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Tax collection is critical for the proper functioning of society. However, many people strongly dislike paying taxes. Although this distaste could be rational on economic grounds, the authors show that this attitude extends beyond simply disliking the costs incurred and affects behavior in counternormative ways. They demonstrate the phenomenon of tax aversion: a desire to avoid taxes per se that exceeds the rational economic motivation to avoid a monetary cost. Across five experiments, the authors provide evidence that people have a stronger preference to avoid tax-related costs than to avoid equal-sized (or larger) monetary costs unrelated to taxes. Tax aversion affects consumer preferences in a variety of domains, including standard store purchases, financial investments, and job selection. Furthermore, this tendency is most prevalent among people who identify with political parties that generally favor less taxation. Finally, encouraging participants who identify with “antitax” parties to consider positive uses of their tax payments mitigates tax aversion. This article concludes with a discussion of the implications of these results for consumer behavior research and tax policies.

Keywords: tax, decision making, consumer financial choice, behavioral economics, political affiliation

Axe the Tax: Taxes Are Disliked More than Equivalent Costs

Most countries depend on taxes to provide essential services, ranging from highways to healthcare. Although people benefit from these services, most also dislike paying taxes. For example, people often travel far across state lines to avoid paying taxes on clothing or gasoline or visit duty-free shops to stockpile items they might not otherwise purchase. Objections to taxes can be attributed in part to

the pain that people experience from paying any expense (Meyvis, Bennett, and Oppenheimer 2010). In economics, the prevailing view holds that any decrease in utility resulting from a tax is entirely due to the monetary cost it imposes (e.g., Ramsey 1927).

However, people may dislike taxes above and beyond their financial costs, for cultural, political, or even moral reasons (Hardisty, Johnson, and Weber 2010; Kirchler 2007). Taxes are often perceived as representing a loss of personal financial freedom, expenditures without a fair return, or funds wasted by inefficient politicians (Kirchler 1998). Each day in the news, headlines highlight Americans’ hatred of taxes—a hatred that seems aimed at the very concept. One man was so enraged that he flew a plane into an Internal Revenue Service office building in Austin, Tex., leaving a suicide note detailing his grievances with the tax code (Brick 2010). In 2009, some U.S. citizens began participating in nationally coordinated Tea (Taxed Enough Already) Party demonstrations, and recent polls (as of April 2010) suggest that 18% of Americans identify with the Tea Party, a movement marked by its hostility to taxes (CNN 2010). The movement has even gained government representation, with 52 elected members of the 2010 U.S. House of Representatives joining the Tea Party Caucus. Among the U.S. population more broadly,

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approximately half of Republicans and nearly one-third of Democrats surveyed say that they are angry about the amount of taxes they pay (CNN 2010).

This negative attitude toward taxes can have serious implications for public finances if it spurs tax evasion. Such behavior costs governments in developed countries an estimated 20% of their revenues, and the numbers are much higher in developing countries (Orviska and Hudson 2002). Despite its prevalence, illegal tax evasion is publicly denounced. In contrast, legal forms of tax avoidance are widely accepted (Kirchler, Maciejovsky, and Schneider 2003). Using a free association task, Kirchler, Maciejovsky, and Schneider (2003) find that participants negatively associate illegal tax evasion with fraud, criminal activity, and punishment, whereas they view legal tax avoidance favorably and associate it with cleverness and an intention to save money. Research also uncovers differences in tax-related behaviors across the political spectrum. For example, those identifying with more conservative ideologies are more likely to evade taxes (Wahlund 1992).

Previous psychological research on taxes has also shown that heuristics, biases, and framing effects, which affect decision making generally, also influence how people evaluate tax policies (e.g., Hardisty, Johnson, and Weber 2010; McCaffery and Baron 2006; Reimers 2009; for reviews, see Hill 2010; Kirchler 2007; McCaffery and Slemrod 2006). People prefer tax policies that are labeled as “bonuses” rather than as “surcharges,” like hidden more than explicit taxes, and change their view concerning the appropriate level and distribution of a tax depending on whether it is presented in absolute monetary or percentage terms (McCaffery and Baron 2004, 2006; Reimers 2009). Furthermore, McCaffery and Baron (2006) demonstrate that the “tax” label carries special meaning and can alter people’s attitudes in ways that vary with the nature of the expense. More recently, Hardisty, Johnson, and Weber (2010) have shown that framing a charge on carbon emissions as a tax rather than an offset reduces its favorability among Republicans but not among Democrats in the United States.

We document the phenomenon of tax aversion,¹ by which we mean a dislike of taxes per se that goes above and beyond any associated financial costs. This article goes further than describing attitudes toward tax policies to examine how the presence of a tax can alter decisions and behavior disproportionately, relative to an equivalent alternative cost. In Experiments 1 and 2, we demonstrate that people are more willing to incur a cost (i.e., spending time traveling or waiting in line) to avoid paying taxes than to avoid other (and larger) tax-unrelated costs. We also begin to quantify the relative impact of tax aversion on consumer behavior. Experiment 3 extends these findings to the domain of financial decision making to show that tax aversion can help explain the overconsumption of tax-exempt municipal bonds by people in low marginal tax brackets. Experiment 4 shows that tax aversion is most prevalent among consumers who identify with antitax political parties. Finally, Experiment 5 demonstrates that asking members of antitax parties

to consider the positive uses of their tax payments diminishes their tax aversion, such that their subsequent preferences are indistinguishable from those of protax citizens.

EXPERIMENT 1

Method

Participants. A total of 238 participants were recruited from three sample populations: (1) users of Amazon.com’s Mechanical Turk service (www.mturk.com)² (N = 131), (2) passersby at a shopping mall in the northeastern United States (N = 65), and (3) Princeton University undergraduates (N = 42). These participants completed the experiment for payment or course credit. For this and all experiments reported in this article, we limited the respondents to U.S. residents. Before our analysis, we thus excluded 43 participants from the online sample who reported either living outside the United States or having previously taken the survey, as well as 4 participants from the shopping mall who were visibly distracted. The final sample consisted of 191 participants (62% female) who were 18–63 years of age (M = 29.89, SD = 11.87).

Materials and procedure. All three populations answered the central survey question, then responded to demographic questions. The participants recruited through Amazon.com completed the survey online for a cash reward. Those recruited from the shopping mall stopped at tables hosting various experiments. They received a survey packet (which also contained unrelated questionnaires) and sat down to complete the survey, in return for a cash reward. The Princeton University undergraduates were recruited in various locations on campus and followed a similar procedure to those at the shopping mall, except that some received course credit in lieu of cash.

Participants read and responded to the following hypothetical decision scenario:

You want to buy a new television and have a particular model in mind. Calling around, you find that only two stores, Bob’s Electronics and Tom’s Electronics, carry that model. Bob’s Electronics is located very close, about a 5-minute drive, but offers no discounts on the television set. Tom’s Electronics is located farther away, about a 30-minute drive, but offers the television set [tax-free, which is equivalent to an 8% discount/with a 9% discount]. Where do you go to make your purchase?

Bob’s Electronics Tom’s Electronics

The experiment consisted of a between-subjects design with participants assigned to one of two conditions (8% tax-related discount vs. 9% tax-unrelated discount) in an unbiased, pseudorandom order (alternating or shuffled). The 8% value resembles a plausible sales tax rate in the United States, and the 9% value is larger but remains a single-digit number.

Results and Discussion

Although participants recruited online were somewhat less willing to travel to receive a discount, regardless of

¹Although this term has been used in varied contexts to mean several different things, we redefine it here. Our use of the term is most closely related—but not identical—to that discussed by McCaffery and Baron (2006).

²For evidence and a discussion of the validity of results obtained from this platform, see Paolacci, Chandler, and Ipeirotis (2010).

their condition, the trends overall were consistent across the three populations surveyed. A binary logistic regression revealed no interaction between population and condition, either in the current experiment or in the other experiments we report herein (all $p > .160$). We therefore pool the data across respondent populations throughout for simplicity.

The results supported our hypothesis that taxes receive special treatment. Participants were sensitive to the nature of the discount, and this reaction overpowered the underlying economic factors. Significantly more participants preferred to travel 30 minutes to receive a discount when it was an 8% tax-related discount than when it was a 9% tax-unrelated discount (76% vs. 59%, $\chi^2(1, N = 191) = 5.83$, $p = .016$, $\phi = .18$), despite the higher level of savings in the latter condition. These results provide evidence that people not only dislike paying taxes, but they also exhibit tax aversion, such that they are willing to make sacrifices to avoid taxes that they would not make to avoid other, larger tax-unrelated costs.

EXPERIMENT 2

Experiment 1 showed that people are more willing to go out of their way to avoid a tax than a larger, nontax cost. Although the two televisions were described identically in both experimental conditions, participants may have inferred that the one receiving the nontax discount was of inferior quality; for example, hidden flaws might have prompted the discount (e.g., Chernev and Carpenter 2001; Lo, Lynch, and Staelin 2007). The same reasoning would be less straightforward for a tax savings, which is beyond the retailer's control.

In Experiment 2, we therefore extend our central finding of tax aversion to a new context and compare purchasing behaviors when consumers face one of two sales with different labels. The target product is described as being on sale in both conditions, so participants should make similar inferences regarding its quality, which enables us to isolate the effect of contemplating a tax-related versus non-tax-related savings. Experiment 2 also aims to quantify consumers' willingness to trade off the benefits of a sale against a cost (waiting in line) associated with the sale. Specifically, we measure how long people are willing to wait to avoid a tax-related versus a non-tax-related cost of equal value, as well as its complement, that is, how much tax-related versus non-tax-related savings they demand to wait in line for the same amount of time to make a purchase. If consumers are tax averse, they should be willing to wait longer for a tax-related sale than for an equivalent tax-unrelated sale. Conversely, they should demand a higher discount to wait in line for a purchase when the discount is unrelated to taxes compared with when it is associated with taxes.

Method

Participants. A total of 401 participants were recruited online through Amazon.com's Mechanical Turk service and took this survey as part of a larger questionnaire, which they completed in exchange for payment. Before the analysis, we discarded data from 28 participants who failed to complete the experiment, 2 who had previously completed the survey, 3 who were not U.S. residents, 3 who were under the age of

18 years, and 14 participants who spent less than five minutes completing the entire experiment (average completion time = 13.9 minutes). Thus, our final sample consisted of 351 participants (64% female) who were 18–78 years of age ($M = 35.18$, $SD = 12.56$). In this and Experiments 3–5, the participants' median self-reported income category was \$25,000–\$50,000.

Materials and procedure. Participants saw two relevant pages of scenarios; on each page, the scenario preceded a series of binary choice questions. These pages were interspersed within a larger set of 12 pages presented in random order, so the relevant pages usually did not appear consecutively. Finally, the questionnaire asked participants to report various demographic variables.

The experiment consisted of two parts (randomly ordered), with each part on a separate page. The first part measured participants' willingness to wait in line for a given amount of savings. Specifically, participants read the following hypothetical decision scenario (i.e., "waiting-time" titration question):

Imagine that you are walking through the mall looking for a particular jacket that you have seen advertised. You come across two closely located stores that carry it. The first store offers no discounts, but has no wait to purchase the coat. The second store is having a special ["axe-the-tax" sale, with the store selling all items tax-free, equivalent to a 9% discount/"customer rewards" sale, with the store selling all items at a 9% discount]. However, due to the popularity of the sale, there is a wait to purchase items there. How long would you wait in line to receive the discount?

Respondents then completed a series of 12 binary (yes/no) titration choice questions that asked if they would be willing to wait X minutes to receive the 9% "axe-the-tax"/"customer rewards" savings, with X increasing from 5 to 60 minutes in 5-minute intervals.

The second part of the experiment measured the amount of savings required for participants to agree to spend a given amount of time waiting in line. Specifically, participants read the following scenario ("discount size" titration question):

Imagine that you are walking through the mall looking for a particular jacket that you have seen advertised. You come across two closely located stores that carry it. The first store offers no discounts, but has no wait to purchase the coat. The second store is having a special ["axe-the-tax" sale, with the store selling all items tax-free/"customer rewards" sale, with the store selling all items at a discount]. However, due to the popularity of the sale, there is a 15 minute wait to purchase items there. How high would the [tax/] savings have to be for you to wait 15 minutes in line?

They then responded to a series of eight binary (yes/no) titration choice questions that asked if they would be willing to wait 15 minutes to save X% on their purchase, where X increased from 5% to 12% in 1% increments. This range of values ensures the size of the tax savings seems realistic (i.e., U.S. sales taxes are generally 5%–12%).

The experiment consisted of a between-subjects design with participants randomly assigned to one of two conditions (tax vs. nontax). Participants in each condition

completed both the waiting-time and discount size titration questions. Those in the tax condition saw the “axe-the-tax” sale descriptions, whereas those in the nontax condition saw the “customer rewards” sale descriptions.

Results and Discussion

Before analyzing the data, we examined responses to the titration questions for their consistency. We removed data from participants with incompatible preferences (e.g., willingness to wait 30 minutes but not 25 minutes for the 9% discount; willingness to wait 15 minutes for a 6% discount but not for a 7% discount) from the analysis (though only for the question to which they provided inconsistent responses). In all, we removed data obtained from 10 participants for each set of titration questions.

In Figure 1 we show, for each set of titration questions, the proportion of participants who preferred waiting in line as a function of the titrated variable (discount size or waiting time). Across the ranges of waiting times and discount sizes, participants in the tax condition were consistently more likely to prefer waiting in line than those in the nontax condition.

We next calculated an average score for each participant and titration set to determine minimum willingness to save or maximum willingness to wait, equal to the total number of “yes” responses divided by the total number of titration questions asked. All our subsequent analyses rely on these proportions, which we translated back into wait times and savings amounts (for descriptive statistics), on the basis of their corresponding meanings in the question choices. For example, someone who responded “yes” to 3 of the 12 waiting-time questions (i.e., willingness to wait 5, 10, or 15 minutes but not 20 minutes or more for the 9% discount) received a score of .25, which we translated into a willingness to wait 15 minutes. To avoid making unwarranted assumptions about the distributional properties

of participants’ responses, and considering that the titration method only provides ranges on indifference points, we used a rank-based, nonparametric (Mann-Whitney U) approach to test the null hypothesis that preferences do not differ across conditions.

Consistent with our predictions, participants in the tax condition were willing to wait 25% longer on average (roughly equivalent to 32 minutes) to receive the 9% discount than those in the nontax condition (26 minutes). The corresponding difference in the proportion of “yes” responses was significant: .53 versus .43 (Mann-Whitney $U = 3.11, p = .002$). Similarly, our analysis of the discount size titration questions showed that participants in the nontax condition demanded a higher savings amount (7.2% on average) to spend 15 minutes in line than those in the tax condition (6.7%). The corresponding difference in the proportion of “yes” responses was marginally significant: .72 versus .79 (Mann-Whitney $U = 1.81, p = .070$).

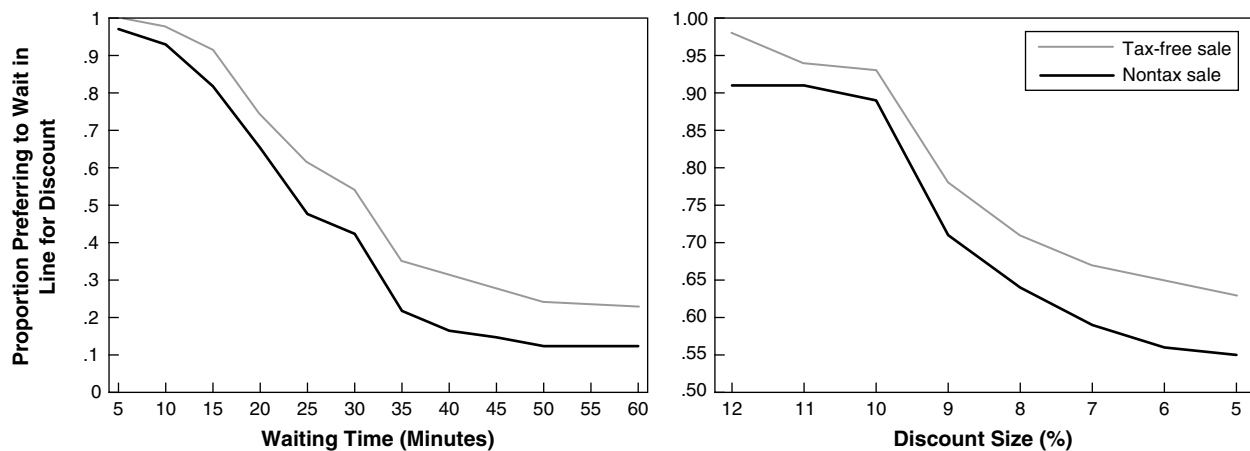
The results from Experiment 2 thus show that consumers are willing to wait longer for a tax-related discount than for a tax-unrelated discount of the same size. Similarly, they demand less savings to wait in line if these savings are derived from a tax-themed sale compared with a nontax sale. Our first two experiments thus demonstrate tax aversion in the context of typical store purchases.

However, taxes permeate a wide range of consumer purchase decisions that extend beyond tangible store items. With Experiment 3, we examine how tax aversion influences financial investment preferences, specifically, the decision to purchase a taxable versus a tax-exempt bond.

EXPERIMENT 3

Existing empirical finance research indicates that, contrary to normative investment models, a significant number of households in low marginal tax brackets hold tax-exempt

Figure 1
WILLINGNESS TO WAIT FOR A TAX-THEMED VS. TAX-UNRELATED DISCOUNT



Notes: These graphs show the proportion of participants in each condition who prefer to wait in line for a 9% discount as a function of waiting time (left) or who prefer to wait in line for 15 minutes as a function of discount size (right), from Experiment 2. If there were no differences between the tax and nontax conditions, we would expect the two lines in each graph to overlap or crisscross. Instead, the line for the tax condition is consistently higher than the line for the nontax condition, demonstrating respondents’ greater willingness to wait for the discount in the tax condition, across the ranges of waiting times and discount sizes. The vertical axes in each graph span different ranges.

municipal bonds (Feenberg and Poterba 1991). From a rational economic perspective, an investor faced with the choice of investing in either a taxable corporate bond or a tax-exempt municipal bond with identical credit quality and terms (other than yield) should choose the bond with the higher after-tax yield, as determined by his or her own marginal tax rate. The benefits of holding tax-exempt municipal bonds to investors increase with their marginal tax brackets. As Feenberg and Poterba (1991) show however, nearly one-fifth of tax-exempt municipal bond interest goes to households for which the bonds appear to be suboptimal investments, given their low marginal tax rates. Feenberg and Poterba speculate that several factors could explain this behavior, including the sluggishness of portfolio adjustments to changing tax brackets or a desire to avoid paying taxes, even if that desire induces an economic cost.

We use an experimental paradigm to examine the latter possibility. We hypothesize that people are motivated to purchase tax-exempt bonds to achieve tax savings, even when these bonds do not yield better after-tax returns. In Experiment 3a we use a between-subjects design to compare willingness to invest money in a bond rather than a savings account when the bond is tax-exempt versus taxable. In Experiment 3b, we make the trade-off explicit by asking participants to compare the two types of bonds directly.

Experiment 3a: Method

Participants. A total of 126 participants were recruited online through Amazon.com's Mechanical Turk service and received payment for their participation. Before the analysis, we discarded data from 1 participant who previously completed the survey, 2 who were younger than 18 years of age, and 6 who were not U.S. residents. The final sample consisted of 117 participants (59% female) who were 18–77 years of age ($M = 35.21$, $SD = 12.45$).

Materials and procedure. Participants read and responded to an online decision scenario, in which they chose between investing in a bond and keeping their money in a bank account. The scenario read as follows:

Imagine that you have just inherited some money. You are trying to decide whether to put the money in your bank account or to invest in a [municipal/corporate] bond. Your bank account will pay you \$100 per year in interest, with no risk attached. The bond will pay you [\$120/\$160] per year in interest, but carries risk, and you cannot withdraw your initial investment for 10 years. You will pay tax on the interest [from the bank account/] at 25%, [but interest from the bond will be tax free/in either case]. Consequently, if you put money in the bank account you will pay \$25 of tax and will keep \$75 each year. If you put money in the bond, you will [not pay tax/pay \$40 of tax] and will keep \$120 each year. What would you do with your money?

- I would put my money in my bank account
- I would put my money in the bond

Following the scenario, they responded to various demographic questions. The experiment consisted of a between-subjects design, with participants randomly assigned to one of two conditions (tax-exempt vs. taxable). Participants in

the tax-exempt condition saw the description of the tax-exempt municipal bond. Those in the taxable condition instead saw the description of the taxable corporate bond. In both conditions, the savings account offered (riskless) after-tax returns of \$75 per year, whereas the bond offered (risky) annual after-tax returns of \$120. In other words, the tax-exempt and taxable bonds yielded equivalent after-tax returns, so participants in both conditions faced the same decision in economic terms.

Results and Discussion

Consistent with our hypothesis, significantly more participants preferred to invest in the municipal bond that offered a \$120 annual tax-free return than in the corporate bond that offered a \$160 annual return but required a \$40 tax payment (82% vs. 18%, $\chi^2(1, N = 117) = 48.03$, $p < .001$, $\phi = .64$). This preference held even though the two bonds provided identical after-tax returns, effectively ruling out any (standard) economic reason to prefer one more strongly than the other.

One limitation of the design is that the tax-free bond, described as a municipal bond, is tied to the government, whereas the taxable bond is tied to a corporation. Participants may prefer government-issued financial products over corporate ones, independent of their tax-exempt status. Furthermore, though both bonds entail "risk" according to their descriptions, the specific amount remains unquantified, and participants may have inferred that the taxable bond carried greater risk. Therefore, in Experiment 3b we extend this study with a direct comparison scenario that allows for an explicit statement of equal risk across the two products and makes no mention of corporations or the government.

Experiment 3b: Method

Participants. We recruited 52 participants online through Amazon.com's Mechanical Turk service, and they received payment for their participation. Before analysis, we discarded data from 4 participants who had previously completed a similar survey and 1 who was younger than 18 years of age. Our final sample consisted of 47 participants (38% female) who were 18–58 years of age ($M = 31.04$, $SD = 10.81$).

Materials and procedure. All participants read and responded to the following decision scenario (before proceeding to demographic questions):

Imagine that you have just inherited some money that you are planning to invest. You are deciding between two different bond options. Both have the same risk and 10 year maturities. The first bond is expected to pay \$400 per year, but you will also be taxed \$100 on these earnings each year. The second bond's return is lower, \$300 per year, but it will not be taxed. Which bond would you invest in?

- I would put my money in the first bond
- I would put my money in the second bond

Results and Discussion

Despite eliminating any mention of the bond issuer and explicitly equating both the risk and the expected after-tax return, we found that a significant majority (77%) of participants preferred investing in a tax-free bond over a taxable

one (binomial test: $z = 3.50$, $p < .001$, with the null hypothesis that participants are equally likely to prefer either bond). This result is consistent with the outcome of Experiment 3a. Together, these studies suggest that tax aversion could be at least partly responsible for some counternormative consumer financial investment choices observed in the field, such as the suboptimal tendency of lower tax-bracket investors to purchase tax-exempt bonds instead of taxable bonds that provide superior after-tax yields (Feenberg and Poterba 1991).

The preceding experiments demonstrate an aversion to paying taxes among the U.S. population overall. Identifying groups of people who particularly dislike paying taxes could help marketers segment consumers to target tax-free sales directly and effectively at those populations who would most appreciate such discounts.

EXPERIMENT 4

Attitudes toward taxes often seem to go hand-in-hand with political views. Therefore in Experiment 4, we examine whether the tendency to exhibit tax aversion (as opposed to merely disliking taxes) varies with political affiliation. People who identify with antitax parties could be primarily responsible for the pattern of preferences documented in our previous experiments. Polls show that in the United States, members of the Republican Party generally hold more negative views of taxes (American National Election Studies 2004; CNN 2010), and several studies reveal that political affiliation correlates with attitudes toward taxes (Hardisty, Johnson, and Weber 2010; Wahlund 1992). We also seek to determine whether tax aversion extends to different types of taxes and alternative time costs.

Method

Participants. We recruited 213 participants online through Amazon.com's Mechanical Turk service and excluded responses from 17 participants before analysis, because they either lived outside the United States or had taken the survey previously. The sample thus consisted of 196 U.S. residents (58% female) who were 18–67 years of age ($M = 33.47$, $SD = 11.42$).

Materials and procedure. Participants completed the survey online for a cash reward. They read and responded to the following hypothetical decision scenario:

Imagine you have been working for an American company and your yearly salary is \$50,000 (before taxes). One day, you are offered the chance to lead one of the company's two European branches, each of which is located in a different European country. Regardless of which country you choose to live in, your duties will be the same and your salary will be raised to \$75,000. However, in Country A, your daily commute will be 30 minutes shorter each way. On the other hand, while most expenses are the same in both countries, [taxes are higher/food is more expensive] in Country A, and you would have to [pay \$4,000 more in taxes/spend \$5,000 more on food] there, each year, than you would in Country B. The two countries are similar in every other respect. Which country would you choose to live in?

Country A Country B

The experiment thus consisted of a between-subjects design in which we assigned participants to one of two conditions (\$4,000 tax cost vs. \$5,000 food cost), in alternating order.

The final page of the questionnaire asked participants to report demographic variables, including their political affiliation, for which they selected one or more of the following options: Democrat, Republican, Independent, Libertarian, Communist, Green, Socialist, and Other/None.

Results and Discussion

Before analyzing the data, we grouped participants by political party affiliation and also identified whether each political party traditionally has been considered (relatively) pro- or antitax. The Democratic, Communist, and Socialist parties represent the protax parties, whereas the Republican and Libertarian parties are antitax. The remaining categories (Independent, Green, and Other/None) were not grouped by tax attitudes. These classifications are based on the parties' platforms (e.g., the Republican Party platform states: "Republicans advocate lower taxes, reasonable regulation, and smaller, smarter government"; Republican National Committee 2008). The participants in our sample divided themselves almost equally into three categories: 38% aligned with protax parties, 29% with antitax parties, and 33% remained ungrouped.³ Because our hypothesis pertains only to people who identify with parties traditionally associated with pro- or antitax policies, we restricted our analyses to members of the first two groups. The final sample of interest thus comprised 132 participants (58% female) who were 18–67 years of age ($M = 34.22$, $SD = 11.94$).

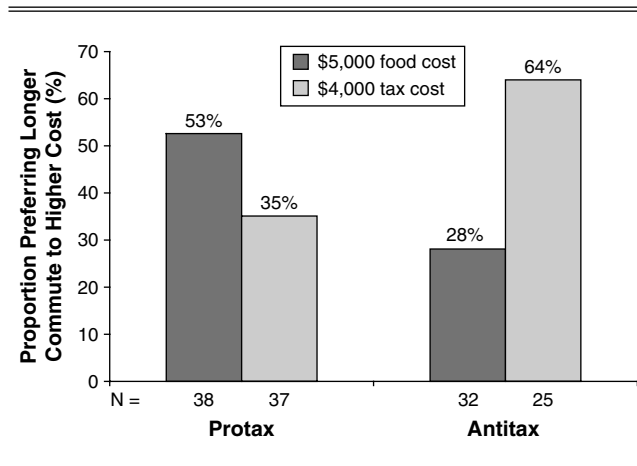
The results of this experiment revealed differences across political parties, according to their constituents' preferences (see Figure 2). Those respondents identifying with antitax parties demonstrated tax aversion: They were more than twice as likely to prefer living in the country with a longer daily commute when it enabled them to avoid a \$4,000 tax than when it enabled them to avoid a \$5,000 food cost ($\chi^2(1, N = 57) = 7.34$, $p = .007$, $\phi = .36$), despite the \$1,000 lower absolute savings in the tax condition. In contrast, the preferences of protax party members showed no significant variance; if anything, they indicated a (not significant) directional preference for the longer commute when it meant avoiding the higher additional food cost than when it meant avoiding the lower additional tax cost ($\chi^2(1, N = 75) = 2.33$, $p = .127$, $\phi = .18$).

We performed a binary logistic regression, with country preference as the dependent variable and condition, party affiliation, and their interaction as predictors, to examine these effects further. We coded the condition as 0 for tax-unrelated (food cost) and 1 for tax-related (tax cost) and political affiliation as 0 for antitax and 1 for protax. The model was significant overall ($\chi^2(3, N = 132) = 9.81$, $p = .020$) and revealed main effects of both condition and party affiliation. That is, random assignment to the tax condition increased the odds of preferring the country with the

³No participants identified with multiple parties with incongruent tax policy platforms (e.g., "Libertarian" and "Democrat"). Participants who listed one party from the protax (antitax) category and another from the ungrouped category were labeled protax (antitax).

Figure 2

WILLINGNESS TO COMMUTE TO AVOID A TAX VS. NONTAX COST AS A FUNCTION OF POLITICAL PARTY



Notes: This graph shows the proportion of participants preferring a longer daily commute rather than a higher annual food or tax cost, as a function of political party affiliation, from Experiment 4. Numbers below the bars represent the sample sizes for each condition and political group.

longer commute by 354% for those affiliated with antitax parties ($\text{exp}\beta = 4.54$, $p = .008$), whereas identifying with protax parties increased the odds by 184% for participants assigned to the food condition ($\text{exp}\beta = 2.84$, $p = .041$). Furthermore, the interaction between the two variables was also significant ($\text{exp}\beta = .11$, $p = .003$), such that the condition assignment had a different impact on the preferences of pro- and antitax party respondents, as suggested by Figure 2 and the preceding results.

Experiment 4 further proves the existence of tax aversion and demonstrates that it is strongest among members of antitax parties.⁴ Republican and Libertarian respondents showed stronger preferences for avoiding a tax-related cost than a tax-unrelated cost, even though the latter was 25% higher. In contrast, members of protax parties showed no such tendency.

In the next experiment, we examine the effects of a potential moderator of tax aversion, namely, the salience of agreeable or disagreeable uses of tax payments, and its variation across political lines. We also seek to understand how deeply ingrained tax aversion is among members of antitax parties. Is it possible to make them less tax averse and bring their preferences closer to those of protax party members? We investigate this question by reminding participants either that taxes are used in ways that they approve of or that taxes are used in ways that they disapprove of.

EXPERIMENT 5

Method

Participants. For this study, we recruited a total of 1,029 participants from three sample populations: (1) users of

Amazon.com's Mechanical Turk service ($N = 887$); (2) users of craigslist.com, an online community forum ($N = 53$); and (3) passersby at a shopping mall in the northeastern United States ($N = 89$). Participants completed the experiment for payment or as volunteers. Before the analysis, we excluded 86 participants who reported living outside the United States or had previously taken the survey. After these eliminations, our sample consisted of 943 U.S. residents (62% female) who were 18–75 years of age ($M = 33.66$, $SD = 12.43$).

Materials and procedure. The procedures for the online and mall participants were similar to those we used in Experiment 1, though the materials differed. Using a between-subjects design, we assigned participants to one of three conditions (positive list, negative list, no list) in alternating order. In the positive list condition, participants first read the following instructions:

Many of us pay taxes because they are mandatory, but without appreciating how tax dollars benefit the tax-payer. Take a moment to consider the different ways in which your tax dollars are well spent. For example, taxes are necessary for maintaining paved roads and bridges. Please write down the first three examples of positive uses of your tax dollars that come to mind. Please make sure to only list examples involving uses of your tax dollars that you approve. Do not list examples involving uses that you disapprove.

In the negative list condition, participants instead read:

Many of us pay taxes because they are mandatory, but without believing that tax dollars benefit the tax-payer. Take a moment to consider the different ways in which your tax dollars are badly spent. For example, taxes are used for bailing out big banks and funding lobbyists who are advancing specific political agendas. Please write down the first three examples of negative uses of your tax dollars that come to mind. Please make sure to only list examples involving uses of your tax dollars that you disapprove. Do not list examples involving uses that you approve.

In both the positive and the negative list conditions, participants responded according to the instructions by listing three positive or negative uses of their tax payments. Participants in the no list condition did not complete the listing task and instead moved directly to the next part of the experiment.

After the listing task, all participants saw and responded to the decision scenario from the tax condition in Experiment 4, which asked whether they would be willing to pay an additional yearly sum in taxes to avoid a 30-minute longer daily commute. However, in the current experiment, the tax amount was changed to \$5,000 (the scenario was otherwise identical). The final page of the questionnaire asked participants to report their demographic variables, including their political affiliation, similar to Experiment 4, except that they could only select one political affiliation from the list of options.

Results and Discussion

Before analyzing the data, we eliminated responses from 23 participants who failed to list three positive or negative uses of their tax payments when asked to do so. We considered a wide range of responses acceptable but omitted

⁴We replicated these results with U.K. residents ($N = 512$) who read scenarios similar to those in Experiment 4. Tax aversion was highest among right-leaning (antitax) respondents and absent among left-leaning (protax) ones; center-leaning respondents (moderates) fell in between.

participants who left the section blank or inserted unrelated words rather than tax uses. Some common (and acceptable) examples of positive uses of tax payments included education, road maintenance, police departments, and fire departments. Common (and acceptable) examples of negative uses included welfare, government bailouts, high salaries for politicians, and funding the Iraq war.

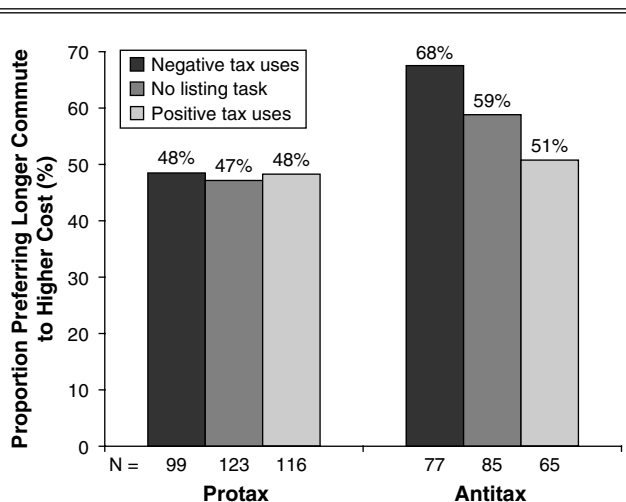
We grouped participants by political party affiliation, using the same procedure as in Experiment 4: 37% aligned with protax parties, 25% with antitax parties, and 38% remained ungrouped. Again, our analyses focused on only those respondents who identify with parties that are traditionally associated with pro- or antitax policies. Thus the final sample of interest consisted of 565 participants (62% female) who were 18–75 years of age ($M = 33.44$, $SD = 12.52$).

Aggregating across listing conditions, members of antitax parties were more likely than members of protax parties to prefer a longer commute to avoid paying additional taxes (60% vs. 48%; $\chi^2(1, N = 565) = 7.26$, $p = .007$, $\phi = .11$). However, as we show in Figure 3, the listing task differentially affected the preferences of pro- and antitax party members. Members of antitax parties were less likely to prefer the longer commute (and more likely to prefer paying additional taxes) in the positive list condition than in the negative list condition ($\chi^2(1, N = 142) = 4.12$, $p = .042$, $\phi = .17$). In contrast, the listing task had no effect on the preferences of protax party members ($\chi^2(1, N = 215) < .01$, $p = .98$).

Following the negative listing task, members of antitax parties were significantly more likely than members of protax parties to prefer the longer commute over the higher tax ($\chi^2(1, N = 176) = 6.41$, $p = .011$, $\phi = .19$). A similar result emerged in the no list condition but only at a marginal level of significance ($\chi^2(1, N = 208) = 2.74$, $p = .098$, $\phi = .12$).

Figure 3

WILLINGNESS TO COMMUTE TO AVOID A TAX COST AS A FUNCTION OF POLITICAL PARTY AND LISTING TASK



Notes: This graph shows the proportion of participants preferring a longer daily commute to a higher tax cost, as a function of political party affiliation and listing task, from Experiment 5. Numbers below the bars represent the sample sizes for each condition and political group.

However, the effect of party affiliation disappeared in the positive list condition, for which members of anti- and protax parties were equally likely to prefer a longer commute over higher taxes ($\chi^2(1, N = 181) = .10$, $p = .748$). This effect could have been driven by the descriptions in the listing tasks themselves or by the examples that participants generated in response to these tasks (or both). In either case, the listing task generated negative or positive associations with the use of tax payments.

We used a binary logistic regression to examine further the effects of political party affiliation, listing task, and their interaction. Participants identifying with antitax parties were coded as 0, those with protax parties as 1. The participants assigned to the negative list condition were coded as -1 , those in the no list condition as 0, and those in the positive list condition as 1. The model was significant overall ($\chi^2(3, N = 565) = 11.43$, $p = .010$) and revealed main effects of both variables (listing condition: $\text{exp}\beta = .70$, $p = .043$; political party identification: $\text{exp}\beta = .64$, $p = .009$). Although we found evidence that participants who identify with antitax parties were somewhat more affected by the listing task, the statistical interaction only approached marginal significance ($\text{exp}\beta = 1.42$, $p = .115$).

These results suggest several interesting differences between members of pro- and antitax parties, in terms of the accessibility and acceptability of tax uses. First, members of protax parties seem generally more aware and accepting of the use of their tax payments in both positive and negative ways. This acceptance could explain why the listing task had no effect (in either direction) on their preferences. In contrast, negative uses of taxes seem more accessible (but less acceptable) to members of antitax parties than are positive uses. Therefore, reminding participants of the positive uses of their tax payments (in the positive list condition) increases the acceptance of the higher tax among antitax party members, bringing their responses in line with the preferences of protax party members. Second, the results suggest that antitax party members may be receptive to additional examples of negative tax uses (beyond the ones they spontaneously generate), which enhances their dislike of taxes, as we show in the negative list condition.

In a follow-up survey with a separate sample of respondents,⁵ we attempted to determine if protax party members were more aware of the positive uses of tax payments, more accepting of the government using their tax payments in ways that they disapprove of, or both. When asked whether they believed their tax dollars were being used in ways that they approved of or in ways that they disapproved of, significantly more protax than antitax party members responded that they approved of the uses of tax money (43% vs. 7%; $\chi^2(1, N = 125) = 17.85$, $p < .001$, $\phi = .38$). However, when asked to rate how they felt when their tax dollars were used in ways that they disapproved of (1–5 scale, 1 = “very angry,” 5 = “very satisfied”), both pro- and antitax party members reported feeling similar levels of anger (1.95 vs. 1.86; $t < .7$, $p = .524$). It therefore seems that compared with members of antitax parties, people who

⁵We recruited respondents with the same approach we used in Experiment 4. Focusing on U.S. residents affiliated with protax (40%) or antitax (22%) parties produced a sample of 125 participants (67% female) who were 18–74 years of age ($M = 34.32$, $SD = 13.23$).

identify with protax parties either approve of a higher portion of the ways that their tax payments are spent or find these positive uses more salient. The pattern of results in Experiment 5 thus appears driven by differing beliefs about tax usage rather than differing affective reactions to disapproved uses.

In summary, protax party members may be more aware that their tax payments are used in ways that they both approve and disapprove of. In contrast, positive tax uses may come as a comforting surprise to antitax party members, and negative tax uses may reinforce their existing skepticism. Thus it seems that members of antitax parties may have more malleable attitudes toward tax policies. We can alter their preferences by merely reminding them of some positive (or negative) functions of taxes, which suggests that their views on taxes are not entirely based on stringent, deeply held principles.

One aspect of our sample worth noting is that despite the equal assignments to the listing conditions, more protax party members completed the positive list condition than the negative list condition (116 vs. 99), whereas more antitax party members completed the negative list condition than the positive list condition (77 vs. 65). Neither of these distributions is significantly different from chance (both binomial test $p > .27$, with the null hypothesis that members of pro- and antitax parties are equally likely to complete the positive and negative listing tasks). However, a modest selection bias may have been present that could have influenced our results. Far from negating our findings however, such a bias would be consistent with our basic hypothesis regarding party affiliation. That is, members of pro- and antitax parties hold such different attitudes toward taxes that even their willingness to *consider* positive and negative tax uses correlates with their political affiliation.

GENERAL DISCUSSION

Across five experiments, we have demonstrated that people exhibit tax aversion, defined as a tendency to avoid taxes more than other equivalent (or even larger) costs. We conducted the experiments over a period of two years (February 2009 to January 2011), which suggests that the (economically) counternormative patterns of preferences we observe are not the result of an isolated political event. In Experiment 1, we find that participants are more willing to travel to a distant store for a tax-free discount than for a larger discount unrelated to taxes. Experiment 2 demonstrates that they also are willing to spend more time waiting in line for an “axe-the-tax” sale than for an equivalent sale unrelated to taxes. Similarly, the smallest discount for which they would spend a given amount of time waiting in line is lower for an “axe-the-tax” sale than for a tax-unrelated sale. In Experiment 3, we find that participants strongly prefer to invest in tax-exempt bonds rather than equally profitable taxable bonds—which may help explain the puzzling (and suboptimal) tendency for households with low marginal tax brackets to purchase tax-exempt bonds. In Experiment 4, we find that tax aversion is most prevalent among respondents who identify with antitax political parties, even though the political relevance of their choices is not explicit in our scenarios (i.e., we elicited political affiliation after participants revealed their tax avoidance preferences). Finally, in Experiment 5, we find that instructing

members of antitax parties to consider positive uses of their tax payments leads them to make the same (hypothetical) choices as members of protax parties, thereby mitigating their tax aversion. Our results thus show that people dislike taxes for reasons that extend beyond monetary costs, related to political and ideological factors. Although all participants in our experiments are from the United States, we also find evidence of tax aversion in a separate population of U.K. residents with a different political system (see note 4). Thus, tax aversion does not seem to be a uniquely American tendency.

Alternative Accounts and Possible Mechanisms

Alternative accounts for our findings, other than tax aversion, need to be considered. In Experiment 1, participants might have inferred that the discounted television was of lower quality than the one being sold tax-free. Retailers could have marked up the base price of goods before placing them on “sale,” or the goods could be on sale because they had hidden flaws (e.g., Chernev and Carpenter 2001; Lo, Lynch, and Staelin 2007). However, by referring to a store-based sale in both conditions (axe-the-tax vs. customer rewards), Experiment 2 eliminated this confound. In addition, the sale in Experiment 2 included all items in the store, so it seems less likely that participants would infer that any specific product is inferior. In Experiment 4, participants may have thought they could control their food costs but not their taxes and therefore assumed food costs would be lower than the stated amount. However, the moderating impact of political party on tax aversion makes this account implausible unless we could explain why members of antitax parties might be more likely (than protax party members) to interpret food costs as more malleable than taxes. Furthermore, neither of these concerns applies to Experiment 5, which uses only the tax scenario but still prompts differences in the level of tax aversion across party members and in response to the listing task. Finally, these alternative accounts cannot explain the results of Experiments 2 and 3.

Regarding the mechanisms driving tax aversion, we believe several factors may be involved, including beliefs about government efficiency. If people believe that the government is inefficient, they may assume that their tax payments are largely wasted and therefore unlikely to benefit them. However, this perception cannot explain the results of Experiments 1 and 2: In the nontax conditions, participants were willing to pay more for the good even though the money would go to the store and not benefit them in any way. Furthermore, we find no interactions among self-reported measures of trust in government, attitudes regarding government efficiency, and condition ($p > .28$).

Perhaps the mental accounting phenomenon of decoupling plays a role (Soman and Gourville 2001; Thaler 1999), because the payment of taxes generally seems disconnected from the ways the government uses that money. Again though, decoupling cannot explain the findings from Experiments 1 and 2: Why would participants prefer to give their money to a retailer rather than the government, if they do not know how it will be used in either case? To consider this possibility, we included a question in the demographics section of Experiment 3 asking, “To what extent do you feel like you know how your tax dollars are being

used?" (1–7 scale). Again, we find no significant interaction between this covariate and the condition ($p > .26$). Nonetheless, we do not claim that these null results rule out the possibility that these factors also contribute to tax aversion. Uncovering the mechanisms that underlie tax aversion is an important goal that requires further research.

Implications for Marketing

Marketers stand to benefit from understanding tax aversion and its impact on consumer behavior. The use of nominal tax-free sale strategies may be more effective than discounts taken directly from the pretax cost of a good, as we showed in Experiments 1 and 2. Consequently, stores could lure in more customers by advertising "tax-free" sales than they would with equal, or even larger, tax-unrelated discounts on the face price of goods. In a tax-free sale, customers feel as though they have avoided the sales tax entirely; in truth, the store is still responsible for paying the tax to the government. Furthermore, as Experiments 4 and 5 demonstrate, this strategy may be particularly effective in politically conservative areas that express strong support for antitax parties, and the Tea Party movement in particular.

More broadly, this article highlights political orientation as an effective dimension for segmenting consumers. Although consumer political orientation has received relatively limited attention in marketing (other than direct political marketing), we have shown that this variable critically moderates the impact of taxes on various purchasing preferences. This article also adds to recent work demonstrating the added utility of using political data to model consumer demand (Roos and Shachar 2010), as well as previous research that examines how consumption behavior represents an expression of political ideology (Crockett and Wallendorf 2004) and how political attitudes relate to the acceptance of innovative trends (Baumgarten 1975). Ongoing investigations should continue to examine the possible role of political affiliation in purchasing decisions. For example, the weight placed on certain product attributes, such as being "Made in the USA," organic, or environmentally friendly, likely differs considerably between right- and left-leaning consumers. Similarly, consumer attitudes toward advertising campaigns may vary across the political divide. Conservative consumers may be averse to campaigns or slogans that have sexual undertones; liberal consumers may shun campaigns or slogans that they perceive as reinforcing negative gender stereotypes. Understanding the dominant political orientation of a target audience thus could improve the effectiveness of a marketing strategy and ultimately prove profitable.

Implications for Policy

Policy makers and governments also could benefit from considering tax aversion as a driver of financial behavior. Standard economic theories of the behavioral impact of taxation assume that decision makers rationally adjust their behaviors to the financial costs of taxes, but our results suggest that many people have an (economically) irrational aversion to taxes that can alter their preferences disproportionately, relative to the actual financial cost. Economists therefore should consider including tax aversion in their models, such as by adding a parameter to adjust for a

behavioral avoidance of taxes that extends beyond monetary costs. Policy makers and academic theorists interested in predicting the impact of tax legislation on behavior, and then projecting the corresponding tax revenues, similarly could benefit from incorporating this nonmonetary factor into their models. In certain cases, the government could make use of people's tax aversion for policy purposes, such as promoting the sale of tax-exempt municipal bonds or limiting behaviors deemed harmful (e.g., sin taxes on cigarettes, alcohol, or gambling). Conversely, a new tax expected to raise revenue from a region with a disproportionately large Republican population might result in greater behavior modification and correspondingly lower tax revenues than conventional models would project.

However, our findings also suggest that tax aversion may not create an intractable obstacle to effective tax collection or even a permanent difference in tax avoidance behavior across party lines. Instead, governments might mitigate tax aversion and minimize political differences by allowing consumers to determine how some of their taxes are spent, which can increase their satisfaction with paying taxes (Lamberton 2010). The results of Experiment 5 suggest an even simpler approach that would require no change in legislation: using public advertising and other outreach efforts to raise awareness and increase the salience of some widely favored uses of tax money. This approach might be a productive way to increase tax revenue, particularly if the initiatives are targeted at Republicans and Libertarians in contexts that require them to make tax-related decisions (e.g., tax return instructions). Dedicating resources to educating citizens about the positive roles the government plays and how it works could reduce tax aversion. Such initiatives would be natural extensions of the work carried out by the Internal Revenue Service's Taxpayer Advocate Service, whose goals include increasing voluntary taxpayer compliance. It reports explicitly that "[a]n understanding of the factors impacting taxpayer compliance is crucial to effective tax administration" and made this issue one of its areas of emphasis for 2011 (Taxpayer Advocate Service 2010, p. 23).

Conclusions and Further Directions

Research examining the mechanisms that lead to tax aversion and how they interact with political affiliation could prove fruitful for designing marketing strategies and predicting behaviors. In addition, it will be important to extend our research into the field, to evaluate how effective "axe-the-tax" sales are in practice or the extent to which such sales have greater success in predominantly Republican areas. The findings we report spark additional research questions, yet the core results indicate a clear behavioral tendency with regard to taxes (relative to other costs). Both marketers and policy makers can benefit from recognizing this unique, economically irrational propensity to avoid taxes, as well as how it varies across population segments.

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