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Abstract

Using an online experiment with two distinct dishonesty games, we analyze how dishonesty in men and women is influenced by either thinking or learning about the dishonesty of others in a related, but different situation. Thinking is induced by eliciting a belief about others' dishonesty in a different game. We find that such belief elicitation (1) increases males' (but not females') dishonesty and (2) has no influence on participants' beliefs about the dishonesty of others in the game that they themselves play. Learning is induced by receiving a signal about the actual honest or dishonest choices of others in a different game. We find that the level of unethical behavior provided in such a signal (1) increases females' (but not males') dishonesty and (2) is positively correlated with participants' beliefs about the dishonesty of others in the game that they themselves play. We conclude that gender matters when examining how unethical behavior spreads. Both genders update their beliefs about others' dishonesty in the same way when presented with information about others' choices, but dishonesty in men is triggered by merely thinking about others' dishonesty, while women only respond to actual information on others' dishonesty.

JEL-Codes: C900, D010, D800, D910.

Keywords: dishonesty, unethical behaviour, thinking and learning about other's dishonesty, gender, experiment.

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1 Introduction

Unethical behavior is often investigated in terms of dishonesty (Fischbacher & Föllmi-Heusi, 2013). Most research focuses on individual decisions and there seems to be a consensus that moral costs play a vital role in explaining dishonest behavior (for an overview, see Abeler et al., 2019). Yet, some research moves beyond the individual and tries to understand group dynamics (Kocher et al., 2018) or leadership effects (Bush et al., 2021; Grosch et al., 2021). However, only very few papers investigate the spreading of unethical behavior due to information about others' behavior (Bicchieri & Xiao, 2009; Gino et al., 2009; Innes & Mitra, 2013) and even fewer papers focus on gender-specific differences in the expansion of unethical behavior (Fosgaard et al., 2013; Greene & Paxton, 2009). Understanding the potential factors that contribute to the spread of unethical behavior in organizations is crucial for preventing the erosion of norms and the proliferation of such behavior in companies and society as a whole. Unethical actions, such as theft and other counterproductive work behaviors (Gruys & Sackett, 2003), can have serious consequences for businesses, including the decline in performance or even bankruptcy (Abdullah et al., 2021). The scandals at Wirecard (Davies, 2020) and Enron (Emshwiller & Smith, 2001) are prime examples for the threat of unethical behavior to the continued existence of an organization. Similarly, unethical and criminal behavior at Volkswagen (Boston, 2017) led to significant legal fines and a loss of consumer trust. In these three cases, the unethical behavior was pervasive at all levels of the organization, leading to what O'Brien (2003, p. 79) refers to as a "corrupt enterprise". Therefore, understanding and addressing the spread of unethical behavior is essential for mitigating its negative impact on businesses, employees, shareholders, and society as a whole.

In this paper, we experimentally investigate how unethical behavior can spread from one decision task into a similar but different decision task. Our results show that not only *learning* about unethical behavior of others but merely *thinking* about the potential unethical behavior of others can increase one's own unethical behavior. We demonstrate that gender is a significant factor for how people adapt their unethical behavior. Men increase dishonesty as soon as they are asked to *think* about other people's potential dishonesty in a different task, but the *learned* level of dishonesty by others does not have a significant influence. In contrast, women do not change their

behavior when asked to *think* about others' potential dishonesty. Yet, females' dishonesty increases when they *learn* the observed level of dishonesty.

Our experiment starts with a belief elicitation about others' behavior in a dishonesty game (Gino et al., 2010). This elicitation is used to induce subjects to think about others' behavior. Subsequently, a signal about others' behavior with different levels of dishonesty is provided. Subjects in our main experiment learn the actual choices from subjects who played the dishonesty game. However, subjects in our main experiment play a different game. Our main behavioral measure is a modified version of the die-rolling task (Fischbacher & Föllmi-Heusi, 2013), in which subjects are asked to report the outcome of a die roll. Finally, as a manipulation check, we ask subjects to state their belief about the dishonesty of others' in the game they themselves just played (i.e., the die-rolling task). The treatment Belief-Signal (B-S) features both, an initial belief elicitation and a signal about others' behavior. In this treatment, the level of dishonesty in the signal varies. We use the corresponding sub-treatments based on the level of dishonesty to investigate the effect of learning about others' unethical behavior. To test for the effect of merely thinking about others' behavior, we use two additional treatments: First, we omit the signal about others' behavior. Hence, Belief-NoSignal (B-NS) still features the initial belief elicitation as well as the main behavioral measure and the manipulation check, but omits the signal about others' dishonesty. Second, we omit both the initial belief elicitation and the signal in NoBelief-NoSignal (NB-NS), while, again, keeping the main behavioral measure and the manipulation check. By comparing the two treatments (B-NS vs. NB-NS), we investigate the effect of merely thinking about the potential dishonesty of others. Dishonesty increases among male subjects once they form beliefs about other's dishonesty, but irrespective of the level of signaled dishonesty. In contrast, women are not more dishonest when they form beliefs about other's dishonesty, but their dishonesty increases with increased levels of signaled dishonesty.

Previous research on unethical behavior focuses on spreads within one situation (Gino et al., 2009; Innes & Mitra, 2013), while previous research on spillovers differentiates two domains (Belot & Schröder, 2016; Dolan & Galizzi, 2015) rather than two situations rooted in the same domain. Additionally, the distinction between *thinking* and *learning* about others' behavior has, to the best of our knowledge, not been investigated for dishonest behavior. Related to this distinction, Krupka and Weber (2009, p. 307) investigate and find that a norm affects behavior in the pro-social domain

by means of a "focusing and (an) informational" influence. Hence, such a norm can draw one's attention to pro-social acts and exerts a stronger impact when one observes higher levels of pro-social behavior in others. Our findings are in line with a previous finding of a gender-related difference in adapting to signals about unethical behavior (Fosgaard et al., 2013) and gender differences in preferences found in a variety of domains (Croson & Gneezy, 2009). In addition, our results add to the previous reports of gender differences in cooperation (Furtner et al., 2021; Molina et al., 2013), willingness to comply (Crawford et al., 1995; Eagly, 1978; Maccoby, 1974; Minton et al., 1971), generosity (Eckel & Grossman, 1998), technology adaptation (Venkatesh & Morris, 2000), competitiveness (Gneezy et al., 2003; Gneezy & Rustichini, 2004), selection into competition (Datta Gupta et al., 2013; Niederle & Vesterlund, 2007; Vandegrift & Brown, 2005), and risk-taking (Holt & Laury, 2002). Our results indicate that gender does not affect how people form beliefs about the unethical behavior of others. Hence, our findings strengthen the case that men and women differ in how responsive they are to social cues (Gilligan, 1982/2016; Kahn et al., 1971; Roberts, 1991) rather than in how attentive they are to such cues (Bales & Parsons, 1956/2014; Garai, 1968; Williams & Best, 1982).

The remainder of the paper is organized as follows: In Section 2, we develop the relevant hypotheses for the two effects (*thinking* about others' behavior and *learning* about the actual behavior of others). Section 3 describes the experimental design. Section 4 presents our non-parametric and parametric analyses, which we split by gender. Finally, in Section 5, we offer a discussion of our results.

2 Hypothesis Development

In this paper, we investigate how *thinking* and *learning* about others' behavior affects a person's decision to act ethically or unethically and how this effect might differ between genders.[1] In the relevant literature, the evidence predominantly supports the idea that men are more dishonest than women (in laboratory experiments: Conrads et al., 2014; Dreber & Johannesson, 2008; Grosch & Rau, 2017; Houser et al., 2012; and in the field: Azar et al., 2013; Bucciol et al., 2013). However,

[1] We recognize gender as a non-binary variable. However, only 24 of 1,351 participants in our sample identified as neither male nor female (1.78%). Therefore, we had to exclude this group from our analysis, in which we compare the decisions of subjects based on their gender.

some researchers find no difference (Aoki et al., 2013; Childs, 2012). Moreover, DePaulo et al. (1996) and Tyler et al. (2006) provide opposing reports of more unethical behavior in females when considering all types of social interactions instead of limiting the observations to economic experiments. Still, it seems fair to assume that women are associated with less dishonesty than men. For example, Swamy et al. (2001) report a negative correlation between the level of unethical behavior and the percentage of women present in various situations, using multinational datasets that feature different levels of observability. Still, this gender difference seems quite complex and results from various factors. Previous findings report gender-related differences in preferences (Croson & Gneezy, 2009; Eckel & Grossman, 2008), in behavior related to dishonesty (e.g., generosity: Eckel & Grossman, 1998), and in how men and women react to signals and social cues (Fosgaard et al., 2013; Kahn et al., 1971; Roberts, 1991). Therefore, we hypothesize different effects for men and women regarding the two influences we investigate in our treatments.

Thinking about others' behavior by eliciting an initial belief about it in a task might increase the dishonesty in a different moral situation.[2] Krupka and Weber (2009, p. 314) find a corresponding "focusing effect" of a norm in the domain of pro-social behavior. Likewise, Fosgaard et al. (2013) test a manipulation aimed at increasing awareness of cheating being a viable option. This is closely related to the idea that honesty occurs due to the absence of temptation (The "Grace hypothesis"; for weak support, see Greene & Paxton, 2009, p. 12506). Krupka and Weber (2009) do not report any gender differences in their paper. However, Fosgaard et al. (2013) report that the effect of their manipulation for cheating awareness holds for women only. While one might expect the same for the intervention used in our experiment (i.e., prior belief elicitation), we hypothesize the opposite outcome. In contrast to Fosgaard et al. (2013), our treatment manipulation introduces a) another group of subjects, b) a moral situation (faced by this second group of subjects), and c) the interplay between the second group and the moral situation, which offered increasing payoffs for unethical behavior.

Introducing another group and promoting thinking about other participants' behavior in a situation in which unethical behavior might be possible might prompt our participants to compare themselves to the other group and their situation. Two consequences are evident. On the one hand,

[2]In our experimental design, we use the treatments NB-NS and B-NS to test for the aforementioned effect for men and women. Section 3 describes the design and treatment manipulations.

this might remind participants of the social norm, that is being honest as the socially desirable choice (Abeler et al., 2019). On the other hand, they might feel a sense of competition because a group has been introduced. Now, participants can compare themselves and try to outdo the others in terms of payoff received. In principle, both consequences (the reminder of the social norm and the increased sense of competition) might be valid for all subjects, but on average the magnitude of the two might differ between genders. Specifically, women's behavior might be stronger influenced by norms than men's and men's behavior might be stronger influenced by competition than women's behavior. In Appendix A, we demonstrate that this describes average perceptions of drivers for male and female behavior in an online sample. Furthermore, previous studies are also pointing into this direction. For example, it has been shown that men are more willing to compete (Datta Gupta et al., 2013; Niederle & Vesterlund, 2007; Vandegrift & Brown, 2005) and perform potentially better in competitive situations (Gneezy et al., 2003; Gneezy & Rustichini, 2004) than women. Consequently, men might adapt their behavior towards more self-interest and higher payoffs in order to perform monetarily better than members of another group. For women, previous findings indicate that their intentions are more often formed based on the currently apparent norm (Crawford et al., 1995; Eagly, 1978; Maccoby, 1974; Minton et al., 1971). Assuming that honest behavior is the predominant social norm when thinking about a moral situation, we hypothesize that a prior belief elicitation will decrease females' dishonesty. To sum up, we expect the promotion of unethical behavior from the elicitation of an initial belief about others' unethical behavior for men and the opposite for women. Specifically, we state the following two hypotheses:

Hypothesis 1. *Men's dishonesty is significantly larger when an initial belief about others' dishonesty is elicited than when it is not elicited.*

Hypothesis 2. *Women's dishonesty is significantly less when an initial belief about others' dishonesty is elicited than when it is not elicited.*

There is some evidence that a signal about others' behavior influences one's own behavior. For pro-social behavior, Krupka and Weber (2009, p. 309) report an "informational effect" caused by a norm, stating that higher levels of the specific behavior in the norm are associated with more similar behavior. In addition, Desmet and Engel (2021) report that people are conditional rule followers. This implies that the extent to which people follow (or violate) a moral norm might depend on the

number of rule followers (or violators) observed. Most closely related to our experiment, Innes and Mitra (2013) report in a series of experiments that higher levels of unethical behavior in such a signal are associated with more unethical behavior. However, in contrast to our experiment, Innes and Mitra (2013) use one situation rather than two distinct situations that both feature dishonesty. In the same domain and also using the same situation twice, Gino et al. (2009) show that one participant acting as a cheating agent in a laboratory can affect whether other participants choose to behave unethically. Therefore, both results are related to what we investigate; however, both papers might observe imitation rather than the spread of unethical behavior. All these findings are plausible, and it seems straightforward to hypothesize an dishonesty-promoting effect of higher levels of unethical behavioral. Yet, again effects could be gender-specific.

Based on our argumentation for Hypothesis 1 and Hypothesis 2 regarding the elicitation of a prior belief (without a signal being provided), we hypothesize higher levels of dishonesty in men than women. Given that women are, indeed, more likely to act in accordance with the moral norm (see Hypothesis 2), a signal about others' behavior containing unethical behavior might reduce the pressure to follow the norm.[3] We relate this line of thinking to previous research on self-depletion (Gino et al., 2011; Mead et al., 2009). Honesty decreases when the power to resist fades. Observing other participants violating the apparent norm in another situation might trigger women to focus less on the the norm and more on the potential earnings. In addition, women have a higher willingness to comply with observed norms (Crawford et al., 1995; Minton et al., 1971) and to confirm with the majority (Eagly, 1978; Maccoby, 1974). Therefore, if high levels of unethical behavior are signaled, women might adapt their behavior accordingly. An underlying reason for this might be that women are more attentive and/or sensitive to social cues (Bales & Parsons, 1956/2014; Garai, 1968; Gilligan, 1982/2016; Kahn et al., 1971; Roberts, 1991; Williams & Best, 1982). This line of argument is strengthened by the finding that women are more likely to act as conditional cooperators (Furtner et al., 2021). In addition, women in leadership positions align their dishonest behavior with their belief on group members' honesty preferences (Grosch et al., 2021). Thus, if high levels of unethical behavior are signaled, dishonesty among women might increase (see Hypothesis 3).

[3]In our experimental design, we use the treatment B-S and its five sub-treatments (B-S-0%, B-S-25%, B-S-50%, B-S-75%, and B-S-100%) based on the signals on unethical behavior to test for the aforementioned effect for men and women. Section 3 describes the design and treatment manipulations.

Hypothesis 3. *Women are significantly more dishonest when a higher level of dishonesty behavior by others is signaled to them.*

For men, some of the effects discussed above might be less relevant. We previously argued that a prior belief elicitation increases males' dishonesty (see Hypothesis 1). Hence, a signal on actual dishonest behavior should have a smaller impact for men than for women. Previous findings also imply that women behave according to what they can observe about others' behavior, but men do not. Men do not adapt their decisions to act unethically based on their belief on group members' preferences. In other words, men seem to care less about what others do or want. Therefore, in contrast to women, signals on higher levels of unethical behavior should not have a strong impact on men's behavior.[4]

Hypothesis 4. *Men are not signficiantly affected by the level of unethical behavior by others signaled to them.*

In summary, we hypothesize that both genders are affected by eliciting a prior belief about the dishonesty of others. However, we propose an increase of unethical behavior among men (see Hypothesis 1) and a decrease of unethical behavior among women (see Hypothesis 2). In addition, we hypothesize that women are affected by the level of unethical behavior provided in the behavioral signal about others (see Hypothesis 3). In contrast, for men, we propose that this effect is not present (see Hypothesis 4).

3 Design and Procedure

The main experiment consists, in some treatments, of four tasks (Task 1, Task 2, Task 3, and Task 4). The tasks are always in the same order. In some treatments, tasks are featured in which we ask our subjects to form beliefs about the behavior of other subjects and, additionally, signal the

[4]Greene and Paxton (2009, p. 12506) propose the "Will hypothesis," arguing that dishonesty increases as a result of observing dishonesty in others. They find no support for this. In contrast, Fosgaard et al. (2013) find support for the Will hypothesis for men but not women. This appears not to be in line with our argumentation. However, the manipulation used by Fosgaard et al. (2013) can also be interpreted as a trigger of competition. More precisely, the observability in their experiment implies that ten out of ten other, previously paid participants of the current session acted dishonestly. Moreover, in the experiment by Fosgaard et al. (2013, p. 280), "subjects in each session know each other" because they are part of one "class [and are] ... forced to spend a lot time together." Hence, a male subject might perceive himself as being in competition with his fellow peers and adapt his behavior accordingly; this is in line with what we argue in Hypothesis 1. Their experiment does not feature different levels of unethical behavior.

Table 1: Overview of Included Tasks

	Treatments		
	B-S	B-NS	NB-NS
Task 1: Initial belief	Yes	Yes	**No**
Task 2: Signal	Yes	**No**	**No**
Task 3: Report	Yes	Yes	Yes
Task 4: Control belief	Yes	Yes	Yes
Additional Controls	Yes	Yes	Yes

Note: The four tasks are described in Subsection 3.1. In Task 2, different levels of dishonesty are included in the signal. Hence, the treatment B-S splits into B-S-0%, B-S-25%, B-S-50%, B-S-75%, and B-S-100%. Details regarding the additional controls are described in Subsection 3.4.

choices of other subjects to them. To avoid deceiving our subjects, we conducted a pre-experiment with a small sample of subjects ($N = 81$). These subjects first perform several versions of the task by Gino et al. (2010) and then a variant of the die-rolling task by Fischbacher and Föllmi-Heusi (2013). Both games are explained in detail below, as they are also used in the main experiment. We use the collected data to calculate the payoffs for the belief elicitation and provide an accurate signal about others' behavior. Therefore, we refrain from analyzing this data in the current paper.[5]

3.1 Treatment with an Initial Belief Elicitation and a Signal (B-S)

We start by describing the treatment B-S of our main experiment, as it is the one in which all tasks are included. Subsequently, we describe the other treatments by pointing out the difference compared to this treatment. Table 1 provides an overview of how the three treatments differ regarding the four tasks. In B-S, participants face all four tasks (Task 1, Task 2, Task 3, and Task 4). This treatment consists of five sub-treatments called B-S-0%, B-S-25%, B-S-50%, B-S-75%, and B-S-100%. In order to explain how these sub-treatments differ, it is useful to describe the four tasks first. Note that all participants in all sub-treatments of B-S participate in all four

[5]In Appendix B, the screens of the main experiment are presented. Screens of the pre-experiment are available upon request.

tasks. The only difference between the sub-treatments is what is signaled to them at the end of Task 2.

3.1.1 Task 1: Initial Belief About Others

In Task 1, we elicit an initial, incentivized belief about the behavior of others in a different situation.[6] In the pre-experiment, subjects were shown an easy-to-judge picture based on the task by Gino et al. (2010). In this dishonesty game, participants are asked to report on which half of a quadratic area ("left" or "right") more dots are located. Reporting "right," and therefore reporting dishonestly, leads to a higher payoff than reporting "left," which is a truthful report. In the main experiment, participants see the exact task previous participants faced and are asked to guess the proportion of the previous participants who reported "right." In other words, they are asked to think about the proportion of the previous participants that was willing to reporting dishonestly to receive a higher payoff. The elicitation uses a five-item Likert scale (0% to 20%, ..., 81% to 100%). We refrain from using words like lying, misreporting, or high payoff but simply show the dot task and the corresponding incentives to avoid an interfering effect from the wording. However, it seems easy to understand that a dishonest report with a high outcome is an unethical choice in this case.[7] Therefore, the corresponding belief indicates how much dishonesty the participants in our main experiment expect from another group of participants. We incentivize this belief with US$0.20 for a correct guess.

3.1.2 Task 2: Signal About Others' Behavior

In Task 2, we inform our participants that they are going to learn what four participants of the other group have chosen in the task they have played. This is the same version of the task and the same group of other participants previously introduced in Task 1 of the main experiment. Following Innes and Mitra (2013), we let participants choose which participants' choices they want to observe. This is done to mitigate the experimenter demand effect (Zizzo, 2010). More precisely,

[6] We do not inform the subjects in our experiment about the sample size of our pre-experiment. We only inform them that subjects recruited via the same platform have participated in it. In addition, we inform our subjects about the incentives in the pre-experiment.

[7] In the original experiment by Gino et al. (2010), some screens feature easy-to-judge pictures, while others present a picture for which a subject has to diligently count the dots in each half to be able to respond with certainty (honest or dishonest). In our main experiment, the belief elicitation is done over an easy-to-judge version. Hence, it becomes quite clear which choice ("left" or "right") is a dishonest report.

we ask participants to select four out of 12 participants (named anonymously "Participant 1" to "Participant 12") from the other group.

Afterwards, the choice of these four participants in the aforementioned dot task is revealed as either "right" or "left." Therefore, this signal about the others' behavior contains either zero, one, two, three, or four out of four observations of unethical behavior ("right"), which makes the specific levels of dishonesty 0%, 25%, 50%, 75%, or 100%, respectively. Hence, the treatment splits into five sub-treatments according to the level of dishonest behavior (B-S-0%, B-S-25%, B-S-50%, B-S-75%, and B-S-100%).[8] There are no financial incentives associated with Task 2, but subjects have to make their choices in order to proceed to the subsequent task.

3.1.3 Task 3: Report of a Die Roll

In Task 3, we use an adapted version of the die-rolling task by Fischbacher and Föllmi-Heusi (2013). Similar to Kocher et al. (2018) we present the outcome as a video of a ten-sided die roll to the participants. In our experiment, the outcome of the throw is random, but not all outcomes are equally likely. There is a 91% probability of seeing the die roll outcome "2" and a 9% probability of seeing a different outcome, with equal probabilities for each of the nine other outcomes. Therefore, we were able to communicate to our participants that the outcome is random. This also enables us to limit the observations to participants with the same die roll outcome ("2"). In the instructions, we do not state the underlying probabilities. We ask participants to watch the video and report the outcome of the die roll. This report is incentivized from US$0.30 to US$3.00, as presented in Table 2.

Table 2: Monetary Incentives of Task 3

Report in Task 3	1	2	3	4	5	6	7	8	9	10
Payoff in US$	0.30	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00

In contrast to previous research by Fosgaard et al. (2013), Gino et al. (2009), and Innes and Mitra (2013), we use two different decision tasks: On the one hand, the initial belief elicitation

[8] To collect an approximately equal number of observations for each of the five sub-treatments of B-S, we varied which participants from the other group are associated with "Participant 1" to "Participant 12." By doing so, we create different distributions of unethical behavior in the 12 participants from which participants in the main experiment can choose four. This is not communicated to our participants.

(Task 1) and the signal about others' behavior (Task 2) use the task by Gino et al. (2010). On the other hand, the main behavioral measure in our experiment (Task 3) is a modified version of the die-rolling task (Fischbacher & Föllmi-Heusi, 2013; Kocher et al., 2018).

This combination comes with three advantages: First, providing a signal about others' dishonest behavior (Task 2) in a situation different from the following behavioral measure (Task 3) does not contaminate the effect with pure imitation of observed behavior but allows us to investigate the spread of dishonest behavior based on observed dishonest behavior. Second, the first situation is easy to understand and allows for a clear judgment of what is (dis)honest. Hence, it is a good game for eliciting the level of dishonest behavior participants expect from another group (Task 1) and signaling a certain level of dishonest behavior to our participants (Task 2). Third, while the initial belief and the signal are easy to understand, because both build on a binary outcome of either definitely honest or definitely dishonest, the main behavioral measure features a decision space for the participants, enabling us to potentially detect an adaptive increase in dishonest behavior. However, it turns out that behavior in our samples is predominately binary in Task 3.[9]

3.1.4 Task 4: Belief About Others in the Die-Rolling Task

In Task 4, we elicit a second, incentivized belief about the behavior of others in the same task the participants in our main experiment face as Task 3. The first belief elicitation in Task 1 measures the participants' initial belief about the behavior of others in another situation. In contrast, this second belief elicitation in Task 4 measures the participants' induced belief about the behavior of others in the same situation they have decided on moments prior (i.e., the die-rolling task). This second elicitation also takes place after participants have received a signal (Task 2) about four participants and how they have decided in the dot task. To be more precise, we inform the participants in our main experiment that the other group had also been tasked with Task 3. We then ask our participants to guess what most participants in the other group reported for the same die roll outcome they have just seen. A correct guess (for example, "2" if the majority in the

[9]More precisely, we use a ten-sided die to allow for more steps between the honest option (truthful report of the number) and the most dishonest option (report highest possible number). However, we find that participants do not adapt their behavior within this space but rather opt for the honest or most dishonest choice. Only 39 of 1,351 participants in our sample (2.89%) produce reports that are neither honest nor at the highest possible level of dishonesty (i.e., reports corresponding to the die roll and reports of "10," respectively). Therefore, we excluded the small group with partial dishonesty from our analysis and proceed with the analysis of a binary variable.

other group reported "2") earns the participant US$0.20; a guess one away from the correct answer (either "1" or "3" in the example above) pays US$0.10. This last task serves to check whether the signal provided in Task 2 induces an update in the belief about the dishonest behavior of the other group. Hence, we can differentiate such an update (captured in Task 4) from a behavioral reaction (captured in Task 3).

3.2 Treatment With an Initial Belief Elicitation but Without a Signal (B-NS)

The second treatment of our experiment has the same structure and order of tasks as the B-S treatment. The only difference is that in B-NS, Task 2 is omitted, that is, the treatment B-NS has no signal about others' behavior in the dot task. More precisely, we left out the elements of selecting participants whose choices are disclosed (the first part of Task 2) and receiving a signal (the second part of Task 2). The initial belief elicitation about others' behavior in the dot task (Task 1) is still included.

3.3 Treatment With Neither an Initial Belief Elicitation nor a Signal (NB-NS)

The third and last treatment, NB-NS, has the same structure and order of tasks as the B-S treatment. The difference is that in NB-NS, both Task 1 and Task 2 are omitted. Thus, the subjects neither form beliefs about others in the dot task (Task 1) nor receive a signal about others' behavior in the dot task (Task 2). We compare this treatment (NB-NS) against B-NS to investigate the effect of an initial belief elicitation introducing prior thinking about others' behavior. It also serves as the baseline for our parametric analysis in Section 4.

3.4 Additional Controls

In all three treatments, we include a set of additional controls in the form of questionnaires aimed at measuring personality traits connected to dishonest behavior. To control for the participants' general preference for honesty and dispositional greed, we use the honesty-humility dimension of the HEXACO-60 (Ashton & Lee, 2009) and the dispositional greed and materialism scale (Seuntjens et al., 2015). In our study, we use treatment manipulations affecting the position of the individual decision relative to the morally right and morally still acceptable choices. Therefore, we also control for a concept called moral disengagement (Shu et al., 2011). In addition, we use a battery

of sociodemographic questions to control for some of the heterogeneity in a broad online subject pool. As we do not derive hypotheses based on correlations between these controls and our main outcome variable, we only add them to our parametric analysis as additional variables to test the robustness of our results. While we show that the inclusion of these controls does not change our results, we do not discuss the coefficients and p-values associated with these control variables.

3.5 Procedure and Subjects

For the main experiment, we recruited 1,351 subjects using Prolific (Palan & Schitter, 2018) and given the research question tried to obtain a balanced sample with regard to gender. The online experiment took place from June 2019 to June 2021 and was realized using Qualtrics. The sample is limited to US citizens with a high school degree or a higher educational level who were born in the US and lived there at the time of the experiment. Of the 1,351 participants, 1,245 saw a die roll outcome of "2." We focus our analysis on observations of these participants. As previously stated, while we recognize gender as a non-binary variable, we exclude observations of participants who identified as neither male nor female ($N = 22$; 1.77%). Likewise, we exclude observations of participants who are partially dishonest ($N = 33$; 2.65%). Partial dishonesty is defined as not reporting either dishonestly ("2") or completely honestly ("10"). At the end of the experiment but before participants are informed about their payoff, we ask them whether they are technically able to watch a video. If they confirmed that they were, we ask them to watch a four-second video displaying the word "dog" and report its content. With this simple technical check, we are able to filter out 11 participants (0.88%) who could not watch videos for technical reasons. With some of these exclusions overlapping, we end up with 1,182 participants whose data we analyze.[10] Of these, 50.93% identified as female (Binominal probability test: $p = 0.541$). The average participant was 34.08 years old ($SD = 11.88$). The average time spent on the experiment was 8.72 minutes ($SD = 5.36$). Participants earned US$2.24 ($SD = 0.95$) on average. The minimum payoff was US$1.60, and the maximum was US$4.40, including a show-up fee of US$1.00.

[10]The total number of included observations (1,182) splits over treatments (and sub-treatments) as follows: B-S: 881, (B-S-0%: 207, B-S-25%: 141, B-S-50%: 201, B-S-75%: 129, B-S-100%: 203), B-NS: 128, and NB-NS: 173. Variations in the number of participants per (sub-)treatment are a result of randomization.

4 Results

As explained in Subsection 3.5, the following analysis is based on 1,182 participants in our sample. We excluded participants if they identified as neither male nor female, failed to pass a technical check for being able to watch the video of the die roll outcome, received a die roll outcome other than "2," or were partially dishonest. We use a binary dishonesty variable (*dishonest number report = 1/honest number report = 0*) for our analysis of participants' dishonest behavior (Task 3). Here, we start by looking at general gender differences in dishonest behavior. Subsection 4.1 covers the effect of thinking about others' behavior by experiencing an initial BELIEF elicitation (Task 1). Subsection 4.2 sheds light on the effect of receiving a SIGNAL about others' behavior containing a certain LEVEL of dishonesty (Task 2). Lastly, Subsection 4.3 follows up with an investigation of the second belief elicitation (Task 4) to ensure that our manipulation worked as intended.[11]

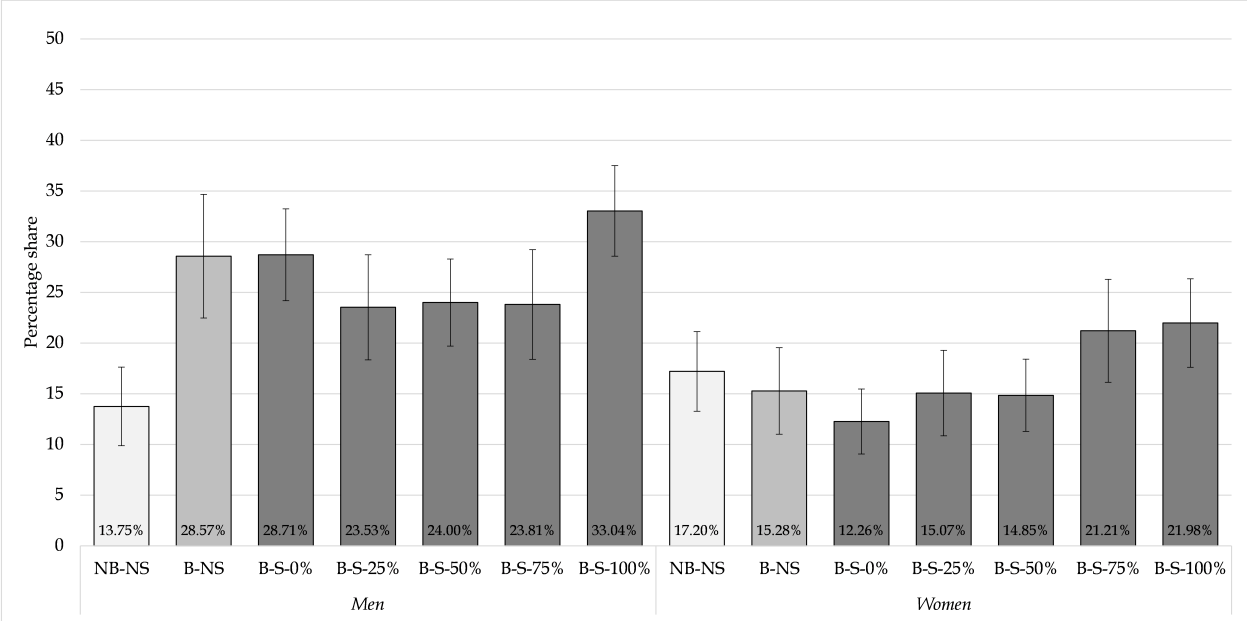
We find support for a gender difference (Fisher's exact test over all treatments: $p < 0.001$).[12] This finding is in line with previous findings showing more dishonest behavior by men than women in economic situations. Regarding the three different treatments (B-S, B-NS, and NB-NS), this finding holds for B-S ($p < 0.001$) and more weakly for B-NS ($p = 0.082$). However, we do not find a significant difference between males' and females' dishonest behavior in NB-NS ($p = 0.675$). This mixed finding, ranging from a highly significant difference to no significance for such a difference, might indicate why some researchers find no difference (Childs, 2012), while others do (Azar et al., 2013; Dreber & Johannesson, 2008; Grosch & Rau, 2017). However, taken together, there is more evidence in our data that men are, indeed, more willing to report dishonestly. In the following two subsections, we will take a closer look at potential gender differences.

4.1 Behavioral Reaction to Thinking About Others' Behavior

The difference in participants' behavior between NB-NS and B-NS can be attributed to thinking about the behavior of others without actually learning something about their choices. Design-wise, the only difference between the two treatments is whether Task 1 is omitted. Task 1 is the initial

[11] Appendix C provides an overview of the hypotheses and results discussed in the following subsections.

[12] Presented results of Fisher's exact tests do not differ relevantly when using χ^2 tests throughout the paper. Throughout the paper we report p-values from two-sided non-parametric tests.



Note: Error bars represent the standard errors.

Figure 1: Dishonest Behavior Over Treatments and Gender

Belief elicitation in which we ask participants to guess the share of dishonest behaving participants in another game (i.e., the dot task).

For men, we observe an increase from 13.75% (NB-NS) to 28.75% (B-NS) in dishonesty, which is a strong and significant difference (Fisher's exact test: $p = 0.048$). In contrast, no such increase can be observed for women (17.20% to 15.28%; $p = 0.833$). While there was no difference between men and women in NB-NS ($p = 0.675$), men are significantly more dishonest than women in B-NS ($p = 0.082$). Figure 1 shows the corresponding means over treatments. In addition to the non-parametric testing, we also apply parametric testing in the form of probit regressions with the binary dishonesty variable as the dependent variable split by gender. Table 3 shows the results of six models: Models 1 to 3 feature male participants, while Models 4 to 6 represent the observations from female participants. Models 1 and 4 feature the effect of eliciting an initial Belief, providing a Signal, and the level of dishonesty contained in the signal on dishonest behavior. In Models 2 and 5, we add additional sociodemographic controls. In Models 3 and 6, we additionally add controls in the form of questionnaires about honesty-humility, dispositional greed, and moral disengagement. Our parametric analysis supports the above-mentioned findings. Eliciting an initial Belief (i.e., introducing another group and encouraging consideration of their

dishonest behavior in another task) significantly increases the likelihood of observing dishonesty among men (Model 1: $p_{\text{BELIEF}} = 0.035$) but not a woman's dishonesty (Model 4: $p_{\text{BELIEF}} = 0.740$). This effect persists even when additional controls are added.

Overall, we conclude two things: First, men adapt their behavior in a task when they are asked beforehand to think about others' behavior in another task. This implies support for Hypothesis 1 and is in line with previous research regarding selection into competition and competitiveness (Datta Gupta et al., 2013; Gneezy et al., 2003; Gneezy & Rustichini, 2004; Niederle & Vesterlund, 2007; Vandegrift & Brown, 2005). Second, women seem not to be affected by this, which is not in line with our hypothesis. In Hypothesis 2, we argue that women are likely to reduce their dishonesty as a consequence. While the mean does, indeed, decrease (from 17.20% to 15.28%), this turns out not to be significantly different. Therefore, we reject this hypothesis.

Result 1. *Men are more more dishonest when asked to think about others' behavior in another task.*

Result 2. *Women's dishonesty is not affected by thinking about others' behavior in another task.*

4.2 Behavioral Reaction to Receiving a Signal About Others' Behavior

We now turn to the impact of signals containing a certain LEVEL of dishonest behavior by others, we also hypothesize a gender-specific effect. As stated above, we find that men are more dishonest than women (all treatments: $p < 0.001$). This holds for treatments in which participants are asked to think about others' behavior (B-NS: $p = 0.082$) and when others' behavior is signaled to them (B-S: $p < 0.001$).

When investigating the effect of receiving a SIGNAL, regardless of the LEVEL of dishonest behavior contained in it, we find no differences in male and female dishonest behavior (B-NS vs. B-S for men: $p = 0.874$; and for women: $p = 0.865$). While there seems to be no general effect of such a SIGNAL for both genders, there is a major difference in how men and women react to the LEVEL of dishonest behavior signaled . The signaled LEVEL of dishonest behavior in the other group could be 0%, 25%, 50%, 75%, or 100%. The average rate of female liars is lower in the sub-treatments B-S-0%, B-S-25%, and B-S-50% but higher in B-S-75% and B-S-100% when compared with the treatment's average (B-S: 16.70%). We find evidence that the female level of dishonesty is corre-

Table 3: Results of Probit Regressions

	Men			*Women*		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
BELIEF (1 if provided)	0.526^{**}	0.566^{**}	0.453^{*}	-0.078	-0.118	-0.184
	(0.249)	(0.254)	(0.260)	(0.236)	(0.243)	(0.252)
SIGNAL (1 if provided)	-0.167	-0.186	-0.140	-0.345	-0.487^{*}	-0.340
	(0.256)	(0.261)	(0.267)	(0.279)	(0.292)	(0.303)
LEVEL (of dishonesty in SIGNAL)	0.031	0.024	0.030	0.101^{**}	0.133^{***}	0.110^{**}
	(0.043)	(0.043)	(0.045)	(0.049)	(0.051)	(0.053)
Constant	-1.092^{***}	-0.992^{**}	-1.277^{**}	-0.946^{***}	-1.429^{**}	-1.790^{**}
	(0.175)	(0.474)	(0.567)	(0.153)	(0.604)	(0.695)
Sociodemographics	NO	YES	YES	NO	YES	YES
Additional Questionnaires	NO	NO	YES	NO	NO	YES
Pseudo R^2	0.012	0.024	0.088	0.008	0.018	0.084
Number of observations	580	577	577	602	594	594

Note: The dependent variable for all six models is the participants' decision to be more dishonest (*dishonest number report = 1/honest number report = 0*) in Task 3 (see Subsection 3.1.3). NOBELIEF-NOSIGNAL (NB-NS) is the reference group in all models. Standard errors are in parentheses. Models 1 to 3 include observations of male participants, and Models 4 to 6 include those of female participants. In Models 2 and 5, sociodemographic characteristics are added as additional control variables. These characteristics are age, employment status, college education, household income, own contribution to household income, English native speaker status, and race. Model 2 includes a slightly smaller number of observations than Model 1 due to the exclusion of two subjects reporting unreasonably low ages and one subject not saying which race he belonged to. Likewise, Model 5 includes a slightly smaller number of observations than Model 4 due to the exclusion of eight subjects not saying which race they belonged to. In Models 3 and 6, additional controls are added. These controls include honesty-humility (dimension of the HEXACO-60: Ashton & Lee, 2009), dispositional greed (Seuntjens et al., 2015), and moral disengagement (Shu et al., 2011). $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

lated with the LEVEL of dishonest behavior in the SIGNAL (Spearman's rank correlation: $\rho = 0.098$, $p = 0.042$). In contrast, testing for a correlation between the LEVEL of dishonest behavior and male dishonesty yields no significant relationship ($\rho = 0.036$, $p = 0.454$). All these findings (i.e., no general effect of the SIGNAL for both genders and a LEVEL-dependent effect for women but not men) are supported by our parametric analysis. More precisely, we find a significant effect of the LEVEL of dishonest behavior for women (Model 4: $p_{\text{LEVEL}} = 0.042$). However, there is no such effect in men (Model 1: $p_{\text{LEVEL}} = 0.460$). Again, this holds when adding additional controls. In summary, we find an effect of increased levels of dishonest behavior affecting females' dishonesty, as proposed in Hypothesis 3. We conclude:

Result 3. *Women are more dishonest when a higher level of dishonesty by others is signaled to them.*

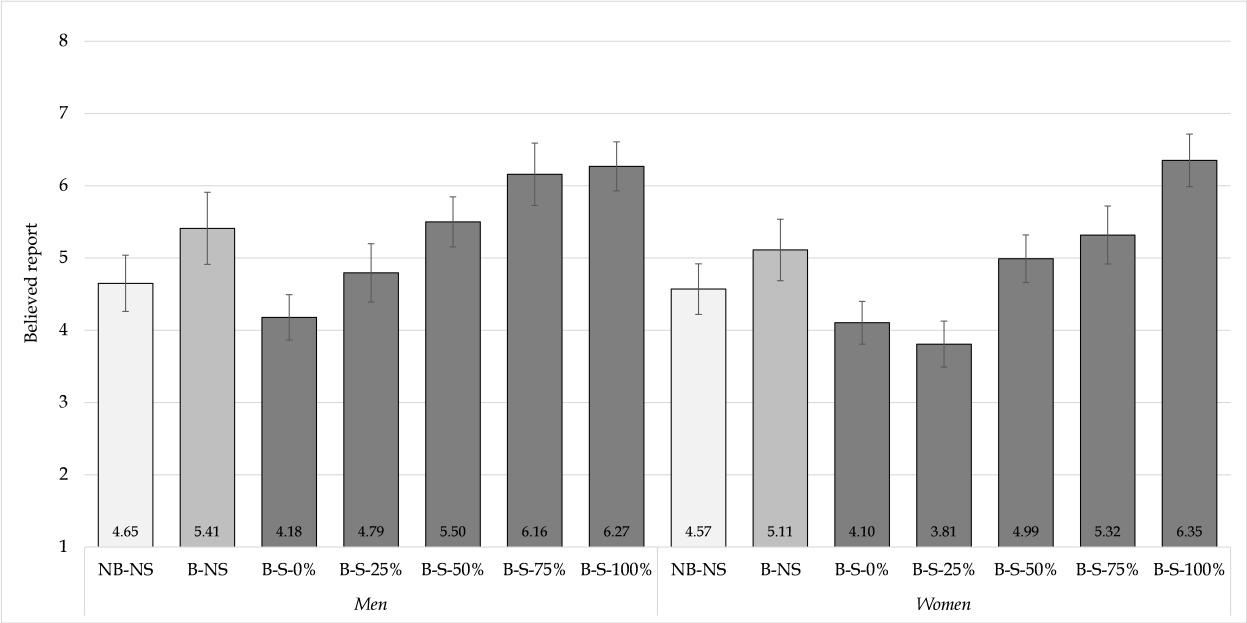
In addition, we argue that men are unaffected affected by this. Indeed, we find no effect for men and, therefore, our data supports Hypothesis 4. Our last result states:

Result 4. *Men's dishonest behavior is not affected by receiving a signal or the level of dishonesty contained in it.*

The behavioral reaction by women (but not men) is in line with previous research arguing that women are more attentive or responsive to social cues than men (Bales & Parsons, 1956/2014; Garai, 1968; Gilligan, 1982/2016; Kahn et al., 1971; Roberts, 1991; Williams & Best, 1982). Such a reaction might also be caused by females' higher willingness to adapt their behaviors based on the choices or believed preferences of others (Furtner et al., 2021; Grosch et al., 2021; Venkatesh & Morris, 2000) and comply with the apparent norms (Crawford et al., 1995; Eagly, 1978; Maccoby, 1974; Minton et al., 1971).

4.3 Manipulation Check

To delve deeper into how our treatment manipulations work, we present the outcome of the second belief elicitation in this subsection. In Task 4, we ask participants to guess which report the majority of the other group provided for the die roll outcome they have just seen (in Task 3). All treatments include Task 4.



Note: Error bars represent the standard errors.

Figure 2: Induced Belief Over Treatments and Gender

Figure 2 shows the corresponding means of the second belief. There are two points that stand out: First, we find that men and women adapt their beliefs in accordance with the level of dishonest behavior provided in the signal (Spearman's rank correlation for men: $\rho = 0.228$, $p < 0.001$; and for women: $\rho = 0.257$, $p < 0.001$). Therefore, our manipulation of providing a specific level of dishonest behavior is apparently successful for both genders. Put somewhat more simply, both men and women understand the signal and its content and adapt their beliefs about others accordingly. However, only women react with a change in behavior. Second, we could not find a significant difference in the second belief between NB-NS and B-NS for either gender (Mann-Whitney test for men: $|z| = 1.259$, $p = 0.208$; and for women: $|z| = 0.807$, $p = 0.420$). Introducing an initial belief elicitation (Task 1) and thereby encouraging consideration of another group of participants and their dishonest behavior (and corresponding profits) does not lead to an updated belief about their dishonesty. This result seems to be straightforward. However, it becomes relevant when considering that men (but not women) react with a change in behavior. Hence, while men do not adapt their beliefs about the other group (and, indeed, there is no valid reason to do so), men's dishonesty depends on the presence of another other group. We argue that the most likely cause is

an increase in the perceived competitiveness of the situation – an opportunity for males' dishonest behavior to thrive while women do not react significantly.

5 Discussion and Further Research

In this paper, we present an experimental study with two games that allow for unethical behavior. We investigate how merely *thinking* about and *learning* about the dishonesty of others affect one's unethical behavior in another task. We find evidence for gender-specific effects.

Men adapt their dishonesty when they are asked beforehand to think about others' behavior in another situation. However, we find no evidence that this effect is present in women. We argue that the effect in men is most likely triggered by a change in the decision environment, allowing the decision to be seen in the light of competition (Gneezy et al., 2003; Gneezy & Rustichini, 2004). Men willingly accept and appreciate this competition (Datta Gupta et al., 2013; Niederle & Vesterlund, 2007; Vandegrift & Brown, 2005), and, consequently, males' unethical behavior increases. In contrast to men, women adapt their unethical behavior according to different levels of dishonest behavior provided beforehand in a signal about others' behavior in another situation. We find no evidence that this effect is present in men. We conclude that our findings are in line with previous research reporting that women are more responsive to social cues (Gilligan, 1982/ 2016; Kahn et al., 1971; Roberts, 1991), more willing to comply with apparent norms (Crawford et al., 1995; Eagly, 1978; Maccoby, 1974; Minton et al., 1971), and more likely to adapt their behavior accordingly (Furtner et al., 2021; Molina et al., 2013; Venkatesh & Morris, 2000). Krupka and Weber (2009) report a focusing and an informational influence from norms in the pro-social domain. For the domain of unethical behavior, we suggest that related effects of merely thinking about or learning about others' behavior are gender specific. However, more research is needed to pinpoint the exact triggers.

Previous research discusses whether men and women differ in their attentiveness or responsiveness to social cues (for arguments in favor of attentiveness, see Bales & Parsons, 1956/2014; Garai, 1968; Williams & Best, 1982; for arguments in favor of responsiveness, see Gilligan, 1982/2016; Kahn et al., 1971; Roberts, 1991). Our experimental results indicate that men and women follow the same pattern when adapting their beliefs based on our treatment manipulations. In other

words, we find support for both genders being equally attentive to social cues. However, we find different behavioral reactions to these cues. Hence, men and women seem to differ in terms of their responsiveness rather than their attentiveness to social cues.

Unethical behavior and its spread can lead to devastating outcomes (Abdullah et al., 2021; Cohn et al., 2014; O'Brien, 2003) and threaten the economic and social well-being of societies. Therefore, it is important to understand the spread of unethical acts and how this process is gender specific. In addition, leadership may play a vital role in real-life economic situations. While men stay equally dishonest when deciding for themselves or as leaders of a group, dishonesty in women increases as they align their unethical behavior with their belief on group members' dishonesty preferences (Grosch et al., 2021) – an alarming finding for practitioners. Promotion-focused instead of prevention-focused ethical leadership might be one way to decrease counterproductive work behavior and the spread of unethical behavior (Bush et al., 2021). Future research might benefit from investigating the effect of leadership as well as the different effects of *thinking* and *learning* about others' behavior.

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Appendix A Online questionnaire on impact of norms and competition

We conducted an online survey to assess whether there is evidence for a general belief that women are more strongly influenced by social norms than men, and that men are more strongly influenced by competition than women. The survey was conducted with Qualtrics and subjects were recruited via Prolific (Palan & Schitter, 2018). In total, 100 participants finished the survey. Average stated age was 34.95. Of the participants 52% were male, 44% of were female, and 4% checked the category "other".

After listing some examples for competitive behavior (win against someone in a sporting contest, prevail against competitors for a new job, be the first person to reach the finish line) and socially desirable behavior (helping someone with something, being faithful to one's love partner, being honest) subjects were asked to asses the following two questions:

> *Who do you think is more influenced in her or his behavior by trying to "act in a socially desirable way"?*
>
> *Who do you think is more influenced in her or his behavior by "acting in a competitive way"?*

Answers were given on a scale from 0 to 10 (0="exclusively for women"; 5 = "equally for women and men"; 10 = "exclusively for men"). Figure A.3 gives histograms for the responses to both questions.[13]

Subjects believed that women's behavior would be significantly more influenced to behave in socially desirable ways than men's behavior (mean response 3.74 significantly different from 5 (equally for women and men), Wilcoxon signed-rank test: $|z|=6.510$, $p < 0.001$). In contrast, subjects believed that men's behavior was significantly more influenced by competitive behavior than women's (mean response 6.7 significantly different from 5 (equally for women and men), Wilcoxon signed-rank test: $|z|=7.728$, $p < 0.001$). The mean responses to the two questions are also significantly different (Wilcoxon signed-rank test: $|z|=7.637$, $p < 0.001$).

[13]Subjects were not shown the numbers on their screen but only the labels and the default was set to 5 = "equally for women and men." Irrespective of whether subjects agreed with the default or whether they wanted to make a different indication, they had to make an active decision – confirm the default or move the slider.

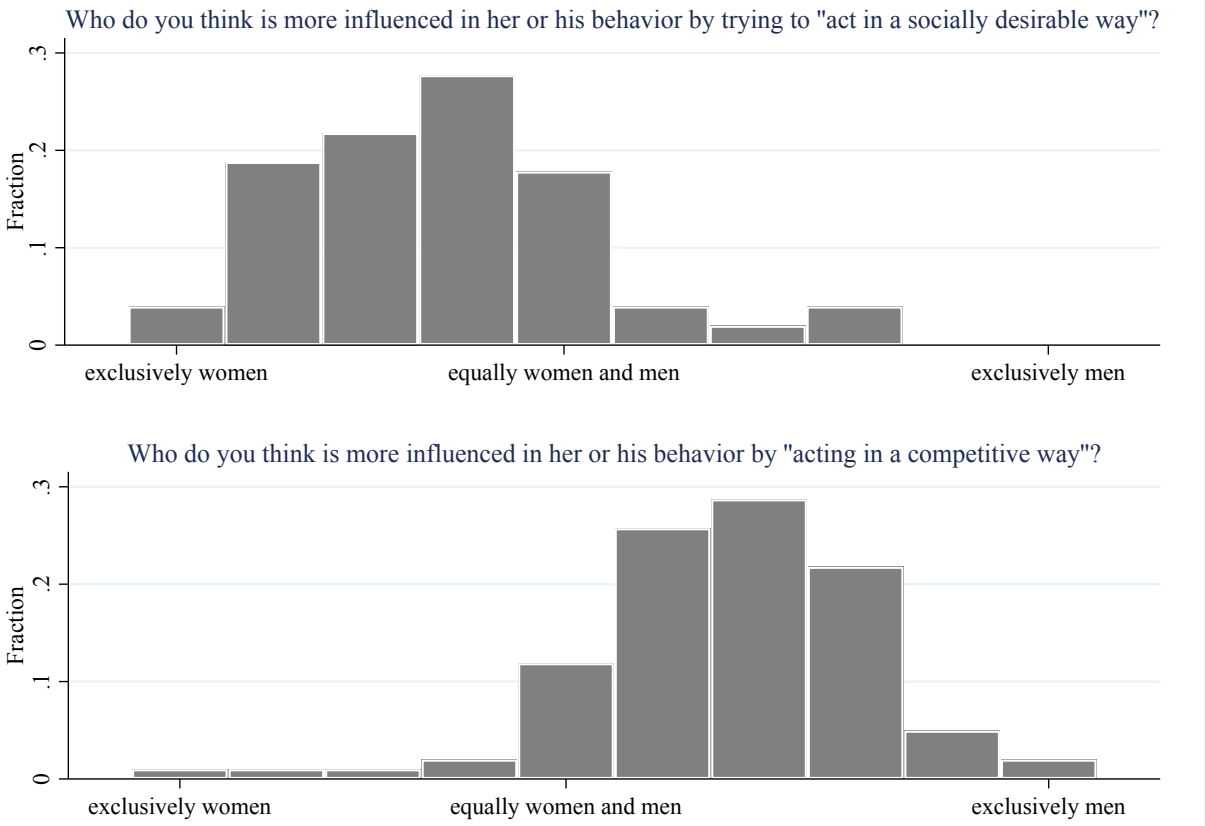


Figure A.3: Assumed gender differences in influences on behavior

Appendix B Screens of the Online Experiment

In the Belief-Signal (B-S) treatment, participants are welcomed with the information that today's online experiment consists of three tasks (see Figure B.1). In Section 3, we described four tasks (Task 1, Task 2, Task 3, and Task 4). Indeed, Task 2 is part of what participants received as their first task. Hence, participants' first task in B-S is Tasks 1 and 2, while participants' second task corresponds to what we describe as Task 3, and the third task corresponds to what we describe as Task 4.

After the general introduction, participants are instructed for their first task (see Figure B.2) and complete it (see Figure B.3). This part corresponds to what we describe as Task 1 in this paper. Therefore, it is what we use to introduce another group and the moral situation they faced to the participants in our experiment.

Following the first task (but not labeled as the second task) is the selection of other partici-

pants whose behavior the participant learns about (see Figure B.4). Based on the selection, the corresponding information is provided (see Figure B.5), making the level of dishonesty zero, one, two, three, or four out of four. This part corresponds to what we describe as Task 2 in this paper.

In the participants' second task, the die-rolling task is presented, as described as Task 3 above. The instructions are shown in Figure B.6. The decision screen, with an unviewed and a viewed video, is shown in Figure B.7 and Figure B.8, respectively.

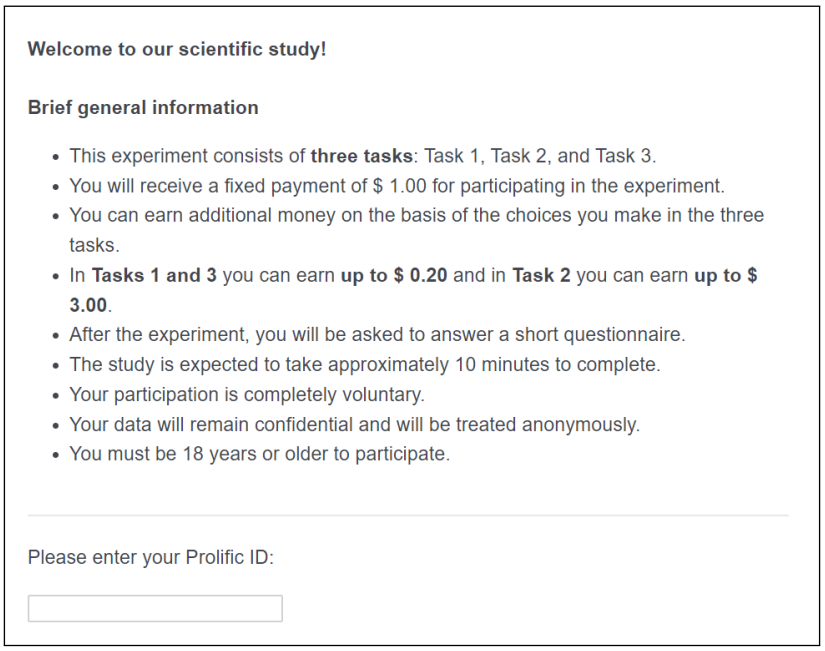
In this paper, we have given the name Task 4 to what is the third task for the participants. The corresponding instructions can be found in Figure B.9. These are continued in Figure B.10 and Figure B.11, again with the video being either unviewed or already viewed, respectively. Figure B.12 shows the decision screen of the main measure.

In the Belief-NoSignal (B-NS) treatment, Task 2 (hence, the screens between the participants' first and second task) are left out. Therefore, the screens presented in Figure B.4 and Figure B.5 are not included in this treatment. All other screens remain unchanged.

In the NoBelief-NoSignal (NB-NS) treatment, Tasks 1 and 2 (hence, the participants' first task and the part between their first and second task) are left out. Consequently, the screens presented in Figure B.2, Figure B.3, Figure B.4, and Figure B.5) are not included in this treatment. Therefore, participants in this treatment start with the second task. The enumeration is adapted accordingly. Likewise, the general introduction and the last screen are slightly modified. Additional screens for this treatment are available upon request.

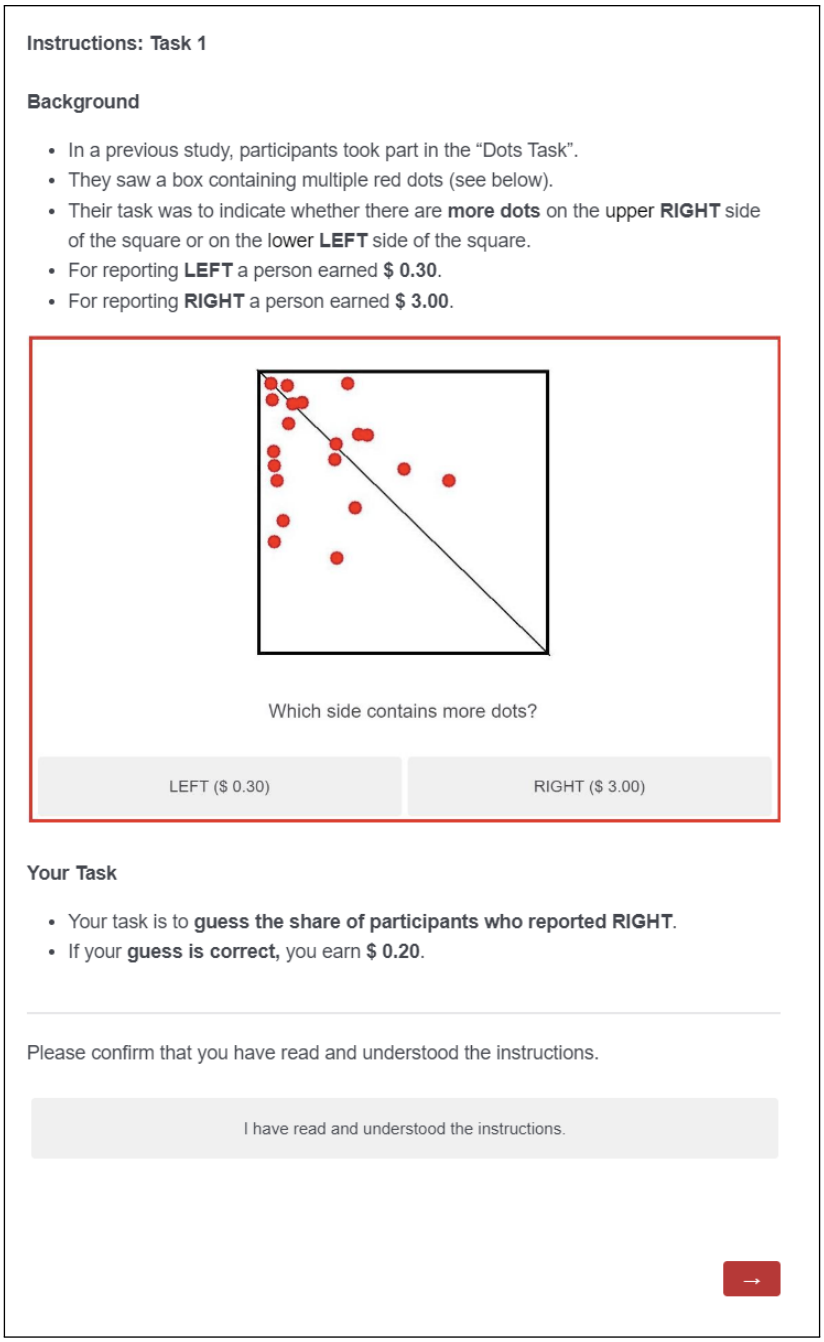
The subsequent parts of the online experiment is identical in all treatments. First, participants transition to the questionnaires (see Figure B.13). The first questionnaire is the honesty-humility dimension of the HEXACO-60 (Ashton & Lee, 2009, see Figure B.14 and Figure B.15). Subsequently, the second questionnaire (dispositional greed Seuntjens et al., 2015, see Figure B.16 and Figure B.17) and third questionnaire (moral disengagement Shu et al., 2011, see Figure B.18 and Figure B.19) are provided. On the last screen in the questionnaire section, the sociodemographic questions are asked (see Figure B.20, Figure B.21, and Figure B.22). Figure B.23 and Figure B.24 show the technical check with the video unviewed and viewed, respectively.

All treatments end with payoff information on the last screen (see Figure B.25).



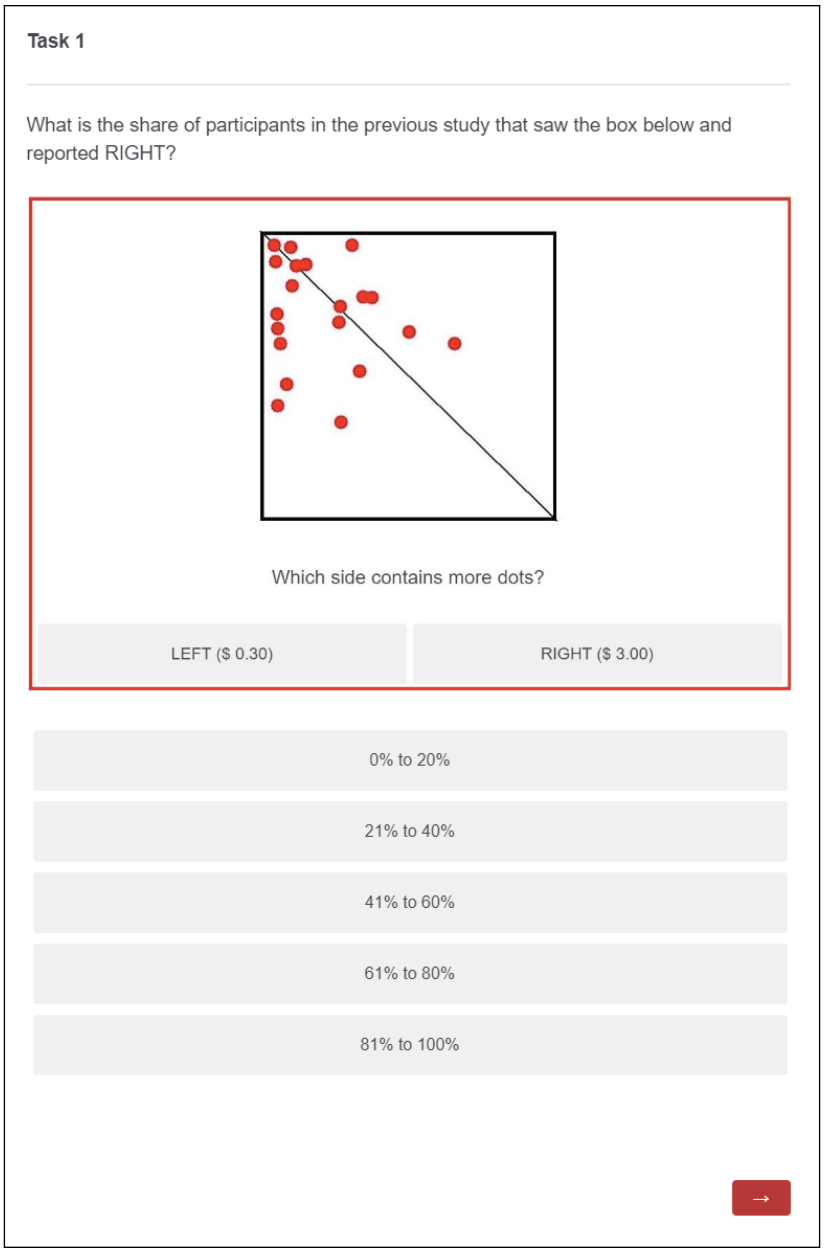
Note: In NB-NS subjects are informed that the experiments consists of two (rather than three) tasks as shown here. Subjects in NB-NS do not participate in the belief elicitation (first task in B-NS) and do not receive a signal about others (jointly with the belief elicitation; first task in the B-S). The information about payment is modified accordingly.

Figure B.1: General Introduction



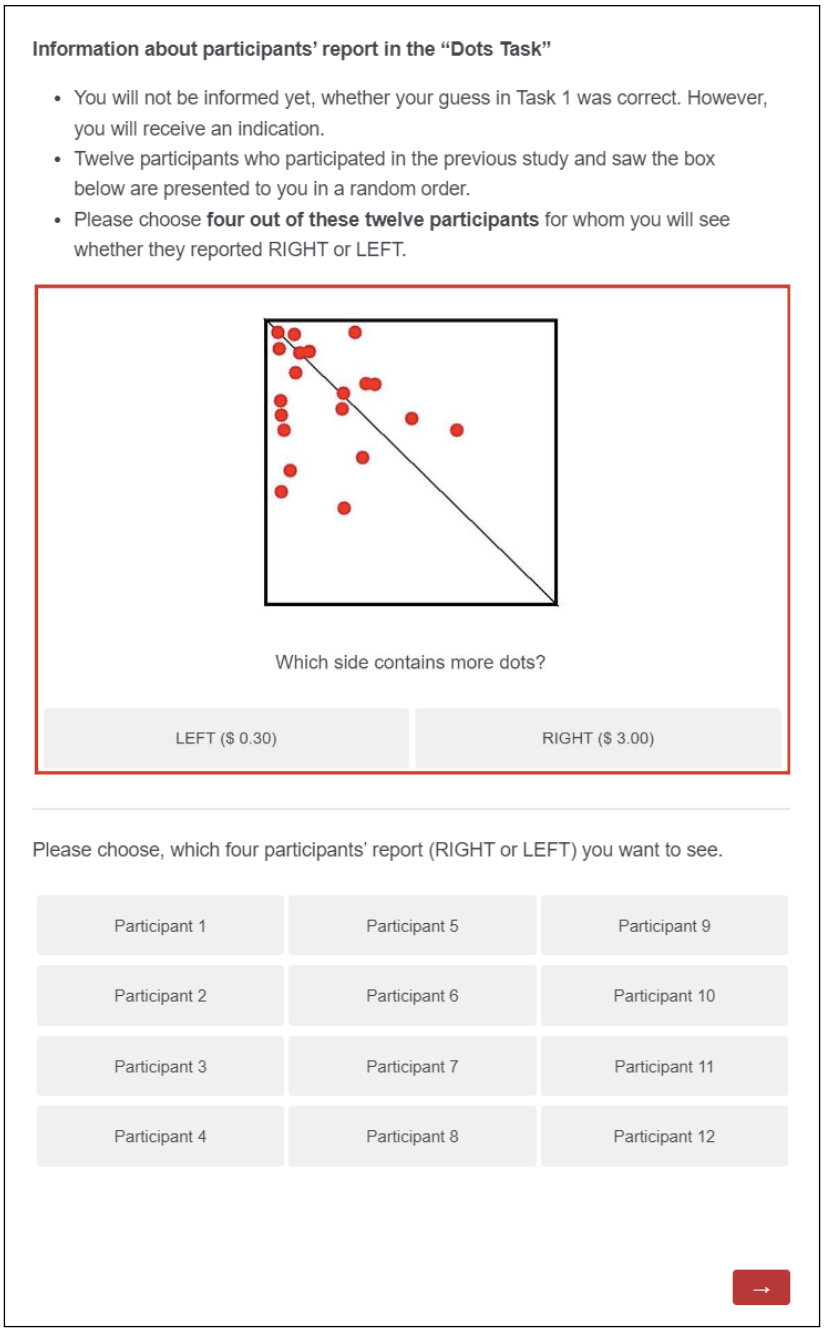
Note: This screen is not provided in NB-NS.

Figure B.2: Instructions for the First Task (Task 1)



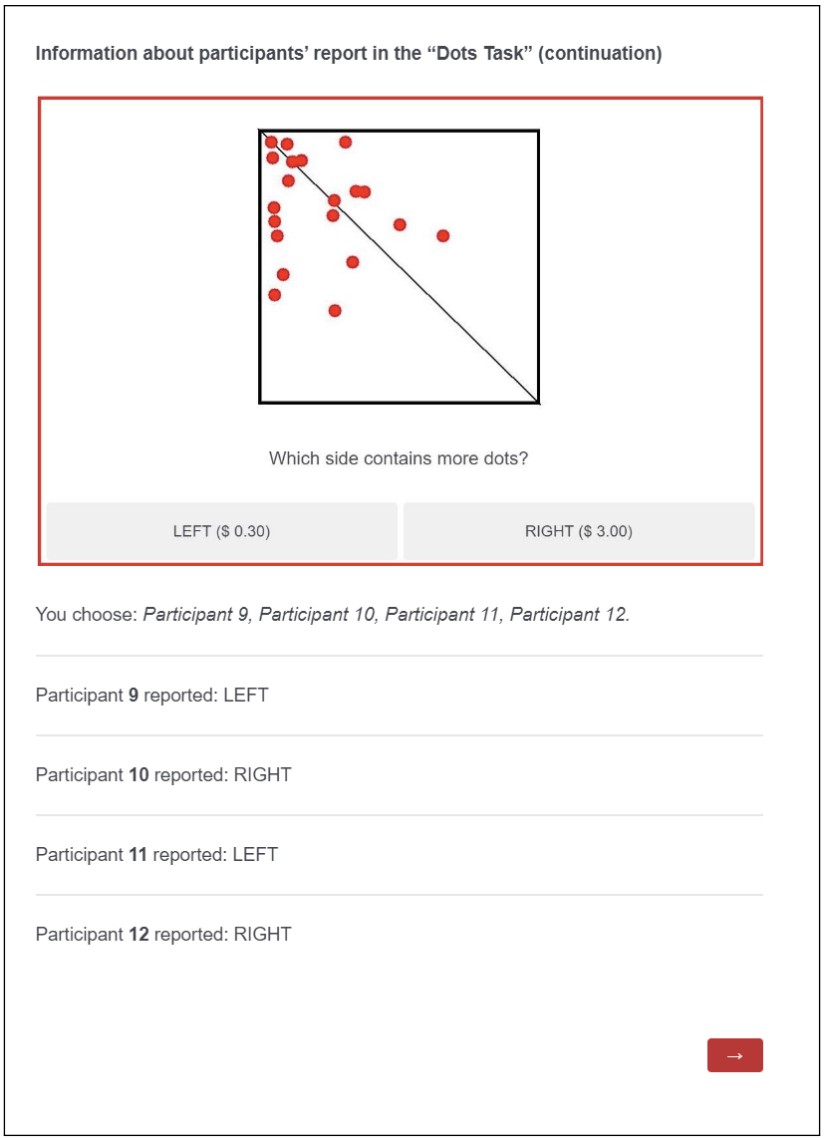
Note: This screen is not provided in NB-NS.

Figure B.3: Decision Screen for the First Task (Task 1)



Note: This screen is provided in B-S only.

Figure B.4: Selection Screen for the Information (Task 2)



Note: This screen is provided in B-S only.

Figure B.5: Screen With the Information (Task 2)

Instructions: Task 2

Your Task

- On the next screen, you will see a video, in which a ten-sided dice is rolled.
- The possible outcomes of the dice roll are: 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10.
- Your task is to **watch the video** and **report the outcome of the dice roll**.
- Note that in order to watch the video you need to **press the "play"-button** in the lower left corner of the video.
- **Your report determines your payoff in Task 2. The higher the reported outcome the higher the earnings.**
- In the table below you see, which report earns you how much.
- Examples of reports and respective earnings:
  - If you report "1," you earn $ 0.30.
  - …
  - If you report "5," you earn $ 1.50.
  - …
  - If you report "10," you earn $ 3.00.

Reported outcome:	1	2	3	4	5	6	7	8	9	10
Payoff:	$ 0.30	$ 0.60	$ 0.90	$ 1.20	$ 1.50	$ 1.80	$ 2.10	$ 2.40	$ 2.70	$ 3.00

Please confirm that you have read and understood the instructions.

I have read and understood the instructions.

→

Figure B.6: Instructions for the Second Task (Task 3)

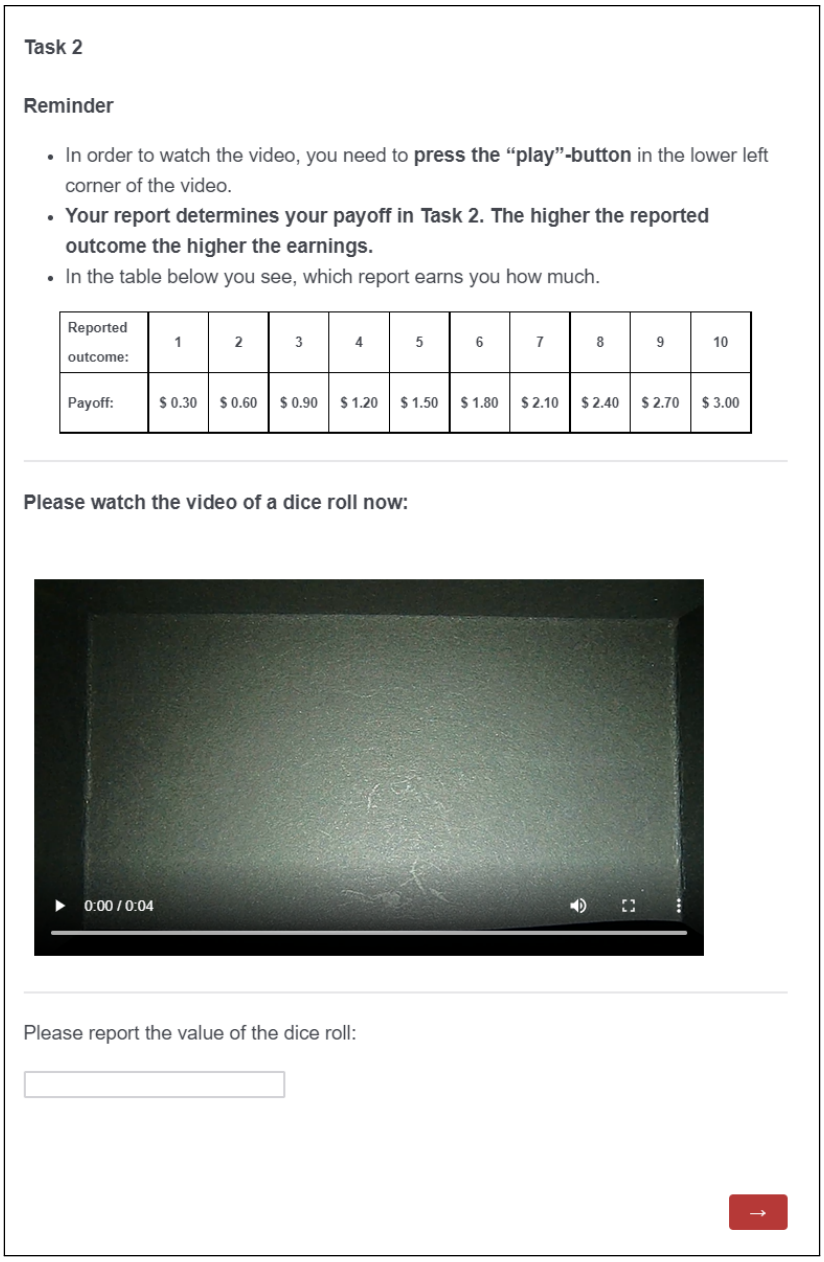


Figure B.7: Decision Screen for the Second Task (Task 3) With Unviewed Video

Task 2

Reminder

- In order to watch the video, you need to **press the "play"-button** in the lower left corner of the video.
- **Your report determines your payoff in Task 2. The higher the reported outcome the higher the earnings.**
- In the table below you see, which report earns you how much.

Reported outcome:	1	2	3	4	5	6	7	8	9	10
Payoff:	$ 0.30	$ 0.60	$ 0.90	$ 1.20	$ 1.50	$ 1.80	$ 2.10	$ 2.40	$ 2.70	$ 3.00

Please watch the video of a dice roll now:

Please report the value of the dice roll:

→

Figure B.8: Decision Screen for the Second Task (Task 3) With Viewed Video

Instructions: Task 3

Background

- In a previous study, other participants also saw a video of a ten-sided dice roll.
- The possible outcomes of the dice roll were also: 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10.
- Furthermore, their reports determined their earnings from the task in the same way as your report in Task 2. (Below you see again the table that informs you about which report earned them how much.)

Reported outcome:	1	2	3	4	5	6	7	8	9	10
Payoff:	$ 0.30	$ 0.60	$ 0.90	$ 1.20	$ 1.50	$ 1.80	$ 2.10	$ 2.40	$ 2.70	$ 3.00

Your Task

- Your task is to **guess, which report most of the participants who saw the same outcome of the dice roll as you, made**.
- If your **guess is correct,** you earn **$ 0.20**.
- If your **guess is almost correct** you earn **$ 0.10**.
- Examples of almost correct guesses:
  - You guess is “1” or “3,” while the correct guess is “2;”
  - …
  - or your guess is “5” or “7,” while the correct guess is “6;”
  - …
  - or your guess is “8” or “10,” while the correct guess is “9.”
- If you don’t remember the outcome you saw, you can watch the video again (see below).

Figure B.9: Instructions for the Third Task (Task 4) 1/2

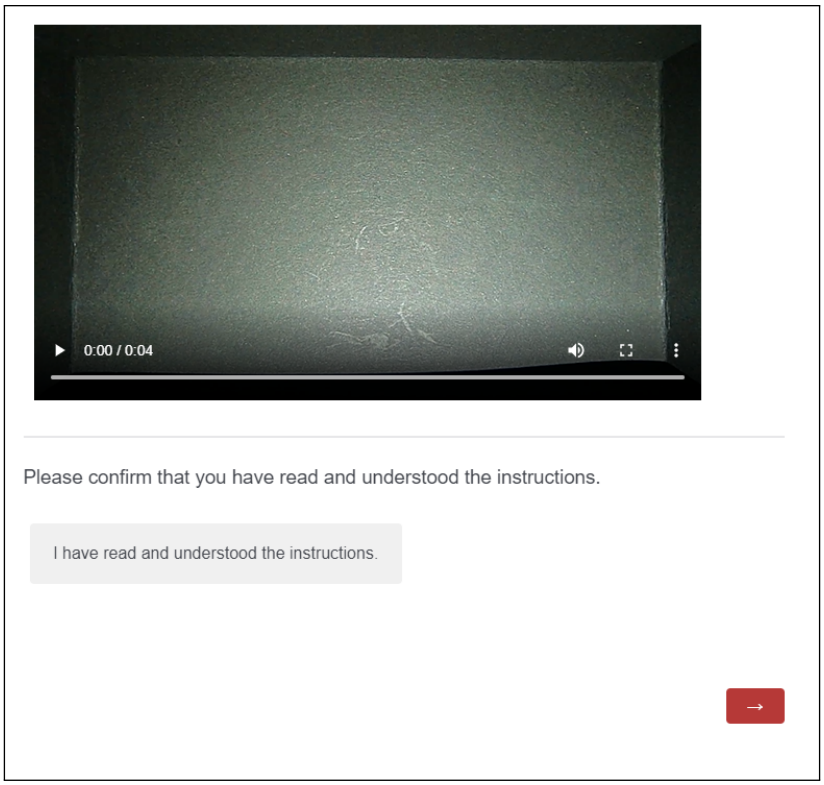


Figure B.10: Instructions for the Third Task (Task 4) 2/2 With Unviewed Video

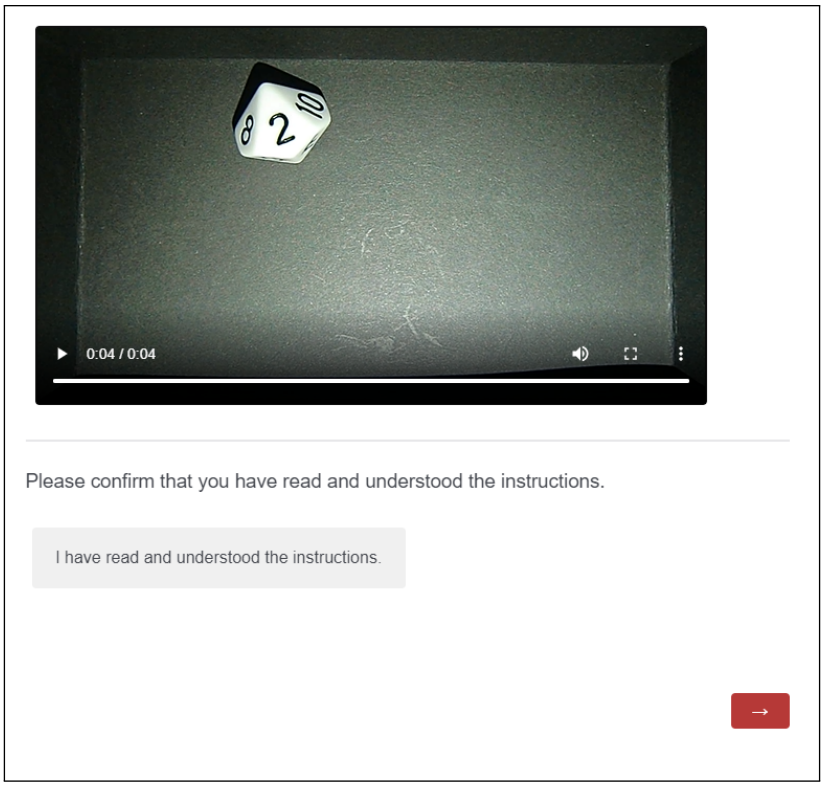


Figure B.11: Instructions for the Third Task (Task 4) 2/2 With Viewed Video

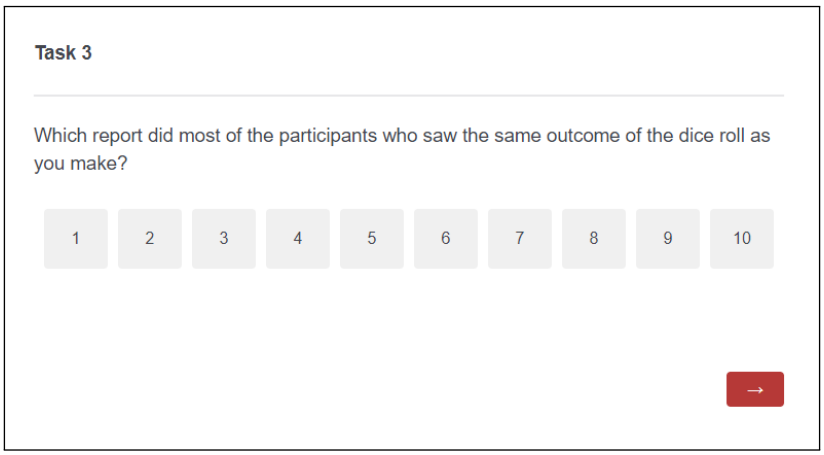


Figure B.12: Decision Screen for the Third Task (Task 4)

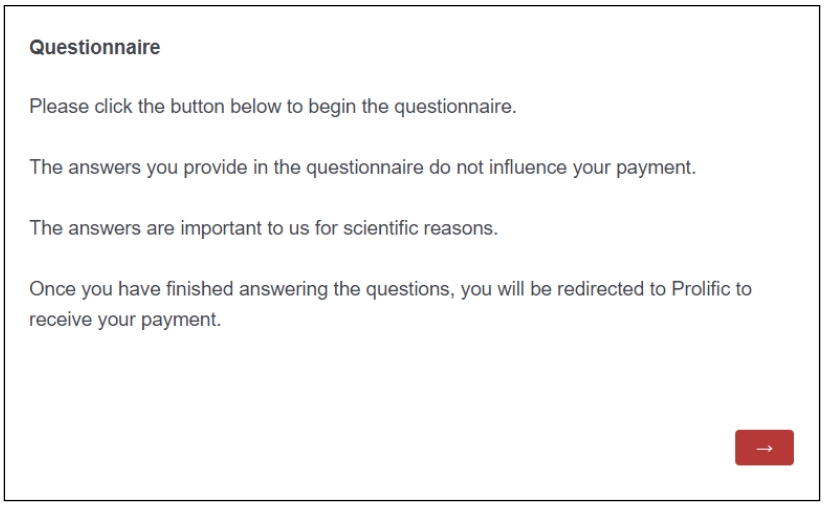


Figure B.13: Introduction to the Questionnaire Section

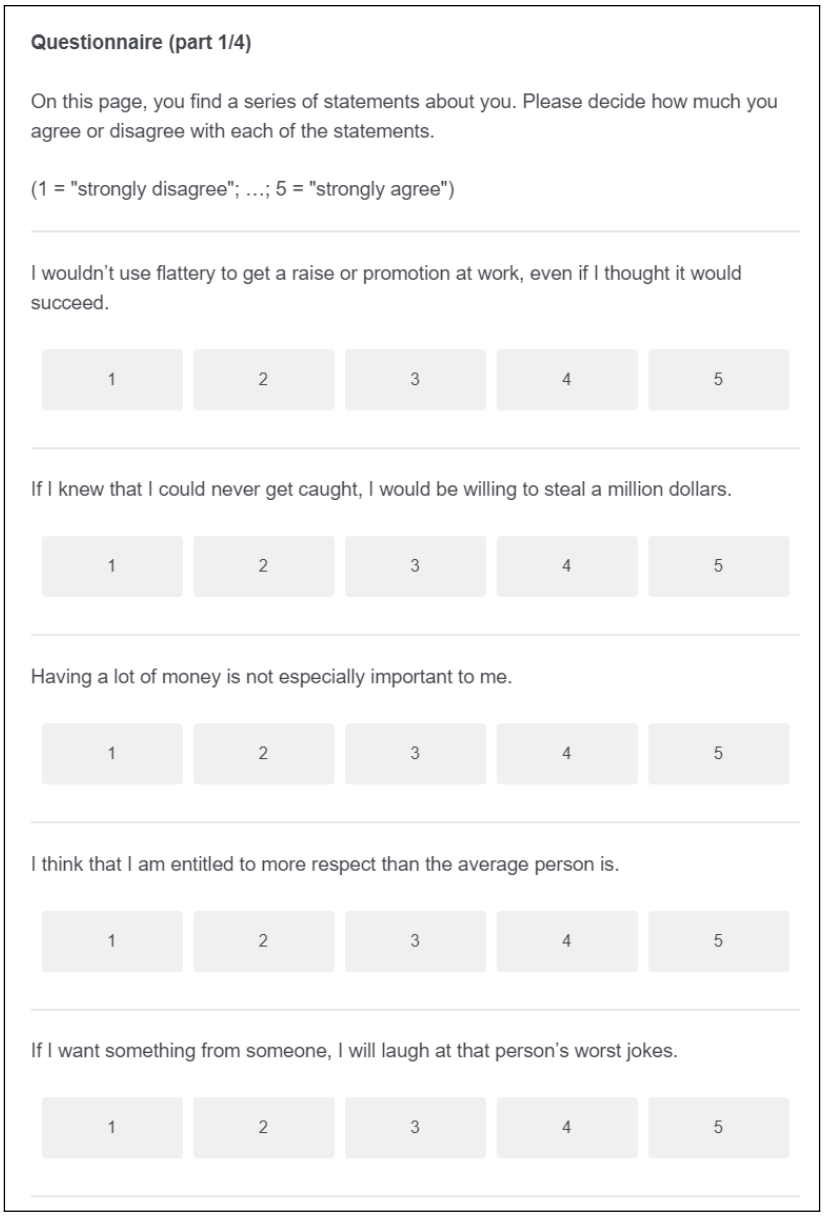


Figure B.14: Honesty-Humility Items of the HEXACO-60 Questionnaire 1/2

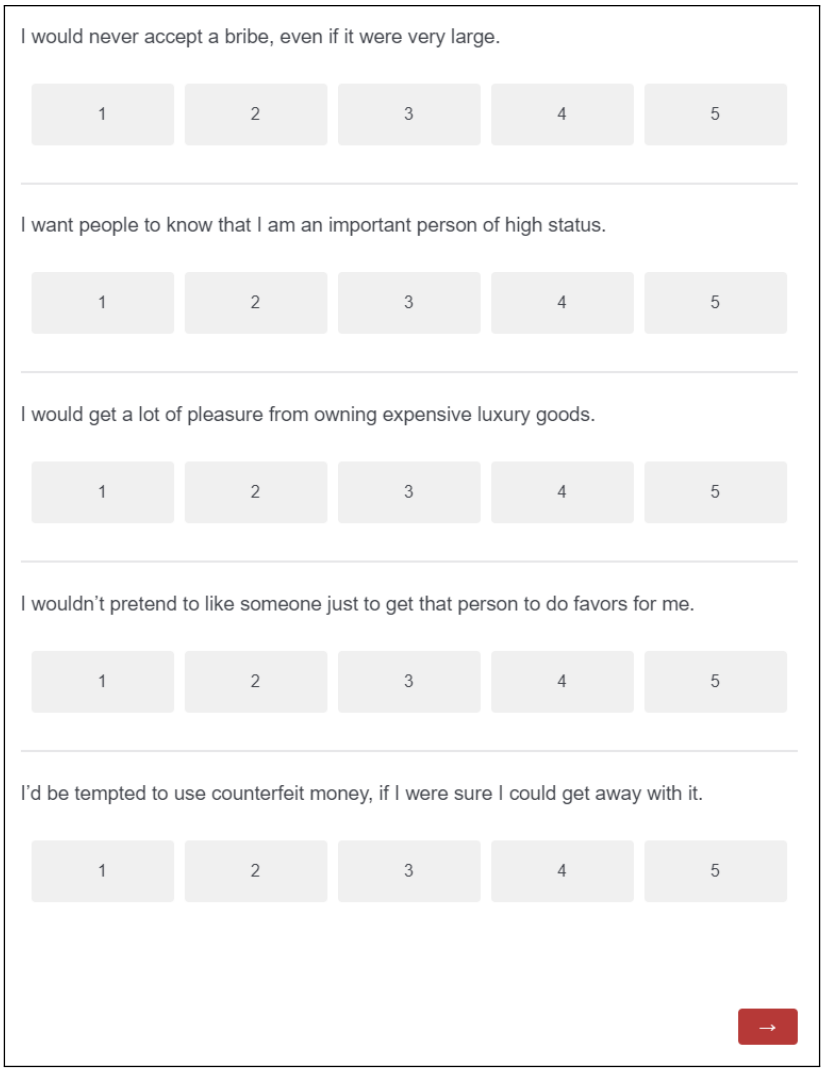


Figure B.15: Honesty-Humility Items of the HEXACO-60 Questionnaire 2/2

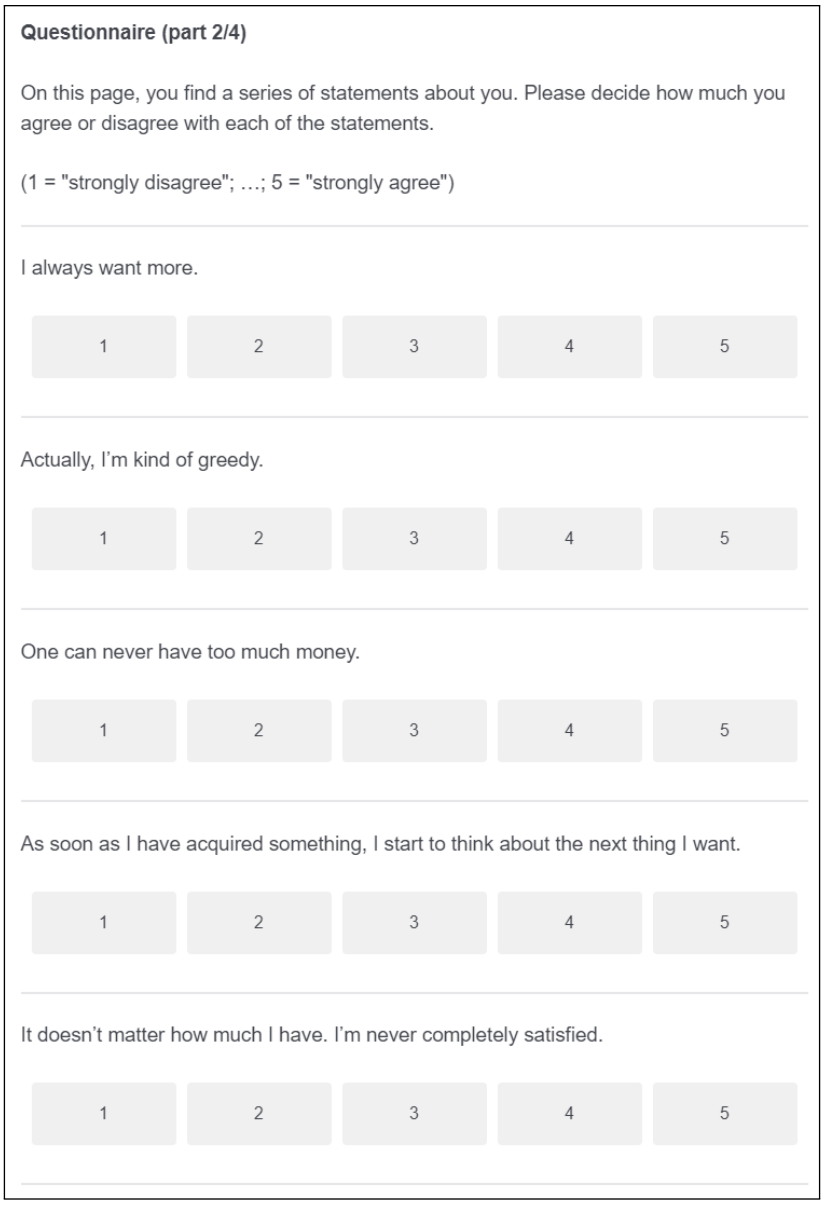


Figure B.16: Dispositional Greed Questionnaire 1/2

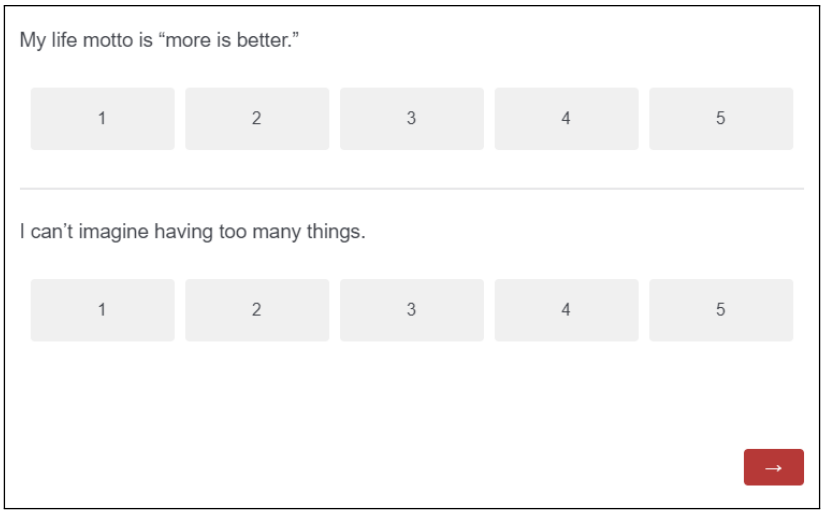


Figure B.17: Dispositional Greed Questionnaire 2/2

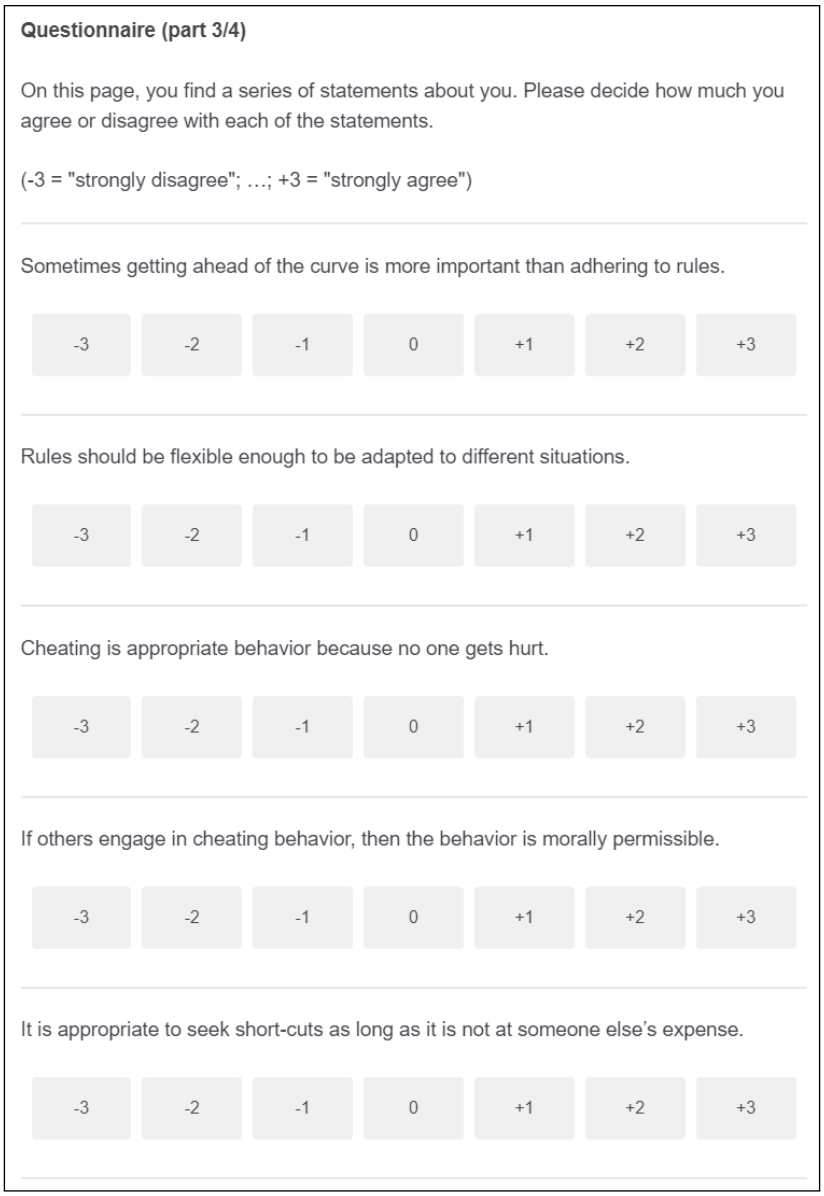


Figure B.18: Moral Disengagement Questionnaire 1/2

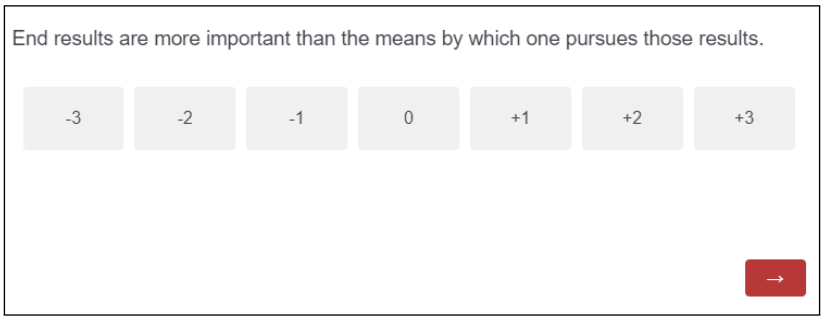


Figure B.19: Moral Disengagement Questionnaire 2/2

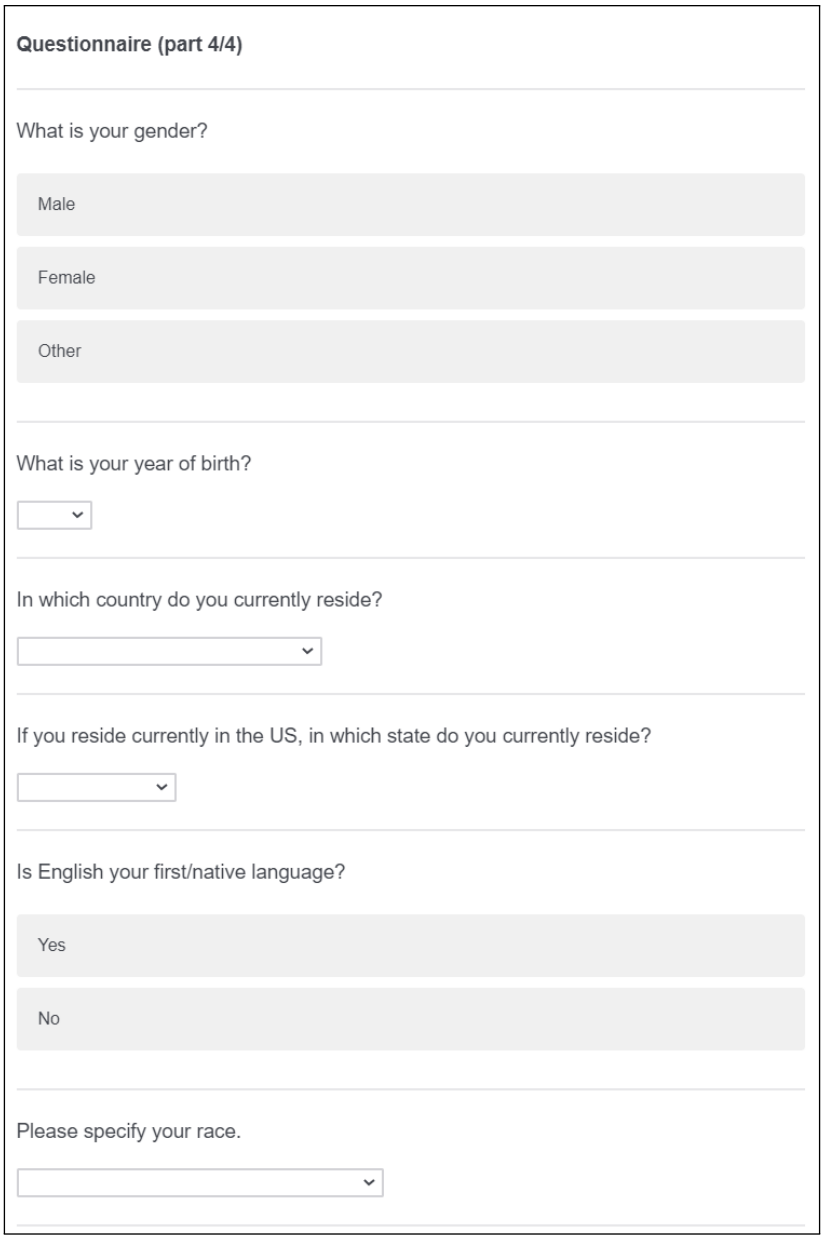


Figure B.20: Sociodemographic Questions 1/3

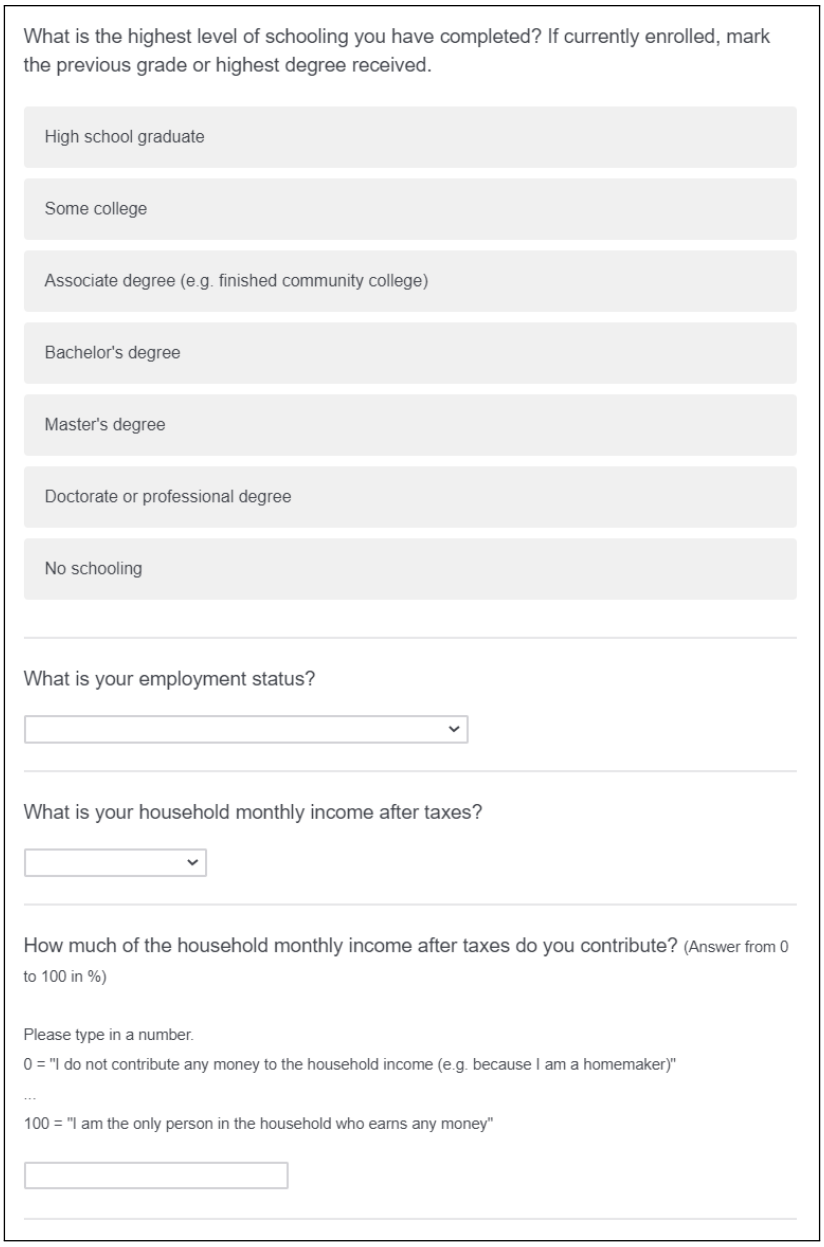


Figure B.21: Sociodemographic Questions 2/3

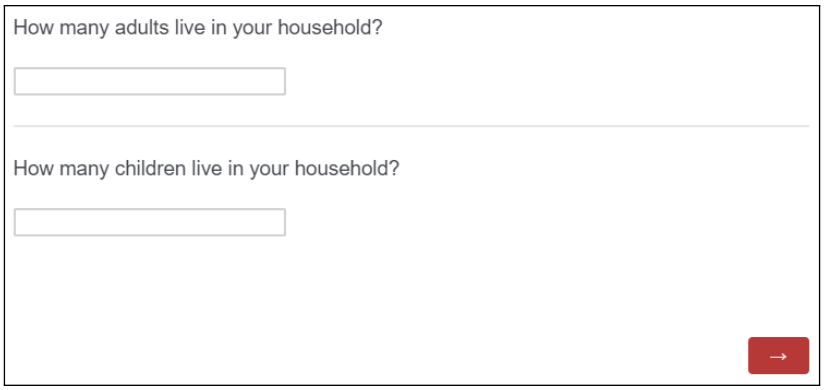


Figure B.22: Sociodemographic Questions 3/3

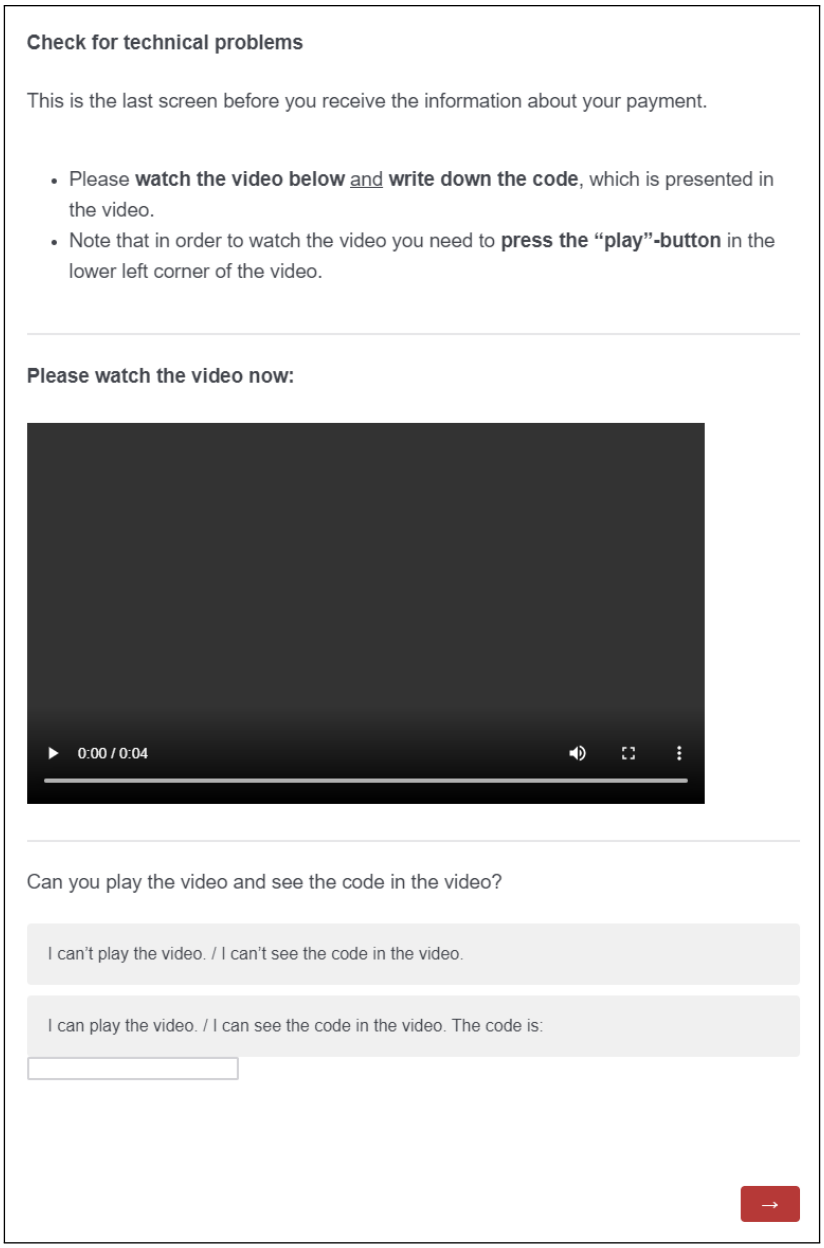


Figure B.23: Technical Check With Unviewed Video

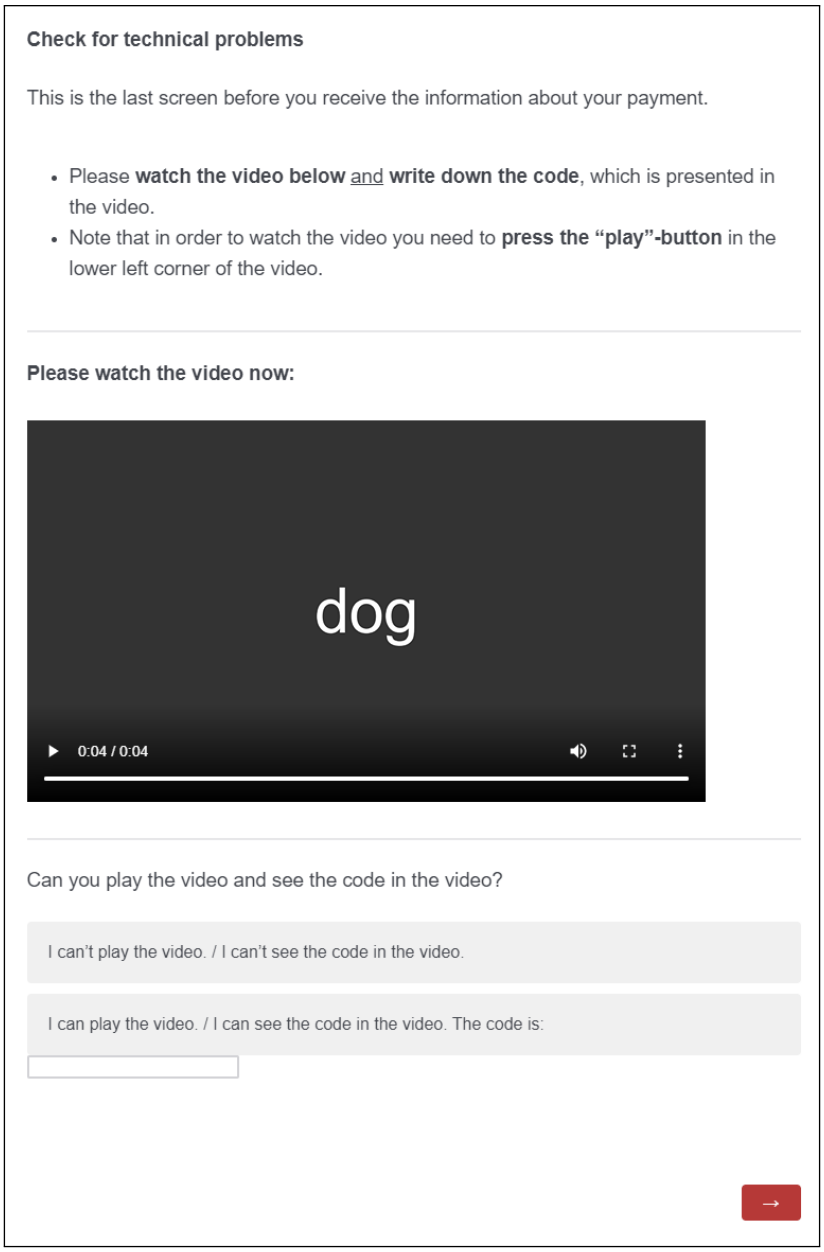
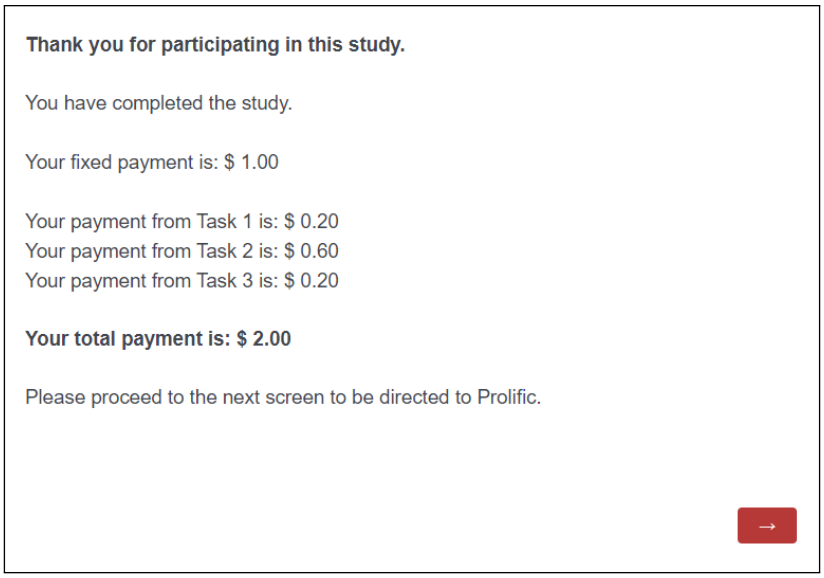


Figure B.24: Technical Check With Viewed Video



Note: In NB-NS, the experiments consists of two (rather than three) tasks as shown here. Subjects in NB-NS do not participate in the belief elicitation (first task in B-NS) and do not receive a signal about others (jointly with the belief elicitation; first task in the B-S). The general introduction is modified accordingly.

Figure B.25: Last Screen

Appendix C Summary of Hypotheses and Results

Number	Hypothesis	Result	Support
1	Men are more dishonest when an initial belief about others' dishonesty is elicited than when it is not elicited.	Men are more dishonest when asked to think about others' behavior in another task.	YES
2	Women are less dishonest when an initial belief about others' dishonesty is elicited than when it is not elicited.	Women's dishonest behavior is not affected by thinking about others' behavior in another task.	NO
3	Women are more dishonest when a higher level of dishonesty by others is signaled to them.	Women are more dishonest when a higher level of dishonesty by others is signaled to them.	YES
4	Men are not affected by the level of dishonesty by others signaled to them.	Men's dishonest behavior is not affected by receiving a signal or the level of dishonesty contained in it.	YES

Table C.1: Summary of Hypotheses and Results