

JULIA PITTERS, THOMAS OBERLECHNER

TRUST IN THE STATE AND TAX COMPLIANCE: DO PRIMING EFFECTS MATTER?

Tax behaviour has been widely studied in psychology and economics. Linking both perspectives, the “slippery slope” model identifies trust as the key predictor of whether taxes are paid voluntarily or whether they need to be enforced by audits and fines. Conducted with a sample of 240 online participants, the present study investigates whether trust in the state can be induced by various priming methods and whether primed trust influences voluntary tax compliance. Mindset priming increased trust in the state and led to more positive associations towards taxes. These results support the role of trust in the state proposed by the slippery slope model and may help develop strategies to improve tax compliance.

Key words: trust, priming, tax compliance, tax behaviour

1. INTRODUCTION

1.1 Tax Behavior and Trust

Numerous economic and psychological studies deal with tax behaviour and with techniques to increase tax compliance (e.g. Braithwaite, 2009; Kastlunger, Mittone, Kirchler & Pitters, 2008; Kirchler, 2007; Mittone, 2006; Torgler & Schneider, 2005). Whereas economic approaches consider tax behaviour as a rational decision which is based on audit probability and severity of fines (Allingham & Sandmo, 1974; Srinivasan, 1973), psychological studies explain tax behaviour by social representations of taxes which, in turn, are based on knowledge, fairness perceptions, norms, and morality. For example, a representative survey of the German population in July 2010 showed that a majority of the population was against tax reductions and that more than two thirds of persons with a monthly income above 3000 Euros did not support tax relief for their own group (Infratest dimap, 2010). This indicates that taxpayers do not necessarily base tax-related attitudes and decision-making on economic rationality by egoistically weighting their own benefits and costs.

Highlighting the importance of trust in tax behavior, a recent review (Kirchler 2007; see also Kirchler, Hoelzl & Wahl, 2008) integrates economic and psychological perspectives into the so-called “slippery slope” model. The model differentiates between two different motives of taxpayers to comply. Either taxpayers comply because they calculate the costs of being audited and fined after tax evasion as too high or taxpayers comply because they feel obliged to support the state. Thus compliance depends on two moderating factors: power by the authorities leads to enforced compliance, trust in the authorities leads to voluntary tax compliance. In other words, trust is assumed to be decisive in

whether taxpayers comply voluntarily or whether they need to be forced to pay their taxes by imposing audits and fines. If taxpayers are treated with trust and respect in their relationship with the state and if they experience themselves as customers in this relationship, then they decide to comply with their tax duties voluntarily. However, if taxpayers are treated in a hostile way, like robbers on the run, then they show reactance, refuse to pay voluntarily, and need to be forced to do so by sanctions.

A meaningful relationship between tax compliance and trust in such authorities as the government or the state has been suggested by various survey studies (e.g. Torgler, 2003; Torgler & Schneider, 2005; Murphy, 2004; Fjeldstaat, 2004; Richardson, 2008). For example, the impact of trust in authorities on tax compliance has recently been explored by Wahl, Kastlunger & Kirchler (in press). Participants were given a scenario in which politicians of a fictitious country treated taxpayers either as trustworthy or as untrustworthy and exercised either high or low power. Participants then filed their taxes over 20 periods and answered various items regarding their tax compliance. Both trust and power increased tax compliance; however, while power increased enforced compliance and decreased voluntary compliance, trust increased voluntary compliance and decreased enforced compliance. In another experimental study (van Dijke & Verboon, 2010), trust in authorities was induced by an episodic recall task in which participants wrote about a personal experience in which they felt high vs. low trust in the authority. Only in the low trust condition, the authors of this study found a main effect of procedural fairness and a moderating effect of trust on tax compliance.

1.2 Trust and Trust in the State

These studies demonstrate that trust plays a role in tax-related attitudes and behavior. Even economists are quick to acknowledge that trust is an important addition to a world of expected return relationships (Lahno, 2002). Without trust, tremendous time would need to be spent on contracts which specify every detail, and contractual parties would focus only on fulfilling their precisely defined duties while refusing any voluntary commitment (Fukayama, 1995).

However, the psychological complexity involved in the dynamics of trust makes it diffi-

cult to grasp this concept. Indeed, a review of scientific trust definitions shows a confusing discord (Nooteboom, 2002). While some authors see trust as a cognitive concept (Hardin 1998, 2001, 2002), others do not associate it with cognition (Williamson, 1993; Becker, 1996). Also, while sometimes trust is considered as an entirely rational notion which is linked to the uncertainty of situations and which represents accepted risk (e.g. Pettit, 1995), at other times, it is perceived as a moral duty based on friendship, empathy, and reciprocity (Nooteboom, 2002).

Moreover, because one does not directly interact with institutions, trust in such institutions as the state is different from trust in other people. However, the nature of trust in people and trust in the state bear a close resemblance: even the impersonal relationship between individuals and the state involves affective components. In both cases, a relational cohesion exists (Lawler und Yoon, 1994), a special form of connection through shared values and goals.

Regarding trust in the state, Hardin (1998) assumes that people trust in the state only when they know that the state appreciates their trust and when the state attempts to reciprocate it. Conditions contributing to trustworthiness of the state include credible commitments, i.e., people can believe that the state represents their interests, procedural fairness, i.e., the actions of the state are fair and transparent, and reciprocity, i.e., people's trust in the state is rewarded by a state which treats people with respect (Levi 1998).

Both for trust in people and for trust in such institutions as the state, Pettit (1995) distinguishes impersonal from personal trust. In impersonal trust, people and institutions can be relied upon not because of their character but because of the resulting sanctions when rules are violated. In contrast, personal trust implies inherent virtues which guarantee the trustworthiness of a person or of an institution.

This difference is also addressed by the distinction of instrumental and social trust (Tyler, 1998). Instrumental trust is motivated by such rational reasons as legal sanctions, self-interest, and reciprocity. Individuals experiencing instrumental trust calculate rationally the extent to which their personal interests are considered by authorities. In contrast, social trust is based on identifying oneself with the state and experiencing a sense of duty which is rooted in social norms.

Here, individuals judge the trustworthiness of authorities by how they are treated by the authorities. If authorities are perceived as trustworthy and if they have a good reputation, individuals will identify with them and support them by accepting their rules and decisions. Thus, while in a climate of instrumental trust, people's motivation to cooperate is extrinsically based on sanctions and rewards, in a climate of social trust, the motivation to cooperate is intrinsic. Social trust is more difficult to achieve and is more efficient; it allows authorities to act more independently and provides a more stable basis for society (Tyler, 1998).

Regarding the question of which kind of trust is relevant for tax behavior, the slippery slope model postulates that trust among tax payers results primarily from such psychological factors as subjective tax knowledge, participation, attitudes, norms, and fairness perceptions (Kirchler et al., 2008). These factors suggest an understanding of trust which focuses on social trust. However, the model also considers that such economic factors as audits and fines increase trust, for example, when honest taxpayers perceive the chances to be audited as fair and when they know that evaders receive just penalties – factors which clearly relate to retributive justice and instrumental trust.

Trust relevant to tax-related attitudes and behaviors has been defined as “a general opinion of individuals and social groups that the tax authorities are benevolent and work beneficially for the common good” (Kirchler et al. 2008, p. 212). Because tax authorities represent the state, trust in these authorities can also be considered as trust in the state.

1.3 Priming and Priming Methods

According to the psychological availability heuristic (Kahneman & Tversky, 1984) information which is mentally available is more likely to be used for information processing than information which is psychologically unavailable. If this is true, as a rich body of literature shows, then it should be possible to activate the concept of trust in the state by priming methods. How priming methods work can be explained by a well-known prank. Asked how a mute person signals the request to buy a pair of scissors, most people will simulate the movement of scissors with their fingers. When people are subsequently asked what a blind person does who wants to buy a dog, most people imitate

barking instead of simply saying, “I want to buy a dog”.

Formally, priming has been defined as a passive and unintentional product of an inner activation due to recent or present experiences (Bargh & Chartrand, 2000). Priming can be explained by energetic cell processes which make action potentials more likely to occur if the neurons involved were already activated. Thus, new stimuli are encoded in the cell with the highest level of activation. If a new stimulus corresponds to the primed action potential, further information processing is influenced by this stimulus (Higgins, Bargh and Lombardi, 1985). Another explanation of priming (Wyer und Srull, 1980, 1981), i.e., the so-called “storage bin” model, compares the primed category with the top of a storage bin. It is primarily this primed category which is used for encoding new information, presumed that the category is relevant and applicable.

According to Bargh and Chartrand (2000), priming methods are mainly used to investigate cognitive representations and processes which act as mediator between the environment and psychological reactions, for example, impressions, judgements, goals, and behaviour.

Priming can be achieved by different psychological methods. In *conceptual priming*, a mental representation of a certain context (for example, honesty) is activated by an abstract task (for example, finding words that have to do with honesty). Later, the activated concept influences a completely different task, for example, when persons are suddenly judged to be more honest than usually. The stimuli used for conceptual priming may be both supraliminal (conscious) and subliminal (unconscious).

In *mindset priming*, certain goals are consciously activated and transferred onto another context. For example, in an experiment participants first read about a person who was described either as being concerned about accuracy or as focusing on impression management. These different descriptions activate either an accuracy goal or an impression management goal. Later, participants were introduced to a topic and discussed their opinions with a person who was presented either as being in favor or as being opposed to the topic. Participants who had first read about impression management adjusted their opinions much more to the opinion of the other person than participants who had read about accuracy (Chaiken, Giner-Sorolla & Chen, 1996).

As these examples demonstrate, conceptual and mindset priming overlap to some extent. However, in contrast to conceptual priming, mindset priming involves conscious will, i.e., an intentional goal or procedure is carried over to another context. Mindset priming is used particularly to activate complex constructs (Bargh & Chartrand, 2000).

Both forms of priming are closely related to the theoretical concept of framing. Framing is about embedding a situation into a specific context; this embedding (e.g., the way a question is worded) influences later judgments. The "frame" provided by framing is then used as a cognitive heuristic or mental shortcut (Tversky & Kahneman, 1981). For example, people cooperated differently in situations which were portrayed either as social or as monetary markets. Whereas in monetary markets cooperation was directly related to the increase of monetary rewards, in social markets cooperation was independent of the extent of social rewards, and in mixed markets, people tended to behave like in monetary markets (Heyman & Ariely, 2004).

1.4 Priming Trust in the State

Because they allow for a systematical analysis of the influence of potentially relevant aspects of trust, experimental studies promise to further clarify of the role played by trust in the state in tax behavior. Based on a broad understanding of trust which includes both social and instrumental aspects, the present study asks whether and how trust in the state can be induced experimentally, and if such experimentally induced trust influences tax compliance.

To our knowledge, empirical data of how trust in the state can be primed or framed, and of the impact of primed trust on tax compliance, are rare. Thus the study investigates the impact of various priming methods on trust in the state. Because of the described complexity of the construct trust, we hypothesize that mindset priming is more efficient than conceptual priming. We also expect that the findings on framing are relevant in our investigation: when the meaning of "state" is framed in purely monetary terms, then social trust should decrease and only instrumental trust should remain, resulting in a decrease of overall trust in the state. Therefore, when using a monetary trust game to prime the concept of state, we expect lower trust in the state. Finally, we hypothesize that

non-primed and primed trust in the state affect various measures of tax compliance, i.e., affective, cognitive, and behavioural.

2. METHOD

An online study was conducted to explore whether trust in the state can be experimentally primed and how trust in the state affects tax compliance. Counterbalancing possible advantages of a laboratory experiment (for example, reduction of distraction among participants, increased motivation of participants to complete assigned tasks), an online study provided access to a more heterogeneous participant sample, including actual taxpayers. An online study format also appeared adequate given the exploratory nature of the study; if priming effects were discovered online, then even more unambiguous effects could be assumed to surface in the controlled environment of a laboratory. In order to control for possible distortions by the chosen study format, the precise time needed by participants to complete the study was recorded.

2.1 Participants

Participation in the study required a minimum age of 18 years and Austrian citizenship. Persons known to the authors were sent E-mails which invited them to complete the questionnaire online and to forward the study invitation to acquaintances (i.e., snowball sampling). A total of 483 persons agreed to take part in the online study and were randomly assigned to one of the four experimental conditions, conceptual priming (169), mindset priming (120), trust game priming (88), and control condition (106). Unequal numbers assigned to the four conditions resulted from diverse drop-out rates in the sub-groups. In an effort to balance the number of participants across conditions, assignment into the four conditions was continuously adjusted to the number of valid and complete cases in each condition. The high amount of drop-outs in the conceptual priming condition can be explained by the additional requirement for participants in this group to download and install a small control device for their task on their computers; the additional work and time involved may have prevented some participants from continuing their participation.

A total of 243 participants were excluded from the analysis because they were not Austrian citizens (conceptual priming 3, mindset priming 5, trust game priming 5, and control group 6 participants), did not take the study questions seriously and produced improbable answers, or realized that the first part of the study influenced the second part of the study (see procedure). Since priming effects fade away after some time, participants who required more than 20 minutes for completion of the study were also excluded from the analysis (mindset priming 2 participants, trust game priming 1 participant). The final study sample included in the analysis consisted of 240 valid participants (conceptual priming 53, mindset priming 56, trust game priming 55, and control group 76 participants), 147 (61 %) female and 93 (39 %) male. Participants' age ranged from 18 to 79 years ($M = 27.69$, $SD = 8.94$), as shown in Table 1 which summarizes demographic information of participants. Participants in the four different experimental conditions did not differ to a statistically significant degree in terms of their age ($F(3,236) = 2.28$, $p > .05$), gender ($\chi^2(3, N = 240) = 1.35$, $p > .05$), and income ($\chi^2(3, N = 240) = 7.11$, $p > .05$).

2.2 Material

Independent measures

After providing basic demographic information, participants in the three experimental conditions (conceptual priming, mindset priming, and trust game priming) were exposed to a supraliminal priming task which allowed them to consciously perceive the priming stimuli. In order to avoid unintended priming in the control group, participants in

this sub-group proceeded directly to answering the first dependent measure after the demographic questions.

Conceptual priming

Conceptual priming of trust in the state was based on the methodology used in the implicit association test (Greenwald, McGhee & Schwartz, 1998). Participants were exposed on the computer screen to a series of words of traits which related either to trust (for example, "caring") or to distrust (for example, "hostile"). Traits related to trust were visually presented on the background of the Austrian flag or the contours of an Austrian map; traits related to distrust were presented on a neutral flag or map. This task was presented to participants as a reaction test in which they should decide as quickly as possible whether a given trait corresponded to trust or distrust and press the corresponding left or right key on the keyboard. After half of the traits, participants were instructed about a designation change of these two keys. The aim of the conceptual priming task was to passively prime the connection between trust and the state (i.e., Austria) on an associative level.

Mindset priming

In the mindset priming group of trust in the state, participants completed the following task: *Imagine you represent your country at an international conference. List six main arguments why citizens would trust your country more than other countries.* The theoretical assumption behind this mindset priming task is based on Tyler's (1998) description of social trust as based on identity processes. Finding arguments for trusting one's home country automatically promotes identification processes regarding, for example,

Condition	Control group n = 76	Mindset priming n = 56	Conceptual priming n = 53	Trust game priming n = 55	Total N = 240
Gender n (%)					
Female	46 (60.53)	36 (67.92)	33 (58.93)	32 (58.18)	147 (61.25)
Male	30 (39.47)	17 (32.08)	23 (41.07)	23 (41.82)	93 (38.75)
Net income n (%)					
€ 0-999	34 (44.74)	33 (62.26)	35 (62.5)	39 (70.91)	141 (58.75)
€ 1,000-1999	29 (38.16)	12 (22.64)	12 (21.43)	8 (14.55)	61 (25.42)
€ 2,000+	9 (11.84)	7 (13.21)	6 (10.71)	5 (9.09)	27 (11.25)
No answer	4 (5.26)	1 (1.89)	3 (5.36)	3 (5.45)	11 (4.85)
Age M (SD)	29.80 (10.63)	26.17 (5.97)	26.57 (7.47)	27.38 (9.68)	27.69 (8.94)

TABLE 1:
Demographic data

shared norms and values or regarding positive aspects of how the state treats its citizens. Thus, the concept of trustworthiness is mentally activated and should remain available in subsequent situations. This procedure was considered as active mindset priming because participants were more actively involved in this priming task than in the conceptual priming task which merely exposed them to stimuli in a passive way.

Trust game priming

For mindset priming of trust in the state, a new task was developed inspired by the trust game (e.g. Berg, Dickhaut & McCabe, 1995). Participants were instructed to imagine that they had € 500 which they could give either to the state or to a private investor. Participants were informed that both the state and the private investor would possibly raise the amount of money given to them up to an amount of € 1500 and then return this raised amount to them. However, unlike the private investor, the state would need to keep at least 300 Euros to cover its own expenses. This task consisted of a series of ten decision periods in each of which participants received a random return of € 1000-1200 for money given to the state and of € 500-700 for money given to the private investor. These returns reflected the assumption that participants expected a certain return when they invested their money in the state and experienced the state to be fair. Emphasizing expected returns, the framing involved in this task was expected to solely prime instrumental and not social trust among participants in this sub-group and thus decrease overall trust in the state.

Trust in the state

Upon completion of the priming task (no priming task in the control group), participants rated how much they trusted in Austria on a scale from 1 to 100. Similar measures of measuring trust in people and institutions are used, for example, in the World Value Survey (worldvaluesurvey, 2005) and the Standard Eurobarometer (European Commission, 2010). This variable was called trust in the state; it was used as manipulation check and served as first of the dependent variables.

Affective, cognitive, and behavioral tax compliance

To assess tax compliance, an affective measure, a cognitive measure, and a behavioural intention measure of tax compliance were used as additional dependent variables.

For affective tax compliance, participants rated their feelings towards taxes on a semantic differential consisting of 15 dimensions. Six-point scales used for these dimensions were defined by such opposites as aggressive-peaceful and wrong-right (Osgood, Suci & Tannenbaum, 1957). The dimensions of the semantic differential are listed in Table 2.

The analysis of the 15 dimensions included in the semantic differential resulted in a reliability of $\alpha = .88$. An exploratory factor analysis of the dimensions yielded three main factors with Eigenvalues greater than 1 which together explain 59% of the total variance, i.e., "general feeling towards taxes", "perceived importance of taxes", and "feeling of control for taxes". The factor "general feeling towards taxes" is compatible with the semantic differential aspect based on positive and negative feelings towards the object which was formulated by Osgood (1971).

The results of the factor analysis are presented in Table 2; for each factor an unweighted mean of the items contributing to the factor was calculated.

For cognitive tax compliance, participants rated six items of the "motivational postures" (Braithwaite 2003a) which express such tax-related representations and expectations as commitment, capitulation, resistance, disengagement, and game playing. The six items included in the present study were all taken from the commitment category. Participants rated "paying tax is the right thing to do", "paying tax is a responsibility that should be willingly accepted by all Austrians", "I feel a moral obligation to pay my tax", "paying my tax ultimately advantages everyone", "I resent paying my tax", and "I think of tax paying as helping the government do worthwhile things" on scales from 1 = no agreement to 5 = strong agreement. The analysis of these six items resulted in a reliability of $\alpha = .73$; answers the six items were thus summarized by their unweighted mean.

For behavioural tax compliance, a behavioural intention measure asked participants which tax rate they would enforce for a gross income of € 2000. The term "enforce" was used in the instruction in order to stress the behavioural intention of participants.

Items	Component			Communalities
	I	II	III	
aggressive-peaceful	.6	.32	.28	.54
negative-positive	.64	.42	.30	.69
unpleasant-pleasant	.83	.09	.08	.70
dislikeable-likable	.86	.10	.15	.70
exhausting-unexacting	.53	.05	.17	.31
dangerous-safe	.17	.65	.18	.48
bad-good	.47	.70	.13	.72
unessential-essential	-.06	.82	.16	.71
unimportant-important	.12	.83	.04	.71
wrong-right	.39	0.60	.36	.64
uncontrollable-controllable	.10	.11	.72	.54
foreign-familiar	.01	.17	0.64	.44
subjective-objective	.25	.17	0.40	.25
ambiguous-clear	.24	.10	.75	.63
intransparent-transparent	.30	.08	.74	.65
Eigenvalues	5.72	1.65	1.41	8.78

N = 240; Total variance explained: 59%

Extraction Method: Principal Component Analysis, Varimax with Kaiser normalization

2.3 Procedure

The online study was conducted in the period from March to April 2007. Upon signing in on the study webpage, participants first completed questions about their demographic details and then were randomly assigned to one of four experimental conditions (conceptual priming, mindset priming, trust game priming, and control group). After completion of the priming task (no task in the control group), participants first answered the *trust in the state* question (manipulation check) and then completed the dependent variable questions which were presented in random order. At the end, participants were asked whether in their opinion participation in the priming task had influenced their answers to the *trust in the state* question (priming check). 5% of participants in the mindset condition, 5% of participants in the trust game priming condition and 7% of participants in the conceptual priming condition were identified by the priming check and thus excluded from the analysis. Participants were thanked for their participation, debriefed about the nature of priming and the purpose of the study, and offered information about the results of the experiment in a later e-mail. As incentive to participate in the study, participants could join a lottery of 5 book vouchers of € 10 each. All instructions and questions of the on-line study were presented via the internet on participants' computer screens and answered

from home. The priming task and the questions which followed the priming task were presented to participants as two independent studies in order to protect the influence of priming effects. Throughout the study, proceeding in the experiment was possible only after previous questions had been answered.

3. RESULTS

3.1 Priming Effect

Table 3 shows means and standard deviations of trust in the state ratings (i.e., the manipulation check) for the three priming groups of conceptual priming, mindset priming, and trust game priming, and for the control group.

The effect of priming was analyzed by an analysis of variance with the experimental condition as independent variable and trust in the state as dependent variable. The analysis showed that there was a statistically significant difference between the groups ($F(3, 239) = 3.82, p < .05, \eta^2 = .05$). Post-hoc comparisons of the subgroups (Duncan's test) showed that trust in the state in the mindset priming subgroup was significantly different from trust in the state in the control group, with higher scores in the mindset priming group. While the differences between (1) the conceptual priming group and the control group and (2) the trust game priming

TABLE 3:
Trust in the state

Condition	Control group		Mindset priming		Conceptual priming		Trust game priming	
	M	SD	M	SD	M	SD	M	SD
Trust in the state	74.18	16.02	80.66	11.12	75.38	14.95	70.85	19.13

group and the control group also pointed in the hypothesized directions (as compared to the control group, higher scores in the conceptual priming group and lower scores in the trust game priming group), these differences were statistically not significant. Because in comparison to the control group only the mindset priming procedure changed the level of trust in the state to a statistically significant degree, further analyses focus on differences between the mindset priming group and the control group.

3.2 Priming Effects on Tax Compliance

Table 4 shows means and standard deviations of the control and mindset priming groups for the affective, cognitive, and behavioural measures of tax compliance.

A one-way between groups multivariate analysis of variance was performed to investigate priming effects on affective tax compliance. Three dependent variables (“general feeling towards taxes”, “perceived importance of taxes”, “feeling of control for taxes”) were used with the experimental condition (mindset priming vs. control) as independent variable. The analysis showed that mindset priming had a statistically significant effect on the combined dependent variables ($F(3,128) = 2.92, p < .01, \text{Wilks' Lambda} = .94, \eta^2 = .06$). When the dependent variables were considered separately, there were statistically significant differences between the control and the mindset priming groups for “general feeling towards taxes” ($F(1,130) = 4.38, p < .05, \eta^2 = .03$) and for

“perceived control of taxes” ($F(1,130) = 8.07, p < .01, \eta^2 = .06$). The difference in “perceived importance of taxes” failed to reach statistical significance ($F(1, 130) = 1.97, p > .05$).

Regarding the cognitive measure of tax behaviour, an independent t-test with the experimental condition (mindset priming condition vs. control condition) as independent variable and the mean of all six motivational posture items as dependent variable did not result in a statistically significant difference ($t(129) = .43; p > .05$).

Regarding the behavioural intention measure of tax behavior, independent samples t-tests showed no statistically significant difference of suggested tax rates for an income of € 2000 between control and mindset priming sub-groups (control $M = 17.03, SD = 6.66$; mindset priming $M = 16.91, SD = 9.31, t(130) = 0.65, p > .05$).

3.3 Relationship between General Trust in State and Tax Compliance

When all study participants ($N = 240$) were together analyzed, trust in the state correlated significantly positively with all three measures of tax compliance, i.e., affective, cognitive, and behavioural. Pearson’s correlation coefficient between trust in the state and affective tax compliance was $r = .18; p < .01$ for general feeling towards taxes, $r = .26; p < .01$ for perceived importance of taxes, and $r = .25; p < .01$ for feeling of control towards taxes. Moreover, a statistically significant correlation was found between trust in state and

TABLE 4:
Tax compliance

	Control group		Mindset priming	
	M	SD	M	SD
Affective tax compliance				
General attitude	2.61	0.89	2.92	0.76
Importance	4.13	0.98	4.36	0.89
Control	3.10	1.04	3.59	0.92
Cognitive tax compliance				
Commitment	3.83	0.66	3.87	0.75
Behavioral tax compliance				
Suggested tax rate	17.93	8.66	16.91	9.31

cognitive tax compliance, $r = .40$; $p < .01$. Finally, trust in the state also correlated statistically significantly positively with behavioural tax compliance, $r = .19$; $p < .01$.

4. DISCUSSION

As the results of this online study show, trust in the state can indeed be primed experimentally. However, results also suggest that various priming methods affect trust in the state to different degrees. Mindset priming in form of actively finding arguments for why one's own country should be trusted generally increased trust in the state while the effects of the other priming methods employed in this study (conceptual priming involving passive exposure to visual connections between trust-related traits and the state, trust game priming in form of participation in a modified trust game) remained below the threshold of statistical significance.

The observed differences in effects on trust in the state between the different priming methods can be explained by the different psychological dynamics involved in these methods. The mindset priming method used in this study addressed trust in the state on a conscious level. In line with explanations of the cognitive availability heuristic (Kahneman & Tversky, 1984), this method makes arguments for trust in the state actively available to participants who then continue to use these arguments as easily accessible information. However, the form of mindset priming employed in the present study can be expected to work only within certain psychological parameters. For example, it is important to choose an appropriate amount of arguments to be produced when in mindset priming participants explain why their home country should be trusted. As demonstrated by Schwarz et al. (1991), ease of retrieval plays an important role in the availability heuristic. As these authors have shown, if the assigned task is excessively difficult (e.g., asking for too many arguments in favor of something), the direction of the resulting effect may even become reversed.

Unlike mindset priming, the methodology used in this study to implement conceptual priming provided a more abstract and passive access to trust in the state. The psychological connections between trust and the state established by the visual connection between trust-related words and the national flag and the geographic shape of the country as representations of the state were

probably neither direct nor specific enough for meaningful priming effects to take place. Trust in the state and attitudes towards tax compliance are highly complex constructs; it may be difficult to activate the mental processes involved by purely passive priming methods. Moreover, the priming check revealed that in the conceptual priming subgroup, the suggested five percent limit of participants who at most should understand the manipulation (Bargh & Chartrand, 2000) was slightly exceeded; this also sheds doubt on the specific methodology employed in the present study to induce conceptual priming. Refining and perfecting this methodology may lead to more pronounced effects of conceptual priming on trust in the state.

Also trust game priming did not influence trust in the state and the assumption that this form of priming decreases overall trust in the state was not confirmed. While the results point in this direction, evidence for this dynamics was not statistically significant. A possible explanation is that participants in the trust game priming subgroup perceived their task merely in a detached investment context and that they thus did not establish a sufficiently strong psychological connection to a broader concept of state which is later perceived as relevant also in a tax-related context. Clearer effects of trust game priming on trust in the state may be witnessed in the carefully controlled conditions of a laboratory setting.

Generally, priming can influence emotions, cognitions, and behaviour (Bargh, 1994). In the present study, however, priming had an impact only on the affective measure of tax compliance but not on the cognitive and behavioral measures of tax compliance. One reason for this finding may be rooted in the complexity of how dependent variables were structured for the purpose of the study. The priming methodology intended to "kill two birds with one stone" by predicting an influence of primed trust in the state both on trust in the state itself and on subsequent tax compliance.

Regarding the lack of a statistically significant cognitive priming effect as reflected in the included items of the "motivational postures" (Braithwaite 2003a), these items addressed ultimate attitudes which may not be as easily influenced as emotions. Priming influences the kind of fast, non-deliberate attitudinal judgments which are measured in the semantic differential. In contrast to these intuitive judgments, the motivational postures address deliberate judgments and high-

er-level cognitive processes which may not immediately be influenced by priming procedures.

Finally, regarding the missing effect of priming on tax-related behavioural intentions, the methodology chosen for the present study (i.e., asking participants to suggest concrete tax rates) may actually have activated stable justice concerns instead of behavioural intentions. In contrast to general opinions about tax rates, decisions about the amount of taxes payed in a given context (e.g. Mitton, 2006) may have led to a more concise measure of behavioural intention. As suggested by Braithwaite (2003a), in the context of taxes, attitudes and behaviour are separate dimensions which only bear some resemblance and relationship to each other. This could also explain why in the present study priming influenced tax-related affects while it did not influence behavioural intentions.

The results of this study support the assumed role of trust in the state as proposed by the slippery slope model of tax behavior (see Kirchler 2007; Kirchler, Hoelzl & Wahl, 2008). Trust in the state was experimentally increased by cognitive availability of positive arguments for why the state can be trusted, and in turn, experimentally increased trust in the state heightened affective tax compliance. Moreover, the level of trust in the state was found to be significantly connected to various kinds of tax compliance. This confirms previous findings (e.g. Braithwaite, 2003b; Schemmann, 2003; Torgler, 2003; Tyler, 2001).

Future experimental research is needed to deepen the key insight of the present study, i.e., that trust in the state can be primed and that primed trust in the state can influence tax compliance. This research could analyze, for example, the influence of trust priming on concrete tax payment decisions. Another area of interest concerns personal, social, and cultural differences in how trust in the state can be primed, and in the effects of such priming on tax-related attitudes and behavior.

On a practical level, the finding of this study that cognitive availability of trust in the state is relevant to the area of taxes may help governments and financial authorities develop strategies to influence tax behaviour. Psychologically available arguments for trusting the state can positively impact tax compliance. However, when communicating reasons for, and advantages of, trusting the state, governments and authorities need to proceed care-

fully and ethically (Oberlechner & Pitters, 2009). When there is no valid reason to experience the state as truly trustworthy and reliable, then being exposed to empty propaganda may actually increase the psychological availability of untrustworthiness and thus have a negative impact on how people perceive the state and their taxes.

ACKNOWLEDGMENTS

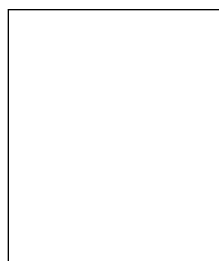
The authors would like to thank Kathrin Hinderhofer for her extensive contributions.

REFERENCES

- Allingham, M. & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 1 (3-4), 323-338.
- Bargh, J. A. (1994). The four horsemen of automaticity: Awareness, efficiency, intention, and control in social cognition. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of Social Cognition* (pp. 1-40). Hillsdale, NJ: Erlbaum.
- Bargh, J. A. & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of Research Methods in Social and Personality Psychology* (pp. 253-285). Cambridge: Cambridge University Press.
- Becker, L. C. (1996). Trust as noncognitive security about motives. *Ethics*, 107 (1), 43-61.
- Berg, J., Dickhaut, J. & McCabe, K. (1995). Trust, reciprocity and social history. *Games and Economic Behaviour*, 10, 122-142.
- Braithwaite, V. (2003a). Dancing with tax authorities: Motivational postures and non-compliant actions. In V. Braithwaite (Ed.), *Taxing democracy. Understanding tax avoidance and tax evasion* (pp. 15-39). Aldershot, UK: Ashgate.
- Braithwaite, V. (2003b). A new approach to tax compliance. In V. Braithwaite (Ed.), *Taxing Democracy. Understanding Tax Avoidance and Tax Evasion* (pp. 1-11). Aldershot, UK: Ashgate.
- Braithwaite, V. (2009). Tax evasion. In M. Tonry (Ed.), *Handbook on Crime and Public Policy* (pp. 381-405). Oxford: Oxford University Press
- Chaiken, S., Giner-Sorolla, R. & Chen, S. (1996). Beyond accuracy: Defense and impression motives in heuristic and systematic information processing. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of Action* (pp. 553-578). New York: Guilford Press.
- European Commission (2010). Standard Eurobarometer. [retrieved at http://ec.europa.eu/public_opinion/archives/eb_arch_en.htm] (Accessed December, 14, 2010).

- Fjeldstad, O.H. (2004). What's Trust Got to Do with It? Non-Payment of Service Charges in Local Authorities in South Africa, *The Journal of Modern African Studies*, 42, 539-62.
- Fukuyama, F. (1995). *Trust: The Social Virtues and the Creation of Prosperity*. New York: Free Press.
- Greenwald, A. G., McGhee, D. E. & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74 (6), 1464-1480.
- Hardin, R. (1998). Trust in government. In V. Braithwaite & M. Levi (Eds.), *Trust and Governance* (pp. 9-28). New York: Russell Sage Foundation.
- Hardin, R. (2001). Conceptions and explanations of trust. In K. S. Cook (Ed.), *Trust in Society* (pp. 3-39). New York: Russell Sage Foundation.
- Hardin, R. (2002). *Trust and Trustworthiness*. New York: Russell Sage Foundation.
- Heyman, J. & Ariely, D. (2004). Effort for Payment: A Tale of Two Markets. *Psychological Science*, 15 (11), 787-793.
- Higgins, E. T., Bargh, J. A. & Lombardi, W. (1985). Nature of priming effects on categorization. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11, 58-69.
- Infratest dimap (2010). Aktuelle bundesweite Umfragen. [Retrieved at <http://www.infratest-dimap.de/de/umfragen-analysen/bundesweit/umfragen/aktuell/bundesregierung-weckt-bei-buergern-wenig-vertrauen/>] (Accessed, August 1, 2010).
- Kahneman, D. & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, 39 (4), 341-350.
- Kastlunger, B., Kirchler, E., Mittone, L. & Pitters, J. (2009). Sequences of audits, tax compliance, and taxpaying strategies. *Journal of Economic Psychology*, 30, 405-418.
- Kirchler, E. (2007). *The Economic Psychology of Tax Behaviour*. Cambridge: University Press.
- Kirchler, E., Hölzl, E. & Wahl, I. (2008). Enforced versus voluntary tax compliance: the "slippery slope model". *Journal of Economic Psychology*, 29, 210-25.
- Kirchler, E. & Wahl, I. (2010). Tax compliance inventory TAX-I: Designing an inventory for surveys of tax compliance. *Journal of Economic Psychology*, 31, 331-46.
- Mittone, L. (2006). Dynamic behaviour in tax evasion: An experimental approach. *The Journal of Socio-Economics*, 35 (5), 813-835.
- Lahno, B. (2002). *Der Begriff des Vertrauens*. Paderborn: mentis.
- Levi, M. (1998). A state of trust. In V. Braithwaite & M. Levi (Eds.), *Trust and Governance* (pp. 77-101). New York: Russell Sage Foundation.
- Murphy, K. (2004). The Role of Trust in Nurturing Compliance: A Study of Accused Tax Avoiders, *Law and Human Behavior*, 28, 187-209.
- Nooteboom, B. (2002). *Trust. Forms, Foundations, Functions, Failures and Figures*. Cheltenham, UK: Edward Elgar.
- Oberlechner, T. & Pitters, J. (2009). Verantwortung für Ethik in Unternehmen: Die Psychologie der Ethik verstehen und nutzen. *Wirtschaftspsychologie*, 2, 47-57.
- Osgood, C. E. (1971). Explorations in semantic space: A personal diary. *Journal of Social Issues*, 27 (4), 5-64.
- Osgood, C. E., Suci, G. J. & Tannenbaum, P. H. (1957). *The Measurement of Meaning*. Urbana: University of Illinois Press.
- Pettit, P. (1995). The cunning of trust. *Philosophy and Public Affairs*, 24 (3), 202-225.
- Richardson, G. (2008). The Relationship between Culture and Tax Evasion across Countries: Additional Evidence and Extensions, *Journal of International Accounting, Auditing and Taxation*, 17, 67-78.
- Schwarz, N., Bless, H., Strack, F., Klumpp, G., Ritzenauer-Schatka, H. & Simons, A. (1991). Ease of retrieval as information. Another look at the availability heuristic. *Journal of Personality and Social Psychology*, 61, 195-202.
- Schemmann, M. (2003). Vertrauensverlust in politische Institutionen. Vertrauensbruchstellen im Widerschein von Globalisierung und reflexiver Modernisierung. In M. K. Schweer (Hrsg.), *Vertrauen im Spannungsfeld politischen Handelns. Herausforderungen und Perspektiven für eine Politische Psychologie* (S. 13-27). Frankfurt am Main: Peter Lang.
- Srinivasan, T. N. (1973). Tax evasion: A model. *Journal of Public Economics*, 2 (4), 339-346.
- Torgler, B. (2003). Tax Morale, Rule-Governed Behaviour and Trust, *Constitutional Political Economy*, 14, 119-40.
- Torgler, B. & Schneider, F. (2005). Attitudes Towards Paying Taxes in Austria: An Empirical Analysis, *Empirica*, 32, 231-50.
- Tversky, A. & Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice. *Science*, 211 (4481), 453-458.
- Tyler, T. R. (1998). Trust and democratic governance. In V. Braithwaite & M. Levi (Eds.), *Trust and Governance* (pp. 269-294). New York: Russell Sage Foundation.
- Tyler, T. R. (2001). Public trust and confidence in legal authorities: What do majority and minority group members want from the law and legal institutions? *Behavioural Sciences and the Law*, 19 (2), 215-235.
- Torgler, B. (2003). Tax Morale, Rule-Governed Behaviour and Trust, *Constitutional Political Economy*, 14, 119-40.
- Torgler, B. & Schneider, F. (2005). Attitudes Towards Paying Taxes in Austria: An Empirical Analysis, *Empirica*, 32, 231-50.
- Wahl, I., Kastlunger, B. & Kirchler, E. (in press). Trust in authorities and power to enforce tax compliance: An empirical analysis of the slippery slope framework. *Journal of Economic Psychology*.

- Williamson, O. E. (1993). Calculativeness, trust, and economic organization. *Journal of Law and Economics*, 36 (1), 453-486.
- World Values Survey Organization (2005). WVS 2005 wave data files. [Retrieved at <http://www.wvsevsdb.com/wvs/WVSDData.jsp>] (Accessed December, 14, 2010).
- Wyer, R. S. & Srull, T. K. (1980). The processing of social stimulus information: A conceptual integration. In R. Hastie, T. Ostrom, E. Ebbeson, R. Wyer, D. Hamilton & D. Carlston (Eds.), *Cognitive Bases of Impression Formation and Person Memory*. Hillsdale, NY: Erlbaum.
- Wyer, R. S. & Srull, T. K. (1981). Category accessibility: Some theoretical and empirical issues concerning the processing of social stimulus information. In E. T. Higgins, C. P. Herman & M. P. Zanna (Eds.), *Social Cognition: The Ontario Symposium* (Vol. 1, pp. 161-197). Hillsdale, NY: Erlbaum.
- van Dijke, M. & Verboon, P. (2010). Trust in Authorities as a Boundary Condition to Procedural Fairness Effects on Tax Compliance. *Journal of Economic Psychology*, 31 (1), 80-91.



DR. JULIA PITTERS
pitters@webster.ac.at



DR. THOMAS OBERLECHNER
oberlechner@webster.ac.at

Psychology Department
Webster University
Berchtoldgasse 1
A-1220 Vienna
Austria