universität wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„Framing and Moral Suasion: Perception and Effects on Tax Compliance Behaviour "

verfasst von / submitted by

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angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien, 2019 / Vienna 2019

Studienkennzahl lt. Studienblatt / degree programme code as it appears on the student record sheet:	A 066 840
Studienrichtung lt. Studienblatt / degree programme as it appears on the student record sheet:	Masterstudium Psychologie UG2002
Betreut von / Supervisor:	Univ.- Prof. Dr. Erich Kirchler
Mitbetreut von / Co-Supervisor:	Mag. Dr. Jerome Olsen

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Acknowledgement

First, I would like to thank my family, my girlfriend Nina and all my close friends for the moral support throughout the past years.
I would also like to thank Jerome Olsen. Without his expertise and helpful support this master's thesis would never have come about.
Further, I want to thank Erich Kirchler for fighting to provide such an amazing professional support for the students at the department of psychology at the University of Vienna.
I also would like to thank Denis Morzinek for the good cooperation in designing this experiment and Ziga Puklavec for always helping me with everything.
Special thanks goes out to "Österreichische Nationalbibliothek" for providing a perfect work environment.

Abstract

This master's thesis investigates the effects of framing – in terms of gain and loss – and moral suasion on tax compliance behaviour. According to prospect theory, I assumed that a gain framing might have positive effects on tax compliance. I expected the same positive effect from the presentation of moral suasion and further, an interaction between these factors. For this purpose, I used a two (gain vs. loss framing) by two (presence vs. absence of moral suasion) designed online-survey (N = 205), where participants earned a performance-based income and had to report it over twelve rounds. Gain was framed by presenting the net income, while loss was framed by presenting the gross income before declaring taxes. Thus, I assumed that participants who were presented with the net income assess themselves in a gain position. Moral suasion was based on social norms and presented before and in the middle of the twelve rounds of the tax game. My results reveal that neither framing nor moral suasion has an impact on tax compliance behaviour. I also found no interactions between these two factors. Participants in the gain condition assessed themselves rather in a gain than in a loss position, but so did those in the loss condition. These findings could suggest that the context-rich tax framing alone is a stronger gain frame than the subtle differences in numerical presentation used as a manipulation and social norms are not suitable as moral suasion in tax games.

Keywords: tax compliance, framing, moral suasion

Abstract

Diese Masterarbeit untersucht die Auswirkungen von Framing - in Bezug auf Gewinn und Verlust - und moralischen Appellen auf das Steuer-Compliance-Verhalten. Gemäß der Prospect Theory ging ich davon aus, dass ein Gewinn-Framing positive Auswirkungen auf das Steuer-Compliance-Verhalten haben könnte. Ich erwartete den gleichen positiven Effekt von der Präsentation moralischer Appelle, sowie eine Interaktion zwischen diesen Faktoren. Zu diesem Zweck habe ich eine Online-Umfrage im zwei (Gewinn- vs. Verlust-Framing) mal zwei (Anwesenheit vs. Abwesenheit eines moralischen Appells) Design entworfen (N = 205), bei der die Teilnehmer ein leistungsabhängiges Einkommen verdienten und es über zwölf Runden versteuern mussten. Das Gewinn-Framing erfolgte durch die Darstellung des Nettoeinkommens und das Verlust-Framing durch die Darstellung des Bruttoeinkommens, da ich davon aus ging, dass sich Teilnehmer, denen das Nettoeinkommen präsentiert wurde, in einer Gewinnposition fühlen. Die moralischen Appelle basierten auf sozialen Normen und wurden vor und in der Mitte des Experiments präsentiert. Meine Ergebnisse zeigen keinen Einfluss von Framing und moralischen Appellen auf das Steuer-Compliance-Verhalten und keine Wechselwirkungen der Faktoren. Die Teilnehmer sowohl der Gewinn- als auch der Verlustbedingung fühlten sich während des Experiments in einer Gewinnposition. Diese Ergebnisse deuten darauf hin, dass das kontextreiche Framing allein ein stärkeres Gewinn-Framing ist als die subtilen Unterschiede in der numerischen Darstellung und soziale Normen nicht geeignet sind für moralische Appelle in Steuerexperimenten.
Stichworte: Steuer-Compliance, Framing, moralische Appelle

1 Introduction

Initial tax compliance research assumed that the decision whether to be compliant or not is rational. This assumption is based on the economics of crime paradigm which states that criminal behaviour is a rational decision where people calculate probability of detection and extend of punishment in (Becker, 1968). Allingham and Sandmo applied these assumptions to tax compliance and extended the model by adding tax rate and level of income. The resulting four deterrence factors (audit probability, tax rate, fine rate and level of income) were supposed to explain the decisions of taxpayers, e.g. the higher the fine rate the more compliance (Allingham & Sandmo, 1972). This model helped to better understand taxpayers, but it did not explain the behaviour of all taxpayers. Deviations were observed in experiments as well as in real life, e.g. many people were always fully compliant regardless of the deterrence factors (Alm, McClelland & Schulze, 1992). So, there must be other than economic factors to explain the behaviour of taxpayers. [1]

One factor is that people use heuristics do take decisions in complex situations. Heuristics help them to reduce potential cognitive overload through selecting certain information that seems important. The decision as to which information is important can be strongly influenced by framing. Framing effects occur when the outcomes of the descriptions of a situation are equivalent, but different aspects of a problem are emphasized differently, so people make different decisions. This leads to a violation of the invariance, a central aspect of rationality (Tversky & Kahneman, 1986).

Impressive insights into framing were provided by Kahneman and Tversky (1979) in their studies on Prospect Theory. Among other things, they showed that the positive or negative framing of a problem affects the choice between two alternatives. With a positive framing of the solution alternatives, participants opted for the low-risk alternative and with a negative framing for the high-risk alternative. They concluded that people act risk-averse in a gain-situation and risk-friendly in a loss-situation.

Taxpayers are considered as rational, self-centred individuals in the economic model. Critical to consider is that social factors such as social norms, altruism, fairness and morality, which also play a role in terms of compliance decisions, are not taken into account. Because

[1] Further, I want to mention that I designed and conducted the experiment together with Dennis Morzinek, BSc. So, most of the times when I spoke of, e.g. “I framed…” it refers to the work we did together. We use the same data and have some common hypotheses but differ in setting the foci with respect to perception as well as in our exploratory analyses.

of individual differences in morality, the economic model can never fully explain the compliance decisions of individuals (Alm & Torgler, 2011, Kirchler, Muehlbacher, Kastlunger & Wahl, 2010). Further research on tax morale has shown that people pursue different motives when paying taxes. While some see tax evasion as a kind of game playing, others feel obliged towards society to be compliant. It is assumed that the economic model better explains the behaviour of those who see taxpaying as sort of game playing, but loses validity when taxpayers pursue different motivational postures (Ayres & Braithwaite, 1992; Braithwaite, 2003)

1.1 Framing

40 years ago, David Kahneman and Amos Tversky published a paper titled: "Prospect Theory: An Analysis of Decision under Risk" (Kahneman & Tversky, 1979). The origin of framing research in economics can be attributed to this paper. The framing effect describes that by simply reformulating a problem, people can be moved to a different answer. Thus, a fundamental principle of rational decision making, the invariance is violated. Invariance means that a decision should not be changed when the questions is changed but the hard facts remain the same.

Kahneman and Tversky showed this violation in the "Asian disease problem" (Kahneman & Tversky, 1981). In this experiment participants should imagine that the U.S. are preparing for an outbreak of an Asian disease which could kill 600 people. Then they chose between two programs to combat this disease. *Program A* implied that if it will be adopted 200 people will be saved, whereas *Program B* implied that there is a one-third probability that 600 people will be saved and a two-thirds probability that no one is saved. The wording that people will be saved is interpreted as the gain-condition. 72% chose *Program A* over *B*. In a second condition they framed the consequences of the two programs from amount of people saved to people dying, which is interpreted as the loss-condition. Thus, *Program C* implied that 400 people will die and *Program C* that there is a one-third probability that no one will die and a two-thirds probability that 600 people will die. This time 78% chose *Program D*. Tversky and Kahneman concluded from this experiment that people in a gain-position are risk-averse and those in a loss-position are risk-seeking. A definite win is preferred over the chance of an even higher win and a definite loss is disfavoured to the chance of a lower loss. The findings about the prospect theory earned David Kahneman (together with Vernon L. Smith) the Nobel Prize in Economics in 2002.

To date, many more studies affirming prospect theory have followed in economical science (e.g. Benartzi & Thaler, 1995; Camerer, 2005) and psychology (e.g. Elffers & Hessing, 1997; Schepanski & Shearer, 1995). It established itself as one of the central theories in judgement and decision-making research.

1.1.1 Framing in Tax Experiments

In the context of tax experiments, framing is either used to describe the context and wording (neutral language vs. tax language) or the reference point. In this study, the income values serve as the reference points. While the negative reference point is the gross income, the net income serves as positive reference point. The reference point is the basis from which outcomes are assessed. Framing, understood as a reference point, refers to the prospect theory and therefore an outcome which is expected to be below the reference point is perceived as a loss, while an outcome expected to be over the reference point is perceived as a gain (Kahneman & Tversky, 1979).

Several studies address the withholding-position of taxpayers as gain and loss framing. Taxpayers who are in an under-withholding position have an additional tax due and therefore are in a loss position. Taxpayers who get money back after their tax filling are in an over-withholding position, a gain position. Participants in an over withholding-position tend to be more compliant than those in an under withholding-position (Robben, Webley, Elffers & Hessing, 1990).

Further research dived deeper into the topic by distinguishing between current asset position and expected asset position. Both positions include the current asset position, which describes if too much or too little was withheld for taxpayers. The expected asset position adds or subtracts the anticipated year-settlement amount to the current asset position. Previous research suggested that compliance behaviour can better be explained through the current asset position (Schepanski and Shearer, 1995). Further research showed that this is only partially correct. While the current asset position better describes compliance behaviour of self-employed, the expected asset position better describes the reference point of business entrepreneurs. People in a current asset position are less compliant when they are faced with unexpected payments and those in an expected asset position are less compliant when faced with expected payments (Kirchler and Maciejovsky, 2001). These findings are of interest for the present study because participants are expected to base their decisions on a short-term basis, while filling out tax declaration in the experiment.

Applied on taxes, prospect theory predicts that people in a loss position are more risk seeking and therefore more prone to tax evasion than those in a gain position. Many researchers explain the tendency to take more risks with people try to repair their losses (Kirchler, Maciejovski & Schwarzenberg, 2007). For example, when someone gets caught evading taxes, he or she experiences a financial loss. This loss is then attempted to be repaired by risk seeking behaviour, meaning evading even more taxes.

Another possible explanation for risk seeking behaviour is the misperception of chance. An example illustrating this is the "bomb crater" effect (Mittone, 2006). The name "bomb crater" effect derives from the phenomenon that soldiers in war hid in the craters of recently detonated bombs, since they thought that it is highly unlikely that a bomb would again detonate in the very same sport shortly after the first one. Applied on tax experiments this means that participants show lower compliance immediately after getting audited.

Several authors point out the difference between the use of context-rich language and neutral language in tax experiments (Alm, McLelland and Schulze, 1992; Baldry, 1986; Choo, Fonseca & Myles, 2014; Torgler, 2002). Their studies, however, come to different results. While some found higher compliance rates when context-rich language was used, others found no difference. The present study does not vary language in the experiment, but focuses on gain- and loss-framing. For the present study it is not only of interest to which extend gain- and loss-framing influences compliance behaviour, but also how it influences decisions.

1.2 Tax Morale and Moral Appeals

Paying taxes is a sacrifice that involves immediate, personal consequences – a lower income. On the other hand, it ensures essential funds for society and therefore has a positive effect on the public good. When someone behaves morally, it means that he is guided by his inner conscience as well as by what the outside world expects of him (Lind, 2002). In the context of taxes, to act morally means to act according to personal as well as social norms. Alm and Torgler (2011) showed that compliant taxpayers regard tax evasion as immoral and concluded that presenting moral appeals would enhance compliance. Moral appeals usually point out the importance of paying taxes so that essential services can be made available to the public (Blumenthal, Christian & Slemrod, 2001). At this point it should be mentioned that there are a lot of synonymous terms which describe moral appeals (moral reminders, moral considerations, moral messages, etc.). In the present paper I will use the term moral suasion.

Ayal, Gino, Barkan and Ariely (2015) introduced the REVISE-Framework as a guideline to formulate moral suasion messages. REVISE stands for reminding, visibility and self-engagement. Referring to it, moral suasion has to emphasise the damage and consequences of immoral behaviour, which in the case of taxpaying is non-compliance. Also, highlighting the benefits of tax money is beneficial. The framework also thematises the timing of moral suasion. To increase morality by maintaining a positive self-image a massage prior to tax decisions should be presented. Another message in the middle of the experiment works as a reminder. The REVISE-Framework further suggests peer monitoring as a tool to trigger compliance, which in the present study cannot be implemented since anonymity was guaranteed to participants.

In field experiments the application of moral suasion brought mixed results. Many experiments did not find significant effects of normative appeals (Blumenthal, Christian & Slemrod, 2001; Fellner, Sausgruber & Traxler, 2013; Torgler, 2013) or honesty priming (Kettle, Hernandez, Sanders, Hauser & Ruda, 2017) on reported tax declaration. However, Hallsworth and colleagues reported enhancement in compliance by including social norms and public good messages in tax payment reminder letters (Hallsworth, List, Metcalfe & Vlaev, 2017). A considerable disadvantage of field experiments is the lack of internal validity which is particularly notable in the case of appeals, since it cannot be assured participants even read them. Further, a general point of criticism is the wide variety of appeals and language used in the experiments. While some appeals focused on the negative consequences of tax evasion others pointed out the necessity of taxes. Some appeals used a context-rich language, others a more neutral language.

Tax experiments on moral suasion in laboratory settings are rare. On exception is Dal Bo and Dal Bo (2014). In their study they investigated the influence of different moral suasion messages in voluntary contribution games. The contribution levels of participants who received a moral suasion message were significantly higher than those without a message. Especially successful appeals were the utilitarian, which describes that an action is moral if it maximizes the profit of everyone and the golden rule message, which says that you should treat others the way you would like others to treat you. Their data also showed, that the influence of moral suasion is highest right after it is presented and slowly decreases over time.

As far as my research went, there are several studies dealing with moral suasion in field experiments and a few dealing with moral suasion in public good games. However, there are no studies investigating the influence of moral appeals on tax compliance in traditional

round by round tax experiments (without interaction). Thus, my goal is to close this gap with the present study.

1.3 The Present Study

The first goal of this study is to further investigate the influence of framing on tax compliance behaviour. Based on the findings of prospect theory and the "Asian disease problem" (Kahneman & Tversky, 1981), I created a new design to manipulate the position of taxpayers while declaring their taxes. In comparison to other studies that deal with over and under withholding-position as gain- and loss-position respectively, I framed the gain-position through presenting the net income and the loss-position through presenting the gross income before declaring taxes each round.

Thus, according to the findings of prospect theory I hypothesise that the gain-framing will lead to a higher extent of tax compliance than a loss-framing.

H1: Tax compliance is predicted to differ between the gain- and loss-condition. Participants in the gain-condition are predicted to be more compliant than in the loss-condition.

I used the REVISE-Framework (Ayal, Gino, Barkan & Ariely, 2015) as a guideline to formulate and time the moral suasion in the experiment. According to it, moral suasion messages have to point out either the specific damage and consequence non-compliance has on society or emphasise the benefits and moral importance of tax money. The framework further advises to present moral suasion prior to tax decision to commit people to act morally. Also, a second message in the middle of the experiment works as a reminder.

So, regarding moral suasion I hypothesise that compliance will be higher if a moral suasion is presented and that compliance will rise after the presentation of a suasion.

H2a: Compliance will be higher if a moral suasion is presented to participants.

H2b: Compliance will rise after the presentation of a moral suasion.

I expect the effect of moral suasion to be higher in the gain-condition, since loss-repair is a highly egoistic phenomenon, because it prioritises the own needs over the common needs and therefore moral suasion should have more impact in the gain-condition. Following this, I hypothesise that there will be an interaction effect between framing and moral suasion.

H3: There will be an interaction effect between framing and moral suasion.

Lastly, I want to refer to the perception of framing. Since the reference point in the gain-condition is a lower one compared to the expected outcome after tax and vice versa in the loss-condition, I hypothesise that participants differ in their perception of the position they

are in. Following that, I hypothesise that participants differ in their strategy of paying taxes, as assumed in prospect theory

H4: The perception of participants regarding their position will differ between gain- and loss-condition. More precisely, participants in the gain condition will rather assess themselves in a gain position and in the loss condition will rather assess themselves in a loss position.

H5: Participants will differ in their strategy of paying taxes. More precisely, the strategy of participants in the gain condition will be to maximise their income and in the loss condition to reduce their loss.

2 Methods

2.1 Participants

A total of 220 individuals participated in the online-survey. Three of them did not agree that I use their data and twelve were excluded because they studied psychology (I assume that their knowledge about prospect theory and tax experiments can influence their behaviour). So, the final sample size was $N = 205$. A total of 42.0% of participants were students. The proportion of self-employed was 6.8% and that of the employed 47.3%. The total distribution of Gender was almost equal, with 55.1% female participants, although in one condition nearly two-thirds of participants were female. Most participants said that they already had experience with paying taxes, with only 11.7% saying they had no experience with it at all. The mean age was 30.25 ($SD = 17.60$). Exact distribution of participants and characteristics across the four conditions is provided in Table 1.

Table 1

Demographic data – Gender and age distribution across conditions

					Gender	*Tax experience*	*Age*
Condition	*N*	*Students*	*Self-employed*	*Employed*	*Female*	*M (SD)*	*M (SD)*
Gain & No Moral Suasion	56	44.6%	7.1%	50.0%	50.0%	3.27 (1.21)	30.86 (12.12)
Loss & No Moral Suasion	49	44.9%	8.2%	42.9%	65.3%	2.94 (1.18)	27.27 (20.77)
Loss & Moral Suasion	51	43.1%	2.0%	54.9%	52.9%	3.25 (1.35)	32.25 (11.37)
Gain & Moral Suasion	49	34.7%	10.2%	40.8%	53.1%	3.41 (1.34)	30.35 (23.85)
Total	205	42.0%	6.8%	47.3%	55.1%	3.22 (1.27)	30.25 (17.60)

Note. Tax experience was measured on a 5-point Likert-type scale ranging from 1 = "no experience with paying taxes" to 5 = "very experienced with paying taxes"

2.2 Materials

The present study comprised a mixed design with two between-subject factors (framing: gain, loss; moral suasion: suasion, no suasion) and one within-subject factor (different degrees of deterrence over the course of 12 decision rounds as detailed below). In the first between-subject factor, participants were presented with the net income in the gain condition, where taxes have already been deducted, while in the loss condition, they were presented with the gross income. The loss framing is the most common way tax experiments are conducted. Whether participants were presented with a moral suasion or not defined the second between-subject factor. In the moral suasion condition participants were presented with a first message that emphasises the benefits of taxes for society, like supporting education and health infrastructure right before their initial tax decision. A second message was presented in the middle of the tax game, after round six. This message emphasised the costs for society when people evade taxes. Participants were randomly assigned to one of the four between-subject conditions.

The within-subject factors systematically varied the tax rate, audit rate and fine rate over the course of twelve tax decision rounds. The tax and fine rate consisted of two levels each (20% and 40%; 0.5 and 1.5, respectively) and the audit rate consisted of three levels (5%, 15% and 25%). These within-subject factors were designed so that paying taxes during the experiment is not monotone. Before the first round of the tax experiment these parameters were explained in an information text. After the information text participants had to prove that they understood the parameters by filling out three examples. After that they were shown the correct solution.

In each of the twelve rounds of the tax game participants received a basic income of 1000 ECU (Experimental Currency Units). Additionally, they could earn up to 1000 ECU each round by doing an effort task. The task was to place up to ten markers exactly on the 50% mark of ten sliders of different length within 20 seconds. Above each slider the current percentage was shown (0% - 100%) and the marker could be moved by either dragging or clicking. For each marker at exactly 50% participants earned 100 ECU. Then, if they were in one of the conditions with moral suasion, they were shown the first moral suasion.

Subsequently, they were informed that by going to the next page, the first effort task and thus the actual experiment will start. After the time was over a table was presented that included basic income, additional income, total income and the tax of this round. In the gain condition the table was supplemented by another line, the income after tax. Beneath the table a text informed the participants about the levels of tax rate, fine rate and penalty rate in this

round and further, participants were asked how much tax they want to declare. On the next page they were informed whether they got audited or nor. A table was shown to them with their actual income of this round and in case of detected tax evasion the income was reduced by the additional payment of the evaded tax and the penalty. Afterwards the next round started. This procedure went on for a total of twelve rounds.

Compliance behaviour was measured by calculating the relative tax compliance, which is the amount of tax that was actually paid divided by the amount that should have been paid. Consequent, a relative compliance quotient of 1 means full compliance, whereas a quotient of 0 means full evasion. I then calculated the mean across the twelve rounds for each participant to use it for the analysis.

2.2.1 Post-Experimental Questionnaire

After the last round of the tax game participants were asked to fill out several items regarding the perception of the framing, their tax-paying strategy, morale, a scale on tax commitment, distractions during execution of the study, a manipulation check regarding the lottery, sociodemographic data and a box where they should write in what they thought the purpose of the study was.

To measure the perception of the framing six statements, derived from the main assumptions of prospect theory, where designed which asked on a five-point Likert-type scale to what extend the participants agree with them (from 1 = "completely agree" to 5 = "completely disagree"). The first four items directly asked the participants in which position they perceived themselves during the tax game (e.g. "Paying taxes is a financial loss for me", or "Evading taxes is an increase of profit for me"), two of them asking statements about gain position and two about loss position (they subsequently will be called "gain items" and "loss items"). The other two items ("gain maximisation" and "loss reduce") asked about the strategy (e.g. "My strategy was to maximise my profit") of participants. The target of these questions was to check if the participants actually perceived themselves in a loss or gain situation.

All participants were presented a question whether they thought about the hypothetical moral implications of their decisions during the experiment or not. Those in the moral suasion condition additionally had to fill out two items regarding the perception of the moral suasion, the first asking if they perceived a moral appeal ("yes" or "no") and the second item presented the first moral suasion again and then asked on a five-point Likert-type scale to what extent

they were influenced during the tax game by this message (from 1 = “very strongly” to 5 = “not at all”).

The next section assessed the general attitude towards taxes of the participants. For this purpose, the commitment scale, a subscale, consisting of eight items, of the motivational postures (Braithwaite, 2013) was presented. This scale measures the positive attitude towards tax authorities. Taxpayers with high commitment scores feel morally obligated to contribute to the common good. Statements of this so-called commitment scale were for example “all in all, I like to pay my taxes”. For this scale a five-point Likert-type scale was used (from 1 = “strongly agree” to 5 = “strongly disagree”). The question whether participants thought about the hypothetical moral implications of their decisions during the experiment or not and the motivational postures items served as a manipulation check. The manipulation check measured if the manipulation was perceived, to what extent it influenced participants and if it led to moral considerations of the participants.

Subsequently, two items addressed the circumstances under which the survey was completed to identify possible disruptions and one item served as check-up if the participants understood that the actual income of a round influences the chanc to win in the draw for the vouchers. All of these items had dichotomous answer options (“yes” or “no”).
In the next section I collected socio-demographic data. Participants were asked about their age, gender, job status (“self-employed”, “employed”, “blue collar worker”, “unemployed” or “student”), the extent of their employment (“full-time”, “part-time”, “marginally” or “unemployed”). They also were asked about their experience with paying taxes in the real world on a five-point Likert-type scale, ranging from “none” to “very experienced” and if they had taken part in a tax experiment before (“yes” or “no”). The last three question of the socio-demographic questionnaire measured the understanding of the survey and the attention of the participants (e.g. “Was the text easy to understand for you?”) on a five-point Likert-type scale (from “no, not at all” to “yes, completely”). The last part of the post-experimental questionnaire was an empty box were participants were told to write in what they thought the purpose of the study was.

Prior to the study, information texts were presented to the participants. The first text informed the participants that the purpose of the study was to investigate financial decisions. It also provided information about the estimated duration (30 minutes) of the study, gave a brief overview about the procedure and explained that participation is voluntary, participants are neither exposed to physical nor psychological harm, the experiment could be interrupted without negative consequence and they were guaranteed anonymity. As an incentive,

participants could win one of three vouchers, each worth €20. To take part in the lottery they had to leave an e-mail address at the end of the experiment. After the last round of the tax game one of the twelve rounds was drawn randomly and the income in this round was matched to their e-mail address (if provided) and saved in a separate file to ensure anonymity. The probability of winning was weighted according to the level of income in this round.

In a second information text, participants were asked to do the survey in a quiet surrounding, preferably via PC or laptop. Then they had to assure that they had read all the information and agreed to participate in the study.

2.3 Procedure

The experiment was conducted using the web-based software SoSci Survey (Leiner, 2019). Data was exclusively collected online, between April and June of 2018. Participants were recruited via the website *surveycircle.com* (Jonas Johé, 2019) as well as through friends and family. Participation in the study was only incentivized by taking part in a lottery in which the probability of winning was weighted by the amount of income in a random round. There were no immediate incentives like it is the case in most laboratory experiments. If someone skipped an item of the post-experimental questionnaire a red lettered message appeared that emphasised the importance of answering every question for the study.

Participants were thanked after critical points of the survey (e.g. after the twelfth round of the tax game) to show appreciation and therefore motivate them to fill out the complete survey. They were also asked to remain discreet about the concrete procedure of the study to avoid learning effects among other participants, since personal recruitment carries the risk that the participants know each other.

3 Results

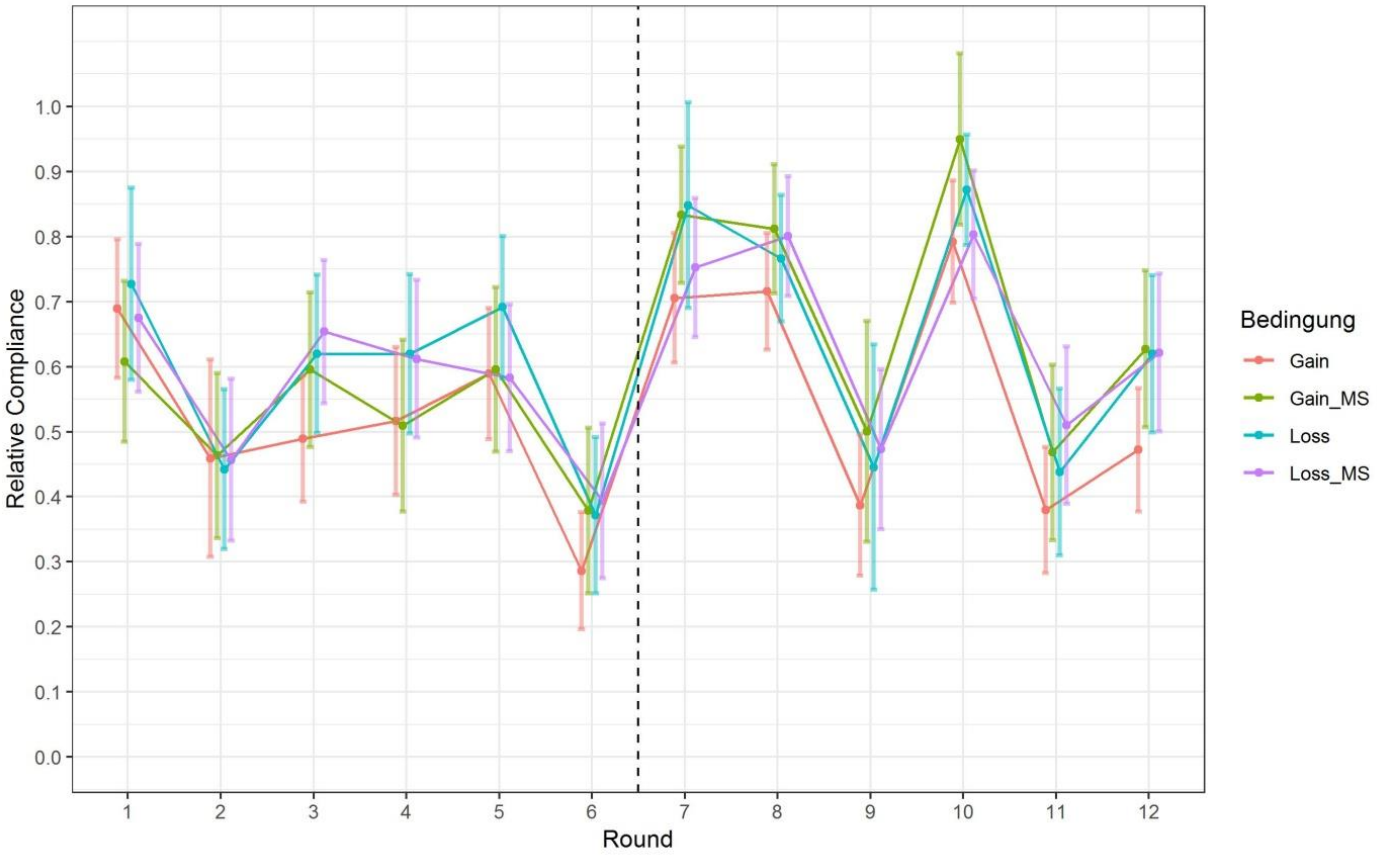
I report the results in three main sections. Firstly, I analyse the effect of framing, moral suasion and their interaction on compliance behaviour. Secondly, I analyse how framing influenced the position in which the participants assessed themselves during the tax game. And thirdly, I further explored the data in the exploratory analyses.

3.1 Analyses of the Effect of Framing, Moral Suasion and Interaction of these Factors on Compliance Behaviour

An overview of the trend of tax compliance across the twelve rounds of the tax game is presented in Figure 1. The visual increase in compliance between round six and round seven of the tax game is to be used with caution since the deterrence factors varied in all rounds. The effects of interest for H1, H2a, H2b and H3 are only the relative distances between the lines which represent the conditions. The variability of compliance over the rounds is just a function of the factors and is not of importance here.

Figure 1

Trend of relative tax compliance in the four conditions across the twelve rounds



Note. The dashed line in the middle represents the time were the second moral suasion was presented to the participants.

To test H1, H2a and H3, I conducted a two-way ANOVA, with the mean of relative compliance across the twelve rounds as dependent variable and framing and moral suasion as independent variables. Framing did not have a significant effect on relative compliance $F(1, 201) = 1.09$, $p = .298$, $\eta p^2 = .005$, there was also no significant effect of moral suasion on relative tax compliance $F(1, 201) = 0.62$, $p = .430$, $\eta p^2 = .003$, and no significant interaction between the two independent variables $F(1, 201) = 0.73$, $p = .393$, $\eta p^2 = .004$. In conclusion, this means that neither framing nor moral suasion had a significant effect on relative compliance and there was no interaction between the two factors. So, the data provided no support for H1, H2a nor H3.

Since the values of the individual rounds are dependent, but the analysis, as mentioned above, measures only the average value over 12 rounds, I additionally ran a linear mixed-effects regression with a random intercept for individuals. The condition with gain framing and moral suasion was dummy coded as the reference group. The results of the mixed-effects

regression are presented in Table 2 and are in line with the results of the previously shown two-way ANOVA. There was neither an effect of framing, nor of moral suasion on compliance and also no interaction between the two factors

Table 1

Linear mixed-effects regression with relative tax compliance as dependent variable

	Relative tax compliance	
	Model 1	
Variables	*B*	*SE*
Intercept	0.54***	0.04
Framing	0.07	0.06
Moral Suasion	0.08	0.06
Framing*Moral Suasion	0.09	0.06
Audit-1	-0.1***	0.02
Random effects	σ^2	
ID	0.29	
Residual	0.31	

Note. N = 205 with 12 repeated measures (2460 observations), the reference group was the gain condition with moral suasion, Audit-1 is dummy coded with 0 = "no audit in the previous round" and 1 = "audit in the previous round".

*p< .05; **p< .01; ***p< .001.

Since there was no overall effect of the moral suasion on compliance, I took a closer look at the reminder. I ran a repeated measures ANOVA to compare the effect of moral suasion on relative tax compliance in round six and seven of the tax game. There was no significant effect of the reminder on tax compliance, Wilks' Λ = .999, $F(2, 200) = 0.12$, p = .73, ηp^2 = .001.These results mean that moral suasion did not lead to an increase in relative compliance. Therefore, H2b cannot be supported. I will take a closer look on the possible explanations of the difference in relative compliance between round six (M = 0.36, SD = 0.41) and seven (M = 0.76, SD = 0.36) in the exploratory analyses.

3.2 Perception of Framing

Before testing H4, I conducted two principal component analyses to see if the gain or loss items, respectively, measured the same construct. For the items one principal component factor was found (eigenvalue = 1.27), accounting for 63.44% of variance, as well as for the loss items (eigenvalue = 1.37), accounting for 68.59% of variance. Therefore, I conclude that the gain and the loss items each measure one construct. Next, I calculated the mean score of the gain and loss items.

To test H4, I conducted a Multivariate ANOVA with the mean scores of the gain and loss items as dependent and framing and moral suasion as independent variables. The results suggested significant differences between the two framing conditions $F(2, 200) = 7.58$, $p < .001$, $\eta p^2 = .07$, and no differences between the moral suasion conditions $F(2, 200) = 0.22$, $p = .81$, $\eta p^2 = .002$, I did not observe an interaction effect $F(2, 200) = 2.22$, $p = .11$, $\eta p^2 = .022$.

Next, I took a look at the mean scores of the perception of framing between the conditions (see Table 3). Participants in the gain condition reported lower scores in the gain items (M = 2.11, SD = 0.91) than in the loss items (M = 2.58, SD = 1.13). The same applied to participants in the loss condition (gain items: M = 2.64, SD = 1.05; loss items: M = 3.08, SD = 1.17). These results are partly contrary to my expectations. This means that participants in both framing conditions rather assessed themselves in a gain than in a loss position. While I expected these results for participants in the gain condition, I did not expect it in the loss condition. In conclusion, this means the data does not support H4. I will take a closer look, especially at the gain and loss items, in the exploratory analysis.

Table 3

Mean scores of gain and loss items, sorted by condition

	Framing	M	SD	N
Gain Items	Gain	2.11	0.91	105
	Loss	2.64	1.05	100
Loss Items	Gain	2.58	1.13	105
	Loss	3.08	1.17	100

Regarding H5, if participants use a different strategy when paying taxes, depending on the condition they are in, I conducted a Multivariate ANOVA with the scores of the profit maximisation item and of the loss reduce item as dependent and framing and moral suasion as independent variables. The results showed no significant differences between gain and loss

framing $F(2, 200) = 0.64$, $p = .53$, $\eta p^2 = .006$, and the moral suasion conditions $F(2, 200) = 1.40$, $p = .25$, $\eta p^2 = .014$, and there was no significant interaction effect $F(2, 200) = 1.77$, $p = .17$, $\eta p^2 = .017$. In summary, contrary to my expectations, neither participants in the gain condition tend to maximise their gain nor in the loss condition tend to reduce their loss respectively. Thus, H5 cannot be supported.

3.3 Exploratory Analysis

I conducted various additional analyses to further explore my data. More specifically, I took a closer look at the self-constructed items for perception of framing, the manipulation check of moral suasion and the deterrence factors

3.3.1 Testing the Self-Constructed Items for Perception of Framing

The principal component analysis prior to testing my fourth hypothesis suggested that the two gain and two loss items, which were constructed to measure the position participants assessed themselves in, each measure one construct. The fact that participants in both framing assessed themselves rather in a gain than in a loss position may indicate that all four items measure the same construct. To test this, I ran a principal component analysis including all four items. The analysis showed one principal component factor for the four items. All items loaded positive on the extracted factor. Its eigenvalue was 2.16, accounting for 53.92% of variance. Taking this into account, these items did not measure two separate factors, gain and loss position, but a common one.

As shown in Table 3, the higher approval of the statements, both in the gain and loss items, of participants in the gain condition hint at an effect of framing on the answers. This led me to analyse if these observed differences were significant. Therefore, I ran a two-way ANOVA with the mean score of all four items as dependent and framing and moral suasion as independent variables. The effect of framing was significant $F(1, 201) = 14.30$, $p < .001$, $\eta p^2 = .066$, while the effect of moral suasion was not $F(1, 201) = 0.43$, $p = .51$, $\eta p^2 = .002$, and there was no significant interaction between framing and moral suasion $F(1, 201) = 0.76$, $p = .38$, $\eta p^2 = .004$.These results indicate that the framing of the experiment influenced the answers of participants. More specifically, gain framing resulted in higher approval for all items, no matter if they measured perceived loss or gain.

3.3.2 Manipulation Check of Moral Suasion

As mentioned in the *Materials* section, I used three items, one of which was shown to all participants, the other two to those who were in the moral suasion condition to see if, and to what extent, moral suasion was perceived. The first manipulation check item asked participants if they were thinking about morality during the study. To check if moral suasion influenced participants answers on the first item, I conducted a logistic regression. The results are presented in Table 4. They show that moral suasion has no effect on participants responses on the first item. This means that participants who were presented with a moral suasion were not more likely to think about moral considerations than that without moral suasion.

Table 4

Logistic Regression with the first manipulation check item (Moral Consideration) as dependent variable

	Moral Consideration	
	Model 3	
Variables	*B*	*SE*
Intercept	-0.25	0.20
Moral Suasion	0.09	0.28

Note. N = 205. Moral Suasion is dummy coded with 0 = "no moral suasion" and 1 = "moral suasion".

*p< .05; **p< .01; ***p< .001.

The second manipulation check item only asked participants in the moral suasion condition whether they noticed a moral suasion message or not (answer options were again "yes" and "no"). Out of the one hundred participants who were in the moral suasion condition, a total of 69% said they had perceived a moral suasion message. The last manipulation check item also only asked participants in the moral suasion condition to what extent they felt influenced by the moral suasion message, while one of the two messages was presented to them. The mean score hereby was 3.31 and the standard deviation 1.23. Participants who perceived the moral suasion message showed slightly lower scores (M = 3.16, SD = 1.23) than those who did not (M = 3.65, SD = 1.17).

In summary, the results of the manipulation checks indicate that the moral suasion messages did not work as strongly as one would expect from an experimental manipulation. It did not lead to more thinking about morality. Also, the fact that only 69% of the participants

who were presented with a message perceived moral suasion also speaks against successful manipulation.

Considering the results of the three self-constructed items, I tested if moral suasion led to a higher moral activation. I assumed that a higher activation will lead to a higher commitment towards paying taxes. For this purpose, I computed the mean scores of the eight motivational posture items (Braithwaite, 2013) and ran a two-way ANOVA with the mean scores as dependent and framing and moral suasion as independent variables. The analysis showed no significant effect of framing $F(1, 201) = 2.43$, $p = .12$, $\eta p^2 = .013$, and no effect of moral suasion $F(1, 201) = 3.74$, $p = .05$, $\eta p^2 = .018$ on moral activation, and there was no interaction effect $F(1, 201) = 1.27$, $p = .26$, $\eta p^2 = .006$. This means that although the results for moral suasion were on the verge of significance, I cannot assume that moral suasion led to higher moral activation.

Further, I tested if reading the morals suasion messages carefully, had an effect on the moral activation. Therefore, I assumed that the more time participants spent on the pages of the survey where moral suasion was presented, the higher their moral activation should be. To test this, I conducted a linear regression with the mean score of the motivational posture items as dependent variable and time spent on the pages with moral suasion as independent variables. The results of the linear regression are presented in Table 5. They showed that time spent on the site of the first moral suasion message influenced the means score of the motivational posture items, while time spent on the site of the second message did not. This means, that the first moral suasion message, where benefits of paying taxes was highlighted, had an effect on the participants moral activation.

Table 5

Linear regression with the mean score of the motivational posture items (Moral Activation) as dependent variable

	Moral Activation	
	Model 4	
Variables	*B*	*SE*
Intercept	3.53***	0.15
Time spent on page 13	0.21*	0.01
Time spent on page 62	0.07	0.03

Note. N = 205. The values of Time spent on page 13 and Time spent on page 62 are equivalent to the seconds spent on the pages.
*p< .05; **p< .01; ***p< .001.

3.3.3 Deterrence Factors

As shown in Table 2, whether participants got audited or not had a significant influence on relative compliance in the following round. More precisely, participants were less compliant after getting audited. These findings support the assumption that there is a "bomb crater" effect. Therefore, it is of interest to me if the other deterrence factors also influenced compliance behaviour. To test this, I ran a linear mixed-effects regression with a random intercept for individuals and included all deterrence factors as additional predictor variables. The dependent variable was relative tax compliance. Because audit rate consisted of three levels, it was dummy coded with *Audit Rate 1* and *Audit Rate 2* with audit rate of 15% as reference category.

The results are presented in Table 6. The results showed that there was still no significant effect of framing or moral suasion on relative compliance and also no interaction between them. Interestingly, the previously observed "bomb crater" effect can no longer be supported, when deterrence factors were included into the model. All deterrence factors had a significant effect on relative compliance. While the increase of tax rate had a negative effect, the increase of audit levels and fine rate had a positive effect. These results suggest that participants decisions were primarily influenced by the deterrence factors. While an increase in tax rate from 20% to 40% led to less compliance, an increase of audit rate or fine rate led to more compliance.

Table 6

Linear mixed-effects regression with relative compliance as dependent variable

	Relative tax compliance	
	Model 2	
Variables	*B*	*SE*
Intercept	0.34***	0.04
Framing	0.06	0.06
Moral Suasion	0.07	0.06
Framing*Moral Suasion	0.09	0.06

Audit-1	-0.1	0.02
Tax Rate	-0.06***	0.01
Audit Rate 1	0.20***	0.01
Audit Rate 2	0.30***	0.01
Fine Rate	0.11***	0.01
Random effects	σ^2	
ID	0.29	
Residual	0.26	

Note. N = 205 with 12 repeated measures (2460 observations), the gain with moral suasion condition served as the reference group, Audit-1 is dummy coded with 0 = "no audit in the previous round" and 1 = "audit in the previous round", Tax Rate was coded with 0 = "20%" and 1 = "40%", Audit Rate 1 was coded with 0 = "5%" and 1 = "15%", Audit Rate 2 was coded with 0 = "5%" and 1 = "25%", Fine Rate was coded with 0 = "0.5" and 1 = "1.5". *p< .05; **p< .01; ***p< .001

4 Discussion

The main goal of the present master's thesis was to investigate the influence framing and moral suasion have on tax compliance behaviour. In the context of this study, I also investigated the perception of the framing. My confirmatory analyses suggest that both framing and moral suasion do not influence tax compliance behaviour (H1, H2a) and they do not interact (H3). Tax compliance behaviour also does not increase right after the presentation of a moral suasion (H2b). Further, participants neither assessed themselves in the position I expected them to be (H4), nor did they follow different strategies in paying taxes (H5).

I could not support H1 because I did not find an effect of framing on tax compliance behaviour. This is contrary to the literature, which is united regarding the effect (Kirchler & Maciejovsky, 2001; Robben, Webley, Elffers & Hessing, 1990; Schepanski & Shearer, 1995). The difference to previous research could derive from the different reference point I used by framing the gain and loss position. While e.g. Schepanski and Shearer (1995) used the withholding position as a reference point, I focused the framing on net and gross income. So, I conclude that the withholding position is the better method to evoke tax compliance behaviour as predicted in prospect theory than the income.

The result of the exploratory analysis, more precisely of the linear mixed-regression including the deterrence variables as predictors, contributes to a better understanding why framing did not work as expected. Audit probabilities, tax rates and fine rates were all highly significant predictors for tax compliance and could therefore dominate the decision-making process of participants. Support for this assumption is provided in previous studies that found out that the clearest effects on tax compliance derive from deterrence factors (Muehlbacher & Kirchler, 2016). Therefore, I conclude that the effects of framing were superimposed by the effects of deterrence variables. As a result, effects of framing diminished and could not be observed in compliance behaviour of the participants.

Regarding H2a the results do not show that moral suasion has an effect on tax compliance behaviour, like Alm and Torgler (2011) assumed and Hallsworth and colleagues (2017) later showed in their study. Other authors however, predicted this outcome (Blumenthal, Christian & Slemrod, 2001; Fellner, Sausgruber & Traxler, 2013; Torgler, 2018). Two essential factors, and thus possible explanations for the different results, are, on the one hand, the different methods of moral suasion and, on the other hand, the nature of the experiment (field vs. laboratory). Thus, I conclude that moral suasion focusing on social

norms, as the REVISE-framework suggests, is not able to reproduce the same results golden rule and utilitarian messages show in laboratory experiments.

My results suggest that participants do not show higher compliance behaviour right after a moral suasion. This is contrary to the effect I expected in H2b and Dal Bo and Dal Bo (2014) found in their study. Again, I have to point out the different kind of moral suasion used in the two experiments. Therefore, I conclude that moral suasion based on social norms not only has no consistent effect on tax compliance behaviour, but also has no short-term effect.

H3 cannot be supported because the results of the logistic regression showed no effect of the reminder on tax compliance. Thus, I conclude that the reminder at least has no immediate effect on tax compliance. This finding also is contrary to the effects reported by Dal Bo and Dal Bo (2014) and as well does not support the suggestion of the REVISE framework to use a reminder in the middle of the experiment. A possible explanation for this is that the reminder highlighted the downfalls of tax evasion which might not lead to a moral activation. But since I did not observe a total effect of moral suasion this is only a vague assumption.

Looking at the results of the hypotheses on moral suasion (H2a, H2b and H3), it can be said that there has been no effect of moral suasion messages on tax compliance. In the exploratory analysis, I considered more closely how these results are consistent with the assumption that moral sentiments play an important role in tax compliance (Alm & Torgler, 2011).

Firstly, it is of importance that the moral suasion messages lead to a higher moral activation of participants. The analysis of the mean scores of moral activation showed a just not significant effect of $p = .05$ but a small effect size of $\eta p^2 = .018$ ($d = 0.27$). So, there is a hint that the presentation of the moral suasion message led to higher moral activation of the participants. That at least partially supports the assumption that presenting social norms is a suitable tool to promote morality (Ayal, Gino, Barkan & Ariely, 2015). Further support derives from the results of the linear regression. They showed, that the more time participants spent on the page of the first moral suasion message, the higher their moral activation was. This was not the case with the reminder message. The two messages differed in their emphasis on the pros and cons of tax compliance and tax evasion, respectively. From this I conclude that emphasising the benefits of compliance is a more appropriate tool for moral activation than emphasising the downfalls of evasion. Therefore, I suggest that future research should focus on the benefits of compliance in morals suasion messages.

Secondly, even if the moral activation was successful it did not influence tax compliance behaviour in the experiment. A possible explanation for this is the dominance of the deterrence variables in decision-making, as shown in the exploratory analysis. As mentioned above previous research supports this by stating that the clearest effects on tax compliance derive from audit probabilities, fine rates and tax rates (Muehlbacher & Kirchler, 2016). The conclusions I draw from it are analogous to the ones I drew in framing and the deterrence variables: the anticipated effects of moral suasion messages based on social norms were superimposed by the effects of deterrence variables. Therefore, effects of moral suasion diminished and could not be observed in compliance behaviour anymore.

Further, the results did not support H4. Indeed, participants in the gain condition assessed themselves rather in a gain than a loss position, but the same applied to participants in the loss condition. Regardless of the framing condition they were in, they assessed themselves in a gain position. This means that framing through presentation of income did not lead to different position of participants. Presumably this means that the subtle differences in numerical presentation as a manipulation is put in the background by the context-richness of the experiment. The impact of context-rich language on decision behaviour was pointed out by several authors (Alm, McLelland & Schulze, 1992; Baldry, 1986; Choo, Fonseca & Myles, 2014; Torgler, 2002). Since the present study does not vary between context-rich and neutral language I cannot support this assumption with data, but it would be an interesting approach for future studies.

A further point of critique is the result of the confirmatory factor analysis of the four items that should measure perceived gain and loss position of participants. It showed that all four items loaded positively on one common factor which was accounting for 53.92% of variance. This means that the four items were not suitable to assess the perceived position as it was anticipated.

H5 dealt with the strategy of participants. I assumed that presenting the net income as an anchor would lead to risk aversion and therefore that those in the gain condition would rather say that evasion would maximise their profit than minimising their losses. This assumption could not be supported with the data which is contrary to the literature (Maciejovski, Kirchler & Schwarzenberg, 2007). An explanation for this may be that the answer to the question whether evasion would maximise their gain or minimise their loss was a rather hypothetical one for participants who were compliant. As a result, I think the question was only meaningful to those who did evade at some point of the tax game and not for those who were fully compliant.

An explanation why the framing manipulation did not work, is that it may be too subtle and therefore overshadowed by other effects, such as deterrence variables and context-rich language. Also, through just presenting net and gross income participants did not experience an immediate financial loss, as it is the case for example during detected tax evasion. In conclusion, presenting net and gross income is not a suitable tool to manipulate gain and loss position.

All in all, I could not support the assumption that framing, moral suasion or the interaction of both has an effect on tax compliance. The only effects on tax compliance were from the deterrence variables, which is in line with the literature. It can further be said, that participants rather perceived themselves in a gain than in a loss position which could be explained by the context-rich language used in the experiment.

4.1 Limitations

A large part of the sample consisted of people who participated in the study via *surveycircle.com*. On this website people can promote their own study by participating in studies of others. One consequence of this is that some want to get through studies sooner rather than read everything carefully, which especially in the case of moral suasion messages is a downfall. Because of this, the data quality might be lower than hoped. A further limitation of this study is the lack of immediate incentives. Participants had the opportunity to participate in a lottery where their chance of winning was weighted on the income in a random round. There was thus no direct correlation between the income in the tax game and the amount of the incentive. Alm (1991) stated that incentives should be connected to behaviour and compensate adequately for time and effort invested in the study. None of these conditions could be met by the lottery. Incentivised studies show less variability in the data, and would therefore contribute to higher data quality (Hertwig & Ortmann, 2001).

Another limitation of this study is that the classic tax game runs without any interaction between participants. The moral suasion messages both based on social norms, but there were no social consequences for the participants if they did not behave according to social norms. When a participant evaded taxes, no other participant had any disadvantages from his behaviour. Also, participants did not have advantages when others behaved compliant. The moral considerations of the participants during the tax game were therefore rather hypothetical.

The survey was conducted online, which can cause confounding factors. There was no control over participants being distracted while completing the survey. There was the

possibility that participants were disturbed by circumstances that would not have occurred or at least were largely controlled in a laboratory experiment.

A power analysis conducted prior to the start of the study suggested a sample size of around 270 participants. This means each condition is about 15 participants short of the suggested size. That is also a possible explanation why I could not find significant many significant effects. Specifically, the analysis of the moral activation, which had a *p*-value of .05, would probably be significant with a larger sample size.

4.2 Strengths of the Study

Nevertheless, a total sample size of 205 participants is quite large compared to other studies. A large sample size leads to a more precise assessment of mean values and prevents distortions in statistical analyses caused by outliers.

Another strength of the study is the balanced age and gender structure of the sample. As shown in literature age influences risk behaviour - older participants show higher risk aversion (Wartick, Madeo & Vines ,1999). Also, it is shown that gender influences compliance behaviour insofar as women show higher compliance rates (Kastlunger, Dressler, Kirchler, Mittone & Voracek, 2010). The balanced distribution of age and gender therefore prevents potential distortions of the data.

Additionally, the sizes of the groups were well balanced (the smallest group consisted of 49 and the biggest of 56 participants). Unequal group sizes can lead to unequal variances between groups which negatively effects statistical power (Rusticus & Lovato, 2014). This means that the balanced size of groups contributed to a maximisation of statistical power.

4.3 Future Research

If in future online surveys participants are also recruited via websites such as *surveycircle.com*, participants recruited by different methods should be compared. This can help to find out if people who participate in a study via websites mentioned above provide quality data. Also, it should be assured that participants read through the moral suasion messages carefully. This could be accomplished, for example, by programming a timer on the page with the moral suasion. This timer would allow participants to click on the continue button only after a certain time.

In studies where moral suasion is also based on social norms, it is advisable to perform a public good game instead of a tax game without interaction. The social and financial interactions and therefore the positive and negative consequences of compliance and evasion

would provide a more realistic scenario. Participants would be reminded more often of the social norms and therefore social norms would have a greater impact on tax compliance behaviour.

As mentioned before, it would be interesting for further studies to vary framing both in terms of reference point and language. This can lead to a better understanding of the different types of framing and also show possible interactions of framing types.

4.4 Conclusion

The present master's thesis investigates the effects of framing and moral suasion on tax compliance behaviour. Contrary to most of the literature my data could not support the assumptions that framing and moral suasion effect tax compliance. However, the study has shown some interesting results, such as the fact that regardless of framing the participants rather assessed themselves in a gain than in a loss position. Additionally, it is interesting that the data hints at a small effect of moral suasion on moral activation, but this higher moral activation did not manifest in more compliant behaviour. The understanding of the effects of framing and moral suasion is of great importance to the authorities and subsequently to society as a whole. One important finding that authorities can draw from this study is that when moral appeals are based on social norms, they should emphasise the benefits of compliance rather than the downsides of evasion. In conclusion, tax compliance is a very complex process that is influenced by many factors. Any slightest insight can help to better understand the factors that affect compliance and thus can help the authorities to develop a beneficial tax system for society.

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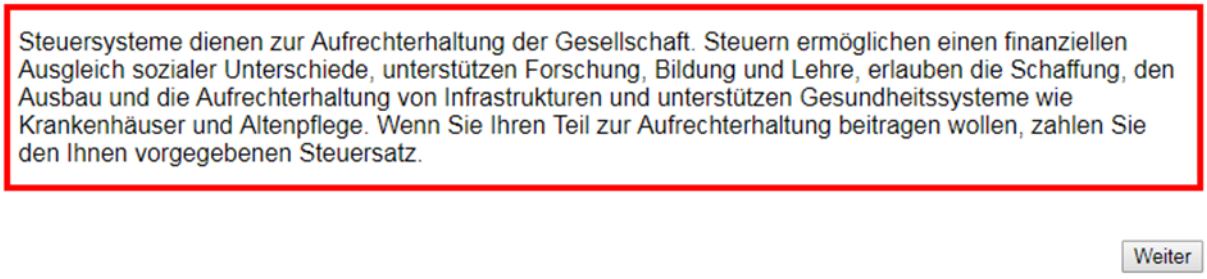
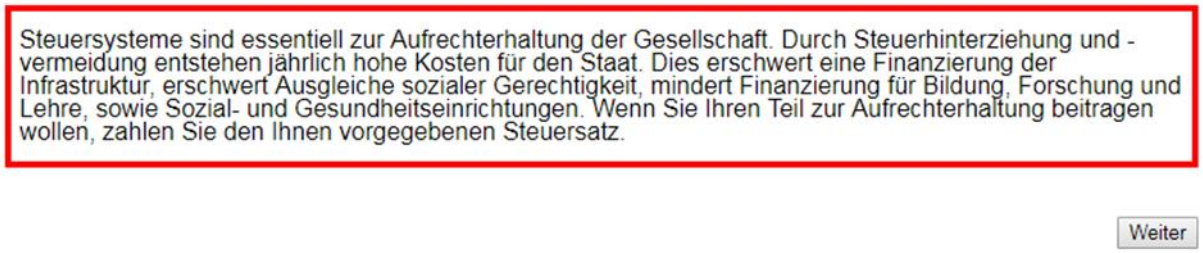
Appendices

Appendix A

Moral suasion before the tax game



Moral suasion in the middle of the tax game



Appendix B

Decision pages in the gain and loss condition

Einkommen in Runde 1

Basiseinkommen:	**1000 ECU**
Einkommen Slider-Task (5 richtig):	**+ 500 ECU**
Einkommen vor Steuern:	**= 1500 ECU**
Steuer (20%):	- 300 ECU
Einkommen nach Zahlen aller Steuern (20%):	**1200 ECU**

Nach Steuerabgaben ist ihr Verdienst in dieser Runde 1200 ECU.

Die Steuerabgabe in dieser Runde beträgt 300 ECU (**20%** Ihres Einkommens).
Die Wahrscheinlichkeit in dieser Runde geprüft zu werden liegt bei **25%**. Falls Sie Steuern einbehalten und geprüft werden, müssen Sie die einbehaltenen Steuern zurück zahlen plus eine Strafe von **0.5** mal dem einbehaltenen Betrag.
Bitte geben Sie an wie viel Steuern Sie zahlen wollen.

ECU

Weiter

Einkommen in Runde 1

Basiseinkommen:	**1000 ECU**
Einkommen Slider-Task (5 richtig):	**+ 500 ECU**
Einkommen vor Steuern:	**= 1500 ECU**
Steuer (20%):	- 300 ECU

Vor Steuerabgaben ist ihr Verdienst in dieser Runde 1500 ECU.

Die Steuerabgabe in dieser Runde beträgt 300 ECU (**20%** Ihres Einkommens).
Die Wahrscheinlichkeit in dieser Runde geprüft zu werden liegt bei **25%**. Falls Sie Steuern einbehalten und geprüft werden, müssen Sie die einbehaltenen Steuern zurück zahlen plus eine Strafe von **0.5** mal dem einbehaltenen Betrag.
Bitte geben Sie an wie viel Steuern Sie zahlen wollen.

ECU

Weiter

Appendix C

Introductions to the experiment

Sehr geehrte/r Teilnehmer/in,

vielen Dank für Ihre Teilnahme an dieser Studie. Die Studie untersucht finanzielle Entscheidungen und wird ca. 30 Minuten lang dauern. Im Gegenzug erhalten Sie die Möglichkeit einen Gutschein zu gewinnen.

Die Studie besteht aus 10 bis 15 Spielrunden. Jede Runde beginnt mit einer Aufgabe, in der Sie in Abhängigkeit Ihrer Leistung ein Einkommen bekommen. Danach erhalten Sie Informationen über das Zahlen von Steuern und müssen entscheiden wie viel Steuern Sie zahlen.

Die Teilnahme an der Studie ist freiwillig. Sie haben das Recht die Teilnahme zu verweigern oder die Studie abzubrechen, sobald Sie begonnen haben, ohne negative Konsequenzen und ohne sich dafür rechtfertigen zu müssen. Die gewonnenen Daten werden vertraulich und anonym behandelt. Die Teilnahme an dieser Studie birgt keine psychischen oder physischen Gefahren in sich.

Danke im Voraus für die Teilnahme an dieser Studie!

Weiter

Wir bitten Sie die Studie in einer möglichst ruhigen Umgebung durchzuführen. Des Weiteren ist die Studie für PC bzw. Laptop Browser optimiert, weshalb es bei der Nutzung auf anderen Geräten zu einer veränderten Darstellung kommen kann.

Weiter

Hiermit bestätige ich, dass ich alle Informationen gelesen habe.

Ich weiß, dass die Teilnahme freiwillig ist und ich das Recht habe die Teilnahme zu verweigern oder die Studie abzubrechen. Die Informationen werden dabei anonym behandelt. Wichtig ist uns dabei Ihre Meinung, es gibt also keine richtigen oder falschen Antworten.

Ich erlaube Ihnen mit den gewonnen Daten zu arbeiten und sie für 10 Jahre zu speichern.

Hiermit bestätige ich, dass ich an dieser Studie teilnehmen will:

- ○ Ja, ich bestätige und will an dieser Studie teilnehmen.
- ○ Nein, ich will nicht teilnehmen.

Weiter

Diese Studie befasst sich mit finanziellen Entscheidungen.

Die folgende Situation ist die Ausgangssitiuation:

Sie erhalten jede Runde ein **Basiseinkommen von 1000 ECU** (Experimental Currency Units). Außerdem können Sie jede Runde ein **zusätzliches Einkommen** von bis zu **1000 ECU** verdienen. Dies hängt von Ihrer Leistung in einer einfachen Aufgabe ab (Erklärung folgt noch). Ihr maximales Einkommen pro Runde beträgt **2000 ECU.** Anschließend sollen Sie Ihre Steuern zahlen.

Der **Steuersatz** , die Wahrscheinlichkeit einer **Steuerprüfung** und das **Strafausmaß** bei Hinterziehung wird in jeder Runde **variieren**. Lesen Sie deswegen bitte sorgfältig alle Informationen.

Definitionen:

Steuersatz ist der prozentuelle Anteil Ihres Einkommens, welchen Sie als Steuer zahlen müssen.

Eine **Steuerprüfung** findet statt um herauszufinden, ob Sie Ihre Steuern in voller Höhe gezahlt haben. Die Wahrscheinlichkeit geprüft zu werden wird prozentuell angegeben. Wenn Sie Ihre Steuern nicht in voller Höhe zahlen und dabei erwischt werden, müssen Sie den fehlenden Betrag plus eine Strafe (siehe unten) zurückzahlen.

Das **Strafausmaß** beschreibt wie viel Sie zahlen müssen, wenn Sie nicht ihre gesamten Steuern gezahlt haben und geprüft wurden.

Weiter

Um ein **zusätzliches Einkommen** zu verdienen werden Sie jede Runde eine Aufgabe, den Slider-Task, ausführen.

Sie werden 10 Slider und einen Timer mit 20 Sekunden sehen. Ihre Aufgabe ist es jeden Slider **exakt in der Mitte** bei **50%** zu platzieren. Sie erhalten **100 ECU** für jeden korrekt platzierten Slider.

Bitte beachten Sie, dass Sie nur dann ein zusätzliches Einkommen erhalten wenn der Slider **exakt** bei 50% platziert ist. Ist er, zum Beispiel bei 49%, bekommen Sie kein zusätzliches Einkommen. Es ist kein Unterschied ob der Slider bei 49% oder 0% platziert ist, beide Szenarien werden als nicht richtig bewertet.

Auf dieser Seite finden Sie einen Probe-Slider. Platzieren Sie ihn bei 50% und klicken Sie auf 'weiter'.

Achtung: Es ist nicht notwendig den Slider zu ziehen. Sie können ihn direkt per Mausklick platzieren.

Weiter

Teilnahmevergütung

Unter allen Teilnehmenden dieser Studie werden 3 x 20 Euro **Gutscheine** eines Anbieters ihrer Wahl verlost. Ihre **Gewinnwahrscheinlichkeit** hängt allerdings davon ab, wie viel **Nettoeinkommen** Sie in den kommenden Runden verdienen. Dafür wird **eine Runde zufällig gezogen** und Ihre Nettoeinkommen dient als Gewichtung in der Verlosung der Gutscheine. Das bedeutet, dass Sie Ihre Gewinnchancen erhöhen können, indem Sie möglichst viel ECU pro Runde verdienen. Sie können Ihr Nettoeinkommen erhöhen indem Sie im Slider-Task viel Zusatzeinkommen generieren und gegebenenfalls Steuern hinterziehen.

Wenn Sie die Studie **vorzeitig abbrechen**, können wir Sie nicht für die Teilnahme entschädigen.

Weiter

Bitte bearbeiten Sie die folgende Aufgabe zur Überprüfung des Verständnisses:

Beispiel 1

Ihr Basiseinkommen beträgt 1000 ECU, zusätzlich verdienen Sie 800 ECU. Ihr Einkommen vor Steuern beträgt 1800 ECU. Der Steuersatz liegt bei 40%, bezogen auf Ihr Einkommen also 720 ECU. Sie zahlen die kompletten 720 ECU der vorgeschriebenen Steuer und es findet keine Prüfung statt.

Wie groß ist Ihr Gesamteinkommen nach dieser Runde?

Beispiel 2

Ihr Basiseinkommen beträgt 1000 ECU, zusätzlich verdienen Sie 900 ECU. Ihr Einkommen vor Steuern beträgt 1900 ECU. Der Steuersatz liegt bei 20%, bezogen auf Ihr Einkommen also 380 ECU. Sie zahlen 100 ECU der vorgeschriebenen Steuer und es findet keine Prüfung statt.

Wie groß ist Ihr Gesamteinkommen nach dieser Runde?

Beispiel 3

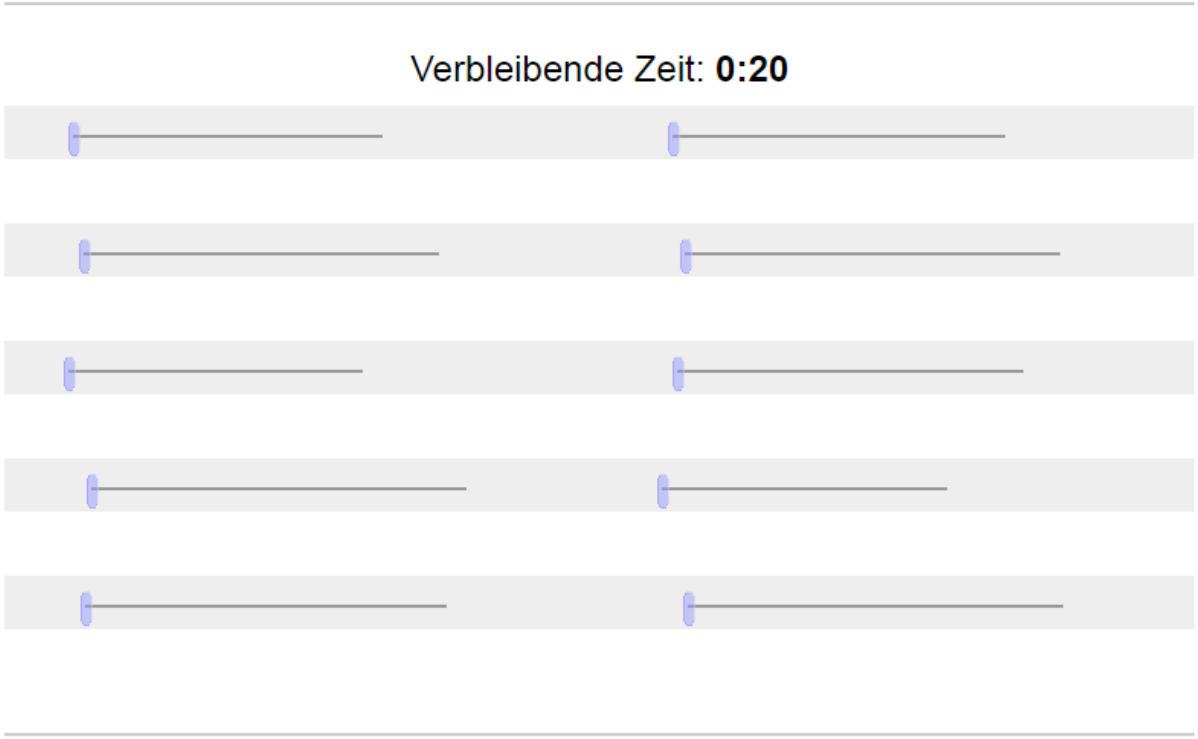
Ihr Basiseinkommen beträgt 1000 ECU, zusätzlich verdienen Sie 700 ECU. Ihr Einkommen vor Steuern beträgt somit 1700 ECU. Der Steuersatz liegt bei 40%, bezogen auf Ihr Einkommen also 680 ECU. Sie zahlen 280 ECU der vorgeschriebenen Steuer. Eine Prüfung findet statt und Sie müssen die Fehlenden 400 ECU nachzahlen, sowie 200 ECU (bei einem Strafmaß von 0.5).

Wie groß ist Ihr Gesamteinkommen nach dieser Runde?

Weiter

Appendix D

Effort-task (slider-task)



Appendix E

Feedback phase with feedback for no audit, detected tax evasion and audit when taxes were paid completely

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Sie wurden **nicht geprüft**.

Einkommen Runde 1 nach Steuerabgaben:

Basiseinkommen:	**1000 ECU**
Einkommen Slider-Task (0 richtig):	**+ 0 ECU**
Einkommen vor Steuern:	**= 1000 ECU**
Steuern gezahlt (Steuer Satz: 20% = 200 ECU):	- 0 ECU
Nettoeinkommen Runde 1:	**= 1000 ECU**

Weiter

Sie wurden **geprüft**.
'Die Prüfung hat ergeben, dass Sie zu wenig Steuern gezahlt haben.

Einkommen in Runde 1 nach Steuerabgaben:

Basiseinkommen:	**1000 ECU**
Einkommen Slider-Task (5 richtig):	**+ 500 ECU**
Einkommen vor Steuern:	**= 1500 ECU**
Steuern gezahlt (Steuer Satz: 20% = 300 ECU):	- 0 ECU
Nachzahlung der hinterzogenen Steuer:	- 300 ECU
Strafe:	- 150 ECU
Nettoeinkommen Runde 1:	**= 750 ECU**

Weiter

Sie wurden **geprüft**.
Laut Prüfung haben Sie den kompletten Steuersatz gezahlt

Einkommen in Runde 3 nach Steuerabgaben.

Basis Einkommen:	**1000 ECU**
Einkommen Slider-Task (6 richtig):	**+ 600 ECU**
Einkommen vor Steuern:	**= 1600 ECU**
Steuern gezahlt (Steuer Satz: 40% = 640 ECU):	- 640 ECU
Strafe:	- 0 ECU
Nettoeinkommen Runde 3:	**= 960 ECU**

Weiter

Appendix F

Items regarding perceived position, strategy, moral considerations and motivational postures (Braithwaite, 2003)

Bitte denken Sie an den Verlauf der Studie und geben Sie an wie sehr die folgenden Aussagen für Sie zutreffend sind.

	stimme zu				stimme nicht zu
Das Zahlen von Steuern ist für mich ein finanzieller Verlust.	○	○	○	○	○
Das Zahlen von Steuern ist für mich eine Reduktion meines Einkommens.	○	○	○	○	○
Die Hinterziehung von Steuern ist für mich eine Reduktion des Verlustes.	○	○	○	○	○
Die Hinterziehung von Steuern ist für mich eine Erhöhung des Gewinns.	○	○	○	○	○

Weiter

Mein Ziel beim Zahlen der Steuern war...

	stimme zu				stimme nicht zu
...ehrlich zu sein.	○	○	○	○	○
...meinen Verlust zu minimieren.	○	○	○	○	○
...meinen Gewinn zu maximieren.	○	○	○	○	○

Weiter

Haben Sie während der Studie über Ihre Moralvorstellungen nachgedacht?

- ○ Ja
- ○ Nein

Weiter

Bitte geben Sie an, inwiefern Sie den folgenden Aussagen zustimmen.

	Trifft gar nicht zu	Trifft eher nicht zu	Trifft mehr oder weniger zu	Trifft eher zu	Trifft absolut zu
Es gehört sich, seine Steuern zu bezahlen.	○	○	○	○	○
Steuern zu bezahlen ist eine Verantwortung, die von allen BürgerInnen gerne akzeptiert werden sollte.	○	○	○	○	○
Ich fühle mich moralisch verpflichtet, meine Steuern zu bezahlen.	○	○	○	○	○
Wenn ich meine Steuern bezahle, nützt das letztendlich Allen.	○	○	○	○	○
Steuern zahlen hilft der Regierung sinnvolle Dinge zu tun.	○	○	○	○	○
Alles in allem zahle ich gerne meine Steuern.	○	○	○	○	○
Ich ärgere mich, meine Steuern zahlen zu müssen.	○	○	○	○	○
Ich sehe es als meine Verantwortung, meinen Steueranteil zu bezahlen.	○	○	○	○	○

Weiter

Appendix G

Sociodemographics

Wie alt sind Sie?

Jahre

Bitte geben Sie Ihr Geschlecht an:

- Männlich
- Weiblich

Was ist ihr derzeitiger Status? (mehrere Antworten möglich)

- Selbstständig
- Angestellte/r
- Arbeiter/in
- Nicht erwerbstätig
- Student/in

In welchem Ausmaß sind Sie beschäftigt?

- Vollzeit
- Teilzeit
- Geringfügig
- Nicht erwerbstätig

Falls Sie angegeben haben zu Studieren, was studieren Sie?

	Keine				Sehr viel
Wie viel Erfahrung haben Sie mit dem Zahlen von Steuern in der realen Welt?	○	○	○	○	○

Haben Sie zuvor schon einmal an einer Studie zu Steuern teilgenommen?

- Ja
- Nein

	Nein, gar nicht					Ja, vollständig
Haben Sie sorgfältig alle Informationen, die Ihnen im Laufe des Fragebogens gegeben wurden durchgelesen?	○	○	○	○	○	
Haben Sie alle Informationen verstanden?	○	○	○	○	○	
War der Text für Sie gut verständlich?	○	○	○	○	○	

Weiter