables order, context, voice on contributions, and voice on distribution.

Since the dependent variable tax compliance was not normally distributed and had a lower and an upper bound, tobit regression analysis is more convenient to test the effect of the experimental manipulations than a linear regression analysis or analysis of variance. In a first step, we tested if there was an effect of order of presentation. Since order had no effect ($B = 1.189$, $p = .885$), we omit this factor to avoid unnecessary complexity of following analyses. A tobit regression analysis with the independent variables voice on contributions, context, and voice on distribution was conducted. As Model 1 in Table 3 reveals, voice on contributions was a highly significant predictor of tax compliance ($B = 13.20$; $p = .004$), and both context ($B = 8.59$; $p = .057$) as well as voice on distribution ($B = 8.28$; $p = .066$) were marginally significant. Thus, participants show higher compliance when they have the possibility to decide on paying their share separately, for instance regarding different public expenditure domains, compared to paying one aggregate amount and just being informed about the use of the collected money. In addition, providing a context presenting different forms of taxes as the purpose of tax levying yields lower compliance than revealing the sectors of public expenditures the money will be used for. Moreover, allowing changing the pattern of distribution of the tax load breeds more tax honesty as well.

To control for potential gender effects, we added this variable in an alternative tobit regression (Model 2). Although a strong effect of gender was identified ($B = 24.84$; $p < .001$) with women showing higher compliance than men (mean compliance females: 57.16%; mean compliance males: 38.62%), the influence of the other three variables was confirmed. Again, voice on contributions was identified as a significant predictor of tax compliance ($B = 11.07$; $p = .012$), and voice on distribution ($B = 8.33$; $p = .058$) as well as context ($B = 8.54$; $p = .052$) were marginally significant.

A rather low and only marginally significant correlation between income and mean compliance indicates no notable income effect ($r(123) = .17$, $p = .068$).

Table 2
Mean compliance rate ($N = 123$).

Factor	Mean compliance rates			
Order	Decreasing	51.02%	Increasing	51.26%
Context	Public expenditures	54.72%	Taxes	47.54%
Voice on contributions	No	46.76%	Yes	55.57%
Voice on distribution	No	47.63%	Yes	54.63%

Table 3
Tobit regression analyses.

Tax compliance ~	Model 1			Model 2		
	B	SE(B)	p	B	SE(B)	p
Intercept	42.624	4.500	< .001	24.727	5.620	< .001
Context	8.593	4.495	.057	8.544	4.382	.052
Voice on contributions	13.199	4.502	.004	11.068	4.402	.012
Voice on distribution	8.276	4.495	.066	8.334	4.382	.058
Gender	–	–	–	24.837	4.772	< .001

Note: The variable voice on contribution was dummy coded with 0 = no and 1 = yes; voice on distribution was coded with 0 = no and 1 = yes; context was dummy coded with 0 = tax context and 1 = expenditures context; gender was dummy coded with 0 = male and 1 = female.

In order to show that participants in the experiment were sensitive to the experimental manipulations of voice on contributions and voice on distribution, we checked whether tax evasion, with respect to certain public expenditures, was correlated with a lower allocation of tax load for the same purpose in case of being allowed to change the distribution in the following round. For instance, if a participant with voice on contributions decides to evade taxes which would be used for national defense in round 1 (round 3) due to disapproval of this purpose, reducing the share of tax revenue used to finance national defense in round 2 (round 4) could be expected. Hence, we calculated the correlation between mean compliance for all public expenditures in rounds with the fixed distribution scheme (rounds 1 and 3; only possible in case of having voice on contributions) and the distribution chosen by participants in the following rounds (rounds 2 and 4). The results reveal a positive correlation of mean compliance and chosen distribution scheme for all 12 categories of public expenditures. Furthermore, the highest correlations were observed in categories which typically polarize among citizens (defense: $r(61) = .45$, $p < .001$; local services: $r(61) = .34$, $p = .007$; state security and justice system: $r(61) = .32$, $p = .013$; interest of government debts: $r(61) = .32$, $p = .013$). Thus, tax evasion in a certain domain of public expenditures goes along with reducing tax revenues used for that domain in the following round, while tax compliance in a certain domain of public expenditures is related to increasing the percentage of tax revenue used for that domain in the next round.

Regarding the different types of taxes we find the same pattern, however less pronounced, which is probably best explained by the low experience of our participants concerning some of these taxes. Nevertheless, for 8 of 11 types of taxes we find a positive correlation of mean compliance in the voice on contribution treatment and the chosen distribution of tax revenue in the following round. The three remaining correlations are negative but close to zero (income tax: $r(61) = -.03$, $p = .799$; property tax: $r(61) = -.02$, $p = .874$; capital tax: $r(61) = -.08$, $p = .523$).

Analyses of the risk-aversion measures did not reveal any differences with regard to the between factors voice on compliance (single item: $F(1, 118) = 0.47$, $p = .494$; risk-scale $F(1, 118) = 0.34$, $p = .560$), order of presentation (single item: $F(1, 118) = 1.79$, $p = .184$; risk-scale $F(1, 118) = 2.57$, $p = .112$), and their interaction (single item: $F(1, 118) = 0.02$, $p = .883$; risk-scale $F(1, 118) = 0.76$, $p = .384$), as well as gender (single item: $F(1, 118) = 0.53$, $p = .468$; risk-scale $F(1, 118) = 0.29$, $p = .590$). Thus, different risk attitudes cannot account for the systematic differences in compliance identified in the experiment.

5. Discussion

Experimental research on tax compliance usually considers only one tax, generally income tax, and avoids situations in which, like in reality, the total tax burden is composed by several taxes and different payments. In our experimental design, we overcome this limitation by presenting the participants' total tax duty as a collection of different tax collections. In some treatments, participants had the opportunity to comply by paying, item by item, their total tax due: in other words, they had voice on contributions. In other treatments, they were asked to comply, as usual in laboratory experiments, by paying an all-embracing tax: in this case, participants had no voice on contributions. Results show that tax compliance is significantly higher when participants had voice on contributions. A straightforward intuition suggests that allowing participants to single out their contributions towards different payments (taxes/public expenditures) would push them to evade more since they could select the "undesired" form of taxation: taxpayers should be more tax compliant when they must pay for a unique bundle of taxes/uses of public money because they cannot separate the desired payments from the undesired ones. Our

results contradict this behavioral prediction. Recalling the Thoreau example, an opposite behavioral prediction would suggest that tax compliance is triggered by the impossibility to separate “good taxes” (or payments) from “bad taxes”. In a mirror like Thoreau’s style of behavior, one could think that the standard taxpayer assumes a prevalent positive attitude towards taxes when she is not allowed to disentangle good taxes from bad taxes. In other words, a standard taxpayer behaves in a way which is perfectly opposite to the Thoreau’s ethical position, meaning obeying to a sort of Kantian imperative: “to pay taxes is an ethically correct behavior, so I pay taxes even if part of this money will be used in a bad way”. On the opposite, when participants have voice on contribution they can apply an utilitarian ethical approach since it is possible to carry on, payment by payment, a cost/benefit computation. In this setting and in our case, the number of “bad” payments might have been perceived smaller than the number of “good” payments, and this might have triggered taxpayers’ compliance.

As in other similar studies (e.g., Djawadi & Fahr, 2013), we found that compliance is also sustained by increasing procedural justice. When participants have the opportunity of a direct participation into the rules of the tax system (they have voice on distribution), tax evasion is lower. A forerunner contribution about the role played by voice in influencing economic behaviors is the one by Hirschman (1970). According to the author economic interactions are influenced by three “institutional” dimensions: voice, exit, and loyalty. For the scope of this work, voice and exit are the relevant dimensions: generally speaking, the availability of voice reduces the frequency of the implementation of the exit option. In our case we can imagine that tax evasion represents the exit option for a taxpayer (since she cannot properly exit the society)⁷ while the opportunity of addressing money to specific uses represents the voice option. Our results are in line with Hirschman’s (1970) thinking since allowing participants to express voice on the use of money increases tax compliance.

Another confirmation of previous result is participants’ tax aversion (Sussman & Olivola, 2011): *ceteris paribus*, when tax due was linked to the concept of taxes, compliance was lower than in the situation where the information was about public expenditure. This finding can be explained by referring to prospect theory (Kahneman & Tversky, 1979) since framing the taxpayer’s problem as a matter of paying a tax or financing a public expenditure implicitly puts the decision maker either in the losses domain (the taxpayer pays a tax) or in the gains domain (the taxpayer invests in a public outcome), respectively. If this intuition is true, the tax frame may push taxpayers to engage in more evasion when the problem is within a tax frame (the decision maker is risk lover) rather than when they face a public expenditure frame (the decision maker is risk averse).

As in many other studies a gender effect regarding tax compliance was observed with females being significantly more compliant than males (cf. Alm, Jackson, & McKee, 2009; Kogler, Mittone, & Kirchler, 2016; Torgler & Valev, 2010). Since in the present study participation within the tax system played an important role it might be the case that women are especially sensitive to such features.

As already pointed out, the design of the present experiment was an attempt to overcome one specific disadvantage of other studies on participation and tax compliance, i.e., that compliance decisions are usually influenced by both the possibility to participate and the consequences of the decisions taken. However, one disadvantage of this rather artificial setting is that there are no real consequences of distribution decisions. Nevertheless, the fact that increased evasion in specific domains of public expenditure are associated with withdrawing tax revenues from these domains suggests that this rather hypothetical participation mechanism worked quite well. Thus, the identified positive effect of participation on tax compliance might be even stronger in case of real consequences. In any case, what the results clearly suggest is that there are alternatives to enforcing tax compliance by deterring tools as frequent tax audits and severe fines for evasion.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.joep.2016.06.005>.

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⁷ For sake of completeness one could observe that a taxpayer can exert the exit option by moving from one country to another. This idea is linked to the famous Tiebout (1956) model of foot voting. Nevertheless in our experimental setting foot voting was clearly not possible.

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