Framing, gender and tax compliance

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Received 3 April 2002; accepted 22 November 2002

Abstract

In the context of extensive social science research on framing, we discuss how framing objectively equivalent information can (but does not always) differentially affect individuals’ attitudes and behaviors. Many of these framing effects have been found in the health communications and marketing literatures. Using a typology of framing developed by Levin et al. [Organ. Behav. Hum. Dec. Proc. 76 (1998) 149], we are able to classify prior tax compliance research, much of it reported in the Journal of Economic Psychology, that suggests decision frames influence tax reporting behavior. This prior research is now known as risky choice framing. Our study differs from this prior literature as, using goal framing, we manipulate two objectively equivalent messages (one positively framed, one negatively framed) that are communicated to adult taxpayers.

We find no evidence of a main effect for framing objectively equivalent information. However, in line with prior research, a significant frame by gender interaction effect was documented. We discuss our results in the light of prior framing and tax compliance research and suggest policy implications. A further contribution of this study is that goal framing effects are demonstrated to extend beyond health and consumer behavior settings.

PsycINFO classification: 2960; 2970; 2340
JEL classification: H26
Keywords: Framing; Gender; Prospect theory; Tax evasion; Tax compliance

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1. Introduction

The concept of framing has been investigated by psychologists and other social scientists ever since the pioneering work at the Yale Communication Research Program (Hovland, Janis, & Kelley, 1953). In the 50 years since then, framing effects have been documented in a wide variety of settings with a recently published meta-analysis on risky decisions being based on 136 empirical papers (Kuhberger, 1998). Despite the multitude of settings, comparatively little work has been completed on the fundamental cognitive processes that underlie framing effects and one consequence of such widespread usage has been imprecise and inconsistent definitions of ‘frame’ and ‘framing’ (e.g. Druckman, 2001). In fact, Payne, Bettman, and Johnson (1993, p. 66) state “Clearly, the development of a theory of framing is badly needed”. More recently, Levin, Gaeth, Schreiber, and Lauriola (2002) and Levin, Schneider, and Gaeth (1998) argue the thesis that “All frames are not created equal” and demonstrate different types of framing effects. They classify three types of framing effects in the literature as (1) risky choice, (2) attribute, and (3) goal framing.

Apart from the obvious difficulty in interpreting framing effects using different settings, Frisch (1993) speculates that the differences in arena may explain why some studies report gender differences and others do not. Fagley and Miller (1997) further suggest that prior studies may be uninterpretable if frame is confounded with gender effects. They suggest that this could happen if a sample contains predominantly one gender in which case the findings may simply describe only the gender that predominated in the sample. Fagley and Miller (1997) infer that the reason for these sex differences may be due to risk taking propensities or differences in values orientation (Gilligan, 1993).

Using the Levin et al. (1998) typology, extensive research has been conducted on risky choice framing. This has been largely based on the now famous Asian disease problem originally proposed by Tversky and Kahneman (1981). One application where risky choice framing (sometimes also known as decision outcome framing) has been tested is in the tax compliance literature (e.g., Kirchler & Maciejovsky, 2001; Robben et al., 1990; Schmidt, 2001; Webley, Robben, Elffers, & Hessing, 1991). Experimental research in the tax arena has supported the suggestion by Elffers and Hessing (1997) that taxpayers in a balance-due situation, as opposed to those who are expecting a tax refund, are generally less compliant in their tax reporting decisions. A second finding is that tax compliance is also influenced by gender (Kirchler & Maciejovsky, 2001).

This paper extends both the general framing literature and the tax compliance literature by seminally testing goal framing (Levin et al., 1998) in a tax compliance setting. Our primary research question is whether objectively equivalent information, that is positively or negatively framed, affects tax compliance behavior. We report the results of a field experiment in which 435 adult taxpayers read a persuasive message, which was framed either positively or negatively, and then responded to an experimental vignette.

The balance of this paper contains (1) a discussion of relevant prior studies on framing, gender, and tax reporting—as well as the experimental predictions, (2) a de-
scription of the experimental procedures, (3) the results, (4) a discussion of the find-
ings and (5) conclusions, implications and limitations.

2. Prior literature

2.1. All frames are not created equal

The concept of framing means different things to different people and Druckman
(2001) lists seven different definitions used by various scholars, before distinguishing
between frames in communication, and frames in thought. The former type is a prop-
erty of a communication and is concerned with a speaker’s words, images, phrases
and presentation styles. For example, a politician emphasizing economic issues dur-
ing an election campaign may use an “economy frame” in a speech that suggests eco-
nomic considerations are relevant. Frames in communication are not the focus of the
current review. The second category, frames in thought, focus on the mind’s internal
cognitive processes and are thus more closely associated with social, cognitive and
economic psychology. This distinction, however, only serves to partition off valence
framing effects. These effects treat the critical information in either a positive or neg-
ative light, and Levin et al. (1998, p. 150) note that these are “often treated as a rel-
avely homogenous set of phenomena explained by a single theory, namely prospect
theory” (Kahneman & Tversky, 1979).

Since the development of prospect theory, documenting framing effects has be-
come something of a vogue, with Kuhberger’s (1998) meta-analysis based on a data
pool of 136 empirical papers with a total of nearly 30,000 participants. One of the
key reasons for the focus on empirical research has been the desire to examine
whether or not, framing effects lead to the conclusion that the descriptive validity
of expected utility theory has been violated (Frisch, 1993).

As the popularity of studies has increased, there have been differences in the
decision scenarios and decision frames being manipulated. This involves differ-
underlying cognitive processes and scenarios with different consequences or outcomes,
(e.g. winning $10 or losing $10 on a gamble), and could be argued not to be framing
at all in the strictest sense of valence framing, but perhaps evidence of a prospect
theory reflection effect (Frisch, 1993).

Levin et al. (1998) respond to the apparent confusion in the literature and have
proposed a typology of three different kinds of valence framing effects. The first they
term risky choice framing. In this type, the outcomes of a decision choice involve op-
tions with different risk levels (e.g. a sure thing option vs. a risky option—with both
framed either positively or negatively). This type of risky framing manipulation has
been shown to affect risk preferences repeatedly ever since the original Asian disease

Levin et al. (1998) term their second category attribute framing. This simple case
of framing is where a single attribute is framed (as positive or negative) with the
framing affecting item evaluation. This is used frequently in marketing, where
consumer perceptions of quality depend on the framing manipulation e.g. beef described as 75% lean vs. 25% fat.

The final category is termed goal framing by Levin et al. (1998). This is where the impact of a persuasive communication has been shown to depend on whether the original message stresses the positive consequences of performing the behavior or the negative consequences of not performing the behavior. The distinguishing feature of goal framing is that both frames promote the same end behavior. The issue is whether one frame is more persuasive than the other.

Goal framing is a relatively recent arrival in the framing literature and to date, has been confined to the health persuasion and consumer judgement literatures. For example, in a health context (breast self-examination), Meyerowitz and Chaiken (1987) found subjects who read a loss-framed pamphlet showed significantly more positive attitudes, intentions, and actual behavior four months after an experiment than subjects in a gain-frame group and subjects in two control groups. Similarly, in a marketing context Ganzach and Karsahi (1995) found that loss-framing had a much stronger effect on increasing both the utilisation and charging behavior of credit card holders than gain-framing. The wording of the loss-framed message emphasized and listed several disadvantages of using checks or cash as payment methods in comparison to using a particular credit card. The gain-framed message emphasized the advantages of using a particular credit card in comparison to using cheques or cash.

The last two categories are fundamentally different from risky choice framing as there is no element of risk being manipulated. However, with goal framing, Levin et al. (1998) note that researchers typically turn to prospect theory to explain them, especially if the loss-framed message had the larger impact. This usually involves “trying to redefine the experimental situation in terms of unstated but implicit risks that respondents are trying to seek or avoid (p. 176). They counsel against this, by documenting prior theory suggesting a negativity bias, and by stating that goal framing may help to show the systematic differences in the manner in which positively and negatively framed information is encoded and processed.

2.2. Tax compliance

Traditional economic models of tax evasion, seminally introduced by Allingham and Sandmo (1972), assume that taxpayers’ decisions are based upon their beliefs about the probability of detection and legal penalties, if detected. These models suggest that changes in taxpayers’ knowledge of tax system variables, such as formal economic penalties, will affect their decisions to evade. Such models do not, however, address the effects of framing the parameters in these models on subsequent decisions, and both Lewis (1982) and Andreoni, Erard, and Feinstein (1998) have called for more work exploring the diverse psychological, moral, and social influences on compliance behavior.

Drawing on these early economic models and the areas of moral development and criminology, prior research on persuasive communications in tax compliance research has focused on the effects of communicating information about formal legal
sanctions or moral appeals to taxpayers’ conscience in comparison with a control group (e.g. Kaplan, Newberry, & Reckers, 1997; Schwartz & Orleans, 1967).

Prospect theory has been applied in several tax studies examining risky choice framing (e.g. Kirchler & Maciejovsky, 2001; Robben et al., 1990; Schepanski & Shearer, 1995; Schmidt, 2001; Webley et al., 1991). These researchers have broadly concluded that taxpayers who at year-end are faced with tax to pay are less compliant when they are completing their tax return (or a client’s tax return) than taxpayers with a refund due to them. Accordingly, while Levin et al.’s (1998) first category of framing has been investigated over several tax settings, there have been no prior taxpayer studies that have used a goal framing methodology. This is despite extensive prior tax research attempting to assess the usefulness of persuasive communications (e.g. with messages such as conscience appeals, legal sanctions) to enhance compliance (Hasseldine, 2000).

2.3. Gender

Prior research on goal framing (Table 4 in Levin et al., 1998) shows that several studies have been predominantly comprised of subjects of one gender (e.g. for behaviors such as breast self-examination, men’s intention to perform self-examination for testicular cancer, and skin cancer detection). Fagley and Miller (1997) note that if a sample contains predominantly one gender (they suggest much framing research has been conducted in undergraduate psychology classes that are 60–85% female) then without an explicit analysis of the frame by gender interaction, the findings may simply describe only the gender that predominated in the sample. Accordingly, they suggest that gender must be an independent variable in future framing studies. They leave open the issue as to what drives sex differences in framing studies, but suggest that one possibility is that the value functions of men and women may differ, or as Gilligan (1993) has suggested, men and women may differ in moral development. The underlying reasons for gender differences (if one agrees they exist) is controversial and beyond the scope of this study (but see Eagly, 1987; Powell & Ansic, 1997; Riger, 1997).

Prior tax research has identified gender differences in tax compliance, although the evidence is of a somewhat mixed nature (Jackson & Milliron, 1986). Of four studies published since Jackson and Milliron’s review article, three of those studies provide more recent support for gender differences in tax compliance. Baldry (1987) found females to be more compliant than males in an experimental tax setting. Subsequently, Jackson and Jaouen (1989) compared the effect of communicating either a sanction threat or a conscience appeal on prospective jurors’ tax compliance attitudes. They found females were more responsive to conscience appeals than to sanction threats, and within the conscience appeal group, females were significantly more responsive than males. There was, however, no significant gender difference for the sanction threat group or for the control group. In a more recent study of the effects of knowledge and gender on tax ethics, Fallan (1999) reports on a pre-test–post-test quasi-experiment using university students studying taxation. Fallan finds gender has predictive power in explaining attitude changes in tax ethics, but not in changes
in perceptions of tax fairness, and he leaves open the question as to why tax knowledge influences men and women differently. Finally, Kirchler and Maciejovsky (2001) found men to be more compliant than women, but they note that their actual sample was not representative and thus conclusions about gender and tax compliance cannot be generalized.

2.4. Experimental predictions

Although we are investigating goal framing in an entirely new context, based on the prior literature on framing effects and gender differences discussed above, we hypothesize that:

H1: Subjects who read a negatively framed persuasive communication will make different tax reporting decisions than subjects who read an objectively equivalent positively framed persuasive communication.

H2: Women will make different tax reporting decisions than men after reading a persuasive communication encouraging compliant behavior.

3. Methodology and sample

3.1. Method and subjects

A mail field experiment represents a trade-off of potential strengths and weaknesses. As subjects are not supervised, it is possible that all subjects did not follow instructions. Further, mail questionnaires are subject to nonresponse bias. On the other hand, a mail experiment provides a larger number of potential subjects with more subject heterogeneity. In the real world, tax agencies use the mail system to communicate with taxpayers, and require them to fill in forms—so a questionnaire format may increase the realism of the setting for subjects (Wartick, 1994). The sample was a randomly selected group of employees (nonfaculty) from a large mid-west university. The population of 4869 is classified as professional (38%), clerical (29%), technical (6%), and service/maintenance/food service (27%).

3.2. Research design

The persuasive communication contained a message concerning formal legal sanctions. This information was simply manipulated to exhibit either a positive (gain) message frame or a negative (loss) message frame in terms of the consequences of either complying or not complying with the tax laws. Note that the actual information presented was objectively equivalent and thus meets Levin et al.’s (1998) criteria for goal framing. The experimental manipulations are reproduced in Appendix A.
3.3. Task and procedures

The total design method advocated by Dillman (1978) for mail surveys was used. Under this method, subjects receive a first cover letter that is personally addressed and signed in ink by the principal researcher. All subjects receive a postcard one week later either thanking them for their response, or encouraging them to respond. Two weeks later, subjects who have not replied receive a second reminder. A further four weeks later, any remaining nonrespondents receive a third reminder. Fowler (1988) and Dillman (1978) reported average response rates using similar procedures of over 70%.

In this study, the total design method was used in its entirety, and a packet consisting of an experimental instrument and cover letter was distributed through the campus mail in a hand written envelope addressed to the subject. Subjects were assured of confidentiality and given information on how to contact the experimenter. A pre-addressed return envelope was provided. Due to the sensitive nature of tax compliance issues, responses were anonymous. To keep track of whether subjects had responded, they were asked to mail back separately a white postcard with their surname printed on it, so that they could be omitted from any further mailouts.

The experimental instrument contained four parts. Part I was the persuasive communication in which the language and consequences of noncompliance had been framed either positively or negatively (see Appendix A). Part II contained a vignette dealing with the underreporting of income i.e., receipt of cash income (see Appendix B). Part III measured subjects’ attitudinal responses to a series of general and specific tax related statements. In particular, a noncompliance scale validated and used by Roberts (1994) was used for comparative purposes (see Appendix C). Finally in part IV, demographics and additional information concerning the respondent’s prior tax history was collected.

A pre-test of the experimental instrument was used to examine the readability of the instruments as well as the procedures, instructions, and measures. The instrument was pilot tested on 204 undergraduate accounting students enrolled in an introductory managerial accounting class. The purpose of this pre-test was to ensure that subjects understood the wording of the questions and the experimental manipulations. Over 83% of the pilot subjects correctly identified the message frame in the persuasive communication as either positive or negative.

3.4. Dependent and measured variables

The dependent variable measured was whether the subject would illegally omit the cash income on their federal tax return. The vignette (see Appendix B) asked subjects to assume that in addition to their regular job at XXXX University they made extra money during the year by moonlighting on the side. Of the $5500 income received during the last tax year, in addition to their salary, $5000 was in the form of a single check from a local business and $500 was received in cash. Subjects were asked
whether they would include all of the $500 cash received as income on their federal
tax return with responses on a 1 (Definitely yes)–9 (Definitely no) scale.

In order to control the perceived probability of detection and perceived probabil-
ity of audit, the scenario stated the correct legal position (i.e., the $500 of income
should be included as income). The scenario also stated that the IRS would not
know whether the subject excluded the income and that the IRS almost certainly
would not audit the subject.

The attitude of subjects to noncompliance acted as a control variable. Roberts
(1994) used factor analysis to construct and validate a noncompliance scale consist-
ing of subjects’ responses to 13 attitude items to noncompliance. The same scale was
used in this study and is reproduced in Appendix C. In this study, it was operation-
alized using a nine point Likert scale. The range of possible scores was from a min-
imum of 13 (indicating a very high tolerance to evasion behavior i.e., very
noncompliant attitudes) to a maximum of 117 (indicating a very low tolerance to
evasion behavior i.e., very compliant attitudes). The Cronbach alpha coefficient
was 0.92.

3.5. Response rate and sample characteristics

Of 800 questionnaires randomly distributed to university staff, 53 were returned as
out of frame (e.g. employee had resigned, was on extended leave, or, in one case, had
died, etc.). The 435 usable responses thus represent a response rate of 58.2%. There
were no significant differences between early and late respondents for the dependent
variable using round of mailing as an independent variable.

Demographic information for the respondents, split by gender, is shown in
Table 1. Approximately 56% of the sample was female and 65% were married.
The median age was 45 years and the mean age was 44 years, with a standard devi-
ation of nine years. The median age in the US in 1996 was 34.9 years (US Bureau of
the Census, 1998). The youngest respondent was 21 years and the oldest was 67
years. Over 80% continued their education beyond high school, with 28% having
an undergraduate degree and 29% a graduate degree.

The median gross annual household income of respondents was $41,000. Average
adjusted gross income reported on 1994 US individual income tax returns was
$33,658 (Internal Revenue Service, 1996). The sample can therefore be characterized
as mostly married, with a majority of female respondents. In addition, respondents
are well educated and are fairly representative of the US population in terms of gross
income.

In addition to pure demographics, the experimental instrument requested infor-
mation on respondents’ prior tax reporting experience. Over one-third of respon-
dents used a paid preparer while 61% of respondents either prepared their own
tax returns or their spouse did. Approximately two-thirds of the sample received a
tax refund from their last federal tax return, with the majority of these respondents
receiving a refund greater than $500. Each year in the US, about 75% of taxpayers
receive a tax refund (Internal Revenue Service, 1996). The other one-third of the
sample had to pay tax and these respondents were almost evenly split between a small tax payment (<$501) and a large payment (>=$500). Over one quarter of respondents reported that the IRS had questioned an item on one of their tax returns, with 9% reporting that they had been subject to a person-to-person tax audit. Finally, 30% of respondents stated that they had received “cash income” from an activity outside their employment one to five times, and 14% disclosed they had received such income over 10 times, during the last five years.

One experiment check used was a question that appeared at the end of the experimental instrument which asked “How clear were the questions in this questionnaire?” with responses recorded on a 1 (Very unclear)–9 (Very clear) scale. The mean response was 7.1 with a standard deviation of 2.0. The mean response obtained in the pre-test using undergraduate accounting students was 6.9. A one-way ANOVA revealed that the mean response was significantly higher in the experimental condition compared to the pre-test condition. 

Table 1
Demographic and tax characteristics of respondents (N = 435)

<table>
<thead>
<tr>
<th>Demographic/tax characteristic</th>
<th>Males</th>
<th>Females</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>189 (44%)</td>
<td>241 (56%)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>27.7%</td>
<td>39.8%</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>72.3%</td>
<td>60.2%</td>
<td>0.008</td>
</tr>
<tr>
<td>Age in years—mean (SD)</td>
<td>44.9 (9.7)</td>
<td>44.1 (9.8)</td>
<td>0.418</td>
</tr>
<tr>
<td>Highest education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school/college/technical</td>
<td>37.1%</td>
<td>47.7%</td>
<td></td>
</tr>
<tr>
<td>Undergraduate or graduate degree</td>
<td>62.9%</td>
<td>52.3%</td>
<td>0.005</td>
</tr>
<tr>
<td>Household income in $US 000—mean (SD)</td>
<td>46.4 (19.8)</td>
<td>42.7 (20.8)</td>
<td>0.068</td>
</tr>
<tr>
<td>Preparer of tax return</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent</td>
<td>50.8%</td>
<td>47.5%</td>
<td></td>
</tr>
<tr>
<td>Spouse/friend/other relative</td>
<td>15.3%</td>
<td>17.2%</td>
<td></td>
</tr>
<tr>
<td>Paid preparer</td>
<td>33.9%</td>
<td>35.3%</td>
<td>0.798</td>
</tr>
<tr>
<td>Last tax return showed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refund over $500</td>
<td>37.4%</td>
<td>39.2%</td>
<td></td>
</tr>
<tr>
<td>Refund under $500</td>
<td>20.8%</td>
<td>30.0%</td>
<td></td>
</tr>
<tr>
<td>Tax to pay under $500</td>
<td>22.5%</td>
<td>14.3%</td>
<td></td>
</tr>
<tr>
<td>Tax to pay over $500</td>
<td>19.3%</td>
<td>16.5%</td>
<td>0.052</td>
</tr>
<tr>
<td>Has IRS questioned you?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29.9%</td>
<td>25.7%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>70.1%</td>
<td>74.3%</td>
<td>0.336</td>
</tr>
<tr>
<td>Have you ever been audited by the IRS?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9.1%</td>
<td>9.6%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>90.9%</td>
<td>90.4%</td>
<td>0.865</td>
</tr>
<tr>
<td>Cash income received ___ times last five years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>42.8%</td>
<td>59.2%</td>
<td></td>
</tr>
<tr>
<td>1–5 times</td>
<td>32.1%</td>
<td>29.1%</td>
<td></td>
</tr>
<tr>
<td>6–10 times</td>
<td>5.9%</td>
<td>2.1%</td>
<td></td>
</tr>
<tr>
<td>Over 10 times</td>
<td>19.2%</td>
<td>9.6%</td>
<td>0.001</td>
</tr>
<tr>
<td>Attitude to noncompliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score on Roberts’ scale (out of 117)</td>
<td>79.00</td>
<td>87.47</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: Univariate results using are based on chi-square tests for all variables with the exception of age and income, for which p-value statistics reported are from one-way ANOVAs.
ANOVA between the pilot subjects (students) and the adult taxpayers was not significant on this variable ($F$-stat. $= 0.491$, $p = 0.484$).

4. Results

4.1. Univariate tests

As gender may influence framing effects (Fagley & Miller, 1997) and gender differences in tax reporting behavior are hypothesized to occur (under H2), we report separately by gender, the demographics and tax characteristics of the sample in Table 1. Univariate tests (chi-square for categorical variables and one-way analysis of variance for continuous variables) are also reported in Table 1. This shows that a higher proportion of men were married than of the women respondents. Second, the men in the sample were more highly educated than the women. Third, men were more likely to report having received cash income over the last five years than did women. Finally, males reported a lower score on the Roberts’s (1994) noncompliance scale than women – indicating that men in general are more tolerant of tax evasion.

There were no significant differences between men and women on two demographics (age, household income) and on three tax reporting characteristics (last tax return outcome, and being either audited or questioned by the IRS).

4.2. Goal framing and gender effects

In order to test the two hypotheses, an overall analysis of covariance (ANCOVA) was used. Consequent on the significant results, reported in the preceding section and shown in Table 1, we include four covariates in our model: (i) score on noncompliance scale thus controlling for prior attitudes; (ii) marital status; (iii) education, and (iv) the number of times the respondent reported receiving cash income.

Table 2 provides the cell means (panel A) and ANCOVA results (panel B) for the 435 subjects. As expected, the noncompliance scale is strongly significant as a covariate, confirming that attitudes to tax noncompliance strongly predict compliance behavior. The manipulated variable (frame) is not significant as a main effect leading to the simple conclusion that there is no support for Hypothesis 1. There was a significant main effect for gender, with females exhibiting more compliant behavior than males (means of 3.8 vs. 4.0 respectively, $p = 0.015$).

The main effect for gender in Table 2 must however be interpreted in the context of the significant frame by gender interaction effect ($p = 0.004$). In order to further analyse this effect, univariate tests were run separately for males and females. For males, the positive-frame group (mean $= 4.5$) and the negative-frame group (mean $= 3.7$) were significantly different ($p = 0.047$), suggesting that males are more compliant when a negatively framed message is used. For females, the positive-frame group (mean $= 3.4$) and the negative-frame group (mean $= 4.3$) were also different ($p = 0.019$), suggesting that females are more compliant when a positively framed message is used.
5. Discussion

The lack of a main effect in Table 2 for the framing manipulation is important to document as Druckman (2001, p. 246) states: “In short, framing effects are remarkably complex. Sometimes they work and other times they do not, and, despite common practice, it is just as important to document cases of failed framing effects as successful framing effects”. However, the lack of a main effect for framing must now be examined in association with gender.

The significant frame by gender interaction is puzzling. It suggests that, for this sample, men were more persuaded by the negatively framed message, while women were more persuaded by the positively framed message. Levin et al. (1998) comment that the research evidence for goal framing is less homogenous than other types of framing, because of greater variations in operationalizing goal framing. As this is the first study to operationalize goal framing in an individual tax reporting context, there are no directly comparable studies. Some assistance is provided by Rothman, Salovey, Antone, Keough, and Martin (1993) who document a frame by gender
interaction (in the area of sunscreen use). They believe that subject involvement in the behavior (females were assumed to be more involved) may affect whether a positive or negative frame is more salient. Levin et al. (1998) note that goal framing effects can be enhanced, eliminated or even removed depending on the characteristics of the situation. Accordingly, in the Rothman et al. study, it was the women who followed the “normal” pattern found in prior research. That is, many prior studies (even those with a one-gender sample) find that there is a general negativity bias with the negative frame more persuasive than the positive frame (e.g. Ganzach & Karsahi, 1995; Meyerowitz & Chaiken, 1987).

The tendency for a negative frame to be more persuasive is confirmed in our study for the males, as they were significantly more influenced by the negative frame. One might speculate that the reason the women in the study were more influenced by the positive frame message is that they are not as involved or as interested in tax matters as men. We examined this, and univariate tests showed no differences between men and women on their personal interest in tax issues in general ($p = 0.802$), how believable the “News-item” (i.e. the experimental manipulation) at the start of the questionnaire was ($p = 0.854$) or how clear the questions in the instrument were ($p = 0.167$). However, as shown in Table 1, men and women did differ on experience with cash income and attitudes toward tax evasion, suggesting less interest and less experience with the hypothetical decision. This is consistent with Rothman et al. (1993) as well as Rothman and Salovey (1997) who suggest that prior experience may affect goal framing.

6. Conclusions

6.1. Future economic psychology research

Several important conclusions emerge from this study. In respect of economic psychology research, it demonstrates the need for researchers to carefully consider the manner in which information being manipulated and conveyed to subjects in a behavioral experiment is framed. The goal framing literature is relatively recent and this study demonstrates that objectively equivalent message framing effects can generalize out of the normal domain in which they have been investigated in the past, (i.e., largely health related and marketing contexts), into other economic and psychological settings.

While there is obviously a need for the development of satisfactory theoretical accounts to explain goal framing (Levin et al., 1998), one area worthy of further investigation is the resulting practical implications in contexts where information is communicated to individuals. Such information can be framed either positively or negatively and may ultimately lead to significant differences in judgements and decisions.

6.2. Tax compliance literature

The significant frame by gender interaction effect for tax reporting behavior warrants some discussion. Females were more compliant in response to a positively
framed persuasive communication than they were to the negatively framed message, even though the information in each message was objectively equivalent. In direct contrast, males responded significantly better to the negatively framed persuasive communication than to the positively framed message.

The framing effects reported here may be part of the reason for different findings in prior tax compliance research. If some prior studies used negatively framed information, and some studies used positively framed information, or the communications had some information framed in a positive manner and some in a negative manner, then this could partly explain the presence and/or absence of significant effects relative to a control group.

Several directions for future tax compliance research are suggested by our results. First, this research could be replicated using a different medium. As some taxpayers now file their tax returns electronically, a field or laboratory experiment could be conducted to ascertain what are the most effective types of persuasive communication over computers (e.g., tax agency internet sites). Alternatively, this research could be extended to television and radio advertising along similar lines to the study by Roberts (1994).

6.3. Limitations of study

There are several limitations of the study. First, there are several inherent limitations with the use of a mail field experiment. These include nonresponse bias, misunderstanding of questions and variables measured by self-reports. Data was collected using Dillman’s (1978) total design method, and careful pilot testing of the instrument was undertaken to reduce the effect of these limitations, although they still could have affected the results.

Second, the sample of university employees was selected from a single campus from one major mid-western university. While demographics indicated that the sample was quite diverse in terms of gender, age, income, and tax background factors, it is acknowledged that the study’s external validity is limited. For instance, all subjects were employed by the same employer, in only one geographical area. Whether or not the results found in this study would generalize to other samples in other geographical areas is unknown.

Third, a scope limitation of this study is that it examined the persuasiveness of a printed message, communicated only on one occasion. Although, the tax agencies still communicate with taxpayers through the mail system, (letters are cheaper than tax audits!), it is possible that different results might be obtained if a different communication medium were used, or indeed if subjects were exposed to the persuasive communication more than once.

Acknowledgements

We are grateful for the comments of seminar participants at the Universities of Bath, Cranfield, Indiana, Lancaster, Nottingham and Strathclyde. Special thanks
Appendix A. Persuasive communications

A.1. Positively framed (gain-framed) treatment condition

The federal government is concerned that some taxpayers claim too many deductions and do not report all their income when filing their tax returns.

However, if taxpayers like you COMPLY by reporting all your taxable income and by claiming only allowable deductions, then you could gain these advantages:

1. NO fines and penalties can be imposed on you.
2. NO jail sentences or criminal convictions can be imposed on you.
3. IRS auditors are less likely to audit you.

In short, if you COMPLY, you will not need to worry about any IRS consequences. The IRS will treat you as a compliant taxpayer.

The message is clear—If you comply and report all your taxes, in the long run you could GAIN and NOT BE PUNISHED by the IRS!!

A.2. Negatively framed (loss-framed) treatment condition

The federal government is concerned that some taxpayers claim too many deductions and do not report all their income when filing their tax returns.

Therefore, if taxpayers like you DO NOT COMPLY either because you fail to report all your taxable income or you claim more deductions than allowed, then you could suffer these disadvantages:

1. Fines and penalties can be imposed on you.
2. Jail sentences or criminal convictions can be imposed on you.
3. IRS auditors are more likely to audit you.

In short, if you DO NOT COMPLY, you need to worry about IRS consequences. The IRS will treat you as a noncompliant taxpayer.

The message is clear—If you do not comply and do not report all your taxes, in the long run you could LOSE and BE PUNISHED by the IRS!!

Appendix B. Evasion vignette and dependent variable

Please read and respond to the following scenario:

Assume that in addition to your regular job at XXXX University you are able to make extra money during the year by moonlighting for extra money on the side. Fur-
ther assume that you earned $5500 during the last tax year and of this amount $500 was paid to you in cash, and the other $5000 by a single check from a local business. Legally, the cash income of $500 should be included as income in your tax return, but the IRS almost certainly will not audit you and would not know if you do not report the $500 received in cash on your tax return.

Remember that this questionnaire is absolutely anonymous.

If you were faced with the above situation: Would you include all of the $500 cash received as income on your federal tax return?

Definitely yes
1 2 3 4 5 6 7 8 9

Mean = 3.9, SD = 3.2

Appendix C. Attitude measures for noncompliance scale

Please respond to the following statements with your personal opinion. Circle one number for each statement.

1. Trading goods or services with a friend and not reporting it on your tax form is:
2. Reporting your main income fully, but intentionally not including some small outside income is:
3. Being paid in cash for a job and then not reporting it on your tax form is:
4. Not reporting some earnings from investments or interest that the government would not be able to find out about is:
5. Since a lot of rich people pay no taxes at all, if someone like you underpays a little, it is not a big deal:
6. Tax rates are just too high, so it is not really cheating when you bend the rules a little to find ways to pay less than you are supposed to:
7. When you are not really sure whether or not you are allowed to claim a tax deduction, it makes sense to take a chance and take the deduction anyway:
8. With what things cost these days, it is okay to cut a few corners on your tax form just to help make ends meet:
9. It is not so wrong to hold back a little bit on taxes since the government spends too much anyway:
10. It is not so wrong to underreport certain income since it does not really hurt anyone:
11. The chances of getting caught are so low that it is worthwhile trying to cut corners a little on your taxes:
12. When you know you deserve a deduction they would not let you take, it makes sense to take it some other place where they would not catch you on it:
13. It is all right to occasionally underreport certain income or claim an undeserved deduction if you are generally a loyal and law-abiding citizen:

Note: All questions were on a nine point Likert scale. Items 1–4 were anchored (Perfectly acceptable–Not at all acceptable). Items 5–13 were anchored (Strongly agree–Strongly disagree). Minimum Score is 13 \((13 \times 1)\) and maximum score is 117 \((13 \times 9)\).

References


