

Cancel the deal? An experimental study on the exploitation of irrational consumers

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Cancel the deal? An experimental study on the exploitation of irrational consumers *

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Abstract

Consumers can sometimes be exploited because they make mistakes in their valuation of products. We present the results from a large-scale experimental study that examines whether third-party spectators from the general population in the United States cancel a deal where a buyer has made a mistake in the valuation of a product and agreed to pay more for the product than the seller knows it is worth. We find that the majority of the spectators cancel such deals even when the seller's involvement is limited to accepting a proposal made by the buyer. A substantial share of these spectators are also willing to fine the seller. However, a large minority of the spectators are willing to uphold the deal even when the seller has proposed the deal and obfuscated the information provided to the buyer. Our results shed new light on when people view market transactions as acceptable and their attitudes to government regulation of businesses.

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1 Introduction

Consumers sometimes make systematic mistakes in their valuation of products (Heidhues and Kőszegi, 2018). Such irrational behavior has been documented in numerous contexts, among them credit card contracts (Heidhues and Kőszegi, 2010), life- and health insurance (Bhargava, Loewenstein, and Sydnor, 2017), cellular phone plans (Grubb, 2009; Bar-Gill and Stone, 2012), mortgages (Campbell, Jackson, Madrian, and Tufano, 2011), credence goods (Balafoutas and Kerschbamer, 2020), and financial investments (Choi, Laibson, and Madrian, 2010). Since firms can exploit consumers who make such mistakes (Gabaix and Laibson, 2006; Grubb, 2015; Akerlof and Shiller, 2015; Kerschbamer, Neururer, and Sutter, 2016), an important policy question is whether the government should introduce regulations to protect irrational consumers from voluntarily making bad deals (Warren and Wood, 2014; Kőszegi, 2014; Agarwal, Chomsisengphet, Mahoney, and Stroebel, 2015; Campbell, 2016). Consumer protection policies may be regarded as promoting fairness in markets at the cost of restricting the freedom of buyers and sellers, and attitudes to such policies are therefore likely to depend on how people trade off concerns for fairness against concerns for individual freedom.

In this paper, we present the results from a novel large-scale experiment designed to examine how the general population in the United States (US) views voluntary deals that result in a gain for an informed seller and a loss for a misinformed buyer. About 4,000 participants are presented with real situations in which a buyer has misunderstood the value of a product and agreed to pay a seller more for the product than the seller knows it is worth. These participants, acting as third-party spectators, are asked to decide whether to cancel the deal between the seller and the buyer. In a between-subject design, we vary the seller's role in the process leading up to the deal. In the base treatment, the seller's involvement is limited to accepting a deal proposed by the buyer, knowing that the deal would result in a loss for the buyer and a gain for themselves. In three additional treatments, the seller's involvement is increased either by the seller having proposed the deal, by the seller having obfuscated the information about the value of the product provided to the buyer, or both.

Our design allows us to identify three types of spectators based on if and when they cancel a deal: **Substantialists**, **Contractualists**, and **Proceduralists**. Substantialists

are spectators who primarily care about the fairness of the outcome and therefore cancel any deal that creates an unfair distribution of gains and losses (Fehr and Schmidt, 1999; Konow, 2000; Cappelen, Drange Hole, Sørensen, and Tungodden, 2007). Contractualists are spectators who primarily care about respecting individual freedom and therefore do not cancel any voluntary deals (Arneson, 1980; Schwartz and Scott, 2003). Proceduralists are spectators who cancel the deal if, and only if, the seller actively contributes to the buyer's mistake (Bolton, Brandts, and Ockenfels, 2005; Falk, Fehr, and Fischbacher, 2008).

After the spectators have decided whether to cancel the deal, we give spectators who cancel an opportunity to fine the seller. This allows us to examine whether these spectators think the seller deserves to be punished and how the spectators' willingness to fine depends on the seller's involvement.

The experiment provides three main findings. First, we show that the majority of spectators decide to cancel a voluntary deal where the buyer has made a mistake in the valuation of a product and agreed to pay more for the product than the seller knows it is worth. Pooled across treatments, 60.7 percent of the spectators decide to cancel such deals. Second, we document considerable heterogeneity in spectator types. While a majority of the spectators are Substantialists, who cancel the deal even when the seller's involvement is limited to accepting a proposal from the buyer, a large minority are Contractualists, who do not cancel a voluntary deal even when the seller has obfuscated the information and proposed the deal. Only a small share of spectators are Proceduralists, who make the decision to cancel the deal conditional on the extent to which the seller contributed to the buyer's mistake. Third, across treatments, we find that 16.3 percent of the spectators not only cancel the deal, but also decide to punish the sellers by imposing a fine. The decision to fine is sensitive to the seller's involvement, with the share of spectators who fine the seller almost doubling when the seller has proposed the deal and obfuscated the information compared with when they have only accepted a proposal from the buyer.

We complement the experiment with survey evidence showing that the general population in the US considers the exploitation of irrational consumers to be an important issue. A large majority of the spectators believe that consumers often make mistakes when evaluating a product or a service, that companies often profit from such mistakes, and that companies target consumers who are likely to make mistakes. Furthermore, we

find substantial support for the government restricting businesses' opportunity to exploit irrational consumers, and show that the spectators' decision to cancel the deal in the experiment is strongly predictive of policy attitudes. Spectators who cancel the voluntary deal are about twice as likely as others to support policies that protect consumers from exploitation.

Our study relates to several literatures. To our knowledge, it provides the first experimental evidence of people's attitudes to the exploitation of irrational consumers, which has recently been studied theoretically in several important papers (DellaVigna and Malmendier, 2004; Dulleck and Kerschbamer, 2006; Kőszegi, 2014; Heidhues and Kőszegi, 2018; Jin, Luca, and Martin, 2021; Apffelstaedt and Mechtenberg, 2021). These papers have demonstrated that the presence of irrational consumers in a marketplace creates opportunities for exploitation. Our experimental evidence suggests that the majority of the general population in the US find it unacceptable for firms to exploit such irrationality. Furthermore, we find that a majority believe that such exploitation is common and that a large minority are in favor of regulations that limit businesses' opportunities to exploit consumers who make mistakes in their valuation of products and services.

The results from this study also contribute to the literature on fairness in market transactions. Previous research has shown that perceptions of fairness can constrain a firm's opportunity to maximize profits (Kahneman, Knetsch, and Thaler, 1986b; Bolton, Warlop, and Alba, 2003; Xia, Monroe, and Cox, 2004; Leibbrandt, 2020). Our study demonstrates that outcome-based fairness considerations are of great importance to people's views of market transactions; a majority of the spectators decide to cancel a voluntary deal that benefits a seller at the expense of a buyer. We also show that procedural-based considerations are important for a non-negligible share of spectators, by causally identifying that an increase in the seller's involvement increases the share of spectators who cancel the deal and the share of spectators who fine the seller. This is in line with previous research showing the importance of both outcomes and processes for people's assessment of fairness (Falk et al., 2008; Andreoni, Aydin, Barton, Bernheim, and Naecker, 2020).

Finally, our findings add to the growing literature investigating the value of freedom (Fehr, Glätzle-Rützler, and Sutter, 2013; Bartling, Fehr, and Herz, 2014; Freundt, Herz, and Kopp, 2023). Empirical evidence has shown that people value their own and other people's freedom and are reluctant to infringe upon it (Fehr et al., 2013; Bartling et al.,

2014; Ambuehl, Bernheim, and Ockenfels, 2021). Consistent with these studies, our results show that a substantial share of spectators are unwilling to intervene when doing so can be seen as restricting someone’s freedom.

The remainder of the paper is organized as follows: Section 2 describes the experimental design and the sample, and Section 3 outlines the empirical strategy. Section 4 presents the results, while Section 5 concludes.

2 Experimental Design

In this section, we first describe the sample and the procedures, before detailing the experimental design and the different treatments. The instructions are provided in the Online Appendix.

2.1 Sample and procedures

The study has two types of participants: spectators and stakeholders. The spectators make consequential decisions for the stakeholders. Our interest is in the spectators’ decisions, while the sole function of the stakeholders is to render the spectators’ decisions consequential. In addition to making consequential decisions, the spectators also answered a set of questions about their background characteristics, their beliefs about the behavior of consumers and firms in society, and their attitudes to consumer protection policies.

The spectators were recruited from the general population in the US, with the assistance of a data collection agency. They were paid a fixed compensation for taking part in the study. We sampled a total of 3,991 spectators in the fall of 2020, based on quotas for gender, age, and region, to match a representative sample of the US population aged 18 or older, see Table A1 in the Appendix. The median age of the spectators is 48 years, 52 percent are women, and the average level of education is somewhat higher than in the general population. The median household income in our sample is \$60,000.

We recruited stakeholders using the online labor market platform Amazon Mechanical Turk (MTurk). The stakeholders earned a participation fee and were informed that their final payment would depend on their own choices and the choices of others. We implemented a 1:5 matching between a pair of stakeholders and spectators, that is, we

randomly selected one out of five spectators and implemented their decisions for a pair of stakeholders. Given our sample of spectators, this entailed a total of 1,596 stakeholders.

2.2 Sellers and buyers

The stakeholders were randomly assigned to the role of a *seller* or a *buyer*, and sellers and buyers were matched in pairs. The sellers were endowed with a product and informed that the product had no value for themselves and a value of \$2 for the buyer. The buyers knew that the product had no value for the seller, but did not necessarily know the true value of the product for themselves. The buyers could receive obfuscated information about the value of the product for themselves, in which case some buyers would make a mistake in interpreting the information and wrongly believe that the product was worth \$20.¹ In these cases, the seller would know that the buyer has made a mistake in the valuation of the product. We are interested in situations in which an *informed seller* and a *misinformed buyer* agreed on a price of \$10 for the product.²

2.3 Spectators

All spectators were presented with a situation in which an informed seller and a misinformed buyer have agreed on a deal. They were in all treatments given the same basic description of the situation and informed about what the seller and the buyer knew about the value of the product. Importantly, the spectators were informed that the seller knew that the buyer had made a mistake in the valuation of the product. Spectators were then asked to choose between the following two alternatives:

- **Uphold the deal:** The seller gains \$10 and the buyer loses \$8.
- **Cancel the deal:** Neither the seller nor the buyer gains or loses.

The spectators who decided to cancel the deal were asked whether they wanted to impose a fine of \$2 on the seller, at no cost to themselves.

¹The mistake would reflect that the buyer is a base-rate neglecter.

²Sellers and buyers who did not enter into a deal were not included in the study.

2.4 Treatment variations

The spectators were randomly assigned to one of four treatments in a between-subject design. The treatments vary with respect to the seller’s involvement in proposing the deal and in obfuscating the information received by the buyer. In the *Low treatment*, the seller’s involvement was limited to accepting a proposal from the buyer to purchase the product. In this treatment, the spectators were told that the buyer had proposed to buy the product for \$10 and that the seller had accepted this proposal knowing that the product was only worth \$2 to the buyer. Further, the spectators were informed that the seller had no role in obfuscating the information given to the buyer.

In the other treatments, the seller’s involvement was increased along two dimensions. The *Propose treatment* is identical to the Low treatment except that the spectators were informed that it was the seller who had proposed the deal and the buyer who had accepted it. The *Obfuscate treatment* is identical to the Low treatment except that the spectators were informed that the seller had chosen to obfuscate the information about the value of the product to the buyer such that the buyer overvalued the product. Finally, in the *High treatment*, the spectators were informed that the seller had both obfuscated the information about the value of the product and proposed the deal. An overview of the treatments is given in Table 1.

[Table 1 about here]

3 Empirical Strategy

We are interested in the spectators’ decision about whether to cancel the deal and, if they cancel, whether they decide to fine the seller. The empirical strategy was pre-registered at the repository of the Open Science Foundation (OSF) before the data collection started.³

3.1 Main specifications

To examine how the involvement of the seller causally affects the spectators’ willingness to cancel the deal, we use the following empirical specification:

³The pre-analysis plan is available at [10.17605/OSF.IO/N5HVB](https://doi.org/10.17605/OSF.IO/N5HVB).

$$C_i = \beta_0 + \beta_1 P_i + \beta_2 O_i + \beta_3 P_i O_i + \gamma X_i, \quad (1)$$

where C_i is an indicator variable taking the value of one if the spectator cancels the deal, P_i is an indicator variable for the spectator being in a treatment where the seller proposed the deal, and O_i is an indicator variable for the spectator being in a treatment where the seller obfuscated the information. $P_i O_i$ is the interaction between P_i and O_i , and X_i is a vector for control variables, including political affiliation, gender, age, education, and income.

We introduce the following classification of spectators, based on when they cancel a voluntary deal that results in a gain for an informed seller and a loss for a misinformed buyer:

- **Substantialists:** Always cancel a voluntary deal that results in a gain for an informed seller and a loss for a misinformed buyer.
- **Proceduralists:** Cancel a voluntary deal that results in a gain for an informed seller and a loss for a misinformed buyer if and only if the seller has been actively involved in the process leading up to the deal.
- **Contractualists:** Never cancel a voluntary deal that results in a gain for an informed seller and a loss for a misinformed buyer.

We assume that the seller has been actively involved in the process leading up to the deal if they have obfuscated the information and proposed the deal. We further assume that the share of spectators of each type is unaffected by the treatment and that all spectators are one of the three types. We can now use equation (1) to estimate the shares of Substantialists, S , Proceduralists, Pr , and Contractualists, C . Since only Substantialists cancel the deal in the Low treatment, we have that $S = \beta_0$. Since only Contractualists do not cancel the deal in the High treatment, we have that $C = 1 - \beta_0 - \beta_1 - \beta_2 - \beta_3$. Finally, since all spectators are assumed to be one of the three types, we have that $Pr = \beta_1 + \beta_2 + \beta_3$.

To examine the causal effect of the seller's involvement on the spectators' willingness to fine the seller, we run equation (1) and replace the indicator variable for the decision to cancel with an indicator variable for whether the spectator fines the seller.

The estimated treatment effects then give the causal effects of the seller proposing the deal or obfuscating information on the share of spectators who fine the seller. Finally, we report this analysis conditional on the spectator having canceled the deal.

3.2 Additional analysis

In an explorative analysis, we examine how behavior in the experiment and beliefs about the behavior of consumers and firms are associated with support for consumer protection policies. We use the following empirical specification:

$$A_i = \beta_0 + \beta_1 C_i + \beta_2 M_i + \beta_3 P_i + \beta_4 T_i + \gamma X_i, \quad (2)$$

where A_i is an indicator variable for whether the spectator agrees or strongly agrees with the statement “The government should restrict businesses’ opportunity to make profits from customers who misunderstand the value of a product or service,” C_i is an indicator for whether the spectator cancels the deal, M_i is an indicator variable for whether the spectator agrees or strongly agrees with the statement “People often have the wrong beliefs about how valuable a product or service would be for them,” P_i is an indicator variable for whether the spectator agrees or strongly agrees with the statement “Businesses often make profits from customers who misunderstand the value of a product or service,” T_i is an indicator variable for whether the spectator agrees or strongly agrees with the statement “Businesses actively target customers who are likely to overestimate the value of their product or service,” and X_i is a vector of control variables (age, education, income, gender, and political affiliation).

4 Results

We first provide an analysis of the spectators’ decision to cancel the deal between an informed seller and a misinformed buyer, and then analyze the subsequent decision of whether to fine the seller. Finally, we examine the spectators’ beliefs and policy attitudes.

4.1 The decision to cancel

We start by providing an overview of the spectators' decision to cancel the deal. Figure 1 shows the share of spectators who decide to cancel the deal in each of the four treatments. We observe that in the Low treatment, 57.4 percent of the spectators decide to cancel the deal. This suggests that a majority of the spectators consider a voluntary deal resulting in a gain for an informed seller and a loss for a misinformed buyer to be unacceptable, even when the seller's involvement is limited to accepting a proposal made by the buyer.

The share of spectators who cancel the deal increases somewhat, to 59.0 percent, in the Propose treatment where the informed seller has proposed the deal. In the Obfuscate treatment where the informed seller has obfuscated the information provided to the buyer, the share of spectators who cancel the deal further increases to 64.5 percent. Finally, we observe that 62.3 percent of the spectators cancel the deal in the High treatment where the informed seller has been most actively involved. Thus, even when the seller has both obfuscated the information provided to the buyer and proposed the deal, more than a third of the spectators consider the voluntary deal acceptable.

[Figure 1 about here]

In Table 2, we report the corresponding regression analysis, with the decision to cancel the deal as the dependent variable. From Column (1), we observe that the effect of the seller having proposed the deal is small and not statistically significant ($p = 0.464$). Thus, the spectators do not view the identity of the proposer, whether seller or buyer, to be relevant for the decision to cancel the deal. We further observe from Column (1) that the spectators are more likely to cancel the deal when the seller has actively misled the buyer: the share of spectators who cancel the deal increases by 7.0 percentage points when the seller has obfuscated the information ($p = 0.001$). Thus, some spectators who find the deal acceptable when the informed seller's involvement is limited to accepting an offer from the misinformed buyer, find the deal unacceptable when the buyer is misinformed because the seller has obfuscated the information. There is no significant interaction effect: the effect of obfuscation does not depend on whether the seller has proposed the deal ($p = 0.220$). From Column (2), we find that these results are virtually unaffected when we control for background characteristics. We can summarize these findings as follows:

[Table 2 about here]

Result 1: *There is substantial heterogeneity in the spectators' willingness to cancel a voluntary deal between an informed seller and a misinformed buyer. A majority of the spectators cancel such deals even when the seller's involvement is limited to accepting a proposal made by the buyer, while a large minority do not cancel the deal even when the seller has proposed the deal and obfuscated the information provided to the buyer.*

From Column (2), we also observe that there is a large political divide in willingness to cancel the deal, with the share of Republican spectators who cancel the deal being 6.1 percentage points lower than the share of non-Republican spectators who cancel the deal ($p < 0.001$). We further find large and systematic differences in willingness to cancel the deal based on the socioeconomic characteristics of the spectators. Women are 7.6 percentage points more likely to cancel the deal than men ($p < 0.001$), high-age spectators are 7.6 percentage points more likely to cancel the deal than low-age spectators ($p < 0.001$), and high-income spectators are 3.7 percentage points less likely to cancel the deal than low-income spectators ($p < 0.001$).

Based on Column (1) in Table 2, we can estimate the share of the three types of spectators. As shown in Figure 2, we find that a majority of the spectators, 57.4 percent, are Substantialists. We interpret these spectators as primarily caring about the outcome of their decision, considering the outcome of canceling the deal to be better than the outcome of upholding the deal. A large minority of the spectators, 37.7 percent, are Contractualists. We interpret these spectators as primarily caring about individual freedom, thinking that canceling a voluntary deal would mean restricting the freedom of the seller and the buyer.⁴ Only 4.9 percent of the spectators are Proceduralists. We interpret

⁴There is a small efficiency gain from upholding the deal and we cannot rule out the possibility that the Contractualists are motivated by a concern for efficiency rather than freedom. However, we find this interpretation unlikely given that the efficiency gain associated with the deal is small. The existing literature also suggests that people do not assign large weight to efficiency considerations (Almås, Cappelen, and Tungodden, 2020; Stantcheva, 2021). To test for the importance of the efficiency argument, we implemented an independent online experiment with 1,000 participants recruited from the general population in the US (+ 18 years old). The participants were informed that two individuals, A and B, had been recruited via an online labor market platform to participate in a study. The participants were then asked to decide how much individual A and individual B should be paid in compensation. Their decision was implemented with a 1:10 matching. They could choose between paying both individuals \$10 or paying individual A \$20 and individual B \$2. Hence, in this experiment, the participants made

these spectators as primarily caring about the seller's involvement in the process leading up to the deal: they view the deal as acceptable if the seller's involvement is limited to accepting a proposal made by the buyer and they view the deal as unacceptable if the seller has obfuscated the information provided to the seller and proposed the deal. We summarize the analysis of the spectator types as follows:

Result 2: *A majority of the spectators are Substantialists, while a large minority of the spectators are Contractualists. Only a small minority of the spectators are Proceduralists.*

The four panels in Figure 2 report how the share of Substantialists, Proceduralists, and Contractualists varies across subgroups. We observe that the share of Substantialists is somewhat lower among Republican spectators than among non-Republicans ($p < 0.1$), somewhat higher among women than among men ($p < 0.001$), and somewhat higher among high-age spectators than among low-age spectators ($p < 0.05$). There are otherwise no significant differences. The main patterns are thus quite similar across the subgroups (see also Table A2 in the Appendix)

[Figure 2 about here]

4.2 The decision to fine

The spectators who cancel the deal are asked whether they want to impose a fine on the seller. Figure 3 reports the share of spectators who decide to fine the seller. In the Low treatment, only 11.2 percent of the spectators fine the seller. The share of spectators who fine the seller increases to 14.5 percent in the Propose treatment, to 19.3 percent in the Obfuscation treatment, and to 20.0 percent in the High treatment.

[Figure 3 about here]

exactly the same trade-off between equality and efficiency as in the present study, but without the unequal outcome reflecting the result of a voluntary deal. Only a very small minority, 7.1 percent, choose the efficient and unequal distribution, which shows that efficiency considerations cannot explain the large share of Contractualists in the present study.

Columns (3) and (4) in Table 2 report regressions on the decision to fine the seller. We observe from Column (3) that the share of spectators who fine the seller increases by 3.3 percentage points when the seller has proposed the deal ($p = 0.043$), and by 8.0 percentage points when the seller has obfuscated the information provided to the buyer ($p < 0.001$). There is no significant interaction in the effect of the seller having proposed the deal and the seller having obfuscated the information ($p = 0.273$). Table A3 in the Appendix shows that these patterns hold for all subgroups in the population. We summarize the analysis of the decision to impose a fine as follows:

Result 3: *A non-negligible share of spectators fine an informed seller who has accepted a proposal from a misinformed buyer knowing that the deal results in a gain for the seller and a loss for the buyer. The share of spectators who fine the seller almost doubles when the seller has obfuscated the information provided to the buyer and proposed the deal.*

We can see from Column (4) that there is a small but statistically significant political divide in the willingness to fine the sellers, with Republican spectators being 3.0 percentage points less likely to impose a fine compared with non-republicans ($p < 0.05$). High-age spectators are also less likely to impose a fine ($p < 0.01$), despite being more likely to cancel the deal.

To shed light on whether an increase in the seller's involvement also made the spectators more likely to impose a fine conditional on the decision to cancel the deal, Columns (5)–(6) in Table 2 examine the association between the seller's involvement and the decision to fine among the spectators who decide to cancel. The results show that the seller's involvement increases the share of spectators who fined the seller, conditional on having canceled the deal: among the spectators who cancel the deal, the share who fine the seller increases from 19.5 percent in the Low treatment to 32.3 percent in the High treatment.

4.3 Beliefs and policy attitudes

Figure 4 shows the spectators' beliefs about consumers and firms in their society and their attitude to consumer protection policies. We observe that a large majority of the

spectators agree or strongly agree with the statement that consumers often make mistakes when evaluating a product or service (78.0 percent). A majority of the spectators also agree or strongly agree with the statements that companies often profit from consumers' mistakes (78.5 percent), and that companies actively target consumers who are likely to make mistakes (58.8 percent).⁵ Taken together, these findings suggest that a majority of the general population in the US believe that the type of situations presented to the spectators in the experiment, in which an informed seller exploits a misinformed buyer, is quite common in consumer markets.

[Figure 4 about here]

We elicit the spectators' attitudes to consumer protection policy by asking them whether they agree with the statement: "The government should restrict businesses' opportunity to make profits from customers who misunderstand the value of a product or service." Figure 4 shows that a large minority of the spectators, 42.6 percent, agree or strongly agree with this statement.

[Table 3 about here]

In Table 3 we study how the spectators' behavior in the experiment relates to their policy attitudes. We find a strong correlation between the spectators' decision to cancel the deal and support for government regulation of consumer markets. From Column (1) we observe that those who cancel the deal are about twice as likely to agree that the government should restrict businesses' opportunity to make profits from customers who misunderstand the value of a product or service, than those who do not cancel the deal ($p < 0.001$). Column (6) shows that this holds even when we control for the spectators' beliefs and political affiliation. We summarize this result as follows:

Result 4: *Spectators who cancel the deal are more likely to support government regulation of consumer markets.*

From Table 3, we can also observe a strong association between the spectators' attitude to government regulation and their beliefs about the extent to which businesses

⁵The distribution of answers is reported in Figure A1 in the Appendix.

profit from, and target, irrational consumers. The share of spectators who agree that the government should restrict businesses' opportunity is about 50 percent higher among those who believe that businesses profit from consumers who misunderstand the value of products and services (Column (3), $p < 0.001$) and among those who believe that businesses target such consumers (Column (4), $p < 0.001$). Interestingly, we do not observe a significant association between the spectators' attitudes to government regulation and their beliefs about the extent to which consumers make mistakes (Column (2), $p = 0.556$). These findings suggest that support for government regulation is motivated mainly by a desire to prevent businesses from exploiting misinformed consumers rather than a desire to protect the consumers from themselves. We can summarize these results as follows:

Result 5: *Support for government regulation of consumer markets is motivated by a desire to prevent businesses from exploiting misinformed consumers rather than a desire to protect the consumers from themselves.*

Finally, in Column (5) we observe that Republican spectators are less likely than non-Republican spectators to support government regulation that restricts businesses' opportunity to make profit from customers who misunderstand the value of their products: While 46.1 percent of non-Republicans support such regulations, this figure is only 34.8 percent for Republicans ($p < 0.001$). This finding is in line with previous research suggesting that conservatives are more likely to hold favorable views of free market outcomes (Jost, Blount, Pfeffer, and Hunyady, 2003; Goren, 2005) and are more skeptical to government interventions in markets (Feldman and Johnston, 2014).

5 Concluding remarks

We have presented the first set of evidence on how the general population in the US views voluntary deals that result in a gain for an informed seller and a loss for a misinformed buyer. Our findings show that a majority of Americans prefer to cancel such deals. This is the case even when the seller's role is limited to accepting a proposal made by the buyer, knowing that the buyer will lose from the deal. This suggests that people

are primarily concerned with the distributional consequences of deals where sellers gain and the buyers lose.

The spectators' willingness to cancel deals in which a misinformed buyer is exploited by an informed seller, is consistent with the widespread support for stricter government regulation of businesses in form of, for example, the US Credit Card Accountability Responsibility and Disclosure Act (known as the CARD Act) (Agarwal et al., 2015) and the European regulations on "unfair" contract features (Heidhues and Kószegi, 2018). However, the fact that a large minority of the spectators choose to uphold such deals, even in settings where the seller has actively contributed to the buyer's mistake by obfuscating the information provided to the buyer, elucidates why efforts to introduce such regulations often meet fierce resistance.

In the present study, only a small minority of the spectators consider the seller's involvement to be critical for the decision to cancel the deal. In contrast, the seller's involvement, in particular whether they have obfuscated the information provided to the buyer, is important for the decision to fine the seller. Procedural concerns thus play a more important role in people's willingness to punish the seller than in their willingness to cancel the deal. We also document that procedural concerns are mostly driven by opposition to the seller having obfuscated the information provided to the buyer rather than to the seller having proposed the deal. This finding offers insight into the strong support for policy initiatives that improve consumers access to information (Sunstein, 2019; Chen, Cramton, List, and Ockenfels, 2021). The finding also suggest that providing consumers with complex and confusing information can negatively influence consumers' perception of a firm.

The present study suggests that firms need to take fairness considerations into account by firms when considering how to handle their customers. In line with previous research (Kahneman, Knetsch, and Thaler, 1986a; Bhattacharjee, Dana, and Baron, 2017), our results document that people are willing to punish firms that earn a profit from deals that they perceive as unfair.

In this study, we have examined people's attitudes to deals where consumers who make mistakes in their valuation of a product are exploited. An interesting avenue for future research is to examine people's attitudes to the exploitation of other types of irrationality, for example status quo bias or present bias. Finally, it would be interesting to study how attitudes to the exploitation of consumers in the US compare with attitudes

in other countries and how variations in these attitudes can shed light on the variation in support for competition policies and firm practices across the world.

References

- Agarwal, Sumit, Souphala Chomsisengphet, Neale Mahoney, and Johannes Stroebel (2015). “Regulating consumer financial products: Evidence from credit cards,” *Quarterly Journal of Economics*, 130(1): 111–164.
- Akerlof, George A and Robert J Shiller (2015). *Phishing for phools: The economics of manipulation and deception*, Princeton University Press.
- Almås, Ingvild, Alexander W. Cappelen, and Bertil Tungodden (2020). “Cutthroat capitalism versus cuddly socialism: Are Americans more meritocratic and efficiency-seeking than Scandinavians?” *Journal of Political Economy*, 128(5): 1753–1788.
- Ambuehl, Sandro, Douglas B. Bernheim, and Axel Ockenfels (2021). “What motivates paternalism? an experimental study,” *American Economic Review*, 111(3): 787–830.
- Andreoni, James, Deniz Aydin, Blake Barton, B Douglas Bernheim, and Jeffrey Naecker (2020). “When fair isn’t fair: Understanding choice reversals involving social preferences,” *Journal of Political Economy*, 128(5): 1673–1711.
- Apffelstaedt, Arno and Lydia Mechtenberg (2021). “Competition for context-sensitive consumers,” *Management Science*, 67(5): 2828–2844.
- Arneson, Richard J (1980). “Mill versus paternalism,” *Ethics*, 90(4): 470–489.
- Balafoutas, Loukas and Rudolf Kerschbamer (2020). “Credence goods in the literature: What the past fifteen years have taught us about fraud, incentives, and the role of institutions,” *Journal of Behavioral and Experimental Finance*, 26: 100285.
- Bar-Gill, Oren and Rebecca Stone (2012). “Pricing misperceptions: explaining pricing structure in the cell phone service market,” *Journal of Empirical Legal Studies*, 9(3): 430–456.

- Bartling, Björn, Ernst Fehr, and Holger Herz (2014). “The intrinsic value of decision rights,” *Econometrica*, 82(6): 2005–2039.
- Bhargava, Saurabh, George Loewenstein, and Justin Sydnor (2017). “Choose to Lose: Health Plan Choices from a Menu with Dominated Option*,” *Quarterly Journal of Economics*, 132(3): 1319–1372.
- Bhattacharjee, Amit, Jason Dana, and Jonathan Baron (2017). “Anti-profit beliefs: How people neglect the societal benefits of profit.” *Journal of personality and social psychology*, 113(5): 671.
- Bolton, Gary E., Jordi Brandts, and Axel Ockenfels (2005). “Fair procedures: Evidence from games involving lotteries,” *Economics Journal*, 115(506): 1054–1076.
- Bolton, Lisa E, Luk Warlop, and Joseph W Alba (2003). “Consumer perceptions of price (un) fairness,” *Journal of consumer research*, 29(4): 474–491.
- Campbell, John Y (2016). “Restoring rational choice: The challenge of consumer financial regulation,” *American Economic Review*, 106(5): 1–30.
- Campbell, John Y, Howell E Jackson, Brigitte C Madrian, and Peter Tufano (2011). “Consumer financial protection,” *Journal of Economic Perspectives*, 25(1): 91–114.
- Cappelen, Alexander W., Astri Drange Hole, Erik Ø. Sørensen, and Bertil Tungodden (2007). “The pluralism of fairness ideals: An experimental approach,” *American Economic Review*, 97(3): 818–827.
- Chen, Yan, Peter Cramton, John A. List, and Axel Ockenfels (2021). “Market design, human behavior, and management,” *Management Science*, 67(9): 5317–5348.
- Choi, James J, David Laibson, and Brigitte C Madrian (2010). “Why does the law of one price fail? an experiment on index mutual funds,” *The Review of Financial Studies*, 23(4): 1405–1432.
- DellaVigna, Stefano and Ulrike Malmendier (2004). “Contract design and self-control: Theory and evidence,” *Quarterly Journal of Economics*, 119(2): 353–402.

- Dulleck, Uwe and Rudolf Kerschbamer (2006). “On doctors, mechanics, and computer specialists: The economics of credence goods,” *Journal of Economic Literature*, 44(1): 5–42.
- Falk, Armin, Ernst Fehr, and Urs Fischbacher (2008). “Testing theories of fairness—intentions matter,” *Games and Economic Behavior*, 62(1): 287–303.
- Fehr, Ernst, Daniela Glätzle-Rützler, and Matthias Sutter (2013). “The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence,” *European Economic Review*, 64(1): 369–383.
- Fehr, Ernst and Klaus M. Schmidt (1999). “A theory of fairness, competition and cooperation,” *Quarterly Journal of Economics*, 114(3): 817–868.
- Feldman, Stanley and Christopher Johnston (2014). “Understanding the determinants of political ideology: Implications of structural complexity,” *Political Psychology*, 35(3): 337–358.
- Freundt, Jana, Holger Herz, and Leander Kopp (2023). “Intrinsic preferences for autonomy,” Working Papers SES.
- Gabaix, Xavier and David Laibson (2006). “Shrouded attributes, consumer myopia, and information suppression in competitive markets,” *Quarterly Journal of Economics*, 121(2): 505–540.
- Goren, Paul (2005). “Party identification and core political values,” *American Journal of Political Science*, 49(4): 881–896.
- Grubb, Michael D (2009). “Selling to overconfident consumers,” *American Economic Review*, 99(5): 1770–1807.
- Grubb, Michael D (2015). “Overconfident consumers in the marketplace,” *Journal of Economic Perspectives*, 29(4): 9–36.
- Heidhues, Paul and Botond Köszegi (2010). “Exploiting naïveté about self-control in the credit market,” *American Economic Review*, 100(5): 2279–2303.

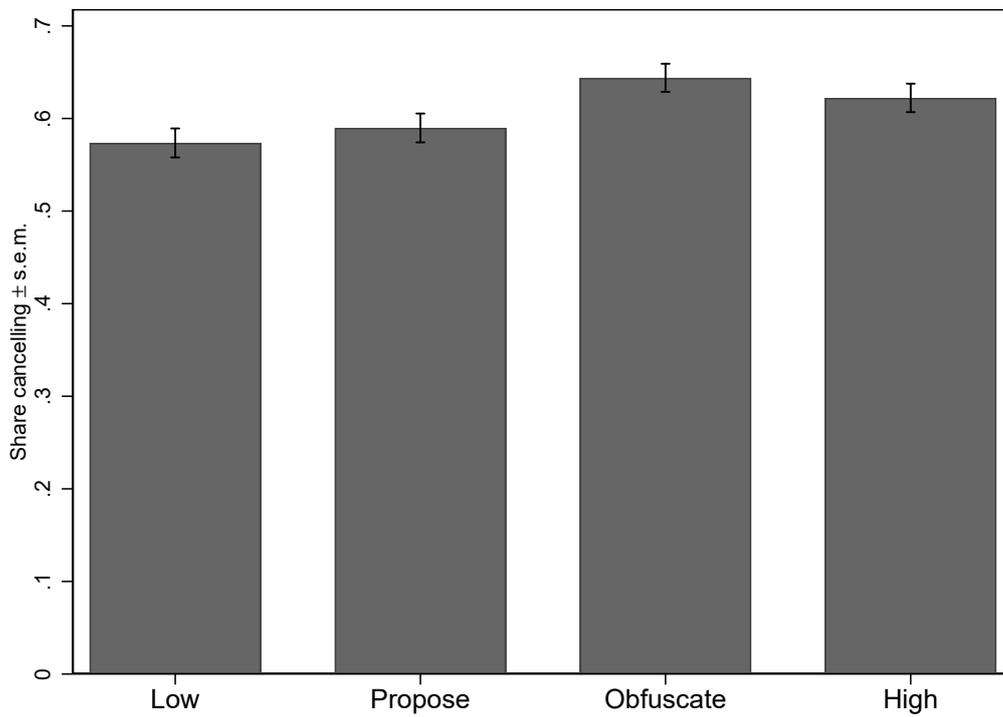
- Heidhues, Paul and Botond Kőszegi (2018). “Behavioral industrial organization,” in “Handbook of Behavioral Economics: Applications and Foundations 1,” Elsevier, pp. 517–612.
- Jin, Ginger Zhe, Michael Luca, and Daniel Martin (2021). “Complex disclosure,” *Management Science*.
- Jost, John T, Sally Blount, Jeffrey Pfeffer, and György Hunyady (2003). “Fair market ideology: Its cognitive-motivational underpinnings,” *Research in organizational behavior*, 25: 53–91.
- Kahneman, Daniel, Jack L Knetsch, and Richard Thaler (1986a). “Fairness as a constraint on profit seeking: Entitlements in the market,” *American Economic Review*: 728–741.
- Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler (1986b). “Fairness and the assumptions of economics,” *Journal of Business*, 59(4): 285–300.
- Kerschbamer, Rudolf, Daniel Neururer, and Matthias Sutter (2016). “Insurance coverage of customers induces dishonesty of sellers in markets for credence goods,” *Proceedings of the National Academy of Sciences*, 113(27): 7454–7458.
- Konow, James (2000). “Fair shares: Accountability and cognitive dissonance in allocation decisions,” *American Economic Review*, 90(4): 1072–1091.
- Kőszegi, Botond (2014). “Behavioral contract theory,” *Journal of Economic Literature*, 52(4): 1075–1118.
- Leibbrandt, Andreas (2020). “Behavioral constraints on price discrimination: Experimental evidence on pricing and customer antagonism,” *European Economic Review*, 121: 103303.
- Schwartz, Alan and Robert E Scott (2003). “Contract theory and the limits of contract law,” *Yale LJ*, 113: 541.
- Stantcheva, Stefanie (2021). “Understanding tax policy: How do people reason?” *Quarterly Journal of Economics*, 136(4): 2309–2369.

Sunstein, Cass R (2019). “Which nudges do people like? a national survey,” in “Handbook of Behavioural Change and Public Policy,” Edward Elgar Publishing.

Warren, Patrick L and Daniel H Wood (2014). “The political economy of regulation in markets with naïve consumers,” *Journal of the European Economic Association*, 12(6): 1617–1642.

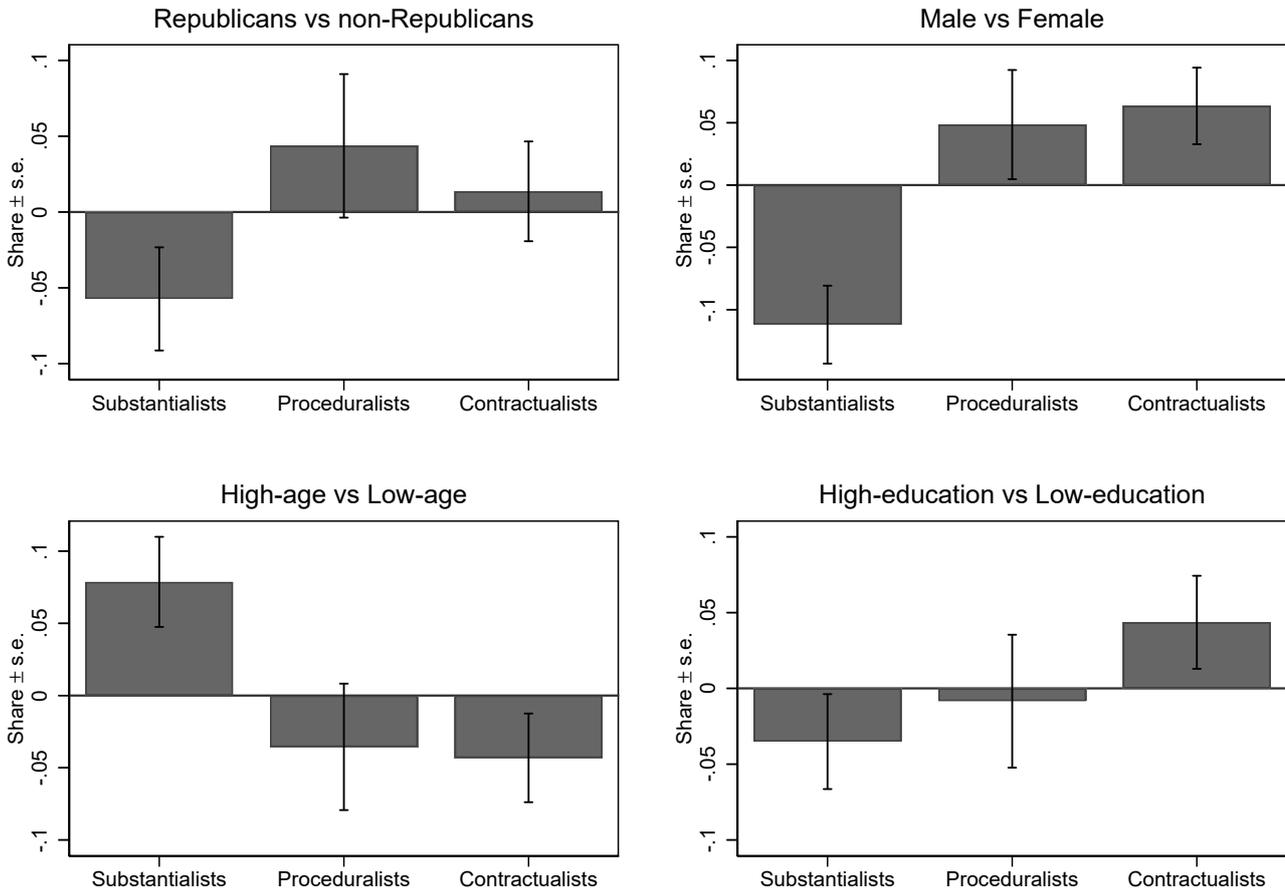
Xia, Lan, Kent B Monroe, and Jennifer L Cox (2004). “The price is unfair! a conceptual framework of price fairness perceptions,” *Journal of marketing*, 68(4): 1–15.

Figure 1: Share of spectators who cancel the deal



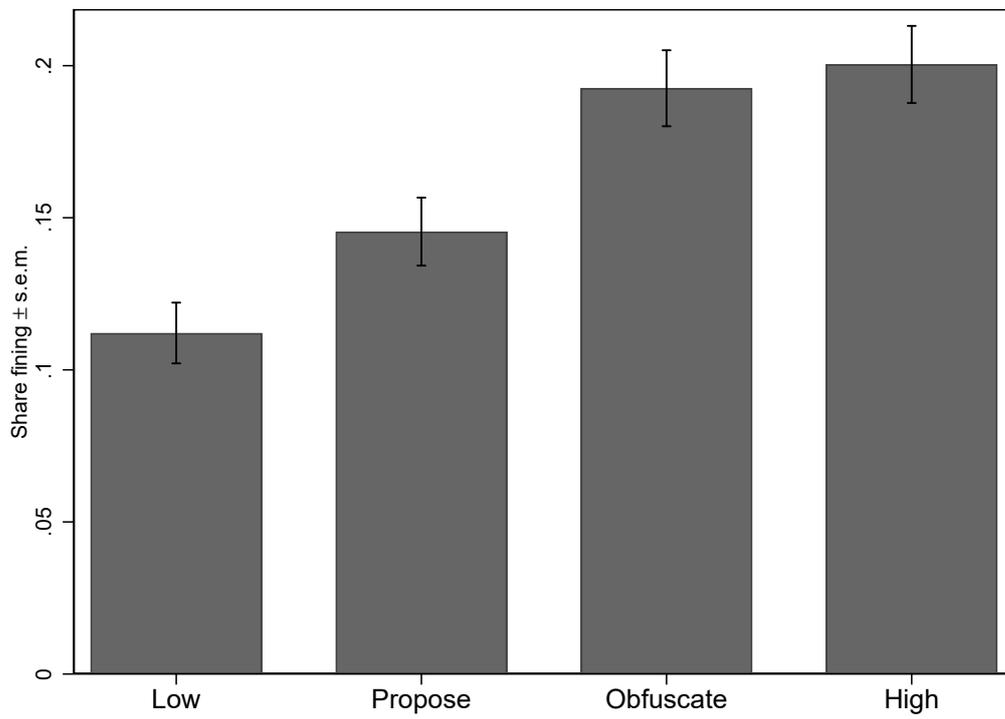
Note: The figure shows the share of spectators who cancel the deal between the buyer and the seller in each of the four treatments. The bars indicate standard errors.

Figure 2: Classification of spectators



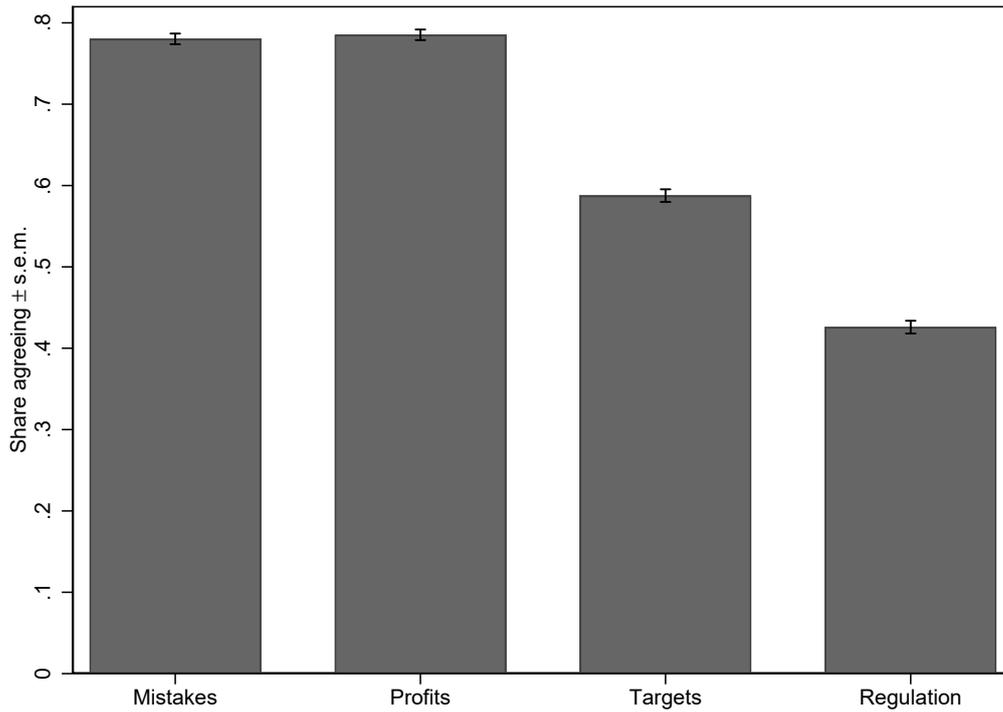
Note: The figure reports the estimated difference between subgroups in the share of the three types of spectators, Substantialists, Proceduralists, and Contractualists. “Republican” is an indicator variable for the spectator voting for the Republican party, “Female” is an indicator variable for the spectator being female, “High-age” is an indicator variable for the spectator being older than the median (47 years) and “High-education” is an indicator variable for the spectator being more educated than the median (bachelor’s degree). The estimates are based on Table A2. We do not report the estimated difference between High-income and Low-income spectators since the estimates are almost identical to the estimates for High-education and Low-education.

Figure 3: Share of spectators who fine the seller



Note: The figure shows the share of spectators who fine the seller in each of the four treatments. The bars indicate standard errors.

Figure 4: Beliefs and policy attitudes



Note: The figure reports the share of spectators who strongly agree or agree with the following statements: “People often have the wrong beliefs about how valuable a product or service would be for them” (Mistakes), “Businesses often make profit from customers who misunderstand the value of a product or service” (Profits), “Businesses actively target customers who are likely to overestimate the value of their product or service” (Targets), and “The government should restrict businesses’ opportunity to make profit from customers who misunderstand the value of a product or service” (Regulate).

Table 1: Overview of the treatments

		Seller obfuscated	
		No	Yes
Seller proposed	No	Low	Obfuscate
	Yes	Propose	High

Note: This table provides an overview of the treatments. In the treatment *Low*, the seller's involvement is limited to having accepted a proposal made by the buyer. In the treatment *Propose*, the seller has proposed the deal, but not obfuscated the information provided to the buyer. In the treatment *Obfuscate*, the seller has obfuscated the information provided to the buyer, but not proposed the deal. In the treatment *High*, the seller has obfuscated the information and proposed the deal.

Table 2: Regression results for decision to cancel the deal and to fine the seller

	Cancel	Cancel	Fine	Fine	Fine Conditional	Fine Conditional
	(1)	(2)	(3)	(4)	(5)	(6)
Proposed	0.016 (0.022)	0.013 (0.022)	0.033** (0.015)	0.033** (0.015)	0.051** (0.024)	0.053** (0.024)
Obfuscated	0.070*** (0.022)	0.072*** (0.022)	0.080*** (0.016)	0.080*** (0.016)	0.104*** (0.025)	0.100** (0.024)
Proposed*Obfuscated	-0.038 (0.031)	-0.037 (0.031)	-0.026 (0.023)	-0.024 (0.023)	-0.028 (0.036)	-0.028 (0.035)
Republican		-0.061*** (0.017)		-0.030** (0.012)		-0.024 (0.020)
Female		0.076*** (0.016)		0.002 (0.012)		-0.029 (0.019)
High-age		0.076*** (0.015)		-0.037*** (0.012)		-0.093*** (0.018)
High-education		-0.019 (0.017)		-0.017 (0.013)		-0.021 (0.019)
High-income		-0.037** (0.017)		-0.005 (0.013)		0.008 (0.020)
Constant	0.574*** (0.016)	0.541*** (0.022)	0.112*** (0.010)	0.149*** (0.016)	0.195*** (0.017)	0.275*** (0.026)
R^2	0.003	0.022	0.009	0.015	0.012	0.026
Observations	3991	3991	3991	3991	2424	2424

Note: The table reports OLS regressions on binary variables taking the value of one if the spectator cancels the deal (Columns 1–2), fines the seller Columns 3–4), or fines the seller conditional on having cancelled the deal (Columns 5–6). “Proposed” indicates a treatment in which the seller proposed the deal. “Obfuscated” indicates a treatment in which the seller obfuscated the information provided to the buyer. “Proposed*Obfuscated” is the interaction between “Proposed” and “Obfuscated.” “Female” is an indicator variable for the spectator being female. “High-age” is an indicator variable for the spectator being older than the median (47 years). “High-education” is an indicator variable for the spectator being more educated than the median (bachelor’s degree). “High-income” is an indicator variable for the spectator having a household income higher than the median (\$60,000 per year). “Republican” is an indicator variable for the spectator voting for the Republican party.

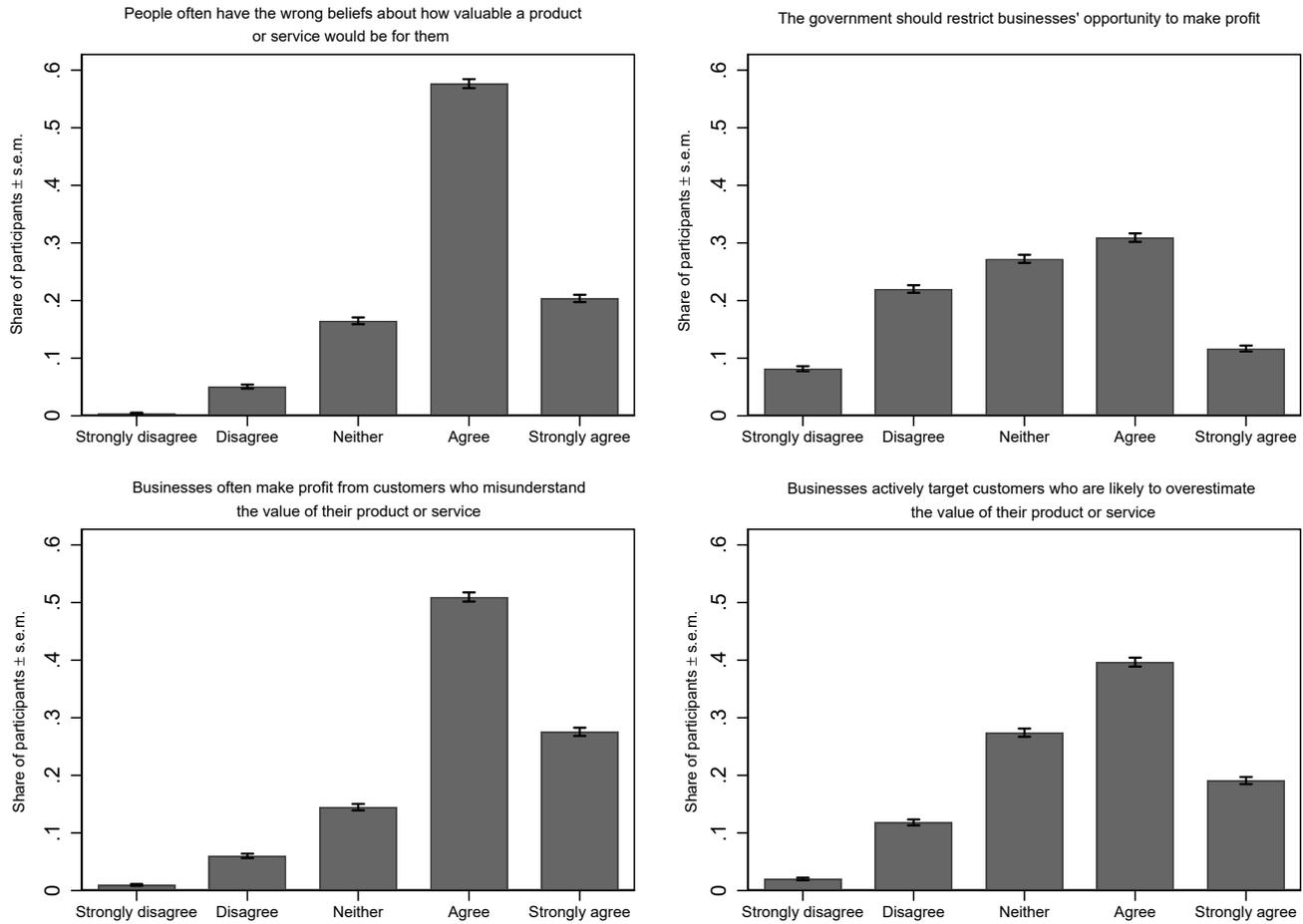
Table 3: Support for government regulation

	Support for regulation						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cancel	0.247*** (0.015)					0.235*** (0.015)	0.241*** (0.015)
Mistakes		0.011 (0.019)				-0.024 (0.019)	-0.017 (0.019)
Profits			0.165*** (0.018)			0.106*** (0.019)	0.108*** (0.019)
Targets				0.163*** (0.016)		0.127*** (0.016)	0.118*** (0.016)
Republican					-0.114*** (0.017)	-0.088*** (0.016)	-0.079*** (0.016)
Constant	0.276*** (0.011)	0.417*** (0.017)	0.296*** (0.016)	0.330*** (0.012)	0.461*** (0.009)	0.172*** (0.021)	0.235*** (0.025)
Controls	No	No	No	No	No	No	Yes
R^2	0.060	0.000	0.019	0.026	0.011	0.098	0.108
Controls	No	No	No	No	No	No	Yes
Observations	3991	3991	3991	3991	3991	3991	3991

Note: The table reports OLS regressions on an indicator variable taking the value of one if the spectator agrees or strongly agrees with the statement: “The government should restrict businesses’ opportunity to make profit from customers who misunderstand the value of a product or service.” “Cancel” is an indicator variable for the spectator deciding with cancel the deal between the buyer and the seller. “Mistakes” is an indicator variable taking the value of one if the spectator agrees or strongly agrees with the statement: “People often have the wrong beliefs about how valuable a product or service would be for them,” “Profits” is an indicator variable taking the value of one if the spectator agrees or strongly agrees with the statement: “Businesses often make profit from customers who misunderstand the value of a product or service,” “Targets” is an indicator variable taking the value of one if the spectator agrees or strongly agrees with the statement: “Businesses actively target customers who are likely to overestimate the value of their product or service.” Controls include dummies for gender, age, education, and income.

6 ONLINE APPENDIX

Figure A1: Beliefs and policy attitudes



Note: The figure reports the distribution of spectators' agreement with the following statements: "People often have the wrong beliefs about how valuable a product or service would be for them" (top left), "The government should restrict businesses' opportunity to make profit from customers who misunderstand the value of a product or service" (top right), "Businesses often make profit from customers who misunderstand the value of a product or service" (bottom left), and "Businesses actively target customers who are likely to overestimate the value of their product or service" (bottom right). Responses are measured on a scale from strongly disagree to strongly agree, with neither as the mid-point.

Table A1: Descriptive statistics

	Share				
	All	Low	Propose	Obfuscate	High
	(1)	(2)	(3)	(4)	(5)
Republican	30.9%	30.9%	28.6%	31.6%	32.4%
Female	52.2%	53.3%	51.9%	51.6%	52.2%
18 – 34 years old	25.9%	27.7%	25.3%	25.3%	25.5%
35 – 44 years old	18.5%	17.5%	18.4%	20.3%	18.0%
45 – 54 years old	20.3%	21.5%	19.0%	20.3%	20.6%
55 – 64 years old	17.1%	15.7%	19.1%	16.2%	17.3%
65+ years old	18.1%	17.5%	18.4%	18.0%	18.5%
High School Education or below	29.0%	30.9%	28.2%	28.0%	28.9%
Some College Education	33.6%	30.8%	34.2%	35.4%	34.1%
Bachelor or equivalent	24.0%	24.3%	24.4%	24.8%	22.3%
Master or equivalent	13.4%	13.9%	13.2%	11.8%	14.7%
Income < \$30,000	28.3%	25.1%	27.9%	27.0%	28.4%
Income \$30,001 – \$60,000	28.5%	29.6%	28.5%	28.2%	27.6%
Income \$60,001 – \$100,000	23.2%	22.8%	23.5%	23.4%	23.0%
Income \$100,001 – \$150,000	13.1%	14.2%	11.8%	14.9%	11.4%
Income > \$150,000	6.9%	7.2%	6.9%	5.0%	8.6%
Observations	3,991	999	997	997	998

Note: The table reports descriptive statistics for the spectators in the study, for the full sample and for each treatment.

Table A2: Regression results for decision to cancel, by subgroups

	Cancel				
	Political	Gender	Education	Income	Age
	(1)	(2)	(3)	(4)	(5)
Proposed	0.028 (0.026)	0.015 (0.032)	0.026 (0.031)	0.022 (0.029)	-0.004 (0.032)
Obfuscated	0.074*** (0.026)	0.093*** (0.032)	0.061** (0.030)	0.073** (0.029)	0.084*** (0.031)
Proposed*Obfuscated	-0.067* (0.037)	-0.033 (0.045)	-0.034 (0.043)	-0.013 (0.041)	-0.014 (0.044)
B	-0.057* (0.034)	0.112*** (0.031)	-0.035 (0.031)	-0.037 (0.031)	0.079** (0.031)
B*Proposed	-0.046 (0.049)	0.005 (0.044)	-0.021 (0.044)	-0.014 (0.045)	0.036 (0.044)
B*Obfuscated	-0.012 (0.047)	-0.040 (0.044)	0.019 (0.044)	-0.007 (0.044)	-0.027 (0.044)
B*Proposed*Obfuscated	0.101 (0.067)	-0.014 (0.062)	-0.006 (0.062)	-0.055 (0.062)	-0.045 (0.062)
Constant	0.591*** (0.019)	0.514*** (0.023)	0.591*** (0.022)	0.590*** (0.021)	0.535*** (0.022)
R^2	0.007	0.012	0.005	0.008	0.009
Observations	3991	3991	3991	3991	3991

Note: The table reports OLS regressions on a binary variable taking the value of one if the spectator cancels the deal. “Proposed” indicates the treatment where the seller proposed the deal. “Obfuscated” indicates the treatment in which the seller obfuscated the information. “Proposed*Obfuscated” is the interaction between “Proposed” and “Obfuscated”. B is an indicator variable that takes the value of one when the spectator is Republican (Column 1), female (Column 2), college-educated (Column 3), has a household income that is higher than \$60,000 (Column 4) or is older than 47 years (Column 5).

Table A3: Regression results for the decision to fine the seller, by subgroups

	Fine				
	Political	Gender	Education	Income	Age
	(1)	(2)	(3)	(4)	(5)
Proposed	0.051*** (0.018)	0.016 (0.022)	0.059*** (0.022)	0.063*** (0.021)	0.023 (0.022)
Obfuscated	0.088*** (0.020)	0.073*** (0.023)	0.085*** (0.022)	0.085*** (0.021)	0.109*** (0.024)
Proposed*Obfuscated	-0.045 (0.029)	-0.007 (0.033)	-0.038 (0.033)	-0.042 (0.032)	-0.034 (0.034)
B	-0.008 (0.021)	-0.011 (0.020)	0.003 (0.020)	0.013 (0.020)	-0.026 (0.020)
B*Proposed	-0.063** (0.031)	0.034 (0.030)	-0.052* (0.030)	-0.068** (0.030)	0.020 (0.030)
B*Obfuscated	-0.023 (0.034)	0.015 (0.032)	-0.009 (0.032)	-0.010 (0.032)	-0.059* (0.032)
B*Proposed*Obfuscated	0.068 (0.048)	-0.036 (0.047)	0.027 (0.047)	0.039 (0.047)	0.019 (0.046)
Constant	0.114*** (0.012)	0.118*** (0.015)	0.111*** (0.014)	0.106*** (0.013)	0.125*** (0.015)
R^2	0.012	0.010	0.011	0.011	0.014
Observations	3991	3991	3991	3991	3991

Note: The table reports OLS regressions on a binary variable taking the value of one if the spectator fines the seller. “Proposed” indicates the treatment where the seller proposed the deal. “Obfuscated” indicates the treatment in which the seller obfuscated the information. “Proposed*Obfuscated” is the interaction between “Proposed” and “Obfuscated”. B is an indicator variable that takes the value of one when the spectator is Republican (Column 1), female (Column 2), college-educated (Column 3), has a household income that is higher than \$60,000 (Column 4) or is older than 47 years (Column 5).

Appendix B

B.1 Instructions to spectators

NHH



Introduction

This study is a project conducted by researchers at the Norwegian School of Economics

Confidentiality

All data obtained from you will be used for research purposes. Data will be anonymized immediately after collection and payment. The collected anonymized data will be used and shared for research purposes and will be stored in open access repositories.

Voluntary participation

It is voluntary to participate in the project, and you can at any time choose to withdraw your consent without stating any reason.

Verification

At the end of the survey, you will receive a number to verify your participation. Copy this number to the mTurk-window so we can verify your participation.

Consent

I have received information about the project and am willing to participate

Yes

No



Figure A2: Low Treatment

NHH



We randomly assigned the two individuals to either the role of seller or the role of buyer. The seller was given a product that he or she could sell to the buyer.

We informed both the seller and the buyer that the product had no value for the seller. The seller, but not the buyer, was informed that the value of the product for the buyer was \$2.

The seller could not disclose this information to the buyer. Instead, we gave the buyer information about the value of the product in a complex manner.

The buyer made a mistake when interpreting this information and wrongly believed that the value of the product for him or her was \$20. The seller knew that the buyer made this mistake.

The buyer offered to buy the product for \$10 from the seller. The seller accepted this offer.

- The seller gained \$10 on the deal.
- The buyer lost \$8 on the deal.

We now want you to decide whether this deal should be upheld or not.

I want to uphold the deal.
The seller gains \$10 and the buyer loses \$8.

I want to cancel the deal.
Neither the seller nor the buyer gain or lose.

There is a one-in-five chance that your decision will be implemented. If your decision is implemented, the seller and the buyer will receive payments according to your decision within a few days. The seller and the buyer are informed that a third-party will make a decision that determines their payments.

Timing

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Figure A3: Propose Treatment



We randomly assigned the two individuals to either the role of seller or the role of buyer. The seller was given a product that he or she could sell to the buyer.

We informed both the seller and the buyer that the product had no value for the seller. The seller, but not the buyer, was informed that the value of the product for the buyer was \$2.

The seller could not disclose this information to the buyer. Instead, we gave the buyer information about the value of the product in a complex manner.

The buyer made a mistake when interpreting this information and wrongly believed that the value of the product for him or her was \$20. The seller knew that the buyer made this mistake.

The seller offered to sell the product to the buyer for \$10. The buyer accepted this offer.

- The seller gained \$10 on the deal.
- The buyer lost \$8 on the deal.

We now want you to decide whether this deal should be upheld or not.

I want to uphold the deal.
The seller gains \$10 and the buyer loses \$8.

I want to cancel the deal.
Neither the seller nor the buyer gain or lose.

There is a one-in-five chance that your decision will be implemented. If your decision is implemented, the seller and the buyer will receive payments according to your decision within a few days. The seller and the buyer are informed that a third-party will make a decision that determines their payments.

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Figure A4: Obfuscate Treatment

NHH

We randomly assigned the two individuals to either the role of seller or the role of buyer. The seller was given a product that he or she could sell to the buyer.

We informed both the seller and the buyer that the product had no value for the seller. The seller, but not the buyer, was informed that the value of the product for the buyer was \$2.

The seller had the opportunity to disclose information about the value of the product to the buyer in an easy-to-understand manner, but decided not to do so. Instead, the seller decided to disclose the information to the buyer in a complex manner.

The buyer made a mistake when interpreting this information and wrongly believed that the value of the product for him or her was \$20. The seller knew that the buyer made this mistake.

The buyer offered to buy the product for \$10 from the seller. The seller accepted this offer.

- The seller gained \$10 on the deal.
- The buyer lost \$8 on the deal.

We now want you to decide whether this deal should be upheld or not.

I want to uphold the deal.
The seller gains \$10 and the buyer loses \$8.

I want to cancel the deal.
Neither the seller nor the buyer gain or lose.

There is a one-in-five chance that your decision will be implemented. If your decision is implemented, the seller and the buyer will receive payments according to your decision within a few days. The seller and the buyer are informed that a third-party will make a decision that determines their payments.

Timing

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Figure A5: High Treatment

NHH



We randomly assigned the two individuals to either the role of seller or the role of buyer. The seller was given a product that he or she could sell to the buyer.

We informed both the seller and the buyer that the product had no value for the seller. The seller, but not the buyer, was informed that the value of the product for the buyer was \$2.

The seller had the opportunity to disclose information about the value of the product to the buyer in an easy-to-understand manner, but decided not to do so. Instead, the seller decided to disclose the information to the buyer in a complex manner.

The buyer made a mistake when interpreting this information and wrongly believed that the value of the product for him or her was \$20. The seller knew that the buyer made this mistake.

The seller offered to sell the product to the buyer for \$10. The buyer accepted this offer.

- The seller gained \$10 on the deal.
- The buyer lost \$8 on the deal.

We now want you to decide whether this deal should be upheld or not.

I want to uphold the deal.
The seller gains \$10 and the buyer loses \$8.

I want to cancel the deal.
Neither the seller nor the buyer gain or lose.

There is a one-in-five chance that your decision will be implemented. If your decision is implemented, the seller and the buyer will receive payments according to your decision within a few days. The seller and the buyer are informed that a third-party will make a decision that determines their payments.

Timing

These page timer metrics will not be displayed to the recipient.

First Click	0 seconds
Last Click	0 seconds
Page Submit	0 seconds
Click Count	0 clicks



NHH



How certain were you in your choice?

0 = very uncertain. I might as well have chosen to uphold the deal.

10 = very certain. I would never have chosen to uphold the deal.

0 - Very uncertain	1	2	3	4	5	6	7	8	9	10 - Very certain
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NHH



How certain were you in your choice?

0 = very uncertain. I might as well have chosen to cancel the deal.

10 = very certain. I would never have chosen to cancel the deal.

0 - Very uncertain	1	2	3	4	5	6	7	8	9	10 - Very certain
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You have decided to cancel the deal.

You can now choose whether you also want to impose a fine of \$2 on the seller.

I do not want to impose a fine.

I want to impose a fine of \$2 on the seller.



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To what extent do you agree or disagree with the following statements:

People often have the wrong beliefs about how valuable a product or service would be for them.

Strongly Agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

The government should restrict businesses' opportunity to make profit from customers who misunderstand the value of a product or service.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree



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To what extent do you agree or disagree with the following statements:

Businesses often make profit from customers who misunderstand the value of a product or service.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Businesses actively target customers who are likely to overestimate the value of their product or service.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree



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How old are you?

Which gender are you?

Female
Male
Other
Prefer not to answer

In which state do you currently reside?

What is the highest level of education you have completed?

What is your household's combined yearly income (gross income before taxes are deducted)?

In politics, as of today, do you consider yourself a Republican, a Democrat, or an Independent?

Republican
Democrat
Independent
Prefer not to answer / don't know



B.2 Instructions to buyers

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Welcome to this research project of the Norwegian School of Economics! We very much appreciate your participation.

Procedures

You will be given instructions on your screen before answering questions. Please make sure to read the questions carefully before you proceed.

Participation

Participation in this research study is completely voluntary. You have the right to withdraw at anytime or refuse to participate entirely without jeopardy to future participation in other studies conducted by us.

Confidentiality

All data obtained from you will be kept confidential and will only be reported in an aggregate format. All questionnaires will be concealed, and no one other than the primary investigator will have access to them. The data collected will be stored in the HIPPA-compliant, Qualtrics-secure database until it has been deleted by the researchers.

Payment

Your payment for participating in this project will consist of the participation fee of \$0.40. The participation fee will be send to you shortly after the completion of this survey.

On the following pages, we will ask you to make decisions **that might be implemented**. Depending on implementation, your choices and the choices of other people, you can earn a bonus.

Completion code

You will receive a completion code at the end of this survey. You will need to copy this code to the code field on web page that directed you here at the beginning.

Questions about the Research

If you have questions regarding this study, you may contact: thechoicelab@nhh.no

I have read and understood the above consent form and desire to participate in this study.

Yes

No



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How old are you?

Which gender are you?

Female

Male

Other

Please read the following description of a product carefully.

This product can either have a low value or a high value. If the value of the product is high, it is worth \$20. If the value is low, it is worth \$2. A random product like this usually has a probability of 1% to be of high value. However, this product was pre-tested and according to the pre-test it is a \$20 product. The pre-test correctly identifies high and low value products in 95% of the cases.

What is the most likely value of this product?

\$2

\$20



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You get the chance to purchase the product that was presented to you on the previous page from a seller who is another worker on mTurk. For that purpose, you receive \$10. If your decision is implemented, you will receive the value of the product that you bought.

For the seller, the product has no value but it does have a value for you.

Please answer the following two questions on the next two screens, one of which might be implemented.



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Are you willing to offer \$10 to the seller for this product?

Yes

No



NHH



The seller offers you the product for \$10. Are you accepting this offer?

Yes

No



B.3 Instructions to sellers

NHH



How old are you?

Which gender are you?

Female

Male

Other

You now receive a product. The product has no value for you.

We recruited another worker, a buyer, who can buy the product from you. For him or her, the value of the product is \$2 but he or she does not know the exact value of the product.

We now want you to decide how you want to inform the buyer about the value of the product for him or her.

You can directly inform the buyer that the product has a value of \$2 for him or her.

Alternatively, you can decide to disclose the information about the value of the product in a complex manner. If you disclose the information in a complex manner, the buyer will make a mistake in interpreting the information about the value of the product. The buyer will then believe that the product actually has a value of \$20 and be willing to pay more than \$2 for your product.

I want to inform the buyer directly about the value of the product.

I want to inform the buyer in a complex manner about the value of the product.



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The buyer has offered to buy the product from you for \$10. Are you accepting this offer?

Yes

No



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You can offer the product for \$10 to the buyer and he or she will accept. Do you offer the lottery ticket for that price?

Yes

No



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