Conspiracies in Times of Social Change: Exploring the Impact of Change-Related Uncertainty on People's Belief in Conspiracy Theories as an Expression of System-Justification Behaviour.

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Abstract

The study's goal was to examine the endorsement of conspiracy thinking as means of system-justification behaviour when facing a threat in terms of a social change. The focus was put on effects that might arise from perceptions about the certainty with which a social change is actually about to occur, and thus, will become reality. Further, this study investigated the moderating influence of institutional trust on this relationship. It was expected that high levels of uncertainty about the actual occurrence of a social change would lead to higher levels of conspiracy thinking (H1a) and the belief in existing conspiracy theories (H1b) as an expression of denial of that change and justification of the current status quo. Moreover, institutional trust was expected to buffer this effect, and thus, to decrease the endorsement of conspiracies (H2). Therefore, an experimental online study (N = 305) with three conditions manipulating different levels of certainty about the occurrence of a social change (*high uncertainty, low uncertainty*, *control*) has been conducted. No evidence for the anticipated effects could be found. However, high levels of uncertainty about the occurrence of the social change, as well as institutional trust, were associated with lower levels of conspiracy endorsement. Further, indicators that institutional trust might decrease the belief in conspiracies when perceiving high uncertainty could be observed. In sum, communicating uncertainties and establishing trust were found to be main factors to prevent the endorsement of conspiracy theories.

Keywords: Conspiracy Belief, System Justification, Institutional Trust, Social Change

Introduction

Conspiracy theorists are often trivialized and mildly smiled at when spreading the word about a flat earth or alien existence. However, they possess power and can exercise influence on parts of the broader public when it comes to socially relevant topics. Accordingly, anti-vaccination movements (Jolley & Douglas, 2014a), anti-corona demonstrations (Deutschlandfunk, 2020), or a low public willingness to reduce the personal carbon footprint (Jolley & Douglas, 2014b) can result from the spread of conspiracies. Besides individual disadvantages resulting from such behaviour, there can be social and political consequences. The spread of conspiracy theories could negatively impact intentions to engage politically (Jolley & Douglas, 2014b), negatively influence the process of governmental policymaking (Uscinski & Parent, 2014) or withhold social development (Jolley et al., 2018; Federico et al., 2018). On the 6th of January, when a mob of Trump supporters stormed the U.S. Capitol, the world witnessed an impressive, extreme example on possible political and social consequences deriving from a reign based on conspiracies, misinformation and fake news (Smith, 2021). This event showed that the spread of conspiracies and misinformation can provoke severe collective action linked to a denial of change in the socio-political landscape.

In line with that, research has shown that the use of conspiracy theories can indeed be an expression of denying a social change, meaning dynamic shifts within social or political arrangements. This is particularly given, when this dynamic shift is perceived to be a threat to the current system (Friesen et al., 2019; Jolley et al., 2018). A system, which is defined by its "overarching institutions, organisations, and social norms" (Kay & Zanna, 2009, p.158), is under threat when an event (e.g., terroristic attack, natural disaster, health crisis) seems to have an impact on the legitimacy or the effectiveness of the social system in a negative way (Friesen et al., 2019; Ulrich, & Chors, 2007; Napier et al., 2006; Vainio et al., 2014). Further, naturally occurring, or politically intended social changes can be perceived as threatening when it fundamentally challenges the overarching system and its currently accepted order and values (Friesen et al., 2019; Federico et al., 2018). In that case, conspiracies could deliver an explanation for the occurrence of such a threatening change and identify an "evil" motive behind it, which would allow the justification to fight against it (Butter, 2018; Sullivan et al., 2010). For example, looking at the storm of the U.S. capitol (Smith, 2021), the election of Biden as the next President might have been perceived as a threat to the system *United States* by Trump supporters. Further, the spread of conspiracies and misinformation by Trump himself about the lost election being a fraud, might have allowed the supporters to identify an evil motive and, in their eyes, to justify collective action (here: stopping the official approval of the election outcome) to defend the former system and stop the social and political change from happening.

However, people do not always deny change and rely on conspiracy theories when facing a perceptibly threatening social change. Otherwise, there would not have been much societal development lately. Thus, there must be a factor, that influences the tendency of citizens to either

accept or defend a perceived threatening change within their own system. Research has carved out that the acceptance of social change is dependent on how absolute and certain its occurrence and implementation is perceived to be (Friesen et al., 2019; Laurin et al., 2012). Therefore, this study aims to investigate in what way the level of certainty with which a social change is actually about to come is related to the belief in conspiracy theories as a form of denying and rejecting that change. Results could deliver indications about communication in times of social change in order to avoid denial in the public, fuelled by unreliable conspiracies and misinformation.

System-Justification Theory and Social Change

The main line of reasoning for this research is based on the assumptions of the system justification theory (SJT) by Jost and Banaji (1994). This theory aims to explain situations in which people tend to defend the status quo of a system they identify with. The SJT particularly focuses on circumstances in which people defend their systems even though such a behaviour appears to go against the actual self- and/or group-interests or seems to be greatly exaggerated and inappropriate within given situations (Friesen et al., 2019; Kay, Gaucher, et al., 2009; Kay & Zanna, 2009). As mentioned before, one motive to justify the system is a perceived system-threat, which could emerge from a social change (e.g., changes in the socio-political order; Friesen et al., 2019). Therefore, the following section particularly focuses on the indications of the SJT about circumstances within which members of a social system are likely to avoid social changes and show defensive behaviour to justify the current status quo or, in contrast, show acceptance and integrate those social shifts in an adopted representation of their system (Friesen et al., 2019). In line with that, the terms rationalisation and reactance will be introduced.

As mentioned before, a change of social or political arrangements within a system, needs to be perceived to be a threat to its currently accepted structure in order to elicit system-justification. According to the SJT, whether people defend or support such a dynamic shift depends on the timely stage and absoluteness of the change which is about to come (Friesen et al, 2019, Laurin et al., 2012). The different time stages represent the stages of decision making concerning a proposed subject of change on a socio-political level. During the *pre-decision stage*, a possible societal change might be visible and publicly discussed, but is perceived to be non-absolute and rather uncertain to come. It poses “a real but uncertain threat to the existing status quo” (Friesen et al., 2019, p. 325). In such a case, people often tend to show defensive attitudes, as they evaluate the consequences of the change (e.g., the introduction of a new law) quite negatively, while stressing the positive sides of the current system as they know it (Friesen et al., 2019, Proudfoot & Kay, 2014). This psychological response is also called reactance, which is mainly prevalent when facing changes that come along with individual restrictions, based on the motivation to restore personal freedom and autonomy (Proudfoot & Kay, 2014). Thus, when facing a change which is uncertain to become reality, people tend to react defensively by strongly bolstering and justifying the current system.

During the *pre-implementation* and *post-implementation stages*, a social change becomes more absolute, certain and definite, which is why people would perceive it as an inevitable part of a new reality (Friesen et al., 2019). Here, people tend to respond with rationalisation. It means that people perceive the change in an exaggeratedly positive light, even though it comes along with individual restrictions (e.g., due to a new law), and therefore, rather tend to accept the change and even start to justify it as part of their system (Friesen et al., 2019; Proudfoot & Kay, 2014). This response is particularly likely when an anticipated change in the system is perceived to be unavoidable and undeniably consequential, and thus, feels psychologically real to the public (Laurin, 2018; Laurin et al., 2012; Kay et al., 2002). People rationalise a change and its consequences to align it with their perception of the system to be legitimate (Proudfoot & Kay, 2014), and to adopt their personal preferences about an event or (anticipated) change to what is likely to occur (Jost, Banaji, Nosek, 2004). Therefore, a change which is certain to occur seems to be met with acceptance and people integrating and justifying the change as part of the system.

A real-life example to describe the effects of the different stages of a change and its elicitation of rationalisation and reactance is the introduction of a workplace-smoking ban in Ireland, 2004 (Proudfoot & Kay, 2014). Before it came into effect only 59% of the public favoured the ban, in contrast to 97% one month after its introduction (Action on Smoking and Health, 2004; Office of Tobacco Control, 2004; Proudfoot & Kay, 2014). Thus, the ban seemed to have been a threat to the system, which until this date legitimised smoking in all social layers. In the beginning, it seemed that it was met with greater reactance as it was still perceived to be avoidable (*pre-decision stage*). However, after it was put into effect (*pre-implementation*, *post-implementation*), it turned into an unavoidable change and apparently was rationalised to be seen much more positive and as a legitimate part of their system. Here, it needs to be noted that other factors, like the perception that such a change additionally came along with some benefits (e.g., fresh air in closed rooms), most likely played a role as well.

Similarly, empirical evidence was found by Laurin and colleagues (2012) who investigated the effect of the perceived absoluteness of changes in policies that constrain freedom on the acceptance of it (respectively reactance vs. rationalisation). People that were confronted with non-absolute information about the introduction of a regulation about speed limits in their town were more rejective about it, than people who perceived the regulation to be absolute and certain to be implemented. Thus, when facing non-absolute restrictions (incomplete, uncertain, temporarily limited), that indicated the possibility of them not coming into effect, people reacted defensively and put greater emphasis on the meaning of personal constraints (reactance). However, when people were confronted with absolute restrictions regarding a change, they were more likely to accept and embrace those and to minimize the meaning of the decrease in their personal freedom (rationalisation; Laurin et al., 2012). Moreover, Laurin (2018) conducted a study about the US presidential election 2016 which

has shown that people started to perceive Donald Trump in a more positive light only after he was officially acknowledged in his new function as president.

To conclude these theoretical and empirical findings, the extent to which an anticipated social change within the system is perceived to be either certain, thus, definite, or uncertain, therefore indefinite to occur, seems to greatly impact the tendency to show acceptance (rationalisation) or system defending behaviour (reactance).

The Belief in Conspiracy Theories as Expression of System Justification

The act of showing system defending behaviour in relation to a social change can be quite diverse. It goes from overtly promoting the disagreement to refusing to behave in accordance to the new rules (Friesen et al., 2019). Real life examples for different degrees of disagreement are people that get together on the street and demonstrate against COVID-19 protective measures (Deutschlandfunk, 2020), storm the U.S. Capitol (Smith, 2021) or ignore the topic of climate change and stick to environmentally unfriendly habits (Jolley & Douglas, 2014b). However, the initial beliefs that form such intentions of behaviour, which translate into actual behaviour, are in the focus of this study. Research has shown that such beliefs could be based on conspiracy theories, and could function as justification for system defensive behaviour (Federico et al., 2018; Jolley et al., 2018). Conspiracy theories are by definition alternative explanations that question an official account for an event, assuming a secret plot by those in power, hiding the truth from the general public (Imhoff & Lamberty, 2017).

To explore the suspected relationship between social change and conspiracy belief as a form of system justification behaviour, the general functioning of conspiracies will be described first. Research concentrating on individual propensities to endorse conspiracies has identified factors such as low levels of trust (Goertzel, 1994), low self-esteem (Abalakina-Paap et al., 1999), low levels of agreeableness (Swami et al., 2011), schizotypy (Darwin et al., 2011), death-related anxiety (Newheiser et al., 2011) and need for uniqueness (Imhoff & Lamberti, 2017). In addition, situational factors have come more into consideration. Situations causing feelings of uncertainty, a perceived lack of control (Whiston et al., 2015), feelings of powerlessness (Jolley & Douglas, 2014b), or those posing a threat to a group or a system (Mashuri & Zaduquisti, 2015; Jolley et al., 2018, Federico et al., 2018) have been found to fuel people's belief in conspiracies.

With a greater focus on situational factors, a fundamental aspect to explain the endorsement of conspiracies is the human need and natural cognitive process to make sense out of the world and to identify causes and interrelations of events to restore a feeling of stability, personal certainty and control (Butter, 2018; Park, 2010, Van den Bos, 2009, Whiston et al., 2015). This need for explanations intensifies when facing complex and threatening situations or changes in the world that are difficult to understand, as such situations come along with great feelings of personal uncertainty (Van den Bos, 2009), aversive feelings (Van den Bos & Lind, 2009), discomfort (Hogg, 2007), and

the feeling of lacking personal control over events or other individuals (Whiston et al., 2015). To resolve this unpleasant psychological stage, conspiracy theories can satisfy the need for sense-making and certainty by delivering "apparently" logic explanations, attributing causes to certain incidents, and identifying patterns underlying hardly understandable, dynamic circumstances (Kay et al., 2008; Whitson & Galinsky, 2008).

Further, it allows dealing with unpleasant developments in the current system, by blaming certain persons or groups to be responsible for corresponding changes. Hence, when having the perception that the world might change for the worse, conspiracy theories seem to help individuals to reduce the feeling of uncertainty and threat by identifying the root for such a (undesirable) change within an external entity, who purposefully brings about the change (Eidelman & Biernat, 2003; Butter, 2018; Sullivan et al., 2010). This possibility of blaming external entities was also found to be effective in reducing a perceived threat (Becker, 1969; Sullivan et al., 2010). As described by Becker (1969; Sullivan et al., 2010), the perceived risk in the world can be lowered by putting a focus on enmity and thereby, bolster control perceptions. Thus, relying on conspiracy theories to explain the uncertain world one is living in seems to be helpful to perceive a lower risk surrounding the threat one is facing. Further support for this idea was given by van Prooijen and Douglas (2017) who described the tendency to believe in conspiracy theories as a maladaptive coping strategy to deal with a risky situation by denying the real causes for the situation.

This general insight into the functioning of conspiracies already allows an understanding in what way situations that are defined by uncertainty, risk, threat or change contribute to an increased susceptibility to endorse those. Recent studies (Jolley et al., 2018; Federico et al., 2018) provided supportive results for that, and further, delivered a deeper insight into the belief in conspiracies as a tool for system-justification. Two groups of researchers found evidence in their studies that the belief in conspiracy theories became greater when individuals perceived a threat to the society they are living in and to the values they admire and identify with as a member of that society (Jolley et al., 2018; Federico et al., 2018). More specifically, Jolley and colleagues (2018) supported that conspiracy theories provided a buffer to defend the legitimacy of the current system and to rather attribute current changes and threats to specific people or groups of people than to inherent flaws within the complex system of society. Federico and colleagues (2018) further found evidence that a social change which is perceived as undermining fundamental values and which seems to challenge the shared identity within a society, led to a higher chance that individuals "adopt to a more conspiracy-oriented mindset and become more willing to endorse conspiracy theories" (Federico et al., 2018, p. 935).

To sum up, the belief in conspiracies seems to be intensified in times of high need for explanations for threatening, hardly understandable or uncertain situations (Van den Bos, 2009; Park, 2010; Whiston, et al., 2015). Further, when corresponding events or situations are perceived as a threat to the system or even as a change undermining the values of the current status quo, tendencies to endorse conspiracy theories increase (Jolley et al., 2018; Federico et al., 2018). Taken together with

the indications of the SJT about acceptance towards social change, the level of uncertainty that is surrounding the espousal of a perceptibly threatening social change, may influence the tendency and level to believe in conspiracy theories. Thus, social change that is perceived to be certain, therefore definite, inevitable, and sure to come, might lead to lower levels of conspiracy belief as an expression of acceptance of the change (rationalisation). In contrast, social change that appears to be uncertain, conversely indefinite, evitable, and unsure to come, might rather lead to increased levels of belief in conspiracy theories, as an expression of defence and system-justification behaviour (reactance).

Institutional Trust as Moderator Between Social Change and Conspiracy Endorsement

Change on a societal level can be a natural process, but is often introduced via political decisions. Either way, official institutions play an important role to communicate about societal change, explaining its circumstances and establishing a supportive attitude towards the consequences that derive from the change. To establish acceptance towards changes within the society, trust in official institutions and persons in charge has found to be an important variable when communicating in uncertain times or when facing risks, threats or crises (e.g., a health pandemic; Siegrist, 1999, 2000; Visschers & Siegrist, 2018; Siegrist et al., 2003). Thus, the role of institutional trust should be considered when exploring the effects of uncertainty surrounding the occurrence of a social change on public reactions (e.g., belief in conspiracies).

To begin, the Organisation for Economic Cooperation and Development (OECD; 2017a) defined trust as "a person's belief that another person or institution will act consistently with their expectations of positive behaviour" (p.42). Trust in institutions includes trust in political institutions, law and order institutions, and non-governmental institutions. Moreover, the OECD (2017a) identified two key components that are relevant when talking about institutional trust. One is *competence*, which means the "ability of governments to deliver citizens the services they need at the quality level they expect" (OECD, 2017b, p. 24). The other is *values*, which includes the "drivers and principles that inform and guide government action" (OECD, 2017b, p. 24). In addition to that, there are dimensions allocated to each component that are amenable in policy change. These are *responsiveness*, *reliability, integrity*, *openness* and *fairness*. They reflect the practical way of handling policy changes that can influence the formation of trust in officials. Thus, perceiving official institutions as trustworthy when handling sensible topics like policy change, can lead to the perceptions of those to be generally reliable and trustworthy (OECD, 2017a). The same is likely to account for the act of dealing with social change, as it is often related to policy changes.

Johnson and Scicchitano (2000) gave a direct insight on how important trust is in times of social change, particularly concerning the acceptance of it. They stressed that social change can be highly complex in its nature and hardly understandable for laypeople. Those are asked to judge a change and its practical consequences on a rather uncertain basis, as they often do not have adequate knowledge to assess all the different layers contributing to the social change. Further, they are asked to create behavioural intentions, which is why false assumptions and inappropriate behaviour could

follow (e.g., denial; Johnson & Sicchitano, 2000). Therefore, institutional trust is fundamental to facilitate understanding and acceptance of a change. For example, environmental policy making which is causing societal change (e.g., transformation of transport), is highly complex, plus, the underlying motive for analogous policies, the climate change, is a threat that is hard to grasp. Thus, the public is rather unlikely to be fully able to retrace the effectiveness of new regulations. Therefore, citizens are required to put trust into their government to make the best choices. However, without this trust, people will be likely to actively oppose any changes within the social systems (Johnson & Sicchitano, 2000).

Further, as social change is often related to feelings of uncertainty and lack of control, trust remains relevant. Research suggested that people tend to emphasize religious or socio-political systems that offer a stable external structure when they perceive a personal lack of control (Kay et al., 2008) or uncertainty (Whiston et al., 2015). Hence, strong external institutions, especially the government, as a broad order and structure imposing organisation, can be an important factor to reduce feelings of uncertainty. Thus, it can be of great value to trust in the competence of public figures or institutions who are perceived as being able to deal with an uncertain situation (Kay et al., 2008; Whiston et al., 2015; Siegrist, 1999; 2000). However, it also has been found that some people tend to make use of conspiracy theories to restore a feeling of control (Whiston & Galinsky, 2008). Similarly, Whiston and colleagues (2015) found evidence that people being manipulated to perceive uncertainty put greater trust in the government, but also had greater beliefs in conspiracy theories and in the paranormal. Consequently, both, relying on official institutions and on conspiracy theories, seem to offer a strategy to cope with uncertain circumstances.

Therefore, the availability of a good trust relation between the public and institutions might prevent people from falling for conspiracies by reducing uncertainties, whereas a lack of such trust might fuel the belief in conspiracies, particularly during uncertain times of social change. In turn, trust in institutions might function as a moderator between high and low levelled uncertain social change situations and the belief in conspiracies.

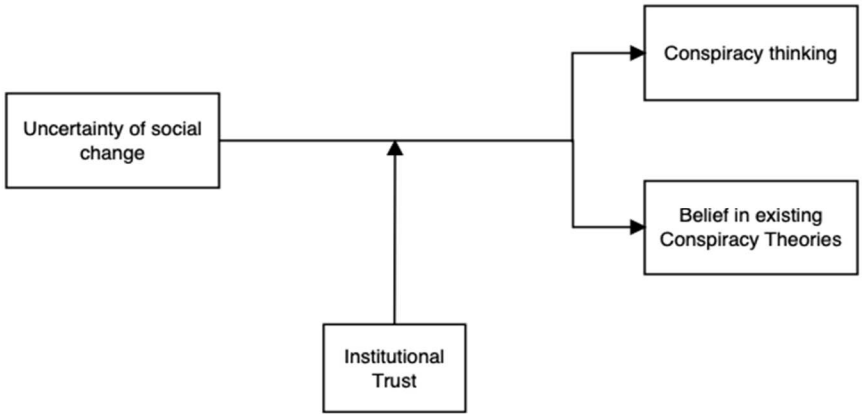
Uncertainty of Societal Change and a Lack of Institutional Trust as Drivers for Conspiracy Endorsement

Summarizing what has been described earlier, the extent to which a social change event that is threatening an existing system is perceived to be certain or uncertain to occur, may be relevant for people to develop a tendency to believe in conspiracies, as an expression of system-defensive behaviour. Thus, believing in conspiracies may allow to take actions against a change within the system, justifying a current status quo. Further, the availability of institutional trust to offer structure and clarity seems to be moderating when dealing with uncertain times like social changes. Hence, a lack of trust in institutions may additionally fuel the belief in conspiracies.

Consequently, this study investigates the interaction of the following three variables. The independent variable is *uncertainty of social change*, which represents the level of uncertainty about the occurrence of a social change (*high*, *low*, *control*). The moderating variable is *institutional trust*, which describes the extent to which people belief that official institutions act in line with their expectations and show positive behaviour and intentions (OECD, 2017a). The dependent variable is the *belief in conspiracies*. To get a full picture on people's belief in conspiracies it was split into the two manifestations *conspiracy thinking* and *the belief in existing conspiracy theorie*s. Conspiracy thinking reflects a general disposition to think about and evaluate social events in terms of conspiracies (Federico et al., 2018). The belief in existing conspiracy theories is about getting an insight in the endorsement of well-known conspiracy theories that exist in relation to relevant world affairs, like climate change or the 9/11 terroristic attacks (Douglas et al., 2016). As the tendency to belief in specific conspiracies is dependent on how prone a person is to accept conspiracies in general (Imhoff & Bruder, 2014), the motivating effect arising from external circumstances (e.g., uncertainty about a social change) to belief in conspiracies was expected to not only increase the tendency to think in terms of conspiracies but also to activate an increased belief in specific conspiracies across different contexts. Similarly, Douglas and colleagues (2015) reported that people were more likely to agree with a range of different conspiracies, when they generally attributed events to intentionality. According to this, **Figure 1** displays a moderator model indicating how the variables could be related to each other.

Figure 1

Proposed Moderator Model



Note: Moderator model with uncertainty of social change as independent variable, institutional trust as moderator variable and conspiracy thinking and the belief in existing conspiracy theories as dependent variables.

The Current Study

Accordingly, the study's goal was to examine the endorsement of conspiracy thinking as means of system-justification behaviour when facing a threat in terms of a social change. The focus was put on effects that might arise from perceptions about the certainty with which a social change is actually about to occur, and thus, will become reality. Further, this study investigated the moderating

influence of institutional trust on this relationship. Therefore, three conditions manipulating different levels of uncertainty about the occurrence of a social change topic have been developed (*high uncertainty*, *low uncertainty*, *control*). These aimed to frame different perceptions about the certainty with which a social change is expected to occur. Moreover, institutional trust, conspiracy thinking and the belief in existing conspiracies have been measured in order to explore the interaction of these variables. According to the theoretical framework, the following hypotheses have been formulated:

H1: Perceiving the occurrence of a social change to be uncertain causes higher levels of **(a)** conspiracy thinking and **(b)** the belief in existing conspiracy theories, than when perceiving the occurrence of a social change to be certain.

H2: The effect of uncertainty of a social change on **(a)** conspiracy thinking and **(b)** the belief in existing conspiracy theories is moderated by institutional trust; specifically, when institutional trust is low, this effect will be stronger than when institutional trust is high.

Method

Participants and Design

The current experimental online study had a two-factor between-participants design with the uncertainty of a social change (*high*, *low*, *control*) concerning its occurrence as independent variable and institutional trust as moderator variable. Uncertainty of social change was manipulated, while institutional trust was measured. Further, conspiracy thinking and the belief in existing conspiracy theories were the dependent variables.

This study used a convenience sample. Participants have been recruited via the Psychology Test Subject Pool (Sona-System) of the Faculty of Behavioural, Management and Social Sciences (BMS) of the University of Twente and via a snowball-sampling technique. All people with an age of 18 or older and with either an EU-citizenship or an EU-residency could participate in this study. 356 people started the study, of which 305 participants (104 in the control group; 102 in the low uncertainty group; 99 in the high uncertainty group) gave a complete response, which leads to a completion rate of 85.67%. Participants who filled in less than 75% of one of the scales included in the survey have been excluded from the sample ($N = 51$).

The final sample included 305 participants with 229 female, 75 male persons, and one that did not indicate a gender. The age ranged from 18 to 67, with a mean of 27.78 years ($SD = 12.67$). Most participants had a high school degree (61.5%), followed by 33.9% who had a graduate degree. 4.6% indicated an education lower than high school level. The sample mainly consisted of German (76.39%) and Dutch (15.08%) participants. 5.57% of the participants were citizens of other EU-member-states. 2.95% came from outside the EU, however, these participants indicated an EU-residency either in Germany or the Netherlands.

Materials and Measures

Demographic Variables

Several demographics have been included in the study: age, gender, highest educational degree, nationality, and country of residence for non-European participants (**Appendix B**). Country of residence was only surveyed for non-European participants to ensure that they currently live in the EU. Having an EU-citizenship or an EU-residency was a prerequisite to participate in this study to ensure the affectedness by the manipulation as described below.

Moderating and Independent Variable

Institutional Trust. The moderator variable institutional trust was measured via a questionnaire developed by the OECD (2017a; **Appendix C**). It is based on their framework on defining trust, as described in the theoretical framework. It measures trust by testing the expectations a person holds towards behaviour and intentions of official institutions in general, assessing the general propensity to trust in official institutions. To do so, it captures beliefs about the policy change dimensions *responsiveness, reliability* and *integrity* which form the key component of trust called

competence (one item each). Further, it surveys the policy change dimensions *openness* (two items) and *fairness* (three items), which form the key component of trust called *values* (**Appendix C**, OECD 2017a, b). Thus, it delivers insights into people's trust by reflecting in what way they perceive official institutions to be competent to handle policy changes and to what extent they perceive institutions to act upon certain values, having the citizens' best interest at heart. Additionally, as social change is often related to policy change, the questionnaire matches the context of this study.

The questionnaire originally consisted of ten items, with two items measuring interpersonal trust, and eight items measuring institutional trust. Due to the focus on institutional trust, the items on interpersonal trust have been excluded from this study. Therefore, the adopted version of the survey consisted of eight items ($\alpha = .718$, $\lambda_2 = .731$, $N = 303$). The following shows example items: "*If you were to complain about bad quality of a public service, how likely is that the problem would be easily resolved?"; "If a private citizen offers a government employee an improper payment in order to speed up administrative procedure, do you think that the government employee would accept the bribe*?" The response scale ranged from 1 (= very unlikely/most likely to refuse) to 5 (= very likely/most likely to accept). The items for *competence* and *values* were each averaged to a mean score, which in turn were averaged to a total score of institutional trust, with greater values indicating higher levels of trust.

Additionally, to get an overview about the trust of participants in specific institutions, particularly to see if it differs between the EU and national institutes, an excerpt of the European Quality of Life Survey (**Appendix D**; OECD, 2017a) has been used. Participants answered on a 5-point response scale (1= I do not trust at all; 5= I trust completely) how much they personally trusted each of the listed institutions. The survey has been enlarged by one more item, asking about the trust in the European Parliament (α=.825, $\lambda_2 = .831$, $N = 303$).

Uncertainty of Social Change. The independent variable uncertainty of social change was manipulated in this experimental study. As described earlier, the time course of social change seems to influence the acceptance of a social change in the system (Friesen et al., 2019). Therefore, the indication about the different time stages of a social change (*pre-decision*, *pre-implementation*, *post implementation stage*) have been of major relevance for the creation of the three conditions within this study (Friesen et al., 2019; Laurin, 2018). The high uncertainty condition was framed in line with the *pre-decision stage* of social change, promoting uncertainty around the espousal of a social change. The low uncertainty condition reflected the *pre-implementation stage*, presenting a social change that is inevitable (Friesen et al., 2019). The control condition did not include any information about the time stage of a social change.

Similar to previous work on investigating system-justification behaviour or rationalisation and reactance (Laurin et al., 2012, Laurin, 2018), this scenario involved the official introduction of a new regulation that comes along with individual restrictions. The scenario used within the conditions dealt with the introduction of EU-wide national air passenger taxes as ground for a social change. Traveling

by plane has become more and more affordable for a broad range of society. For instance, in the UK in 2018, 78% of air traveling accounted for holiday purposes, while only 7% was for business travelling (Johnson, 2020). Thus, flying is a relevant part concerning travelling and mobility of our current modern society. However, this growth contributes greatly to the increased carbon emissions world-wide, with a rising trend. Hence, introducing air passenger taxes aims to put a hold to this growth, and accordingly, to reduce carbon emissions to keep climate change limited (Krenek & Schratzenstaller, 2016). Even though this scenario might not affect the full range of society, it is particularly relevant for the broad middle class of society, which will be main subject to this study. An increase of plane ticket prices could make it less affordable for a great range of people that can afford flying now due to the currently pleasing conditions that air traffic is not subject to excise duty or VAT. Further, the introduction of these air passenger taxes represents one aspect of a broader transport transformation process to reduce carbon emissions. Additionally, as the aviation sector is a main driver of economic activity and social development (Lioutov, 2020), the introduction of these taxes would introduce a change in our society on several layers. It would have an impact on the whole aviation sector, travel operators, tourism, job opportunities, and individuals in their choices concerning transport and mobility.

The scenario about the introduction of EU-wide national air passenger taxes was described in a short text. All participants first read an introduction about rising air traffic and, conversely, rising carbon emissions, with experts recommending the introduction of air passenger taxes to efficiently curb the growth of the aviation sector and carbon emissions. Participants in the control condition only read about this and did not receive any specific information concerning the introduction of the EU-law on aviation taxes. Participants in the high uncertainty condition (*pre-decision stage*) further read that the EU is discussing the introduction of air passenger taxes but is, so far, restraining from any decisions. Participants in the low uncertainty condition (*pre-implementation stage*) read that the EU has decided on air passenger taxes and that those will soon come into effect. The material used can be found in **Appendix E**.

Dependent Variables

The following section delivers descriptive information about the dependent variables, representing the belief in conspiracies. As mentioned in the theoretical framework, two manifestations of the belief in conspiracies have been considered: conspiracy thinking and belief in existing conspiracy theories. This combination allows to get a full picture on people's belief in conspiracies, and to investigate if an external situational factor that is expected to motivate conspiracy thinking also motivates to engage in specific conspiracies across different contexts (Douglas et al., 2015; Imhoff & Bruder, 2014).

Conspiracy Thinking. Conspiracy thinking was measured by a 17-item scale, developed by Federico and colleagues (2018; **Appendix F**), assessing the "general propensity to think in terms of conspiracies about social events" (Federico et al., 2018, p. 930). Example items are "*Those people in*

power will use shadowy means to gain profit or an advantage, rather, than lose it", "*Nothing in politics or world affairs happens by accident or coincidence*." The response scale ranged from 1 (= strongly disagree) to 5 (= strongly agree). The items were averaged to form a single scale, with higher values indicating greater tendencies of conspiracy thinking. According to Blanz (2015) internal consistency of this scale is high, with Cronbach's alpha for conspiracy thinking of .89 (N = 298) and Guttman's Lambda 2 of .90 (N =298).

Belief in Existing Conspiracy Theories. The belief in existing conspiracies was assessed with the adapted version of Douglas' and Sutton's (2011) *Belief in Conspiracy Theories* scale. This adapted version (Douglas, Sutton, Callan, Dawtry, Harvey, 2015; **Appendix G**) consisted of 7 items (α = .74; λ_2 = .752, N = 305), for example "*Scientists are creating panic in climate change because it is in their interests to do so*". It presented conspiracies that are related to socially and politically relevant world affairs and are well known by most people. The response scale ranged from 1 (= strongly disagree) to 5 (= strongly agree), with the additional scale point "I am not familiar with this event", which was coded 0. The item scores were averaged to a single score, with higher values indicating greater belief in existing conspiracies.

Manipulation Check and Covariates

Manipulation Check. To test for the effectiveness of the manipulation regarding the different levels of uncertainty surrounding the proposed social change, the following items have been developed: (I) Thinking back to the text you have read earlier, how likely do you think it is, that the EU will tax the aviation sector, e.g. via an EU-wide law on air passenger taxes, sometime soon? The response scale ranged from 1 (= very unlikely) to 5 (= very likely). Additionally, to measure the emotional experience of uncertainty in relation to the manipulation (Whiston, Galinsky, & Kay, 2015), the following item has been used: (II) Please recall most details of the information you read about in the short text. Then, please indicate the extent to which the confrontation with this information made you feel definite/uncertain/insecure." Participants answered on a scale ranging from 1 (= not at all) to 5 (= extremely).

Attitude and Affectedness. Similar to Laurin and colleagues (2012), participants have been asked to answer on a 5-point scale (1= not at all, 5 = extremely) how much they supported and how much they would be annoyed by the introduction of a new law on air passenger taxes. This aimed to measure attitudes towards this aspect of social change and to survey whether the participants supported or felt annoyed by the law, which delivered an indicator on whether they engaged in system-justification or not. Hence, it allowed to understand if greater belief in conspiracies actually appeared as an expression of denial of social change (system-justification), and thus, was included as a covariate. Additionally, to test how much the participants would be affected by that law, they indicated if they, in general, would consider travelling by plane when going on a holiday (no = 0; yes = 1). Additionally, they reported how often they travel by plane per year on a scale from never (1),

over 1-2 times per year (2) and 3-9 times per year (3), to 10 or more times per year (4). This division has been chosen based on the results of a consumer survey of the Federal Association of the German Air Transport Industry on the frequency with which people in Germany travel by plane. People flying one to nine times per year have been classified as occasional flyers, people who flew ten or more times per year were classified as frequent flyers (Bundesverband für deutsche Luftverkehrswirtschaft, n.d).

Environmental Concern. Further, as the scenario is related to the climate change problem, participants shortly indicated in what way they are concerned about environmental issues. People with a high sense for the problem of climate change might be more inclined to accept air passenger taxes even though it might lead to individual restrictions when travelling (Sonnenschein & Smedby, 2019). Thus, they responded to the item "To what extent do you agree to the following statement? 'Personally, I think climate change is the most important topic these days.'", on a 5-point response scale ranging from 1 (= strongly disagree) to 5 (= strongly agree).

Knowledge. Besides, to control for any influences arousing from deeper knowledge about the topic of air passenger taxes planned by the EU, the following item was constructed: "I know about the current plans of the EU about introducing an EU-wide law on air travel taxes." The 5-point response scale ranged from 1 (= not at all) to 5 (= very much).

Procedure

The study took place via an online experiment using Qualtrics. After opening the link, participants first read and agreed to the informed consent (**Appendix A**). Afterwards they indicated some sociodemographic data (**Appendix B**). Following that, participants replied to items on institutional trust (**Appendix C**, **D**). Afterwards, the participants were randomly assigned to one of three conditions (*high uncertainty*, *low uncertainty*, *control condition*). All participants were asked to read and memorize a text about the introduction of EU-wide air passenger taxes displayed to them according to the three conditions. Thus, they either read a text promoting certainty or uncertainty about the introduction of European air passenger taxes, or they only read basic information about air passenger taxes without an indication about their introduction (control condition; **Appendix E**). Then, each participant answered the items measuring conspiracy thinking and the belief in existing conspiracy theories (**Appendix F**, **G**). In the end, they responded on different items testing the effectiveness of the manipulation and controlling for further influencing variables (attitude towards the change, affectedness, environmental concern, knowledge). To conclude, the participants read a short debriefing (**Appendix H**), which informed about the real circumstances surrounding an international air travel tax in Europe and which included a debunking of the real-world conspiracies.

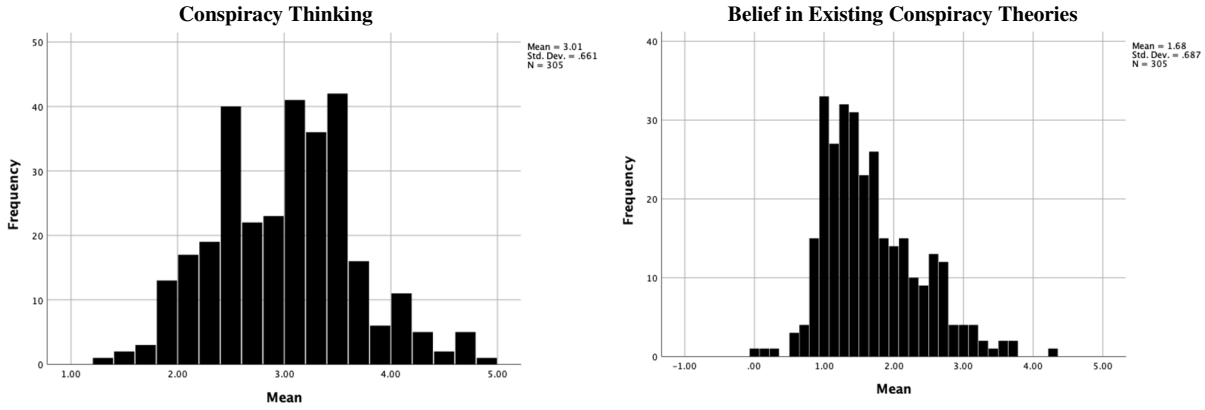
Results

Preliminary Analyses

To begin, some descriptive analyses provided an insight into the prevalence of conspiracy thinking and the belief in existing conspiracy theories within the study sample. Among the sample, moderate levels of conspiracy thinking were prevalent with a mean of 3.01 (S*D* = 0.66; **Figure 2**), while the belief in existing conspiracy theories was rather low (*M* = 1.68, *SD* = 0.69; **Figure 2**).

Figure 2

Conspiracy Thinking and the Belief in Existing Conspiracy Beliefs



The descriptive analysis of institutional trust showed a moderate level of trust in the whole sample (*M* = 3.12, *SD* = 0.62), with moderate levels of the trust component competence (*M* =3.07, *SD* = 0.78) and values (*M* = 3.16, *SD* = 0.67). Similar to this, the participants in this study indicated moderately high levels of trust in all proposed public institutions (EU-Parliament *M* = 3.33, *SD* = 0.78; Country Parliament *M* = 3.37, *SD* = 0.85; The legal system *M* = 3.59, *SD* = 0.80; The police *M* = 3.47, *SD* = 0.84; The government *M* = 3.25, *SD* = 0.90; The local authorities *M* = 3.38, *SD* = 0.78).

As another preliminary step, bivariate analysis among the key variables have been run (**Table 1**)**.** With respect to the dependent variables, conspiracy thinking was positively correlated with the belief in existing conspiracy theories (*r* =.43, *p* < .001). Further, institutional trust was associated with lower levels of conspiracy thinking (*r* = -.38, *p* < .001) and the belief in existing conspiracies (*r* = -.17, *p* =.003). In regard to the covariates, conspiracy thinking correlated positively with perceived insecurity (*r* = .16, *p* = .006) and traveling by plane (*r* = .12, *p* = .035), and negatively with the support of the EU-law (*r* = -.22, *p* < .001), environmental concern (*r* = -.15, *p* = .010) and knowledge (*r* = -.14, *p* = .012). Further, the belief in existing conspiracy theories was associated with higher levels of perceived insecurity (*r* = 25, *p* < .001) perceived uncertainty (*r* = .17, *p* = .003) and annoyance towards the EU-law (*r* = .19, *p* = .001) and with lower levels of support for the EU-law (*r* = -.20, *p* = .001) and environmental concern (*r* = -.13, *p* = .020). Institutional trust was further found to be positively associated with knowledge (*r* = .25, *p* < .001), and correlated negatively with, age (*r* = -.15, *p* = .009) and the level of feeling annoyed by the EU-law (*r* = -.13, *p* = 0.22). Besides, some additional interesting associations in-between the covariates became visible as presented in **Table 1**.

Table 1

Means (M), Standard Deviations (SD) and Correlations between the Key Variables

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. CT	3.01	0.66															
2. BECT	1.68	0.69	**.43**														
3. Institutional Trust	3.12	0.62	**-.38**	**-.17**													
4. Age	27.78	12.67	-.004	.01	**-.15**												
5. Gender	0.75	0.43	.10	-.01	-.01	**-.15**											
6. Education	2.29	0.55	.02	-.12	.04	**.38**	-.03										
7. Perceived Likelihood Law	3.21	0.96	.07	-.04	.01	.07	-.02	.10									
8. Perceived Determination	2.53	0.95	-.05	.05	.06	.08	-.06	.07	.10								
9. Perceived Uncertainty	2.29	1.07	.07	**.17**	.01	**-.16**	.11	*-.12*	**-.19**	-.03							
10. Perceived Insecurity	2.02	1.05	**.16**	**.25**	-.11	.12	*.12*	-.03	-.09	.02	**.65**						
11. Support	3.15	1.22	**-.22**	**-.20**	.11	.13	-.05	.06	-.09	.06	-.05	-.04					
12. Annoyance	2.18	1.15	.11	**.19**	*-.06*	**-.25**	.08	-.01	.07	.01	*.14*	**.19**	**-.58**				
13. Travelling by Plane	1.13	0.33	*.12*	.004	-.01	-.20	.02	**-.15**	-.001	.002	-.01	.06	*-.15*	*.14*			
14. Travel Frequency	1.91	0.54	.10	.03	-.01	-.02	.02	**.21**	-.004	.08	.01	.02	**-.16**	**.22**	**.31**		
15. Environmental Concern	3.86	0.98	**-.15**	*-.13*	-.01	.02	.07	-.02	*-.14*	.07	.11	.10	**.33**	**-.26**	-.07	-.09	
16. Knowledge	1.97	0.01	*-.14*	-.05	**.25**	-.04	-.03	.04	.10	.11	.08	.07	.08	-.02	.01	-.02	-.02

p < .01, *p < .05* Scale Categories (1-5); CT = Conspiracy Thinking, BECT = Belief in Existing Conspiracy Theories
N = 305

Manipulation Check

There was a significant difference between the three experimental groups concerning the perceived likelihood about the introduction of an EU-wide law on aviation taxes (Levene's Test, F[2, 301] = 1.71, p = .183; one-way Anova, F[2, 301] = 14.22, p < .001). Tukey post-hoc analysis revealed that participants in the high uncertainty condition with a mean of 2.87 (SD = 0.88) perceived the introduction of the EU-law to be significantly less likely than the control group (p = .040), with a mean of 3.18 (SD = 0.92), and the low uncertainty group, with a mean of 3.56 (SD = 0.95; p < .001). The low uncertainty group, with a mean of 3.56 (SD = 0.95), perceived a significantly greater likeliness of the introduction of the law than the control group (M = 3.18, SD = 0.92); p = .010). Further, there was a statistically significant difference between the groups concerning the level of perceived uncertainty in regard of the introduction of the EU-law (Levene's Test, F[2, 301] = 1.60, p = .205, one-way Anova, F[2, 301] = 5.97, p = .003). Tukey post-hoc analysis showed that the high uncertainty group with a mean of 2.58 (SD = 1.11) felt significantly more uncertain than the control group (p = .030) with a mean of 2.20 (SD = 0.99) and the low uncertainty group (p = .003) with a mean of 2.09 (SD = 1.05). There was no significant difference between the control and the uncertainty group (p = .720). Thus, the manipulation worked effectively in eliciting different levels of the perceived uncertainty concerning the occurrence of a social change and in prompting greater feelings of uncertainty in the high uncertainty group in comparison to the low uncertainty and control group.

However, even though the majority of the sample seemed to be affected by the manipulation (87.5% indicated to travel by plane, 81.6% travelled at least one time per year), the participants did not seem to perceive the promoted change as a threat to the system. There was a moderate support for the introduction of the EU-law within the full sample (M = 3.15, SD = 1.22). Similarly, 66.4% indicated that they would feel not annoyed at all (34.7%) or only somewhat annoyed (31.7%) by the law. Additionally, the analysis did not show any statistically significant differences between the experimental groups concerning the level of support (Levene's Test F [2, 294] = 0.60, p = .550; one-way Anova, F[2, 294] = 0.67, p = .513) nor the level of annoyance (Levene's Test F[2, 300] = 4.06, p = .018; Welch Test, F[2, 199.22] = 0.63, p = .532). Hence, the manipulation seemingly did not work effectively in presenting a system threat to elicit annoyance and/or defensive attitudes, and thus, system-justification behaviour. This might have been affected by high levels of environmental concern among the participants (M = 3.86, SD = 0.98), which was positively correlated with support for the EU-Law (r = .33, p < .001), and negatively associated with feeling annoyed by it (r = -.26, p < .001). Knowledge was rather low, and therefore, did not seem to have influenced the manipulation (M = 1.97, SD = 0.91).

Hypothesis Testing

To test the proposed moderator model and the corresponding hypothesis **H1** and **H2,** a moderator analysis was performed, using PROCESS by Hayes. To test **H1a)** and **H2a)** conspiracy thinking was the outcome variable, institutional trust the moderator variable and the level of uncertainty (experimental conditions) the predictor variable. As the conditions were categorial and to compare both forms of information to a control group, and then to compare the two forms of information to each other, Helmert contrasts were used. This form of contrast first compared the control group with both the low and high uncertainty group (i.e., no uncertainty information vs. any information, **Table 2**), and then the low uncertainty with the high uncertainty group (i.e., low vs. high uncertainty, **Table 2**). Further, the variables perceived insecurity, support for the law, environmental concern and knowledge were included as covariates, due to the previously described bivariate correlative relations (**Table 1**).

Similarly, to test **H1b)** and **H2b)** the outcome variable was belief in existing conspiracy theories, institutional trust was the moderator variable and the level of uncertainty (experimental conditions) the predictor variable. Again, as the experimental conditions were categorial, Helmert contrasts were used to compare both forms of information to a control group, and then to compare the two forms of information to each other. This form of contrast compared the groups as described before. Further, the variables perceived uncertainty, perceived insecurity, support for the law, annoyance towards the law and environmental concern were included as covariates, due to the previous described bivariate correlative relations (**Table 1**).

Table 2

Moderator Analysis to Predict Conspiracy Thinking and The Belief in Existing Conspiracy Theories

		Conspiracy Thinking		Belief in Existing Conspiracy Theories	
Model	Predictor	*B*	95% CI	*B*	95% CI
	Constant	**4.51**	(4.01, 5.01)	**2.20**	(1.57, 2.84)
	No Uncertainty Info vs. any Info	0.23	(-0.58, 1.04)	*-0.85*	(-1.71, -0.01)
	Low vs. High Uncertainty	-0.50	(-1.44, 0.43)	0.77	(-0.24, 1.79)
	Institutional Trust	**-0.35**	(-0.48, -0.22)	-0.12	(-0.24, 0.01)
	No Uncertainty Info vs. any Info x Trust	-0.10	(-0.36, 0.15)	0.23	(-0.02, 0.50)
	Low vs. High Uncertainty x Trust	0.09	(-0.20, 0.38)	-0.30	(-0.60, 0.01)
	Perceived Uncertainty[a]			0.05	(-0.03, 0.13)
	Perceived Insecurity	**0.09**	(0.02, 0.16)	*0.12*	(0.02, 0.22)
	Support	*-0.07*	(-0.14, -0.01)	-0.07	(-0.15, 0.004)
	Annoyance[a]			0.03	(-0.05, 0.10)
	Environmental Concern	*-0.08*	(-0.16, -0.01)	*-0.09*	(-0.18, -0.004)
	Knowledge[b]	-0.04	(-0.12, 0.05)		
	R^2	.226		.165	
	F	**8.41**		**5.41**	
	ΔR^2	.003		.021	
	ΔF	0.47		4.03	

Note. Conspiracy Thinking $N = 295$, Belief in Existing Conspiracy Theories $N = 294$.
[a]Only relevant for the belief in existing conspiracy theories, [b]Only relevant for conspiracy thinking
p < .01, *p < .05*

Conspiracy Thinking (H1a, H2a)

The overall moderator model to predict conspiracy thinking was significant, $F(9, 285) = 8.41$, $p < .001$, explaining 22.6% of the variance. The analysis did not show significant differences between the control group and both low and high uncertainty group ($B = 0.23$, $p = .574$) in predicting conspiracy thinking. Similarly, there was no significant difference between the low uncertainty group and the high uncertainty group in regard to conspiracy thinking ($B = -0.50$, $p = .292$). Therefore, **H1a)** needs to be rejected, participants in the high uncertainty group did not show significantly greater conspiracy thinking than the low uncertainty or control group. Further, the interaction of the control group, in comparison to the low and high uncertainty group (i.e., no information vs. any information), with institutional trust was not significant ($B = -0.10$, $p = .431$). Likewise, the interaction of the low uncertainty group with institutional trust, in comparison to the high uncertainty group, was not significant ($B = 0.09$, $p = .541$). Thus, the analysis did not show that institutional trust moderated the relationship between conspiracy thinking and the level of uncertainty concerning the occurrence of a social change (experimental conditions). Additionally, the interaction term did not add significant information to the model, $\Delta F(2, 285) = 0.47$, $p = .622$, explaining 0.3% of the variance. Therefore, **H2a)** needed to be rejected, institutional trust had no moderating effect.

Besides, institutional trust had a main effect on conspiracy thinking (B = -0.35, p < .001), indicating that high levels of institutional trust was associated with lower levels of conspiracy thinking. Further, perceived insecurity was associated with greater levels of conspiracy thinking (B = 0.09, p = .008), while support for the law (B = -0.07, p = .035) and environmental concern (B = -0.08, p = .036) was found to be negatively associated with conspiracy thinking.

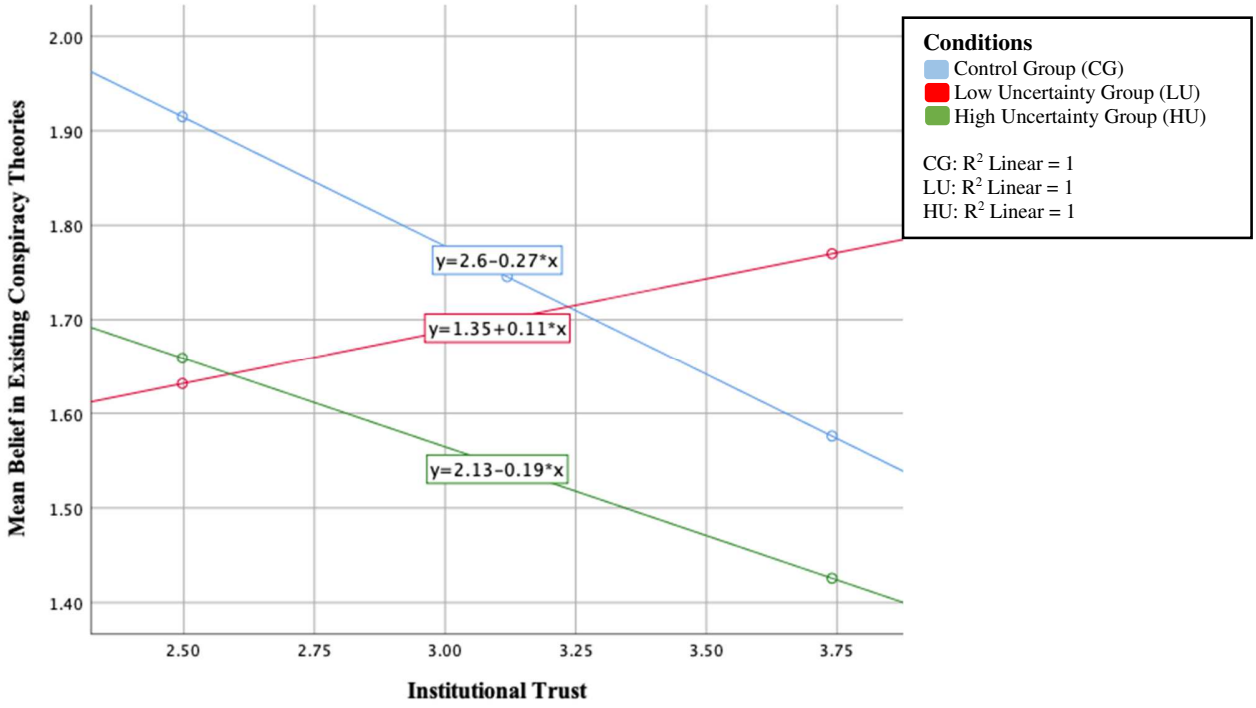
The Belief in Existing Conspiracy Theories (H1b, H2b)

The overall model to predict the belief in existing conspiracy theories was significant, $F(10, 283) = 5.41$, p < .001, explaining 16.5% of variance. The analysis showed, that there was a negative relationship between the control group and any other information (B = -0.85, p = .049), indicating that the belief in existing conspiracies is higher among the control group and decreases when being confronted with any kind of information. There was no significant difference between the low uncertainty group and the high uncertainty group (B = 0.77, p = .135) to predict the belief in existing conspiracy theories. Therefore, **H1b)** needs to be rejected, participants in the high uncertainty group did not show significantly greater beliefs in existing conspiracy theories. In addition, the interaction of the control group, in comparison to the low and high uncertainty group, with institutional trust was not significant (B = 0.23, p = .079). Likewise, the interaction of the low uncertainty group, in comparison to the high uncertainty group, with institutional trust was not significant (B = -0.30, p = .055). However, the interaction term added significant information to the overall model, $\Delta F(2, 283) = 3.81$, p = .023, explaining 2,3% of the variance. Still, as the interaction terms themselves were not significant, **H2b)** needed to be rejected.

However, it is worth examining the interactions, as the interaction terms were close to the .05 significance level and statistically significantly improved the model. **Figure 3** shows that as institutional trust increased, belief in existing conspiracy theories decreased, but only for the control group and the high uncertainty group. When low uncertainty information is presented the relationship between institutional trust was no longer negative, and may even be positive. Still, it needs to be stressed that these results are not significant, and should rather be seen as an indicator of a probable effect arising from institutional trust.

Figure 3

Moderation of Institutional Trust on the Relationship Between the Level of Uncertainty (Conditions) and the Belief in Existing Conspiracy Theories.



Note. The interaction terms were not significant, only close to the .05 level.

In addition, perceive insecurity predicted greater levels of the belief in existing conspiracy theories (B = 0.12, p = .019), whereas environmental concern predicted lower levels of the belief in existing conspiracies (B = -0.09, p = .041).

Testing for Main Effects

As the moderation analysis via PROCESS did not show significant effects arising from the moderator, the interaction term has been dropped and a linear regression was run to test for main effects only. After checking the assumptions for linear regression, conspiracy thinking and the belief in existing conspiracy theories were regressed on two dummy variables of the level of uncertainty (low uncertainty group and control group; high uncertainty group as reference) and institutional trust. Further, due to significant bivariate correlations (**Table 1),** the variables perceived insecurity, support for the law, environmental concern and knowledge were added as covariates to predict conspiracy thinking (**Table 3**). Similarly, perceived uncertainty, perceived insecurity, support for the law, annoyance towards the law and environmental concern were added as covariates to predict the belief in existing conspiracy theories (**Table 3**).

Table 3

Predictors of Conspiracy Thinking and the Belief in Existing Conspiracy Theories

Model	Predictor	Conspiracy Thinking		Belief in Existing Conspiracy Theories	
		B	95% CI	*B*	95% CI
1	Intercept	**4.39**	(3.90, 4.88)	**2.03**	(1.43, 2.63)
	Institutional Trust	**-0.34**	(-0.46, -0.23)	*-0.12*	(-0.24, -0.002)
	Low Uncertainty vs. High Uncertainty	**0.22**	(0.06, 0.39)	0.15	(-0.03, 0.34)
	Control Group vs. High Uncertainty	*0.20*	(0.03, 0.37)	*0.21*	(0.02, 3.93)
	Perceived Uncertainty[a]			0.04	(-0.06, 0.13)
	Perceived Insecurity	**0.09**	(0.02, 0.16)	**0.13**	(-0.04, 0.23)
	Support	*-0.07*	(-0.13, -0.01)	-.061	(-0.14, 0.02)
	Annoyance[a]			0.03	(-0.05, 0.11)
	Environmental Concern	*-0.08*	(-0.16, -0.01)	*-0.08*	(-0.17, -0.004)
	Knowledge[b]	-0.04	(-0.12, 0.04)		
	R^2	.224		.144	
	F	**11.81**		**5.99**	

Note. Conspiracy Thinking $N = 295$. Belief in Existing Conspiracy Theories $N = 294$, CI = Confidence Interval
[a]Only relevant for belief in existing conspiracy theories. [b]Only relevant for conspiracy thinking.
p < .01, *p < .05*

The model for conspiracy thinking was significant, $F(7, 287) = 11.81$, $p < .001$, accounting for 22.4 % of variance. Participants in the low uncertainty condition seemed to show greater levels of conspiracy thinking than the high uncertainty group ($B = 0.22$, $p = .009$). This, is in contrast to **H1a)** and therefore, again, delivers evidence for the rejection of the hypothesis. In addition, the control group showed significantly higher levels of conspiracy thinking than the high uncertainty group ($B = 0.20$, $p = .024$). Further, the analysis revealed a significant relationship between institutional trust and conspiracy thinking, $B = -0.34$, $p < .001$. Thus, institutional trust seemed to predict lower levels of conspiracy thinking. In addition, perceived insecurity predicted significantly greater levels of conspiracy thinking ($B = 0.09$, $p < .008$), while the support for the law ($B = -0.07$, $p < .017$), and environmental concern ($B = -0.08$, $p < .024$) were associated with lower levels.

The model for the belief in existing conspiracy theories was significant as well, $F(8, 285) = 5.599$, $p < .001$, accounting for 14.4% of variance. The analysis revealed a significant relationship between institutional trust and the belief in existing conspiracies, $B = -0.12$, $p = .046$, indicating lower beliefs in existing conspiracies when institutional trust is high. There was no significant difference in predicting the belief in existing conspiracy theories between the low and the high uncertainty group ($B = 0.15$, $p = .106$). This, again, provides evidence for the rejection of **H1b)**. However, there was a significant difference between the control group and the high uncertainty group ($B = 0.21$, $p = .030$), indicating that people in the control group seemed to show greater beliefs in existing conspiracies than people in the high

uncertainty group. In addition to that, perceived insecurity predicted greater belief in existing conspiracy theories ($B = 0.13$, $p = .007$), while environmental concern ($B = -0.08$, $p = .039$) was significantly associated with lower beliefs in existing conspiracies.

Discussion

The study's goal was to explore the belief in conspiracies, particularly in regard of a social change which is perceived to be a threat to the system. The focus was put on effects that might arise from perceptions about the certainty with which a social change is actually about to occur, and thus, will become reality. Here, high uncertainties about the actual occurrence or implementation of a change aspect on a societal level was expected to lead to greater beliefs in conspiracies as an expression of system-justification. In addition to that, institutional trust was expected to moderate this effect, as trust can offer possibilities to cope with change and uncertainties (Johnson & Sicchitano, 2000; Kay et al., 2008; Whiston et al., 2015; Siegrist, 1999; 2000). In contrast to that, high uncertainty was found to predict lower levels of conspiracy thinking and the belief in existing conspiracy theories in comparison to low uncertainty and/or no uncertainty information. Thus, people that were confronted with highly uncertain information about an upcoming social change, seemed to show less endorsement of conspiracies[1]. Further, no evidence for the moderating effect of institutional trust on the relationship between the level of uncertainty and conspiracy thinking was found. Similar applies for the moderating effect of institutional trust on the belief in existing conspiracy theories. However, for the latter, the results delivered indicators for a probable moderating effect of institutional trust, though not a significant one. Accordingly, an increase in institutional trust may lead to less belief in existing conspiracies when being confronted with high uncertainties or no uncertainty information, while being confronted with low uncertainties may even increase the belief in existing conspiracy theories. Besides, a main effect arising from the variable institutional trust was found. Institutional trust predicted lower levels of conspiracy endorsement. In addition to these main outcomes, there were effects arising from the covariates perceived insecurity, support for the law, and environmental concern on conspiracy thinking and/or the belief in existing conspiracy theories. Perceived insecurity was associated with greater endorsement of conspiracies, while support for the law and environmental concern predicted lower levels of conspiracy endorsement.

These results partly differ from the findings in literature. Particularly, the result that high uncertainty was associated with less endorsement of conspiracies opposed the expectations based on empirical findings. According to literature, facing a social change that is perceived to be a threat to the system was rather found to be associated with greater conspiracy belief (Jolley et al., 2018; Federico et al., 2018). Similarly, facing a change that might come along with individual restrictions and that was

[1] The usage of term conspiracy endorsement is intended to include both conspiracies thinking and the belief in existing conspiracy theories.

uncertain to occur was found to elicit reactance (Laurin et al., 2012, Friesen et al., 2019), which, in turn, was suspected to lead to increased conspiracy belief as expression of system-justification.

That contrast could be explained by the fact that the manipulation did not fully work as intended. To elicit system-justification behaviour, and thus, greater belief in conspiracies, a change within a system must be perceived as a threat by the public and people need to feel negatively affected by it (e.g., due to individual restrictions; Friesen et al., 2019; Laurin et al., 2012; Jolley et al., 2018; Federico et al., 2018). Even though 80% of the sample was affected by the scenario (as they indicated to travel by plane), it seems that the manipulation was not perceived as threatening and therefore, did not elicit system-justification behaviour. Further, the described restrictions might have been too mild to elicit reactance. In turn, the manipulation did not evoke increased belief in conspiracies as an expression of it.

This assumption can be based on the fact that participants rather indicated high levels of support for the EU-law than annoyance towards it. In addition, moderately high environmental concern among the sample might have contributed to it, in forms of a greater general openness towards corresponding regulations (Sonnenschein & Smedby, 2019). Additionally, the need to address an even greater environmental threat, like the climate change, might have outweighed the threat of a change, that in contrast, comes along with minor restrictions and/or acceptable societal developments. However, it is unclear to what extent the participants actually would accept individual restrictions for environmental reasons, as the item used only measured a general opinion on the relevance of environmental topics. Thus, there might have been a clash between the participant's ideals and how they would actually feel when the restrictions would become reality and directly affect them.

This is also an indicator that participants might not have assessed the restrictions coming along with the law to be too severe or detrimental in their day-to-day life. Based on assumptions by Laurin and colleagues (2012), the objective features that were supposed to prompt a detrimental perception of the restrictions arising from the social change in the manipulation, might not have met the level of perceived absoluteness, and thus, did not elicit reactance. This can be supported by the fact that travel frequency was positively associated with annoyance towards the law and negatively with support for it. Hence, the manipulation might have worked for frequent flyers which might have assessed the monetary consequences arising from an EU-law on aviation taxes more severely. However, frequent flyers (>10 times per year) only accounted for approximately 1% of the sample, which is why no equivalent effects became visible during the analysis. Similarly, Laurin and colleagues (2012) showed that reactance towards a law on speed limits was mainly elicited among frequent drivers.

Moreover, the emotional state of uncertainty and insecurity in regard of the change one is facing, might have played a role. Feeling insecure was associated with, both, conspiracy thinking and the belief

in existing conspiracies, as indicated in the literature (Butter, 2018; Imhoff & Bruder, 2014; Kay et a., 2009; Whiston et al., 2015; Van den Bos, 2009). Further, the feeling of uncertainty was greater among participants in the high uncertainty group. However, people might have only felt insecure and/or uncertain about the change to occur, but not have felt personally uncertain or insecure about themselves, their environment or the situation because of the proposed change. Hence, reacting with an increased belief in conspiracies, might occur only when uncertainty and insecurity is linked to the corresponding emotional state with a certain level of severity, and thus, the perception of an actual threat. Support is given by the literature on risk perceptions, describing that perceiving a threat depends on its perceived level of susceptibility and severity (Popova, 2012).

The Role of Uncertainty and Trust Concerning Conspiracy Endorsement When Facing a Non-Threatening Social Change

Even though the outcomes described a decreased conspiracy belief among people who were confronted with high uncertainty, and by that, opposed what has been anticipated, it is an interesting finding. Instead of explaining conspiracy beliefs as a reaction towards a threat, it delivers insight into people's reaction on uncertainties while threat perceptions are rather low. Accordingly, the study showed that communicating uncertainties about a proposed change seemed to be appreciated as it resulted in less conspiracy belief than when communicating a change that already has been decided on, or when sharing no information at all. Thus, in the absence of a direct threat, people might be better able to deal with uncertainties surrounding a change. Further, communicating uncertainties about a change before it has been decided on might provide people with the opportunity to better assess the different layers of the change and to develop an attitude towards it (Johnson & Sicchitano, 2000). This might allow the public to develop a feeling of self-efficacy to deal with and adopt to upcoming changes (Markon et al., 2013; Rabinovich & Morton, 2012; Popova, 2012). Further, communicating uncertainties offers a certain range of transparency on what and why "those in power" take certain decisions, which is why people may not suspect conspiracies (Seeger, 2006). This might also be linked to the rather high level of support for the EU-law. Understanding the reasoning behind a new policy, and observing that uncertainties were being discussed among decision makers, might have led to a greater support (Seeger, 2006). Moreover, environmental concern was moderately high among the sample, and was associated with greater support for the law. Thus, participants might have been rather open for the introduction of aviation taxes in general. Thus, a person that supports a change content-wise, as it meets personal ideals and attitudes, has no need to blame it on an external entity via the use of conspiracies, as it might happen when facing an unpleasant change (Eidelman & Biernat, 2003; Butter 2018; Sullivan et al., 2010).

In contrast, when communicating a change that already has been decided on or when giving no specific information at all, people may not have the chance to assess the value and the different layers of the change and to adopt to it (Johnson, Sicchitano, 2000). Further, people do not have any transparency or insights into the process of policy making that would introduce a social change. Thus, they cannot understand the reasoning behind, e.g., the introduction of a new law, which might lead to the impression that "those in power" might be engaged in conspiracies while taking far-reaching decisions. To conclude, an open communication about ongoing policy-making processes and corresponding uncertainties seems to allow for greater support and acceptance for a change. Consequently, it is associated with lower tendencies to belief in conspiracies, as long as the change is not posing a direct threat to the social system.

After discussing the relationship between the level of uncertainty and the belief in conspiracies, it is worth having a closer look at the role of institutional trust, as the previous described assumptions may be further linked to it. Institutional trust was found to have a main effect on conspiracy thinking, reducing the tendency to think in terms of conspiracies. As described by the OECD (2017 a, b), the key components of trust are competence and values. Thus, people that perceive official institutions and authorities to be competent and to act upon positive values, seem to see no need to rely on conspiracy theories as alternative explanations or to question an official account for an event (Imhoff & Lamberty, 2017). This highlights the importance of good trust relations between official institutions and the public to buffer the influence arising from conspiracies, irrelevant of social developments.

Besides, there was no clear evidence for the moderating effect of institutional trust. However, indicators for it could be found. Accordingly, it seemed that the belief in existing conspiracy theories might decrease with greater institutional trust, but only for the high uncertainty group and the control group. Thus, institutional trust might function as a coping mechanism when facing a lot of uncertainties or when no information is available at all, and, again, might reduce the need for alternative explanations (e.g., conspiracy theories, Butter, 2018; Imhoff & Lamberty, 2017). Liu and colleagues (2016) similarly found that the trust in official figures helps people to accept the uncertainty surrounding them, and by that, allows a proactive way of coping with it. Additionally, different researches indicated that communicating uncertainties and by that building up trust, can help people to better deal with uncertainties and related fears (Gray & Ropeik, 2002; Rogers et al., 2007). Hence, institutional trust might actually promote proactive coping strategies as people might feel encourage to actively deal with the threat and related uncertainties (Frewer, 2003; Siegrist & Zingg, 2013. In contrast, it might decrease the tendency to make use of maladaptive/negative coping strategies, like denial of a change or change-related beliefs in conspiracies (van Projien & Douglas, 2017). Further, knowledge was associated positively with institutional trust and negatively with conspiracy thinking. Thus, keeping the public informed, even about

uncertainties, might promote greater trust and reduce the belief in conspiracies (Liu et al., 2016). This goes along with the previous ideas that communicating uncertainties might reduce conspiracy theories as it allows for transparency. Interestingly, it seemed that this effect might also be prevalent when being confronted with no clear information on a social change aspect. Thus, trust may even buffer the need for information or to make sense out of events when facing a change (e.g., a social change; Yang et al., 2014, Visschers, Siegrist, 2018; Butter, 2018) and by that, prevent people to seek for conspiracies as source of information.

In contrast to that, looking at the low uncertainty group, it seemed that the belief in existing conspiracies even may increase when institutional trust is high. An explanation might be that people are aware of vulnerabilities that come along with trusting others (Siegrist et al., 2003). Moreover, this awareness might become particularly salient when facing information on a social change that do not allow for any scope for participation or public discussion. Thus, it might increase the belief in conspiracy theories, as people might suspect that their trust could be exploited by "those in power". This is in line with low uncertainty leading to greater conspiracy thinking than high uncertainty. However, here is to state that these assumptions in regard to institutional trust need to be assessed carefully, as the results on the moderation only reached a level close to being significant.

Limitations and Future Research

As discussed earlier, the main limitation of this study was the insufficient design of the manipulation. Based on that, the study could not find specific indicators to describe the endorsement of conspiracy thinking as means of system-justification behaviour when facing a threat in terms of a social change. It rather found indicators on the effect of uncertainty and trust in general, when facing a social change that is associated with low levels of a perceived threat. Thus, to redirect the focus on conspiracy belief as means of system-justification, future research should focus on a manipulation that ensures that a proposed change is actually perceived as a threat. Moreover, it should include more direct consequences on an individual level to ensure a greater perceived impact on the day-to-day lives of participants. Further, the individual perception of absoluteness of restrictions or consequences arising from a change in contrast to objective features of absoluteness should be considered according to recommendations by Laurin and colleagues (2012). Thereby, the participant's actual perceived impact arising from the manipulations could be better accounted for.

Another limitation was the convenience sample used in the current study, which was rather homogenous in terms of the socio-economic status. Among the participants, there has been only a moderate prevalence of conspiracy thinking and a low prevalence of believing in existing conspiracy theories. This might be due to the high educational level of the participants (Douglas et al., 2015), even

though there was no association between the educational level and the belief in conspiracies However, the educational level was associated with lower levels of uncertainty, which could be an indirect indicator that the belief in conspiracies among people with a high educational level might be lower. Thus, future research on the endorsement of conspiracy theories would profit from a rather heterogenous sample including people with diverse socio-economic backgrounds to investigate effects on the belief in conspiracy theories.

Conclusion

To conclude, this study did not find evidence for the endorsement of conspiracy thinking as means of system-justification behaviour when facing a threat in terms of a social change. However, it did find interesting effects arising from change-related uncertainties and institutional trust on the belief in conspiracies. These findings particularly are to interpret in the context of people facing a social change which is not posing a direct threat to the system or individual. Correspondingly, being confronted with highly uncertain information about a social change as well as having high levels of trust in official institutions and authorities was found to lead to lower levels of the endorsement of conspiracy theories. Further, indicators that trust might provide better means to cope with high uncertainties surrounding a change, and by that, might buffer the need to rely on conspiracy theories to explain those uncertainties were found. Hence, communicating uncertainties and establishing trust seem to be main factors to prevent the endorsement of conspiracy theories when facing a social change. To conclude, the role of trust and uncertainty in times of social change was investigated more thoroughly. However, future research should start another attempt to investigate conspiracy theories in the context of system-justification and social change, by designing a more impactful manipulation.

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Appendix

Appendix A

Informed consent

Information Sheet

Study: Living in Times of Social Change: Human Behaviour and Reactions towards Change in the Society.

Author: Louisa Köppen
Last edited: 17.01.2021

Please read the following information carefully, before you consent to participate in this study:

- The purpose of this research is to examine different behaviour and reactions of humans towards social and societal change.
- The participation in this study will take about 15 min. You will be led through the whole study step by step and will be asked to answer different types of questions.
- The study only aims to understand your initial reactions to certain stimuli, it **does not** aim to test
- any skills or abilities.
- To avoid any bias in your reactions, you will be informed about specific hypotheses and research goals after you filled in the survey. You may ask any kind of questions about the research via E-Mail after your participation.
- The participation is completely voluntary. You can withdraw from the study at any time without having to give a reason.
- All information you provide, all collected data, will be stored and analysed anonymously and does not allow any conclusions about your individual person.
- The data will be collected and analysed in the context of a Master Thesis.

This research project has been reviewed and approved by the BMS Ethics Committee.

Contact details of the researcher:
Louisa Köppen
l.koppen@student.utwente.nl

Contact Information for Questions about Your Rights as a Research Participant
If you have questions about your rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the Secretary of the Ethics Committee of the Faculty of Behavioural, Management and Social Sciences at the University of Twente by ethicscommittee-bms@utwente.nl

Please note: You must be 18 or older and an EU-Citizen or EU-Resident to participate in this study.

By clicking on '*Continue to next page*', you confirm that you have read and understood the study information above and consent voluntarily to be a participant in this study.

Appendix B

Sociodemographic Data

To begin, I would like you to indicate some sociodemographic data.

Age _____

Gender
- ☐ male
- ☐ female
- ☐ non-binary/third gender
- ☐ prefer not to say

Highest educational degree
- ☐ Lower than high school degree/Abitur
- ☐ High school degree/Abitur
- ☐ Graduate degree (University/Applied University degree)
- ☐ Other

Nationality _____

If you are **not** an EU-citizen, but currently residing in the European Union, please additionally indicate your country of residency.

_____

Appendix C

Institutional Trust: Overview and Questionnaire (OECD, 2017a, p.203f)

Overview

Table 4

Overview Components of Trust Within the OECD Module to Assess Institutional Trust.

Item Number	Policy Change Dimension	Trust Component
1	Responsiveness	Competence
2	Reliability	Competence
3	Openness	Values
4,5	Fairness	Values
6,7,8	Integrity	Values

(OECD, 2017a, b)

Questionnaire

The following questions are about your expectations of behaviour from public institutions. In each question, you will be asked whether you think a particular example of behaviour is something that would be expected not to occur at all, or to always occur. Indicate your answer on a scale from 'very unlikely' to 'very likely'.

Please note:
For Non-EU citizens, please refer to the institutions of your current country of residence in the EU.

1. If you were to complain about bad quality of a public service, how likely is that the problem would be easily resolved?
2. If a natural disaster occurs, do you think that the provision by government of adequate food, shelter and clothing will be timely and efficient?
3. If a decision affecting your community to be taken by the local or regional government, how likely is it that you and others in the community would have an opportunity to voice your concerns?
4. If an individual belongs to a minority group (e.g., sexual, racial/ethnic and/or based on national origin), how likely is it that the individual will be treated the same as other citizens by a government agency?
5. If taxes were to be increased, do you think that the financial burden would be shared fairly across social groups?

The response scale for the following questions has changed. Please indicate your answer to the following statements on a scale from 'most likely to refuse' to 'most likely to accept'.

6. If a private citizen offers a government employee an improper payment in order to speed up administrative procedures, do you think that the government employee would accept the bribe. (R)
7. If a large business offers a well-paid job to a high-level politician in exchange for political favours during their time in office, do you think that the politician would accept this proposal? (R)
8. If a member of the national parliament were offered a bribe to influence the awarding of a government contract, do you think that the member of parliament would accept the bribe? (R)

Appendix D

European Quality of Life Survey (OECD, 2017a)

This part is about trust in public institutions. Please indicate how much you personally trust each of the following institutions.

Please note:
For Non-EU citizens, please refer to the institutions of your current country of residence in the EU.

European parliament	1 2 3 4 5
Country parliament	1 2 3 4 5
The legal system	1 2 3 4 5
The press	1 2 3 4 5
The police	1 2 3 4 5
The government	1 2 3 4 5
The local (municipal) authorities	1 2 3 4 5

Appendix E

Manipulation - Texts used in the study

Instruction: Please read and memorize the most important points of the following text.

Control condition

In the European Union (EU), traveling by plane has become more and more popular within the last decades. The number of passengers is ongoingly increasing, which leads to increased air traffic, which, in turn, is causing greater carbon emissions. Experts stated that since 1990, carbon emissions have doubled, and aviation now accounts for about 3% of the EU's total greenhouse gas emissions, which is a main driver of climate change. They further predicted that CO2 emissions, as well as the number of flights, are expected to grow by 45% each between 2014 and 2035. Thus, they recommended taxing the aviation sector (e.g. via air passenger taxes), in order to curb the ever-growing air traffic and to reduce carbon emissions, to address current climate change challenges (Krenek & Schratzenstaller, 2016).

Low uncertainty condition, pre-implementation stage

In the European Union (EU), traveling by plane has become more and more popular within the last decades. The number of passengers is ongoingly increasing, which leads to increased air traffic, which, in turn, is causing greater carbon emissions. Experts stated that since 1990, carbon emissions have doubled, and aviation now accounts for about 3% of the EU's total greenhouse gas emissions, which is a main driver of climate change. They further predicted that CO2 emissions, as well as the number of flights, are expected to grow by 45% each between 2014 and 2035. Thus, they recommended taxing the aviation sector (e.g. via air passenger taxes), in order to curb the ever-growing air traffic and to reduce carbon emissions, to address current climate change challenges (Krenek & Schratzenstaller, 2016).

As a result, the European Parliament and the European Council, have been debating the merits of introducing EU-wide air passenger taxes. On the 15th of November, 2020, Ursula von der Leyen, president of the European Commission, announced that the law on air passenger taxes has been agreed on by all member states. Approval for this new legislation is strong, and is going to come into effect on 1st of July, 2021. After this date, member states have two years to translate the EU-law into national law. Accordingly, latest on the first of July, 2023, air passenger taxes are going to be added on to ticket prices for passengers departing from any EU-member state (<2000km, 20€ for economy class tickets, 40€ for business class tickets; >2000km, 80€ for economy class tickets, 160€ for business class tickets). The introduction of these air passenger taxes represents one aspect of a broader transport transformation process to reduce carbon emissions. Thus, as the aviation sector is a main driver of economic activity and social development, the introduction of these taxes is going to introduce a change in our society on several layers. It is going to have an impact on the whole aviation sector, travel operators, tourism, job opportunities, and individuals in their choices concerning transport and mobility. Flying is going to become, once again, more exclusive and thus, less affordable for a broad range of people traveling from and within Europe. Still, this tax facilitates one aspect of climate change mitigation, which is urgently demanded. Therefore, this new law is inevitable and is going to change the shape of our world of transport and mobility as we know it.

High uncertainty condition, pre-decision stage

In the European Union (EU), traveling by plane has become more and more popular within the last decades. The number of passengers is ongoingly increasing, which leads to increased air traffic, which, in turn, is causing greater carbon emissions. Experts stated that since 1990, carbon emissions have doubled, and aviation now accounts for about 3% of the EU's total greenhouse gas emissions, which is a main driver of climate change. They further predicted that CO2 emissions, as well as the number of flights, are expected to grow by 45% each between 2014 and 2035. Thus, they recommended taxing the aviation sector (e.g. via air passenger taxes), in order to curb the ever-growing air traffic and to reduce carbon emissions, to address current climate change challenges (Krenek & Schratzenstaller, 2016).

As a result, the European Parliament and the European Council, have been debating the merits of introducing EU-wide air passenger taxes. On 15th of November, 2020 Ursula von der Leyen, president of the European Commission, announced that the debate is still going on and the needed consensus for such a law is far from reach. The introduction of these air passenger taxes would represent one aspect of a broader transport transformation process to reduce carbon emissions. Support for this new legislation is low in many member states. Most fear the financial, economic, and social costs of the introduction, as the aviation sector is the main driver of economic activity and social development. Further, there is the fear of great resistance by the aviation sector and the general public. Additionally, opinions about the height of air passenger taxes differ extensively, ranging from 7€ to 160€ for economy class tickets, and 80€ to 450€ for business class tickets. Even though depending on the height of possible extra costs, the introduction of these taxes would lead to a change in our society on several layers. It would have an impact on the whole aviation sector, travel operators, tourism, job opportunities, and individuals in their choices concerning transport and mobility. Flying would become, once again, more exclusive and thus, less affordable for a broad range of people traveling from and within Europe. Still, this tax would facilitate one aspect of climate change mitigation, which is urgently demanded. However, the if, how, and when of the introduction remains unsettled, leaving behind uncertainties about possible changes concerning transport and mobility within our society.

Appendix F

Conspiracy Thinking (Federico et al., 2018, p. 930)

After you read the article, please indicate how much you agree to the given statements on a scale from 'strongly disagree' to 'strongly agree'.

1. Those people in power will use shadowy means to gain profit or an advantage, rather, than lose it.
2. I rarely wonder what hidden reasons those in power may have for their actions (R).
3. There are always powerful groups plotting to sway the outcomes of those in power.
4. The media is the puppet of those in power.
5. Nothing in politics or world affairs happens by accident or coincidence.
6. The actions of the powerful are usually what they seem (R).
7. Many major events have behind them the actions of a small group of influential people.
8. Despite what people may think, much of the power in this country is concentrated in the hands of a select group of individuals working behind the scenes.
9. There are people with power who will do anything to hide the truth from public scrutiny.
10. The media usually reports on what is happening behind the scenes in the halls of power (R).
11. The public is generally unaware of the identity and actions of the most influential people in the country.
12. Sometimes politics and government seem so suspicious that people can't really understand the truth of what's going on.
13. The media hides the truth to protect the interests of those in power.
14. People in power rarely lie to prevent the public from knowing what is truly going on (R).
15. Many of the decisions that affect us the most are made in secret y a small group of people.
16. Our lives are not controlled by the secret actions of the powerful (R).
17. There is no "secret cabal" of powerful people pulling the world's strings (R).

Appendix G

Belief in existing conspiracy theories (Douglas, Sutton, Callan, Dawtry, Harvey, 2015)

There has been much debate about various historical events, suggesting that the 'official version' of the truth of those events is something of a cover-up. Below is a list of events for which the official version has been disputed. For each event, I would like you to indicate to what extent you agree to the given alternative explanation.

1. Scientists are creating panic about climate change because it is in their interests to do so.
2. There was an official campaign by MI6 to assassinate Princess Diana, sanctioned by elements of the establishment.
3. The AIDS Virus was created in a laboratory.
4. The attack on the Twin Towers was not a terrorist action but a governmental plot.
5. The American moon landings were faked.
6. Governments are suppressing evidence of the existence of aliens.
7. Lee Harvey Oswald did not act alone in assassinating President John F. Kennedy.

Appendix H

Debriefing

Debriefing

This debriefing gives you an overview of the **research goals and hypotheses** of this study. Further, it **clarifies the actual circumstances related to the scenario about EU-wide taxation of the aviation sector**. In the end, it displays **correcting statements** on the alternative explanations about different world-affairs you read about earlier!

Research goals and hypotheses:

The aim of the study is to examine the extent to which perceived uncertainty about the occurrence of a social and societal change (e.g., the introduction of a new, influential law) affects belief in conspiracy theories. Accordingly, it is expected that a change whose actual occurrence is perceived as uncertain is more likely to be rejected and more likely to lead to belief in conspiracy theories. On the one hand, this assumption relates to the *System-Justification Theory*, which states that a change in the social system that is perceived as uncertain, and thus stoppable, tends to be more likely to be rejected in order to maintain the "old" system. On the other hand, the connection to conspiracy theories seems to make sense, as uncertainty leads to an increased striving for meaning and explanation. Conspiracy theories can provide seemingly logical explanations for complex, incomprehensible changes. Moreover, they legitimise opposition to change, as they usually focus on negative intentions of powerful individuals and assume intentional harm to society. Further, institutional trust is seen as an influential factor in uncertain times characterized by change (e.g., times of social change), as trust in the system and institutions can provide structure and clarity. Thus, a lack of trust in public institutions could further encourage belief in conspiracies.

Hypothesis 1: Perceiving the occurrence of a social change to be uncertain causes higher levels of (a) conspiracy thinking and (b) the belief in existing conspiracy theories, than when perceiving the occurrence of a social change to be certain.
Hypothesis 2: The effect of uncertainty of a social change on (a) conspiracy thinking and (b) the belief in existing conspiracy theories is moderated by institutional trust; specifically, when institutional trust is low, this effect will be stronger than when the institutional trust is high.

The Scenario: EU- wide Air Passenger Taxes

In this study, the introduction of EU-wide air passenger taxes represented a social change topic, indicating a change in public transportation and mobility. The scenario has been created only for the purpose of this study and does not reflect the real circumstances. For a few years, there has been a demand to appropriately tax the aviation sector, as it contributes greatly to carbon emissions, with a rising trend (Krenek & Schratzenstaller, 2016; Deutsche Welle, 2019). Further, it has been asked to create more fair conditions and to close the price gap towards other taxed transportation sectors (e.g., train sector). However, a collective solution to appropriately tax the aviation sector on a European level to achieve climate goals has not been achieved yet. Accordingly, there will be no introduction of EU-wide air passenger taxes anytime soon.

Debunking conspiracies

During the study, you have been confronted with existing conspiracy theories related to different world affairs and have been asked to indicate your agreement to them. You read about alternative explanations about climate change, princess Diana's death, the AIDS virus, the 9/11 attacks, the American moon landings, the existence of aliens, and the assassination of John F. Kennedy.

Here is to state, that the shown conspiracy theories do not address the real circumstances of the correspondent world-events. There is no evidence for these claims to be true.
Please read the correcting statements below carefully.

- **Numerous scientific studies confirm that the earth is warming and that the rate of warming is increasing. The global mean temperature for 2019 was 1.1 ±0.1 °C above pre-industrial levels.**
(World Meteorological Organization. (2020). WMO Statement on the current State of the Global Climate in 2019. WMO-No.1248. https://library.wmo.int/doc_num.php?explnum_id=10211; Than, K. (2013, April 4); Fast checking 6 Persistent Science Conspiracy Theories. Conspiracy theories that are easily debunked by science still persist. https://www.nationalgeographic.com/news/2013/4/130404-american-conspiracy-theories-polls-debunk/)
- **Princess Diana died in a car crash caused by a paparazzi chase on August 31, 1997. She suffered a cardiac arrest as a consequence of the car crash.**
(Davis, C. (2017, August 31). The Death of Princess Diana: A week that rocked Britain. https://www.theguardian.com/uk-news/2017/aug/31/death-of-diana-the-week-that-rocked-britain)
- **The AIDS Virus came from a type of chimpanzees from Central Africa. The virus was probably passed on to humans when they hunted these chimpanzees for meat and encountered their infected blood (approx. In the late 1800's).**
(Centre for Disease Control and Prevention. (No date). About HIV. https://www.cdc.gov/hiv/basics/whatishiv.html)
- **The attack on the Twin Towers was a terroristic attack, initiated by al Qaeda leader Osama bin Laden.**
(CNN. (updated 2020, September 18). September 11 Terror Attacks Fast Facts. https://edition.cnn.com/2013/07/27/us/september-11-anniversary-fast-facts/index.html)
- **On July 19, 1969, the Apollo 11 moon mission successfully landed on the moon with Neil Armstrong, an American astronaut, being the first man to walk on the moon.** (NASA. (2019, July 20). July 20, 1969: One Giant Leap for Mankind. https://www.nasa.gov/mission_pages/apollo/apollo11.html)
- **There is no conclusive evidence for the existence of aliens. However, many astronomers today are open to the idea of life existing in the universe – even intelligent alien life. However, incidents about the emergence of UFOS are most likely linked to more mundane causes, e.g., visual illusions caused by reflected sunlight from a plane passing near sunset.**
(Than, K. (2013, April 4). Fast checking 6 Persistent Science Conspiracy Theories. Conspiracy theories that are easily debunked by science still persist. https://www.nationalgeographic.com/news/2013/4/130404-american-conspiracy-theories-polls-debunk/)
- **Lee Harvey Oswald has been identified as the lone perpetrator assassinating President John F. Kennedy in the official Warren Report investigating the cause of this incident.**
(CNN (updated 2020, December 2). John F. Kennedy Assassination Fast Facts. https://edition.cnn.com/2013/06/28/us/john-f-kennedy-assassination-fast-facts/index.html)

For further questions and information:
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By clicking "**end this session**", you confirm that you have read and understood the information given in the debriefing.