

# Eliciting Taxpayer Preferences Increases Tax Compliance

Cait Lambertson  
Jan-Emmanuel De Neve  
Michael I. Norton

Working Paper

14-106

April 23, 2014

Copyright © 2014 by Cait Lambertson, Jan-Emmanuel De Neve, and Michael I. Norton

Working papers are in draft form. This working paper is distributed for purposes of comment and discussion only. It may not be reproduced without permission of the copyright holder. Copies of working papers are available from the author.

# Eliciting Taxpayer Preferences Increases Tax Compliance\*

Cait Lambertson<sup>†</sup>

*Katz Graduate School of Business, University of Pittsburgh*

Jan-Emmanuel De Neve

*University College London and Centre for Economic Performance (LSE)*

Michael I. Norton

*Harvard Business School*

April 23, 2014

## Abstract

Two experiments show that eliciting taxpayer preferences on government spending—providing *taxpayer agency*—increases tax compliance. We first create an income and taxation environment in a laboratory setting to test for compliance with a “lab tax.” Allowing a treatment group to express non-binding preferences over tax spending priorities leads to a 16% increase in tax compliance. A follow-up online study tests this treatment with a simulation of paying US federal taxes. Allowing taxpayers to signal their preferences on the distribution of government spending results in a 15% reduction in the stated take-up rate of a questionable tax loophole. Providing taxpayer agency recouples tax payments with the public services obtained in return, reduces general anti-tax sentiment, and holds satisfaction with tax payment stable despite increased compliance with tax dues. With tax noncompliance costing the US government \$385 billion annually, providing taxpayer agency could have meaningful economic impact. At the same time, giving taxpayers a voice may act as a two-way “nudge,” transforming tax payment from a passive experience to a channel of communication between taxpayers and government.

JEL codes: D03, H26, H30, H50, I31

---

\*Seminar participants at the LSE Centre for Economic Performance, Oxford University Centre for Business Taxation, and the HMRC Behaviour Change Knowledge Network provided helpful comments. We thank Johannes Spinnewijn, Ori Heffetz, Richard Layard, Nick Powdthavee, Andrew Oswald, Peter John, Michael Hallsworth, Rohan Grove, Paolo Morini, Cody Xuereb, Lucy Barnes, Bazil Sansom, Marsha Teo, Andrew Stephen and George Ward for their help and comments on the manuscript. De Neve gratefully acknowledges research support from the LSE Centre for Economic Performance.

<sup>†</sup>Corresponding author: 364 Mervis Hall, Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, PA, 15260. E-mail: clamberton@katz.pitt.edu

# 1 Introduction

Most citizens dislike paying taxes. Indeed, tax noncompliance is estimated to amount to some \$385 billion annually in the US (IRS 2013) and £42 billion in the UK (HMRC, 2012), many other governments also suffer from a so-called “tax gap” in their national accounts.

While tax aversion has many causes, we suggest that a meaningful portion of that aversion can be understood — and addressed — by considering two psychological characteristics of the tax process. First, tax aversion is created by the *decoupling* of tax payments and the public goods obtained in return. This disconnect places distance between payment and benefit, and therefore decreases taxpayers’ perceptions of the tax-funded benefits they receive. Data suggests that such under-recognition of benefits is widespread: in one survey, among Americans who claimed they had never used a government social service, 53% percent had in fact taken out student loans, and 40 percent had benefited from Medicare (Mettler, 2011). Because perceptions of such benefits are low at the time of payment, decoupling may undermine tax compliance (Soman and Gourville, 2001; Thaler, 1999). Second, taxpayer frustration also results from the lack of *agency* or sense of influence over tax spending — which stands in sharp contrast to one’s control over private spending — and may prompt some degree of psychological reactance (Brehm, 1966). As psychological reactance creates aversion both to the focal action and to the entity perceived to restrict freedom, a lack of agency may also be expected to lower tax compliance.

Academics and policymakers have begun to address the first source of frustration, aiming to better inform citizens on where tax money is being spent. To recouple payment and benefit, policymakers now widely publicize information on the allocation of tax dollars across expenditure categories (White House, 2011) and are introducing “Personal Tax Statements” (UK Treasury, 2012). The success of such interventions are yet to be determined. However, the negative effects of lack of taxpayer agency remain largely unaddressed, either theoretically or in practice. Thus, taxation continues to be a relatively passive exercise in which citizens pay taxes without agency in how the collected tax revenue is allocated.

We propose that the annual tax filing process offers an unexploited opportunity for governments to increase taxpayer engagement and compliance. We explore this possibility in a set of experiments that allow taxpayers to express non-binding (advisory) preferences regarding the use of their tax dollars, assessing the effects of this taxpayer agency treatment on tax compliance as well as satisfaction with tax payment and attitudes towards taxation. We find that providing taxpayers with such “taxpayer agency” — eliciting tax spending preferences — significantly increases tax

compliance. We also observe that agency operates, in part, by recoupling payment and benefit. Further, agency creates no decrease in tax satisfaction or change in fear of audit, and may reduce general anti-tax sentiment among taxpayers.

## 1.1 Background

Tax compliance and tax morale form the basis for a large literature. This research suggests that the factors driving tax compliance include tax audit probabilities and penalty rates, trust in government and tax fairness, tax code uncertainty, taxpayer socio-demographics, and numerous cultural and normative factors (for reviews see Alm, 2012; Jackson and Milliron, 1986; OECD, 2012; Torgler, 2007). The psychological aspects of the tax system have received increasing attention, as the more standard drivers of compliance (such as enforcement rates) have failed to fully explain individual tax behavior (Kirchler, 2007; McCaffery and Slemrod, 2006; Torgler, 2007). More recent research has focused on understanding the “interaction climate” between tax authorities and taxpayers (Kirchler, 2007; Hallsworth et al., 2014) and examines factors such as patriotism (Konrad and Qari, 2012), enforcement information dissemination (Alm et al., 2009), tax code complexity (Abeler and Jäger, 2013), tax code kink points (Saez, 2010), service provision by tax authorities (Chetty and Saez, 2013; Mckee et al., 2011), tax framing (McCaffery and Baron, 2004), peer pressure and varied means of communication (John et al., 2011), and effects of tax form redesign such as the placement of the signature box (Shu et al., 2012). However, tax enforcement and these recent behavioral approaches seldom address the deep-rooted tax aversion that exacerbates noncompliance (for exceptions, see Sussman and Olivola, 2011; Lambertson, 2011), nor has research explored tax compliance that explicitly considers the operational possibility of raising the “procedural utility” citizens experience when coping with the tax process (Frey and Stutzer, 2001).

Research suggests that providing information on the purpose and benefits of taxation may increase satisfaction with tax payment. For example, Sussman and Olivola (2011) show that asking individuals to consider the positive uses of their tax payments improves their negative attitudes towards taxation. Such results align with work that shows that making the resulting outcome of a charitable donation more tangible (Cryder and Loewenstein, 2010; Cryder et al., 2013) or providing more information on the beneficiary (Bohnet and Frey, 1999) can increase generosity. In essence, such work addresses the well-known mental accounting problem of decoupling between payment and its economic outcomes (Soman and Gourville, 2001; Thaler, 1999). Individuals are happier to give when they know what they’re giving for, and less likely to do so when the outcome of their payment is ill-defined.

Thus, any intervention aimed at increasing tax compliance should re-couple payment and benefits. Merely solving decoupling in the tax process, however, does not solve the problem of citizens' lack of agency. We hypothesize that past work has underestimated the importance of the persistent lack of agency taxpayers feel with regard to tax spending. Agency is defined as "the human capability to exert influence over one's functioning and the course of events by one's actions" (Bandura, 2009). The belief in one's ability to make choices that affect one's outcomes is the foundation of agency; as a result, introducing choice into behaviors increases perceptions of agency, and with it, intrinsic motivation to complete the related action (Deci and Ryan, 1985; Weinstein and Ryan, 2010). By contrast, when an individual's freedom appears to be curtailed, they often experience psychological reactance (Brehm, 1966), which creates aversion toward the action and the entity perceived to be responsible for the restriction on one's freedom. As such, we predict that adding elements of choice to the tax processes will raise compliance.

Research demonstrating the link between agency and compliance has mostly been carried out in therapeutic contexts, in which medical professionals seek to raise patient compliance with treatment regimens (e.g. Reid, 1984). Like decoupling, agency has also been studied in the domain of charitable giving. For example, allowing individuals to control the amount they pay for a good or experience can raise overall product sales and generate a sense of shared social responsibility (Gneezy et al., 2010). With regards to tax morale, Torgler (2005) found in a comparative study of Swiss cantons that more direct democracy — that is, more voice among citizens in the decision-making process — had significant positive effects. In the same spirit, Alm et al. (1993) showed that tax compliance increased when small groups of individuals cooperatively reached agreement about the use of their payments relative to having similar uses simply assigned.

Importantly, this previous research demonstrating the benefits of agency has required actual direction of expenditures or actions, as opposed to simple preference expression. In practice, representative democracies may be unable or unwilling to provide this type of agency to all taxpayers. The present research, in contrast, suggests that agency can be increased by merely providing the opportunity to express tax preferences to the tax collector. This effectively recouples payment and benefit, resulting in increased compliance.

Importantly, we posit that eliciting taxpayer preferences will increase tax compliance even when those preferences are not directly implemented in subsequent government expenditures. We propose that taxpayers who express tax preferences will experience proxy agency, defined as having the opportunity to influence individuals with decision-making authority (Bandura, 1986, 2000). Despite its non-binding na-

ture, proxy agency has been shown to have similar effects to direct personal agency. For example, management research suggests that even when managers do not comply with employees' expressed preferences, employees whose preferences have been elicited express greater job satisfaction, lower turnover intentions, and more positive evaluations of supervisors (Alexander and Ruderman, 1987; McFarlin and Sweeney, 1996). Relatedly, research suggests that preference elicitation increases compliance and loyalty to political entities even when it does not alter the actual outcome of the process, due to increased perceptions of procedural fairness (e.g Tyler et al., 1989). Thus we predict that expressing preferences for the disbursement of taxes will increase taxpayer compliance even when such preferences are not binding.

We test our prediction that taxpayer agency increases tax compliance in a small-scale pilot test and in two studies. In the pilot and first experiment, we create an incentive-compatible employment and taxation environment in a lab. Here, participants can choose to pay or withhold assessed taxes, and second in an online tax-paying simulation in which participants choose whether or not to take a loophole in the federal tax code. We assess the effect of taxpayer agency on actual and planned tax compliance, as well as on attitudes toward taxation and taxpayer satisfaction.

## 2 Pilot Study

In our pilot study, we pay 125 undergraduate lab participants to complete a simple task, for which they are paid a fixed amount of money. All participants are asked to pay 30% of their earnings in "lab tax". Randomly-selected participants are given agency in tax payment by allowing them to express their preferences for the use of their tax dollars. In the pilot study, preferences can be expressed for undergraduate-relevant expenditures such as the purchase of additional printing stations, support for student organizations, and scholarships. Detailed participant instructions for this pilot study are provided in the online appendix.

Participants were asked to put their tax dollars in an envelope and bring it to the experimenter at the end of the session. They were also told that 1 in 8 participants would be "audited." If selected for audit, participants who had not fully complied were subject to their \$3.00 tax plus an additional \$2.00 penalty. This method thus allowed participants a private, auditable form of compliance.

An ANOVA using experimental condition (agency, no agency) predicts the amount participants put into their envelopes. Taxpayer agency has a positive effect on compliance, though at this sample size the difference does not approach conventional levels of significance ( $M_{noagency} = \$1.69$ ,  $M_{agency} = \$1.98$ ; Wald  $\chi^2 = 4.18$ ,  $p = .37$ ).

### 3 Experiment I

Given the results of the pilot study, we developed a similarly-structured experiment to more fully test our theory in a larger sample. Our account suggests that agency should recouple payment and perceived benefit, we capture perceptions of the perceived benefits associated with taxes. Further, to ensure that agency does not elicit negative reactions, we capture satisfaction with payment. In addition, we measure perceived audit probability, to examine whether agency raises concerns about heightened monitoring of payment. If individuals given agency feel their behavior will be more carefully scrutinized because of their expressed preferences, they may be both less satisfied with payment and comply simply out of heightened audit fear.

#### 3.1 Experimental Design and Participants

Experiment 1 followed a two-group between-subjects design in which, as in the pilot study, participants were randomly assigned to either agency or no agency conditions. Participants were one hundred and eighty-nine participants who registered online to participate in Harvard University’s Computer Lab for Experimental Research (CLER) lab. As part of the online registration process, demographic information was collected (age, gender, marital status, ethnicity and income). After registering, participants came to a physical lab with the understanding that they would receive a certain \$10 payment for completing the multi-study session. In the course of that session, participants were told that they could also complete a “bonus” task in return for an additional \$10.

Table 1: Experiment I - Demographics

	No Allocation	Allocation	Difference
Percent male	38%	41%	2 (1) = 0.15, p = .70
Ethnicity (white)	48%	60%	2 (5) = 5.83, p = .32
Monthly Household Income	2,710 (3,376)	3,161 (3,722)	F = 0.73, p = .39
Marital Status (single)	84%	85%	NS (very small cell counts, so chi-square is not valid; no difference in # of single)
Age	24.5 (5.05)	23.4 (4.41)	F = 2.67, p = .10

#### 3.2 Income, Taxation and Audit

Before deciding whether to complete the \$10 “bonus task,” participants were informed about the tax rate and audit probability associated with their payment for that task.

In this experiment, both were held constant. All participants read that their tax rate would be 30% (\$3 out of the \$10 bonus), and that this tax rate represented the average amount of labor time devoted to tax payment in the United States (Morrison, 2013). All participants were also told that at the end of the session, an experimenter would collect all the envelopes and audit 1 out of every 8 envelopes. Participants read that if they were audited and the experimenter found less than \$3 in their envelope, they would have to pay the full \$3 plus an additional \$2 penalty out of their \$10.

All participants chose to opt into the bonus task. The bonus task consisted of rating their enjoyment of 12 landscape and home interior pictures on a 9-point scale (1: not at all to 9: very much.) After rating the pictures, participants raised their hand to receive their \$10 payment. To facilitate payment, payment was provided in ten \$1 bills.

### **3.3 Taxpayer Agency**

Participants were then randomly assigned to either the agency or no agency conditions. Participants in the no agency condition continued directly to the tax payment portion of the study. Participants in the agency condition first read:

We will allow you to provide input into how your tax money is used. You will be able to provide your thoughts about how tax money should best be used. The categories you can select as your preferred expenditure of tax money will only benefit you indirectly, but will benefit the broader community of individuals who participate in lab studies at Harvard. The lab administrators may take your preferences into account as they determine what to do with the lab tax money.

They were then reminded that they would pay \$3 in tax and told that they were able to allocate their money across three categories, which they were told would benefit individuals who participated in experiments and surveys in the lab in the future. The three categories were beverages, snacks and enhanced incentives for future study participants.

They then completed attitudinal measures. First, they reported their beliefs regarding audit likelihood on a 7-point scale (1: I am very unlikely to be audited to 7: I am very likely to be audited). To capture perceived value, they also reported the sense of value they associated with their taxes on a 7-point scale (1: I do not value the way my lab taxes will be used to 7: I value the way my lab taxes will be used), and their satisfaction with paying their taxes on a 7-point scale (1: I feel dissatisfied with paying the tax to 7: I feel satisfied with paying the tax); the order of these questions was randomized.

### 3.4 Compliance

Participants were reminded that their tax rate was 30% and were asked to place their tax payment in an envelope on their desk. (All envelopes were numbered so that participants' responses could later be connected to their agency condition and other responses). At the end of the lab session, research assistants collected the envelopes, randomly selected 1 in 8 participants for audit, collected tax payment and penalty money consistent with prior instructions, and recorded the amount each participant had placed into their tax envelope. At no point did lab administrators view participants' other data, including responses on other measures or condition assignment.

### 3.5 Results

Seven participants did not provide age information, resulting in a usable sample size of 182. We first classify participants into "full compliance," "partial compliance," and "no compliance" categories. In the aggregate, as is common in experimental studies of tax behaviors (see Alm et al., 1992, 2011), compliance follows a strongly bimodal pattern, such that 58% of participants paid their full tax amount (\$3.00), 39% paid no tax, and approximately 2.5% paid other amounts. As a result, we test whether the proportion of individuals falling into each compliance classification varied based on agency condition. Proportions in each compliance category are shown in Figure 1. To accommodate the extremely small number of participants who partially complied, we use a Fisher's exact test of proportions. This test reveals that, as expected, agency has a significant effect on participants' compliance tendencies (Fisher's exact test  $p = .019$ ).

The exact amounts placed into the envelopes were then analyzed continuously using generalized linear modeling with a negative binomial distribution. Results are in Table 2. The top portion of the table provides results without any controls, while the bottom presents results with demographic information incorporated.

Without any controls, agency has a significant positive effect on compliance ( $M_{noagency} = \$1.58$ ,  $M_{agency} = \$2.11$ ; Wald  $\chi^2 = 4.18$ ,  $p = .04$ ). Agency continues to increase tax payment when including the demographic measures as controls, (Wald  $\chi^2 = 3.94$ ,  $p = .05$ ). Gender was the sole significant covariate, such that men pay less (i.e., showed lower compliance) than women ( $M_{male} = \$1.40(1.57)$ ,  $M_{female} = \$2.14(1.54)$ ; Wald  $\chi^2 = 11.11$ ,  $p = .0009$ ).

One possible explanation for the effect of agency on compliance is that individuals who had been given agency felt they would be under greater scrutiny and thus, be more likely to experience an audit. To test this possibility, we estimate an ANOVA using agency condition as well as the same covariates to estimate participants' perceptions of their likelihood of audit. There is no significant effect of agency on perceived likelihood

Table 2: Experiment 1 - Effect of Taxpayer Agency on Compliance

	(1)	(2)
Treatment (Agency)	0.29** (0.14)	0.26** (0.13)
Gender (Male)		-0.45** (0.14)
Age		-0.0002 (0.01)
Ethnicity (African-American)		-0.11 (0.34)
Ethnicity (Asian-American)		0.11 (0.30)
Ethnicity (Caucasian)		-0.04 (0.28)
Ethnicity (Hispanic)		0.26 (0.35)
Ethnicity (Pacific Islander)		-0.55 (0.45)
Marital Status (Single, never married)		-0.35* (0.20)
Marital Status (Married)		-0.4 (0.34)
Marital Status (Divorced)		0.12 (0.73)
Household income		0.02 (0.17)
Intercept	0.45*** (0.11)	0.82 (0.52)
Observations	182	182
Pseudo R <sup>2</sup>	0.04	0.012
Log Likelihood	-182.23	-172.12

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

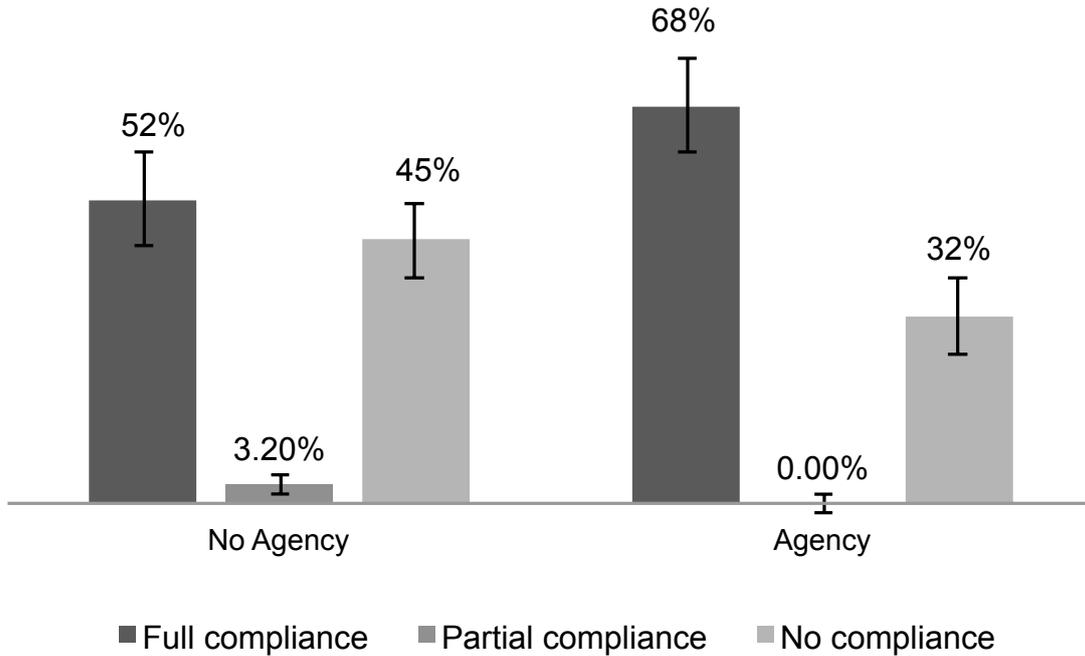


Figure 1: Compliance Proportions, Experiment 1

of audit ( $M_{agency} = 3.35(SD = 1.63)$ ,  $M_{noagency} = 3.56(SD = 1.82)$ ;  $F(1, 166) = 0.88$ ,  $p = .35$ ). Men believe they are significantly less likely to be audited than women ( $M_{male} = 2.94(SD = 1.70)$ ,  $M_{female} = 3.79(SD = 3.79)$ ,  $F(1, 166) = 12.27$ ,  $p = .0006$ ).

Further, we test for possible mediating mechanisms that would explain the effect of agency on compliance. These analyses follow Preacher and Hayes (2008) bootstrapping methodology, set at 1000 iterations; a significant mediation is indicated by a 95% confidence interval for the indirect path that does not include zero. All analyses use agency condition as well as the same set of covariates as before to predict compliance amount. Perceived likelihood of audit does not mediate the effect of agency on compliance (95% CI for indirect effect:  $-0.09$  to  $.04$ ). However, considered either with or without demographic controls, participants given agency value the uses associated with the taxes more than those who not given agency ( $M_{agency} = 4.16(SD = 1.75)$ ,  $M_{noagency} = 3.49(SD = 1.74)$ ;  $F(1, 168) = 5.21$ ,  $p = .02$ ). Further, bootstrapping analyses specified as before suggest that perceptions of the value of the items funded by the tax payment mediated the effect of agency on compliance (95% CI for indirect effect:  $.02$  to  $.15$ ). These results suggest that the psychological decoupling and subsequent devaluation common to non-agency taxation was reduced by the provision of agency, and that this recoupling, in turn, raised compliance. Finally, there is no significant direct relationship between agency and satisfaction with tax payment ( $M_{agency} = 3.37(SD = 1.69)$ ,  $M_{noagency} = 3.25(SD = 1.80)$ ;  $F(1, 168) = .30$ ,  $p = .59$ ).

Experiment 1 provides evidence that providing taxpayer agency increases tax com-

pliance, using an incentive-compatible, highly controlled method. These results appeared to be driven at least in part by more positive perceptions of the value that tax dollars would provide, suggesting that taxpayer agency successfully recouples payment and benefit. We also note that taxpayer agency does not appear to be associated with higher concern of audit. Moreover, although asking participants to express their preference about tax dollar expenditure raised average tax payment and required some additional cognitive effort, we did not see any decreases in satisfaction with tax payment itself. Of course, this tightly-controlled setting is not without its limitations: the sample consisted predominantly of young students, and participants made their compliance decisions about a novel type of taxes used to benefit the laboratory. Experiment 2 was designed to conceptually replicate the results of Experiment 1, while also addressing some of the limitations presented by a lab context.

## 4 Experiment II

Experiment 2 tests for taxpayer agency effects in a population of taxpayers encompassing a wider demographic range than seen in Experiment 1, and also uses a more familiar income tax payment scenario as a decision-making context. In this experiment, we compare the typical taxpaying experience (i.e., no information about current tax expenditures and no agency) to having information about the benefits associated with taxes but having no agency and to two agency conditions: one that includes agency but provides no information about current expenditures, and a second that includes both information about current expenditures and agency. We focus on a consequential compliance decision made by many taxpayers: whether or not to take a questionable loophole when completing their income tax returns.

Providing agency in a US Federal income tax context requires preference expression with regard to a much broader set of options than in Experiment 1. We again collect information about both satisfaction and perceptions of audit likelihood. Finally, we collect information about anticipate payment date, as well as post-treatment attitudes that have been assessed in prior work on tax morale, to examine whether any of these planned behaviors or attitudes shift in response to agency.

### 4.1 Experimental Design and Participants

Participants were 267 English-speaking, US citizens who had opted into Amazon’s Mechanical Turk panel, and received a \$1.00 payment for completing the experiment. All participants read an informed consent prior to opting-in to the survey. In this informed consent, they were informed that the survey would focus on Federal income

tax dollars and were assured of the confidentiality of their responses. They then provided demographic information (see Table 3) Note that the median reported household income was \$43,000/year.<sup>1</sup>

The experiment followed a two (agency, no agency) x two (information, no information) between-subjects design, resulting in four conditions: One group of participants was provided neither information about current tax spending nor agency (control group) before proceeding to a compliance measure. A second group of participants was provided information about existing tax expenditures but was provided no agency (information only group). A third was provided agency, but not information about existing tax expenditures (agency only group). A fourth group was provided both information about existing tax expenditures and was provided agency (agency plus information group). In addition, within the two agency conditions, the percentage of their tax payment over which participants were told they could express their preferences was varied at 10, 25 and 50 percent. We first report results across these percentages, then for each individually.

## 4.2 Information Provision

Participants assigned to the information only or information plus agency conditions first read about the current allocation of Federal tax dollars, using categories and descriptions listed on the [www.whitehouse.gov/2011-taxreceipt](http://www.whitehouse.gov/2011-taxreceipt) website (Appendix A). They viewed this information both in list and pie chart format. Participants were allowed to review this information for as long as they wished before continuing.

## 4.3 Taxpayer Agency

Participants in the information only condition then proceeded directly to the compliance measures. Participants in the agency only and information plus agency conditions read the following:

Imagine that you are told that you can provide input about how [10%/25%/50%] of your tax payment would be spent across categories used by the Federal government. The government would take your opinion into account for this portion of your tax dollars. Below, please provide the allocation you would advise for [10%/25%/50%] of your income tax dollars.

Participants were given an open-ended amount of time to express their preferences, by allocating funds across the same spending categories. A running total at the bot-

---

<sup>1</sup>This is lower than the US 2011 median (\$50,054) but consistent with the slightly lower household income reported in Mechanical Turk samples (see Paolacci et al. (2010)).

tom of the screen allowed them to see the percentage they had allocated across the categories. They were instructed to ensure that their preferred answers totaled 100%.

#### 4.4 Compliance

Next, we assessed participants' likelihood of compliance, by presenting the following situation: "Imagine that you were aware of a tax loophole that would enable you to avoid paying 10% of your income tax bill. However, you aren't sure you really qualify. Would you take the tax loophole to lower your tax bill?" Participants answered this question by indicating yes or no.

#### 4.5 Additional Measures

As in Experiment 1, we assessed participants' beliefs about their likelihood of being audited by the IRS on a 7-point scale (1: very unlikely to 7: very likely). Further, we again asked participants to rate their satisfaction with tax payment on a 7-point scale (1: I feel dissatisfied with paying taxes to 7: I feel satisfied with paying taxes). We also asked participants to report the date on which they anticipated paying their taxes, given the official due date of April 15th.

These items were embedded in additional attitudinal measures (see Appendix B). While not focal to our account, we assessed the possible impact of agency on factors previously identified as drivers of tax morale and compliance: belief in the redistributive role of taxes (e.g. Mittone, 1997), attitudes toward other taxpayers, trust in government (e.g. Scholz, 1998; Tyler and Smith, 1997; Tyler et al., 1989), prosocial attitudes (McGraw and Sholz., 1991), and general tax sentiment. Finally, participants rated how seriously they took the survey on a 7-point scale (1: not at all seriously to 7: very seriously).

#### 4.6 Results

Ten respondents were removed from the sample for providing nonsensical responses on an open-ended measure of anticipated payment date (asked to specify the day of the month on which they would pay taxes, they entered a number greater than 31), resulting in a sample of 257 individuals. Overall, participants reported taking the survey seriously ( $range = 3 - 7$ ;  $M = 6.83$ ,  $SD = .53$ ), with no significant differences across conditions ( $p = .21$ ).

Most background characteristics do not vary significantly across conditions (Table 3). However, contrasts show that household income is significantly lower in the control condition than in the agency only ( $F(1, 248) = 5.08$ ,  $p = .03$ ) and information plus

Table 3: Experiment 2 Sample Characteristics by Condition

	Control	Information only	Agency only	Information plus agency	Significance test
	(n = 32)	(n = 23)	(n = 104)	(n = 98)	
Percent female	52.1%	56.5%	47.1%	53.1%	$\chi^2 = (3) 1.13,$ $p = .77$
Paid tax last year (vs. did not or do not recall)	56.2%	52.2%	59.6%	58.2%	$\chi^2 (6) = 2.71,$ $p = .84$
How taxes filed in the last year					
Filed by themselves electronically	59.4%	69.6%	66.3%	64.1%	$\chi^2 (12) =$ 11.02, $p = .53$
Filed electronically with help of tax preparer	31.2%	8.7%	19.2%	22.4%	
Filed by themselves by mail	6.2%	4.3%	7.7%	8.2%	
Filed by mail with help of tax preparer	3.1%	17.4%	5.8%	5.1%	
Filing status					
Filing status: single	40.6%	65.2%	56.7%	48.0%	$\chi^2 (9) = 13.26,$ $p = .15$
Filing status: married filing jointly	53.1%	30.4%	31.7%	41.8%	
Filing status: married filing separately	0.0%	0.0%	5.8%	1.0%	
Filing status: qualifying widow or widower	6.2%	4.3%	5.8%	9.2%	
Number of dependents	.81 (.97)	.52 (.99)	.75 (1.09)	1.06 (1.37)	$F(3, 252^2) =$ 1.89, $p = .13$
Age	37.3 (13.6)	36.3 (10.8)	33.6 (9.9)	36.2 (12.2)	$F(3, 253) =$ 1.41, $p = .24$
Household income	40,031 (22,200)	34,538 (26,010)	49,333 (34,830)	55,490 (36,772)	$F(3, 248) =$ 3.38, $p = .02$ <sup>3</sup>

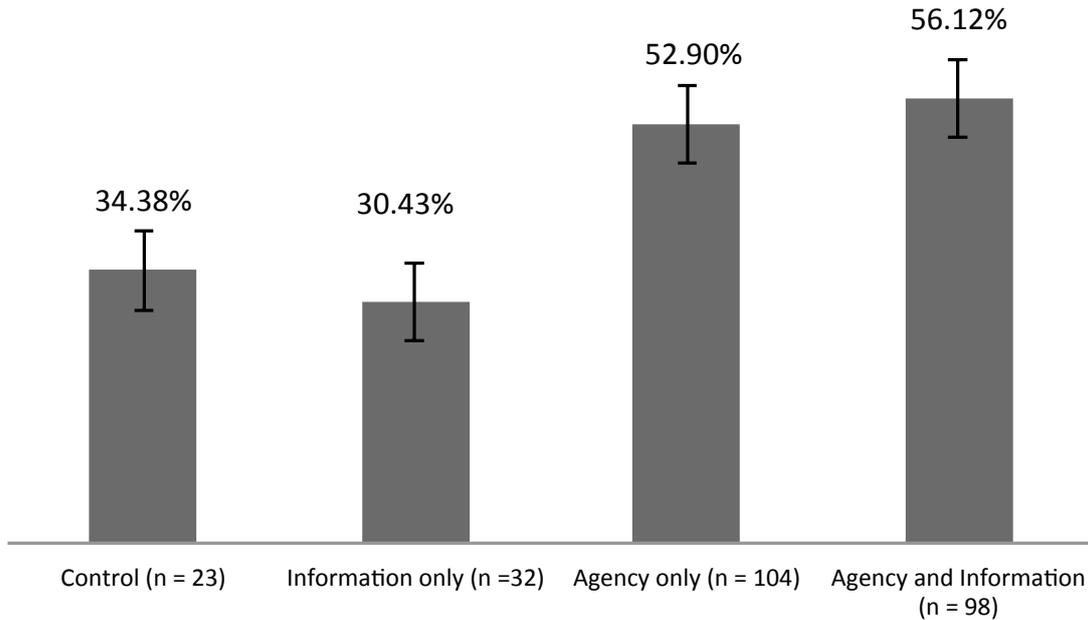


Figure 2: Compliance Proportions, Experiment 2

agency condition ( $F(1, 248) = 7.22, p = .008$ ). As a result we report analyses both with and without these measures as controls.

We first examine likelihood of compliance (non-loop-hole adoption) as a function of condition, depicted in Figure 1. An overall chi-square test using information condition and agency condition as predictors suggests that, as expected, experimental condition has a significant effect on compliance likelihood ( $\chi^2(3) = 8.45, p = .04$ ). Follow up chi-square analyses comparing the four experimental groups indicate that first, simply providing information offers no significant difference in compliance relative to the control group (control: 34.4% v. information only: 30.4%;  $\chi^2 = .09, p = .64$ ). Second, the two agency conditions (with and without information) do not differ significantly from one another (agency only: 52.9% vs. agency plus information: 56.1%; ( $\chi^2 = .21, p = .76$ ) but both agency conditions show significantly greater compliance than the information only condition (30.4%): information only vs. agency only (52.9%, ( $\chi^2 = 3.80, p = .05$ ; information only vs. agency plus information (56.1%, ( $\chi^2 = 4.92, p = .03$ ). Finally, both the agency plus information group and agency only group display higher levels of compliance relative to the control condition ( $p = .03$  and  $p = .06$ , respectively).

We next estimate a generalized linear model using the two experimental factors (agency, information) and their interaction as well as all covariates to predict likelihood of compliance. We note that there is no interaction of the two factors. Thus, we estimate a general linear model testing for the effect of agency controlling for

information. This analysis yields a significant positive main effect of agency on compliance ( $b = .95, Wald\chi^2 = 7.69, p = .006$ ), but no main effect of information ( $Wald\chi^2 = 0.00, p = .95$ ). As shown in Table 3, no other effects were significant at conventional levels.<sup>4</sup>

Further analysis tested whether agency's effects were sensitive to the proportion of the tax bill about which participants expressed their preferences. For this purpose, both non-agency conditions were coded as offering 0% agency. Statistics are included in Table 4. A chi-square test using percent agency to predict loophole adoption first reveals that the percent of taxation over which participants were given agency has a significant effect on likelihood of taking the loophole ( $\chi^2(3) = 11.01, p = .01$ ). More specifically, agency regarding 10% of one's tax bill generates a significant change in compliance compared to the information only condition (54.7%*v.*32.7%;  $\chi^2(1) = 5.77, p = .02$ ), as does agency over 25% of one's tax dollars (61.4%*v.*32.7%;  $\chi^2(1) = 10.15, p = .001$ ). Interestingly, there is not a significant difference between the 0% and 50% agency conditions (47.0%*v.*32.7%;  $Wald\chi^2(1) = 2.59, p = .11$ ).

As in Experiment 1, we analyzed participants' beliefs about their likelihood of being audited (Table 5). A 2 (information condition) x 2 (agency condition) ANOVA suggests no significant main effects or interactions between the two factors (information ( $F(1, 253) = .99, p = .32$ ); agency ( $F(1, 253) = .42, p = .64$ ); interaction ( $F(1, 253) = .26, p = .61$ ). No main or interactive effects of the focal factors become significant when controls are added (all  $p < .16$ ); as in Experiment 1 we again observe only that men believe they are less likely to be audited than are women ( $M_{males} = 2.47(1.87), M_{females} = 2.05(1.06); F(1, 243) = 8.96, p = .003$ ).

As in Experiment 1, we again examined the relationship between agency and payment satisfaction, also shown in Table 5. A 2 (information condition) x 2 (agency condition) ANOVA reveals no significant main effects or interactions between the two factors on payment satisfaction (information ( $F(1, 253) = 1.18, p = .28$ ); agency ( $F(1, 253) = 0.05, p = .83$ ); interaction ( $F(1, 253) = 0.10, p = .75$ ). No effects become significant when all controls are added to the model (all  $p > .32$ ); we also see no significant effects of any controls.

Finally, we test for relationships between the experimental conditions and the ancillary battery of planned behavior and attitudinal measures. A 2 (information condition) x 2 (agency condition) ANOVA without controls reveals significant main effects of agency ( $F(1, 253) = 14.34, p = .0002$ ) and information ( $F(1, 253) = 8.96, p = .003$ ) and a significant interaction of both factors ( $F(1, 253) = 4.65, p = .03$ ). Planned

---

<sup>4</sup>The effect of agency remains significant when the interaction term is included in the model: ( $Wald\chi^2 = 3.83, p = .05$ ) but there is no main effect of information ( $Wald\chi^2 = 0.01, p = .91$ ) or interaction between the two factors ( $Wald\chi^2 = 0.00, p = .95$ )

Table 4: Experiment 2 - Effect of Taxpayer Agency on Compliance

	(1)	(2)
Agency	0.895***	0.953***
	(0.32)	(0.34)
Information		0.015
		(0.27)
Household Income		0.000
		(0.00)
Filing status (single)		-0.077
		(0.55)
Filing status (married filing jointly)		0.301
		(0.57)
Filing status (married filing separately)		0.088
		(0.96)
Gender (male)		0.298
		(0.28)
Age		0.024*
		(0.01)
Filing process (by mail with tax preparer)		0.225
		(0.57)
Filing process (by mail)		-0.014
		(0.51)
Filing process (electronically)		0.312
		(0.33)
Filing process (don't know)		22.52
		(66270)
Paid tax last year (yes)		-0.103
		(0.66)
Paid tax last year (no)		0.022
		(0.67)
Intercept	0.22	-1.14
	(0.19)	(1.06)
Observations	257	252
Pseudo R <sup>2</sup>	0.02	0.08
Log Likelihood	-173.94	-163.75

Standard errors in parentheses

\*\*\*  $p < 0.1$  \*\*  $p < 0.5$  \*  $p < 0.01$

Table 5: Experiment 2 - Percent Compliance at Various Agency Percentages

	No Agency		Agency			
	Control	Info only	10%	25%	50%	Aggregate
Without info	34.5%		52.9%*	58.8%**	47.2%	52.9%
With info		30.4%	56.7%**	63.9%***	46.9%	56.1%
Overall	32.7%		54.7%**	61.4%***	47.1%	54.4%***

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 6: Experiment 2 Perceived Likelihood of Audit and Payment Satisfaction

	Perceived Likelihood of Audit		Payment Satisfaction	
	No information	Information	No information	Information
No agency	2.03 (.97)	2.30 (1.15)	3.06 (1.76)	3.05 (1.66)
Agency	2.27 (1.21)	2.36 (1.21)	3.26 (1.98)	3.38 (1.58)

contrasts reveal that when information is provided, agency has a strong accelerating effect on payment date, shifting it from approximately April 29th to March 8 ( $F(1, 253) = 15.55, p = .0001$ ). However, information can in fact create delay when it is not accompanied by agency, shifting anticipated payment date from approximately March 15th to April 29th. Including all controls in the model, the main effects remain significant (agency ( $F(1, 236) = 13.06, p = .0004$ ), information ( $F(1, 236) = 6.78, p = .01$ ) but the interaction of the two factors drops significance ( $F(1, 236) = 3.35, p = .07$ ). With controls, while providing agency accelerates anticipated payment date to approximately March 5th as opposed to April 4th, providing information creates a significant delay in anticipated payment date (from approximately April 5th, when no information is provided to March 18th, when information is present).

To accommodate the different scales used in the attitudinal questions, all measures were standardized. We then conducted a factor analysis using a varimax rotation on these standardized measures. Items that loaded at .5 or above and showed no cross-loadings were averaged to create indices for four factors: general anti-tax sentiment, redistributive tax philosophy, prosocial engagement and trust in government. We then conduct a 2 (information condition) x 2 (agency condition) ANOVA to predict each index (Table 6). This analysis identifies a significant main effect of agency on anti-tax sentiment ( $F(1, 253) = 4.39, p = .04$ ). Contrast analyses further reveal that agency plus information significantly lowered general anti-tax sentiment relative to both the information only and agency only conditions ( $M_{agencyplusinformation} = -.16 (SD = .72)$ ,  $M_{informationonly} = .28 (SD = .88)$ ;  $F(1, 253) = 6.44, p = .01$ ;  $M_{agencyonly} = .06 (SD = .76)$ ;  $F(1, 253) = 4.09, p = .04$ ), and created a marginally significant decrease in anti-

tax sentiment relative to the control condition (no information, no agency) ( $M_{control} = .10$  ( $SD = .69, p = .09$ )). Agency, information and their interaction had no significant effects on participants' redistributive tax philosophy, prosocial engagement, or trust in government.

Table 7: Experiment 2 Effects of Agency on Standardized Attitude Indices

	Redistributive philosophy		Prosocial engagement		Trust in government		Anti-tax sentiment	
	No info	Info	No info	Info	No info	Info	No info	Info
No	1.19	1.48	-.15	-.10	.14	-.17	.10 (.69)	.28
agency	(.82)	(.77)	(1.01)	(.86)	(.99)	(.91)		(.88)
Agency	1.20	1.29	.08	-.009	-.01	.004	.06 (.76)	-.16
	(.77)	(.81)	(.81)	(.75)	(.91)	(.90)		(.72)

## 5 General Discussion

In two experiments, we show a robust effect of providing taxpayer agency on increasing tax compliance. First, in an incentive-compatible laboratory setting, participants allowed to express their preferences about where their tax dollars would be allocated were less likely to underpay on their taxes. Second, in a more representative sample in which participants completed a simulated federal income tax filing, those given agency were less likely to state that they would take a questionable loophole. Experiment 1 suggests that the increased compliance due to agency arises in part due to a decrease in decoupling between tax payments and benefits: those given agency reported seeing more value in how their tax dollars would be used, and this increase in value mediated the effect of agency on compliance. Importantly from both a conceptual and public policy standpoint, Experiment 2 suggests that while agency alone can increase tax compliance relative to a control condition that mirrors current taxpaying experiences, information alone does not have the same effects.

In addition, we see no negative effects of agency on tax satisfaction in either experiment. Relatedly, agency does not increase participants' perceived audit likelihood. As such, it appears that providing taxpayer agency may offer a means of encouraging tax compliance using a positive incentive, in line with calls to reduce tax avoidance without reliance on negative affect, fear, or threat (Smith and Stalans, 1991)

In our experiments, preferences were expressed but were not binding, suggesting that the mere opportunity to express preferences changes their taxpaying experience. This agency treatment differs from the binding voting behaviors examined in Alm et al. (1993, 1999) and Lambertson (ming), providing initial evidence that the actual reallocation of resources may not be necessary to observe changes in compliance. That

is, our research suggests that the simple provision of voice may provide citizens with a feeling of proxy agency (Bandura, 1986, 2000) and therefore, entice more compliant behavior.

The magnitude of compliance shifts generated by taxpayer agency in both studies is substantial and somewhat consistent. In both experiments, we observe approximately a 16% increase in the proportion of participants who choose the more compliant option offered, whether to pay their tax burden in-full or to reject a questionable loophole. This effect occurs whether audit possibility is concrete and imminent, as in Experiment 1, or distant and uncertain, as in Experiment 2, and regardless of whether real money is at stake, as in experiment 1, or in a realistic but hypothetical scenario, as in experiment 2. In addition, it appears that the effects of taxpayer agency persist above and beyond differences in gender and age, as well as accounting for the effects of other behavioral and demographic factors.

Simply providing expenditure information to taxpayers may lead to more informed voting (Beckett and King, 2002), and has been proposed as a means of increasing tax compliance. To the extent that information recouples payment and benefit, it is possible that such positive effects will emerge. However, our data does not bode well for such efforts. Specifically, our findings suggest that not only will information alone likely fail to generate increased compliance, it may not generate ancillary benefits created by taxpayer agency. First, results from experiment 1 suggest that taxpayer agency's effects are in part driven by enhanced appreciation of the value of tax-funded services. As such, it may be that successful recoupling of payment and benefit is in fact contingent on agency — particularly if information does not align with taxpayers' preferences. Misalignment between actual and preferred spending may explain the delaying effect of information in the absence of agency, as seen in Experiment 2. Thus, agency may be necessary to overcome potential misalignment and generate compliance.

Second, in experiment 2 we note that taxpayer agency lowered general anti-tax sentiment among participants. This effect is consistent with work arguing that enhanced citizen engagement can reduce antigovernment sentiment (Ebdon and Franklin, 2006), but suggests that taxpayer agency's effects may be localized to the domain in which agency is provided. If agency can prompt broader acceptance of taxes, policymakers may be able to both argue for and allocate new tax dollars in ways that enhance perceived benefits among taxpayers. Such effects convert the tax payment experience from a uni-directional, passive experience to a bi-directional "nudge", whereby consumers reward government for providing proxy agency while also actively communicating their preferences. This nudge may also result in heightened civic engagement, as taxpayers seek accountability from the individual chosen to represent them, that is, the individuals with whom they anticipate their proxy agency should be influential (Robbins and

Feldman, 2008).

These studies are not without limitations and their results should be considered with caution until replicated in a large-scale field trial. Although tax compliance experiments in the lab tend to be considered externally valid (Alm et al., 2011); their translation to the field remains an important step in order to inform evidence-based policy-making (Hallsworth et al., 2014). Furthermore, as with any behavioral intervention, the downstream outcomes and permanence of the effects we observe here are important to consider. Part of agency's effect may be determined by the extent to which policymakers are responsive to the preferences expressed by taxpayers. In experiment 1, and many community-based programs where new taxes are levied to fund specific projects, taxpayer agency would not disturb a pre-existing spending plan. Federal income taxes, however, are committed to a wide variety of non-discretionary spending categories. Interestingly, we note that even were Experiment 2's non-binding allocations fully enacted by policymakers in the proportions assigned in the experiment, many categories would experience little change. While military spending would decrease substantially (from 24.9% to 18.8%) and education spending increase (from 3.6% to 18.2%) based on our sample's responses, changes of less than 1% would be seen in many other categories, such as international aid, immigration and law enforcement, agriculture and natural disaster relief. Given that effects on compliance were seen when agency was provided over as little as 10% of tax dollars and decay after 25% agency is provided, however, it would not be necessary to elicit preferences at the aggregate level in our data, which included a sample who expressed agency over 50% of their tax dollars. Thus, it may be possible for policymakers to acknowledge and respond to non-binding preferences in many categories without disrupting the entire Federal budget beyond the levels ordinarily seen due to changes in administrative or political policy.

It is also possible that allowing citizens to express their tax preferences would increase compliance in the first year of implementation, but such effects would wear off as citizens became accustomed to their new tax form. Indeed, to the extent that voicing preferences led citizens to expect government to respond rapidly to those preferences, agency might actually lead to citizen dissatisfaction. Our results, however, suggest that at least in the short term, offering citizens the chance to merely voice their tax preferences can substantially impact tax compliance, raising the rate of compliance approximately 16% (in Experiment 1) and decreasing tax evasion by approximately 15% (in Experiment 2). Further, if taxpayer agency offers a positive experience, it may be less subject to adaptation than would agency over an equivalent purchase (Van Boven, 2005), particularly given the relatively long timeframe between tax payments. If agency experiences are even marginally positive and not dissatisfying, they

may in fact gain value with time. Given the huge sums of money that governments fail to collect in taxes — and given that the cost is merely small edits to existing tax forms — taxpayer agency may transform the tax payment process to an experience with fiscal, informational and social rewards for taxpayers and government alike.

## References

- Abeler, J. and Jäger, S. (2013). Complex tax incentives: An experimental investigation. CESifo Working Paper Series No. 4231.
- Alexander, S. and Ruderman, M. (1987). The role of procedural and distributive justice in organizational behavior. *Social Justice Research*, 1(2):198.
- Alm, J. (2012). Measuring, explaining, and controlling tax evasion: Lessons from theory, experiments, and field studies. *International Tax and Public Finance*, 19(1):54–77.
- Alm, J., Bloomquist, K., and McKee, M. (2011). On the external validity of tax compliance experiments. Paper presented at New Perspectives on Tax Administration: An IRS-TPC Research Conference, Washington, DC.
- Alm, J., Jackson, B. R., and McKee, M. (1992). Estimating the determinants of taxpayer compliance with experimental data. *National Tax Journal*, 45:107–15.
- Alm, J., Jackson, B. R., and McKee, M. (1993). Fiscal exchange, collective decision institutions, and tax compliance. *Journal of Economic Behavior and Organization*, 22:285–303.
- Alm, J., Jackson, B. R., and McKee, M. (2009). Getting the word out: Enforcement information dissemination and compliance behavior. *Journal of Public Economics*, 93(3):392–402.
- Alm, J., Sanchez, I., and DeJuan, A. (1999). Changing the social norm of tax compliance by voting. *KYKLOS*, 52:141–71.
- Bandura, A. (1986). *The social foundations of thought and action*. Prentice Hall, Englewood Cliffs, NJ.
- Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, 9(3):75–78.
- Bandura, A. (2009). Agency. In Carr, D., editor, *Encyclopedia of the life course and human development*, pages 8–11. Macmillan Reference, New York, NY.

- Beckett, J. and King, C. S. (2002). The challenge to improve citizen participation in public budgeting: A discussion. *Journal of Public Budgeting, Accounting and Financial Management*, 14(3):463–485.
- Bohnet, I. and Frey, B. (1999). Social distance and other-regarding behavior in dictator games: Comment. *The American Economic Review*, 89(1):335–339.
- Brehm, J. W. (1966). *A theory of psychological reactance*. Academic Press, New York, NY.
- Chetty, R. and Saez, E. (2013). Teaching the tax code: Earnings responses to an experiment with eitc recipients. *American Economic Journal: Applied Economics*, 5(1):1–31.
- Cryder, C. and Loewenstein, G. (2010). The critical link between tangibility and generosity. In Oppenheimer, D. and Olivola, C., editors, *The science of giving: Experimental approaches to the study of charitable giving*. Psychology Press, New York NY.
- Cryder, C. E., Loewenstein, G., and Scheines, R. (2013). The donor is in the details. *Organizational Behavior and Human Decision Processes*, 120(1):15–23.
- Deci, E. L. and Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum, New York, NY.
- Ebdon, C. and Franklin, A. (2006). Citizen participation in budgeting theory. *Public Administration Review*, 66(3):437–447.
- Frey, B. and Stutzer, A. (2001). Happiness, economy, and institutions. *Economic Journal*, 110:918–938.
- Gneezy, A., Gneezy, U., Nelson, L. D., and Brown, A. (2010). Shared social responsibility: A field experiment in pay-what-you-want pricing and charitable giving. *Science*, 329:325–327.
- Hallsworth, M., List, J. A., Metcalfe, R. D., and Vlaev, I. (2014). The behavioralist as tax collector: Using natural field experiments to enhance tax compliance. *NBER Working Paper No. 20007*.
- HMRC (2012). Budget 2012.
- Internal Revenue Service (2012). Tax gap for tax year 2006 overview.
- Jackson, B. R. and Milliron, V. C. (1986). Tax compliance research: Findings, problems and prospects. *Journal of Accounting Literature*, 5:125–66.

- John, P., Cotterill, S., Richardson, L., Moseley, A., Smith, G., Stoker, G., and Wales, C. (2011). *Nudge, nudge, think, think: Using experiments to change civic behaviour*. Bloomsbury Academic, London, UK.
- Kirchler, E. (2007). *The economic psychology of tax behaviour*. Cambridge University Press, New York, NY.
- Konrad, K. A. and Qari, S. (2012). The last refuge of a scoundrel? patriotism and tax compliance. *Economica*, 79(315):516–533.
- Lamberton, C. (forthcoming). A spoonful of choice: How allocation increases satisfaction with tax payments. *Journal of Public Policy and Marketing*.
- McCaffery, E. J. and Baron, J. (2004). Framing and taxation: Evaluation of tax policies involving household composition. *Journal of Economic Psychology*, 25(6):679–705.
- McCaffery, E. J. and Slemrod, J. E. (2006). *Behavioral Public Finance*. Sage Publications, New York, NY.
- McFarlin, D. and Sweeney, P. (1996). Does having a say only matter if you get your way? *Basic and Applied Social Psychology*, 18(3):289–303.
- McGraw, J. and Sholz., J. T. (1991). Appeals to civic virtue versus attention to self interest: Effects on taxpayer responses to new tax laws. *Law and Society Review*, 25:471–498.
- Mckee, M., Siladke, C., and Vossler, C. A. (2011). Behaviourial dynamics of tax compliance under an information services initiative. MPRA Paper 38865, University Library of Munich, Germany.
- Mettler, S. (2011). *The Submerged State*. The University of Chicago Press, Chicago, IL.
- Mittone, L. (1997). Subjective versus objective probability: results from seven experiments on fiscal evasion (ceel. Working Paper 9704 - Cognitive and Experimental Economics Laboratory, Department of Economics, University of Trento, Italy.
- Morrison, R. (2013). Tax freedom day arrives april 18th in 2013.
- OECD (2012). What drives tax morale?
- Paolacci, G., Chandler, J., and Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk. *Judgment and Decision Making*, 5(5):411–419.

- Preacher, K. J. and Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40:879–891.
- Reid, D. (1984). Participatory control and the chronic illness adjustment process: In h. In Lefcourt, H., editor, *Research with the locus of control construct: Extensions and Limitations (Vol 3)*, pages 361–389. Academic Press, New York, NY.
- Robbins, M.D., B. S. and Feldman, B. (2008). Citizens and resource allocation: Improving decision making with interactive web-based citizen participation. *Public Administration Review*, 68(3):564–575.
- Saez, E. (2010). Do taxpayers bunch at kink points? *American Economic Journal: Economic Policy*, 2(3):180–212.
- Scholz, J. T. (1998). Trusting government: Fear, duty, and trust in tax compliance. In Braithwaite, V. and Levi, M., editors, *Trust and Governance*. Russell Sage Foundation, New York, NY.
- Shu, L. L., Mazar, N., Gino, F., Ariely, D., and Bazerman, M. H. (2012). Signing at the beginning makes ethics salient and decreases dishonest self-reports in comparison to signing at the end. *Proceedings of the National Academy of Sciences of the United States of America*, 109(38):15197–15200.
- Smith, K. W. and Stalans, L. (1991). Encouraging tax compliance with positive incentives: A conceptual framework and research directions. *Law and Policy*, 13:35–53.
- Soman, D. and Gourville, J. T. (2001). Transaction decoupling: How price bundling affects the decision to consume. *Journal of Marketing Research*, 38(1):30–44.
- Sussman, A. B. and Olivola, C. Y. (2011). Axe the tax: Taxes are disliked more than equivalent costs. *Journal of Marketing Research*, 48 (special issue):S91–S101.
- Thaler, R. H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, 12(3):183–206.
- Torgler, B. (2005). Tax morale and direct democracy. *European Journal of Political Economy*, 21(2):525–531.
- Torgler, B. (2007). *Tax compliance and tax morale: A theoretical and empirical analysis*. Edward Elgar Publishing, Northampton, MA.

- Tyler, T. R., Casper, J. D., and Fisher, B. (1989). Maintaining allegiance toward political authorities: The role of prior attitudes and the use of fair procedures. *American Journal of Political Science*, 33:629–52.
- Tyler, T. R. and Smith, H. J. (1997). Social justice and social movements. In Gilbert, D., Fiske, S., and Lindsey, G., editors, *The handbook of social psychology*, (4th edition, vol. 2), pages 595–629. McGraw-Hill, New York, NY.
- UK Treasury (2012). Budget 2012.
- Van Boven, L. (2005). Experientialism, materialism and the pursuit of happiness. *Review of General Psychology*, 9(2):132–142.
- Weinstein, N. and Ryan, R. M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, 98:222–244.
- White House (2011). Your 2012 federal taxpayer receipt.

# Online Appendix

## “Eliciting taxpayer preferences increases tax compliance”

Cait Lambertson

Jan-Emmanuel De Neve

Michael Norton

Participant instructions for:

1. Experiment I: Lab study (tax compliance)
2. Experiment II: Online study (loophole take-up)
3. Pilot lab study (tax compliance)

## 1. Participant instructions for Experiment I: Lab study (tax compliance)

Q15 Please enter your CLER ID.

Q1 If you participate in this task, you will have the opportunity to earn a \$10 bonus. This money will be in addition to your normal payment for participation. However, like most income earned in the United States, you will need to pay a tax on this bonus money. Please click below to let us know what you would like to do.

- I would like to complete the bonus task. I understand that the \$10 I earn on this task will be subject to a tax. (1)
- I would like to skip the bonus task. I understand that I will not earn any bonus money if I skip this task. (2)

If I would like to skip the bo... Is Selected, Then Skip To End of Survey

Q2 Before you begin, you should know how much tax you have been assigned to pay. For the amount of income you earn, you will pay 30% in taxes. So, you will take home \$7.00 but pay \$3.00 in tax. This tax rate approximately represents the average amount of labor time that is devoted to tax payment in the United States, according to an MSNBC report in April 2012. After you complete the task and receive your payment, you will be able to put your tax payment in the envelope on your desk. You will seal this envelope and give it to the experimenters. One in every 8 participants' tax envelopes will be "audited." If you are audited and have not paid your lab tax, you will pay the full \$3.00 in lab tax plus an additional \$2.00 in penalty fees.

Q3 In this task, we want you to tell us how much you like a series of pictures that may be used in future research studies. Please look carefully at each picture and answer the question below it.

### Bonus Task

Q103 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All: Very Much (1)	<input type="radio"/>								

Q105 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All: Very Much (1)	<input type="radio"/>								

Q107 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q100 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q102 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q104 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q106 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q108 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q110 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q112 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q114 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q116 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q4 Congratulations! For completing this task, you have earned \$10 in cash. You owe \$3.00 of this amount in tax. Please raise your hand to receive your \$10.00.

**Agency Condition Only sees Q5 and Q6**

Q5 IMPORTANT: We will allow you to provide input into how your tax money is used. You will be able to provide your thoughts about how tax money should best be used. The categories you can select as your preferred expenditure of tax money will only benefit you indirectly, but will benefit the broader community of individuals who participate in lab studies at Harvard. The lab administrators may take your preferences into account as they determine what to do with the lab tax money.

Q6 How would you like to advise the lab administrators to spend your \$3.00 in tax money?

\_\_\_\_\_ Beverages for study participants (1)

\_\_\_\_\_ Snacks for study participants (2)

\_\_\_\_\_ Enhanced incentives for future study participants (3)

Q7 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

Q8 Now we need you to decide how much of this tax to actually pay. Please remember that you were assigned a 30% tax rate. This means that you should put \$3.00 in your the envelope on your desk. You may put more in the envelope if you wish.

Q9 However, you may also decide to put LESS money than this in the envelope on your desk. Recall that at the end of the session, an experimenter will collect all the envelopes and will "audit" 1 in every 8 envelopes. If you are audited and the experimenter finds less than \$3.00 in your envelope, you will have to pay the full \$3.00 plus an additional \$2.00 penalty.

Q10 If you are NOT audited, your envelope will not be opened while you are here. You will simply leave with whatever money you did not put in the envelope. So, if you chose not to put any money in the envelope and you are not audited, you will walk out with \$10.00 in bonus money, in addition to your standard payment for the session.

Q11 Please put as much tax as you would like to pay in the envelope right now. When you have done this, please click to continue.

Q12 Mark the dot that represents your feelings right now.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
I am very unlikely to be audited.:I am very likely to be audited. (1)	<input type="radio"/>						
I do not value the way my lab taxes will be used.:I value the way my lab taxes will be used. (2)	<input type="radio"/>						
I feel dissatisfied with paying the tax.:I feel satisfied with paying the tax. (3)	<input type="radio"/>						

Q13 Thank you for completing this task! Please take your envelope up to the experimenter when you check out of the session.

## 2. Participant instructions for Experiment II: Online study (loophole take-up)

Q1 In this survey, we will ask you about federal income taxes. Please read every question carefully and answer as honestly as possible. There are no right or wrong answers. Note: all information is completely confidential. We will not connect your responses to you in any way or share this information with anyone. We will ask you to share some income information with us. For the sake of this survey, this information is required. If you are uncomfortable providing this information, please close the HIT now and watch for another opportunity.

Q2 Under what status do you generally file your taxes?

- Single (1)
- Married filing jointly (2)
- Married filing separately (3)
- Head of Household: You can claim the Head of Household (HOH) filing status on your tax return if you are unmarried, have cared for a dependent for over half the year, and paid more than half the cost of maintaining a home. (4)
- Qualifying Widow/Widower (5)

Q3 What is the approximate gross income that you will report on your taxes? If you file jointly, this should include the total for your household, not only your personal income. If you file singly, this should simply be your personal gross income. Please enter only a number. For example, if you expect to report \$28,000 in income, please type 28,000.

Q4 What is your personal annual income? (if you file singly, this would be the same number you reported above.)

Q5 What is your household annual income? (if you file jointly, this would be the same number you reported above.)

Q6 How many dependents do you claim on your taxes?

Q7 What is your gender?

- Male (1)
- Female (2)

Q8 What is your age?

Q9 How do you usually file your taxes?

- I or someone in my household files them electronically (1)
- I file electronically with the help of a tax preparer (2)
- I or someone in my household files them by mail (3)
- I file by mail with the help of a tax preparer (4)
- Other (5)

Q10 Did you have to pay any income tax last year? (Not just at tax time, but over the course of the entire year.)

- Yes (1)
- No (2)
- I don't know. (3)

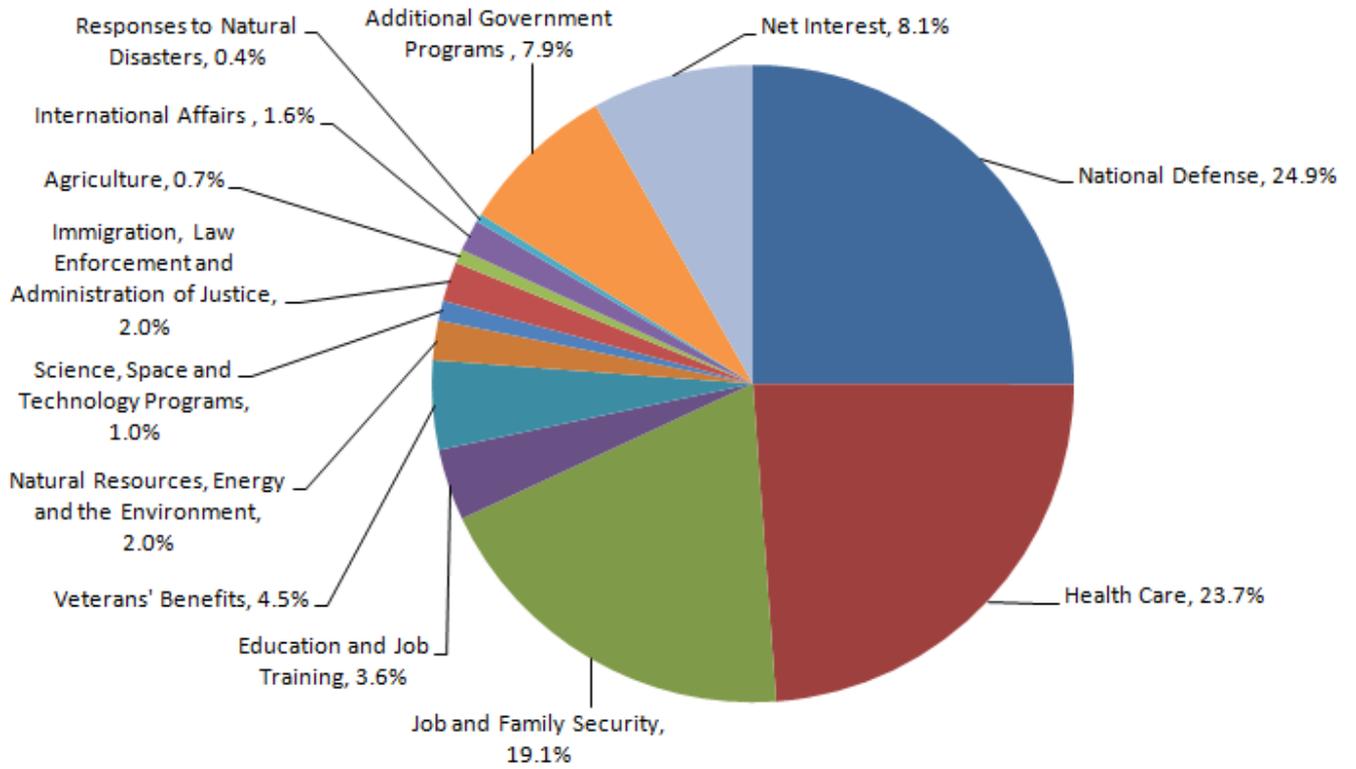
Q11 Below, please take a look at the way that your tax dollars are spent. This information is taken from the White House's tax receipt website, available online at <http://www.whitehouse.gov/2011-taxreceipt>. You will see a breakdown of the different expenses in each of 13 categories, and the percent of tax dollars that go toward that category. When categories contain multiple types of items, they are explained. On the next page you will see this information in a pie chart. Please take a look at the way that your tax dollars are spent. On the next page you will see this information in a pie chart. Please look at each for as long as you need to in order to feel you understand the information.

Q12 National Defense: Military personnel salaries and benefits; Ongoing operations, equipment and supplies; Research, development, weapons and construction; Atomic energy defense activities; Defense-related FBI activities and additional national defense 24.9% Health Care: Medicaid and Children's Health Insurance Program; Medicare physician, prescription drug, and other payments; Health research and food safety; Disease control and public health services; COBRA tax credit and additional health care activities 23.7% Job and Family Security: Unemployment insurance; Food and nutrition assistance; Housing assistance; Earned income, Making Work Pay, and child tax credits; Supplemental Security Income; Federal military and civilian employee retirement and disability; Child care, foster care, and adoption support; Temporary Assistance for Needy Families; Railroad retirement and additional income security 19.1% Education and Job Training: Elementary, secondary, and vocational education; Student financial aid for college; Job training and employment services; Employment training for people with disabilities and additional education and job services 3.6% Veterans' Benefits: Income and housing support; Health care; Education, training, and additional veterans benefits 4.5% Natural Resources, Energy and the Environment: Water and land management; Energy supply and conservation; Environmental protection and other energy and natural resources 2.0% Science, Space and Technology Programs: NASA; National Science Foundation and additional science research and laboratories 1.0% Immigration, Law Enforcement and Administration of Justice 2.0% Agriculture 0.7% Responses to Natural Disasters 0.4% Additional Government Programs 7.9% International Affairs: Development and humanitarian assistance; Security assistance; Foreign affairs, embassies, and additional international affairs 1.6% Net Interest 8.1%

Q13 Timing

- First Click (1)
- Last Click (2)
- Page Submit (3)
- Click Count (4)

Q14 Here is the same information in a pie chart. Again, the percentages refer to the amount of tax dollars that are spent on each category.



Q15 Timing

- First Click (1)
- Last Click (2)
- Page Submit (3)
- Click Count (4)

**No agency condition only sees Q16**

Q16 We will now ask you a few questions about paying your income taxes. As you answer these questions, it is very important that you are as honest as possible; remember that no identifying information is collected and we will not share your individual responses with anyone. We just want to understand people's thoughts and feelings about taxes.

**10% agency conditions sees Q17 and Q18.**

Q17 We will now ask you to imagine that your tax payment process were changed in a specific way. Please read very carefully and try to imagine how you would think and feel if you had the opportunity described.

Q18 Imagine that you are told that you can provide input about how 10% of your tax payment would be spent across categories used by the Federal government. The government would take your opinion into account for this portion of your tax dollars. Below, please provide the allocations you would advise for 10% of your income tax dollars. Note: Please make sure your responses equal 100%. A running total is shown at the bottom of the category list. Also, note that the CURRENT spending percentage in each category is displayed.

\_\_\_\_\_ National Defense (currently 24.9%): Military personnel salaries and benefits; Ongoing operations, equipment and supplies; Research, development, weapons and construction; Atomic energy defense activities; Defense-related FBI activities and additional national defense (1)

\_\_\_\_\_ Health Care (currently 23.7%): Medicaid and Children's Health Insurance Program; Medicare physician, prescription drug, and other payments; Health research and food safety; Disease control and public health services; COBRA tax credit and additional health care activities (2)

\_\_\_\_\_ Job and Family Security (currently 19.1%): Unemployment insurance; Food and nutrition assistance; Housing assistance; Earned income, Making Work Pay, and child tax credits; Supplemental Security Income; Federal military and civilian employee retirement and disability; Child care, foster care, and adoption support; Temporary Assistance for Needy Families; Railroad retirement and additional income security (3)

\_\_\_\_\_ Education and Job Training (currently 3.6%): Elementary, secondary, and vocational education; Student financial aid for college; Job training and employment services; Employment training for people with disabilities and additional education and job services (4)

\_\_\_\_\_ Veterans' Benefits (currently 4.5%): Income and housing support; Health care; Education, training, and additional veterans benefits (5)

\_\_\_\_\_ Natural Resources, Energy and the Environment (currently 2.0%): Water and land management; Energy supply and conservation; Environmental protection and other energy and natural resources (6)

\_\_\_\_\_ Science, Space and Technology Programs (currently 1.0%): NASA; National Science Foundation and additional science research and laboratories (7)

\_\_\_\_\_ Immigration, Law Enforcement and Administration of Justice (currently 2.0%) (8)

\_\_\_\_\_ Agriculture (currently .7%) (9)

\_\_\_\_\_ Responses to Natural Disasters (currently .4%) (10)

\_\_\_\_\_ Additional Government Programs (currently 7.9%) (11)

\_\_\_\_\_ International Affairs (currently 1.6%): Development and humanitarian assistance; Security assistance; Foreign affairs, embassies, and additional international affairs (12)

\_\_\_\_\_ Net Interest (currently 8.1%) (13)

Q19 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

**25% Agency sees Q20 and Q21**

Q20 We will now ask you to imagine that your tax payment process were changed in a specific way. Please read very carefully and try to imagine how you would think and feel if you had the opportunity described.

Q21 Imagine that you are told that you can provide input about how 25% of your tax payment would be spent across categories used by the Federal government. The government would take your opinion into account for this portion of your tax dollars. Below, please provide the allocations you would advise for 25% of your income tax dollars. Note: Please make sure your responses equal 100%. A running total is shown at the bottom of the category list. Also, note that the CURRENT spending percentage in each category is displayed.

\_\_\_\_\_ National Defense (currently 24.9%): Military personnel salaries and benefits; Ongoing operations, equipment and supplies; Research, development, weapons and construction; Atomic energy defense activities; Defense-related FBI activities and additional national defense (1)

\_\_\_\_\_ Health Care (currently 23.7%): Medicaid and Children's Health Insurance Program; Medicare physician, prescription drug, and other payments; Health research and food safety; Disease control and public health services; COBRA tax credit and additional health care activities (2)

\_\_\_\_\_ Job and Family Security (currently 19.1%): Unemployment insurance; Food and nutrition assistance; Housing assistance; Earned income, Making Work Pay, and child tax credits; Supplemental Security Income; Federal military and civilian employee retirement and disability; Child care, foster care, and adoption support; Temporary Assistance for Needy Families; Railroad retirement and additional income security (3)

\_\_\_\_\_ Education and Job Training (currently 3.6%): Elementary, secondary, and vocational education; Student financial aid for college; Job training and employment services; Employment training for people with disabilities and additional education and job services (4)

\_\_\_\_\_ Veterans' Benefits (currently 4.5%): Income and housing support; Health care; Education, training, and additional veterans benefits (5)

\_\_\_\_\_ Natural Resources, Energy and the Environment (currently 2.0%): Water and land management; Energy supply and conservation; Environmental protection and other energy and natural resources (6)

\_\_\_\_\_ Science, Space and Technology Programs (currently 1.0%): NASA; National Science Foundation and additional science research and laboratories (7)

\_\_\_\_\_ Immigration, Law Enforcement and Administration of Justice (currently 2.0%) (8)

\_\_\_\_\_ Agriculture (currently .7%) (9)

\_\_\_\_\_ Responses to Natural Disasters (currently .4%) (10)

\_\_\_\_\_ Additional Government Programs (currently 7.9%) (11)

\_\_\_\_\_ International Affairs (currently 1.6%): Development and humanitarian assistance; Security assistance; Foreign affairs, embassies, and additional international affairs (12)

\_\_\_\_\_ Net Interest (currently 8.1%) (13)

#### Q22 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

#### **50% Agency condition sees Q23 and Q24**

Q23 We will now ask you to imagine that your tax payment process were changed in a specific way. Please read very carefully and try to imagine how you would think and feel if you had the opportunity described.

Q24 Imagine that you are told that you can provide input about how 50% of your tax payment would be spent across categories used by the Federal government. The government would

take your opinion into account for this portion of your tax dollars. Below, please provide the allocations you would advise for 50% of your income tax dollars. Note: Please make sure your responses equal 100%. A running total is shown at the bottom of the category list. Also, note that the CURRENT spending percentage in each category is displayed.

\_\_\_\_\_ National Defense (currently 24.9%): Military personnel salaries and benefits; Ongoing operations, equipment and supplies; Research, development, weapons and construction; Atomic energy defense activities; Defense-related FBI activities and additional national defense (1)

\_\_\_\_\_ Health Care (currently 23.7%): Medicaid and Children's Health Insurance Program; Medicare physician, prescription drug, and other payments; Health research and food safety; Disease control and public health services; COBRA tax credit and additional health care activities (2)

\_\_\_\_\_ Job and Family Security (currently 19.1%): Unemployment insurance; Food and nutrition assistance; Housing assistance; Earned income, Making Work Pay, and child tax credits; Supplemental Security Income; Federal military and civilian employee retirement and disability; Child care, foster care, and adoption support; Temporary Assistance for Needy Families; Railroad retirement and additional income security (3)

\_\_\_\_\_ Education and Job Training (currently 3.6%): Elementary, secondary, and vocational education; Student financial aid for college; Job training and employment services; Employment training for people with disabilities and additional education and job services (4)

\_\_\_\_\_ Veterans' Benefits (currently 4.5%): Income and housing support; Health care; Education, training, and additional veterans benefits (5)

\_\_\_\_\_ Natural Resources, Energy and the Environment (currently 2.0%): Water and land management; Energy supply and conservation; Environmental protection and other energy and natural resources (6)

\_\_\_\_\_ Science, Space and Technology Programs (currently 1.0%): NASA; National Science Foundation and additional science research and laboratories (7)

\_\_\_\_\_ Immigration, Law Enforcement and Administration of Justice (currently 2.0%) (8)

\_\_\_\_\_ Agriculture (currently .7%) (9)

\_\_\_\_\_ Responses to Natural Disasters (currently .4%) (10)

\_\_\_\_\_ Additional Government Programs (currently 7.9%) (11)

\_\_\_\_\_ International Affairs (currently 1.6%): Development and humanitarian assistance; Security assistance; Foreign affairs, embassies, and additional international affairs (12)

\_\_\_\_\_ Net Interest (currently 8.1%) (13)

#### Q25 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

**All participants see following questions.**

Q26 Imagine that you were aware of a tax loophole that would enable you to avoid paying 10% of your income tax bill. However, you aren't sure you really qualify. Would you take the tax loophole to lower your tax bill?

- Yes (1)
- No (2)

Q27 Taxes are due on April 15 of each year. On what date do you intend to pay your taxes? Please first select the month in which you would pay. Then enter a number for the date.

- January (Three months early) (1)
- February (Two months early) (2)
- March (One month early) (3)
- April (the month taxes are due) (4)
- May (One month late) (5)
- June (Two months late) (6)
- July (Three months late) (7)
- August (Four months late) (8)
- September (Five months late) (9)
- August (Six months late) (10)
- September (Seven months late) (11)
- October (Eight months late) (12)
- November (Nine months late) (13)
- December (Ten months late) (14)

Q28 On what day of this month would you pay? Please enter a number below.

Q29 How likely do you think it is that you will be audited by the IRS?

- Very Unlikely (1)
- Unlikely (2)
- Somewhat Unlikely (3)
- Undecided (4)
- Somewhat Likely (5)
- Likely (6)
- Very Likely (7)

Q30 What percentage of your income tax bill would you LIKE to be able to allocate to categories you prefer?

- 0% (1)
- 10% (2)
- 20% (3)
- 30% (4)
- 40% (5)
- 50% (6)
- 60% (7)
- 70% (8)
- 80% (9)
- 90% (10)
- 100% (11)

Q31 How difficult was it to decide where tax dollars should be allocated?

- Very Difficult (1)
- Difficult (2)
- Somewhat Difficult (3)
- Neutral (4)
- Somewhat Easy (5)
- Easy (6)
- Very Easy (7)

Q32 To what extent would you trust your fellow taxpayers to make good allocations?

- Not at all - 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Very much - 7 (7)

Q33 To what extent would you trust the government to make good allocations?

- Not at all - 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Very much - 7 (7)

Q34 As you answer the following questions, please keep in mind the information you just saw. Assuming you found that you had to make a tax payment, how likely would you be to pay your tax bill in full?

- Very Unlikely (1)
- Unlikely (2)
- Somewhat Unlikely (3)
- Undecided (4)
- Somewhat Likely (5)
- Likely (6)
- Very Likely (7)

Q35 What percent of your tax bill are you certain you would pay? Please enter a whole number between 0 and 100.

Q36 Imagine that you were aware of a tax loophole that would enable you to avoid paying 10% of your income tax bill. However, you aren't sure you really qualify. Would you take the tax loophole to lower your tax bill?

- Yes (1)
- No (2)

Q37 How likely would you be to take the loophole to lower your tax bill?

- Very Unlikely (1)
- Unlikely (2)
- Somewhat Unlikely (3)
- Undecided (4)
- Somewhat Likely (5)
- Likely (6)
- Very Likely (7)

Q38 Taxes are due on April 15 of each year. On what date do you intend to pay your taxes? Please first select the month in which you would pay. Then enter a number for the date.

- January (Three months early) (1)
- February (Two months early) (2)
- March (One month early) (3)
- April (the month taxes are due) (4)
- May (One month late) (5)
- June (Two months late) (6)
- July (Three months late) (7)
- August (Four months late) (8)
- September (Five months late) (9)
- August (Six months late) (10)
- September (Seven months late) (11)
- October (Eight months late) (12)
- November (Nine months late) (13)
- December (Ten months late) (14)

Q39 On what day of this month would you pay? Please enter a number below.

Q40 How likely do you think it is that you will be audited by the IRS?

- Very Unlikely (1)
- Unlikely (2)
- Somewhat Unlikely (3)
- Undecided (4)
- Somewhat Likely (5)
- Likely (6)
- Very Likely (7)

Q41 Imagine that you were given the opportunity to personally allocate a portion of your tax dollars across the spending categories you saw. The government would then use this information in determining the budget. What percentage of your income tax bill would you LIKE to be able to allocate to categories you prefer?

- 0% (1)
- 10% (2)
- 20% (3)
- 30% (4)
- 40% (5)
- 50% (6)
- 60% (7)
- 70% (8)
- 80% (9)
- 90% (10)
- 100% (11)

Q42 How difficult would it be for you to decide where tax dollars should be allocated?

- Very Difficult (1)
- Difficult (2)
- Somewhat Difficult (3)
- Neutral (4)
- Somewhat Easy (5)
- Easy (6)
- Very Easy (7)

Q43 To what extent would you trust your fellow taxpayers to make good allocations?

- Not at all - 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Very much - 7 (7)

Q44 To what extent would you trust the government to make good allocations?

- Not at all - 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Very much - 7 (7)



<p>am very DIFFERENT from most other taxpayers (6)</p> <p>I do not value the way my taxes will be used.:I value the way my taxes will be used. (7)</p> <p>I feel like I have very little freedom in paying my taxes.:I feel like I have a lot of freedom in paying my taxes (8)</p> <p>I feel dissatisfied with paying taxes.:I feel satisfied with paying taxes. (9)</p> <p>I did not take this task seriously.:I took this task seriously (10)</p>	<input type="radio"/>						
--	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Q46 I believe the way my income taxes are spent will benefit ME, personally.

- Strongly Disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Strongly Agree (5)

Q47 I believe the way my income taxes will be spent will benefit OTHER PEOPLE, but NOT me.

- Strongly Disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Strongly Agree (5)

Q48 I am satisfied with my experience in this experiment.

- Strongly Disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Strongly Agree (5)

Q49 I am interested in volunteering for charitable causes at some point in the next 6 months.

- Strongly disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Strongly Agree (5)

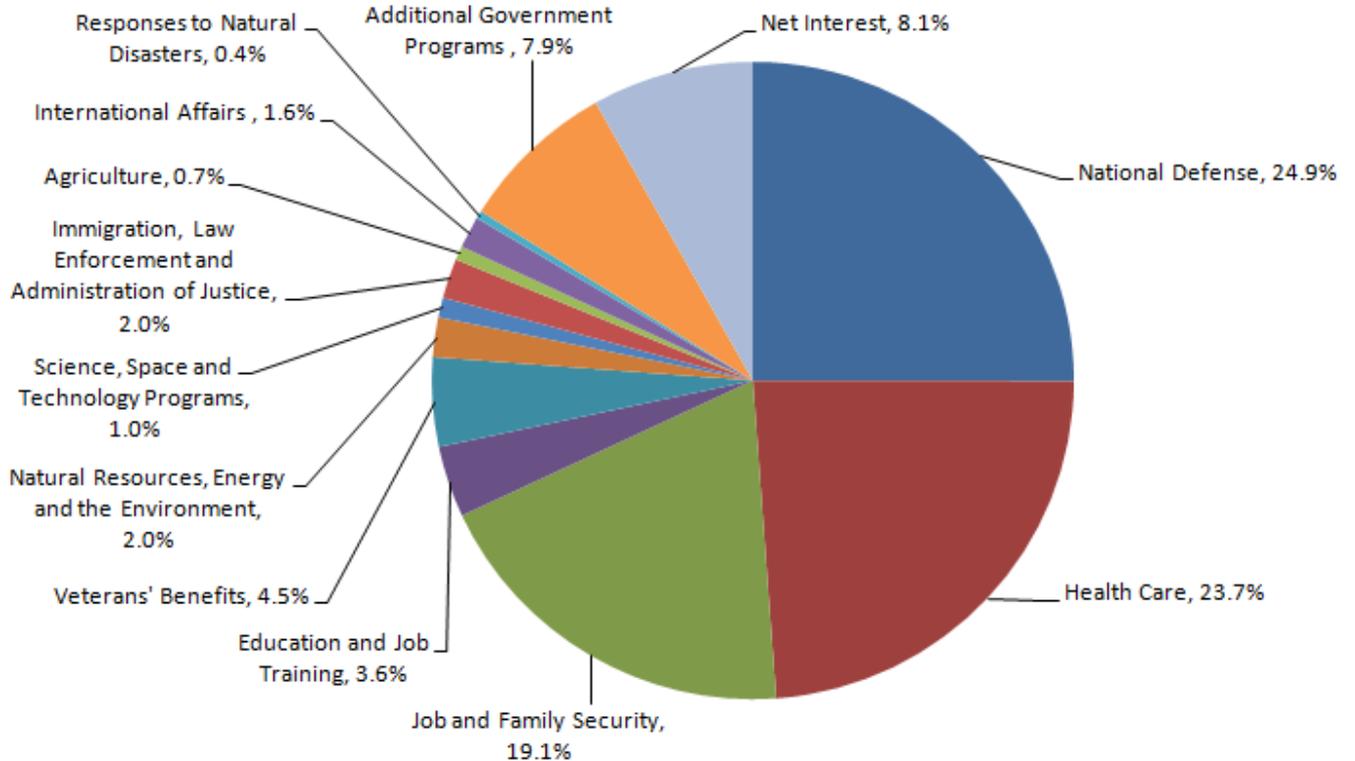
Q50 I care a great deal about my community

- Strongly disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Strongly Agree (5)

Q51 I feel very connected to the people around me.

- Strongly disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Strongly Agree (5)

Q52 Now please think about the information you saw about ACTUAL CURRENT use of tax dollars. You saw this information both in a list and as a pie chart, earlier in the survey. As a reminder, here's the pie chart.



Q53 How well do you understand how your tax dollars are spent?

- Not at all (1) (1)
- (2) (2)
- (3) (3)
- (4) (4)
- (5) (5)
- (6) (6)
- Very well (7) (7)

Q54 To what extent do you disagree or agree with how your tax dollars are currently spent?

- Strongly disagree - I would make major changes (1) (1)
- (2) (2)
- (3) (3)
- (4) (4)
- (5) (5)
- (6) (6)
- Strongly agree - I wouldn't change anything (7) (7)

Q55 How much do you trust the government to spend your tax dollars in ways that are appropriate for the country?

- Not at all (1) (1)
- (2) (2)
- (3) (3)
- (4) (4)
- (5) (5)
- (6) (6)
- Very much (7) (7)

Q56 With what political label below do you most strongly identify?

- Conservative Republican (1)
- Moderate Republican (2)
- Liberal Republican (3)
- Moderate (4)
- Conservative Democrat (5)
- Moderate Democrat (6)
- Liberal Democrat (7)
- Green Party (8)
- Libertarian (9)
- Independent - Undecided about which party I agree with (10)
- Independent - Do not agree with any political party (11)
- Other (12)

Q57 How do you feel about the following statements? Read each one carefully and tell us what you think.

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
I am my brother's keeper. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The economy cannot grow unless taxes are cut. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People will work harder if their taxes are cut. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tax cuts for the rich trickle down to everyone else. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>Tax cuts for the rich ultimately benefit the middle class. (5)</p>	<input type="radio"/>				
<p>Income taxes in the US should be about the same as in other developed nations. (6)</p>	<input type="radio"/>				
<p>No one should have to pay income taxes in the US. (7)</p>	<input type="radio"/>				
<p>I would be comfortable with higher national debt if my taxes were cut. (8)</p>	<input type="radio"/>				
<p>We have a moral responsibility to make sure the poor can meet their basic needs. (9)</p>	<input type="radio"/>				
<p>Government should redistribute wealth by heavy taxes on the rich. (10)</p>	<input type="radio"/>				
<p>The poor are responsible for improving their own standard of living. (11)</p>	<input type="radio"/>				
<p>Peoples' standard of</p>	<input type="radio"/>				

<p>living is primarily a result of their own personal choices. (12)</p>					
<p>Individuals with more resources are responsible for helping the poor to improve their standard of living. (14)</p>	○	○	○	○	○
<p>Peoples' standard of living is primarily a result of the environment they are born into. (15)</p>	○	○	○	○	○

Q58 Are you a US citizen?

- Yes (1)
- No (2)

Q59 Is English the primary language you speak in your home?

- Yes (1)
- No (2)

Q60 Are you registered to vote in US elections?

- Yes (1)
- No (2)

Q61 What are your thoughts on taxes? Please write as much or as little as you like; we are interested in any thoughts you have to share.

Q62 Thank you very much for your participation! Please enter your completion code in the MTurk box to receive payment: HX2201.

### 3. Participant instructions for pilot lab study (tax compliance)

Q1 Please enter your computer number in the space below.

Q2 Please enter the current time in the space below.

Q3 If you participate in this task, you will have the opportunity to earn a \$10 bonus. However, like most income earned in the United States. You will need to pay a tax on this bonus money. Please click below to let us know what you would like to do.

- I would like to complete the bonus task. I understand that the \$10 I earn on this task will be subject to a tax. (1)
- I would like to skip the bonus task. I understand that I will not earn any bonus money if I skip this task. (2)

If I would like to skip the bo... Is Selected, Then Skip To End of Survey

Q4 Before you begin, you should know how much tax you have been assigned to pay. For the amount of income you earn, you will pay 30% in taxes. So, you will leave with \$7.00 but pay \$3.00 in tax. This tax rate approximately represents the average amount of labor time that is devoted to tax payment in the United States, according to an MSNBC report in April 2012.

Q5 You will be asked to put your tax payment in the envelope on your desk and bring it to the experimenters. 1 in every 8 participants' envelopes will be randomly selected to be "audited." If you are audited, the lab administrator will check to see if you have put \$3.00 (the right tax amount) in the envelope. If you are audited and have not put in \$3.00, you will have to pay the \$3.00 plus another \$2.00 as a penalty. If you are not audited, no one will check whether you put money in the envelope.

Q6 Timing

- First Click (1)
- Last Click (2)
- Page Submit (3)
- Click Count (4)

Q7 When you are ready to complete the bonus task, please click below to continue.

Q8 In this task, we want you to tell us how much you like a series of pictures that may be used in future research studies. Please look carefully at each picture and answer the question below it.

Q103 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q105 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q107 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q100 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q104 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q106 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q108 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q110 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q112 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q114 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q116 Please indicate how much you enjoy the above picture.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
Not At All:Very Much (1)	<input type="radio"/>								

Q11 Congratulations! For completing this task, you have earned \$10 in cash. You will pay \$3.00 of this amount in tax. Please raise your hand to receive your \$10.00.

**Agency condition only sees Q12 and Q13**

Q12 IMPORTANT: We will allow you to provide INPUT into how your lab tax money is used. You will be able to provide your thoughts about how tax money should best be used. The lab administrators may take your preferences into account as they determine what to do with the lab tax money.

Q13 allocation How would you like to advise the lab administrators to spend your tax money? Please provide your input based on the percentage of your tax money you'd like spent on each item below. You will not be able to continue until you have told us how you would like 100% of your tax money spent.

- \_\_\_\_\_ Buy beverages for future study participants (1)
- \_\_\_\_\_ Buy snacks for future study participants (2)
- \_\_\_\_\_ Create enhanced monetary incentives for future study participants (3)
- \_\_\_\_\_ Give to the CBA Advising Office for purchase of a printer to be available to students (4)
- \_\_\_\_\_ Put in a fund to be divided among student organizations at the College of Business Administration (5)
- \_\_\_\_\_ Use to buy additional lab supplies (paper, pens, software licenses) (6)

Q14 Timing

- First Click (1)
- Last Click (2)
- Page Submit (3)
- Click Count (4)

**All participants see Q15 and following**

Q15 Now we need you to decide how much of this tax to actually pay. Please remember that you were assigned a 30% tax rate. This means that you should put \$3.00 in your the envelope on your desk. You may put more in the envelope if you wish.

Q16 However, you may also decide to put less money than this in the envelope on your desk. You will take your envelope to the experimenter at the front of the room in a minute. She will "audit" 1 in every 8 envelopes. If you are audited and the experimenter finds less than \$3.00 in your envelope, you will have to pay the full \$3.00 plus an additional \$2.00 penalty. You will still leave with \$5.00 in bonus money, in addition to your standard payment for the session.

Q17 If you are NOT audited, your envelope will not be opened while you are here. You will simply leave with whatever money you did not put in the envelope.

Q18 Please put as much tax as you would like to pay in the envelope right now. Please seal the envelope and leave it on your desk. The experimenter will pick it up later. When you have done this, click below to continue.

Q19 What is your gender?

- Male (1)
- Female (2)

Q20 What is your age? Please enter only a whole number.

Q21 Are you a member of any student organizations sponsored by the College of Business Administration?

- Yes (1)
- No (2)

Q22 Have you ever filed a Federal income tax form?

- Yes (1)
- No (2)

Q23 How many more lab sessions do you anticipate you'll participate in this semester?

- None (1)
- 1 (2)
- 2 (3)
- 3 (4)

Q24 Would you like to sign up to participate in online experiments in the future?

- Yes (1)
- No (2)

Q25 Are you currently participating:

- To fulfill a course requirement (1)
- For course extra credit (2)

Q26 Thank you very much for your participation!

You will now continue to the next task.