

## What Money Can Buy: How Market Exchange Promotes Values

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# What Money Can Buy: How Market Exchange Promotes Values

## Abstract

We study consumers' concerns for the ideological values of their market counterparts and the implications of such concerns for the public promotion of values. Using a survey and online and laboratory experiments, we find that consumers are willing to pay premiums to exchange with counterparts who demonstrate support for their values. When sellers anticipate the possibility of market exchange, they exhibit public support for consumers' values. Our findings challenge notions that market exchange is impersonal, suggest that public value positions can provide a dimension of firm differentiation, and provide evidence that market exchange can influence public support for ideological values.

JEL-Codes: A130, C900, D120, D220, D910.

Keywords: market exchange, ideology, values, experiment.

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# 1 Introduction

Modern market exchange is often characterized by the notion of impersonality (Friedman, 1962; Greif, 2006), meaning that individuals care about the products they exchange but not, *per se*, with whom they exchange. From a consumer’s perspective, attributes like price, quality and even a product’s environmental or social impact can be relevant for purchasing decisions,<sup>1</sup> but as long as institutions are sufficiently effective to safeguard against moral hazard and disputes that may arise in the exchange process, the personal characteristics, values, and behaviors of market counterparts are considered largely irrelevant. As put by Milton Friedman, “an impersonal market separates economic activities from political views and protects men from being discriminated against in their economic activities for reasons that are irrelevant to their productivity” (1962, p. 21).<sup>2</sup>

This notion of impersonality, however, contrasts sharply with widespread instances in which market actors appear to care about the personal values and non-market behaviors of their counterparts in exchange. For example, recent surveys conducted around the globe document majorities of consumers stating a preference to buy from brands that reflect their personal values, including 66 percent in the U.S. (Willige, 2021). Such stated preferences concord with anecdotal evidence of consumers rejecting or favoring firms’ products based on perceptions that a company’s statements and actions oppose or support certain ideological values—such as nationalism in China or LGBTQ rights in the US—and firms taking public positions on those values (Hong, Saito and Leung, 2022; Holman and Creswell, 2023).

If people do care about the characteristics of those with whom they engage in market exchange, including the ideological values they hold or promote, this has important implications for market behavior and for the role of markets in shaping society. First, if consumers prefer to purchase from counterparts who hold or promote “desirable” ideological values, such value positions become an attribute along which products can be differentiated. Sellers can then potentially attract greater demand from consumers whose values they publicly promote in ways unrelated to their core market activity. Second, such consumer preferences, if sufficiently widespread, can create incentives for sellers to promote and support those values. For instance, if

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<sup>1</sup> For evidence that consumers care about a product’s direct environmental or social impact, see Elfenbein & McManus (2010), Bartling, Weber & Yao, (2015), Hainmueller, Hiscox & Sequeira (2015), among others.

<sup>2</sup> The impersonality of market exchange and the focus only on what one gets out of a transaction—but not on who else benefits from exchange—are also sometimes held as arguments against the inherent morality of markets as an institution (for a discussion, see Bruni and Sugden, 2013).

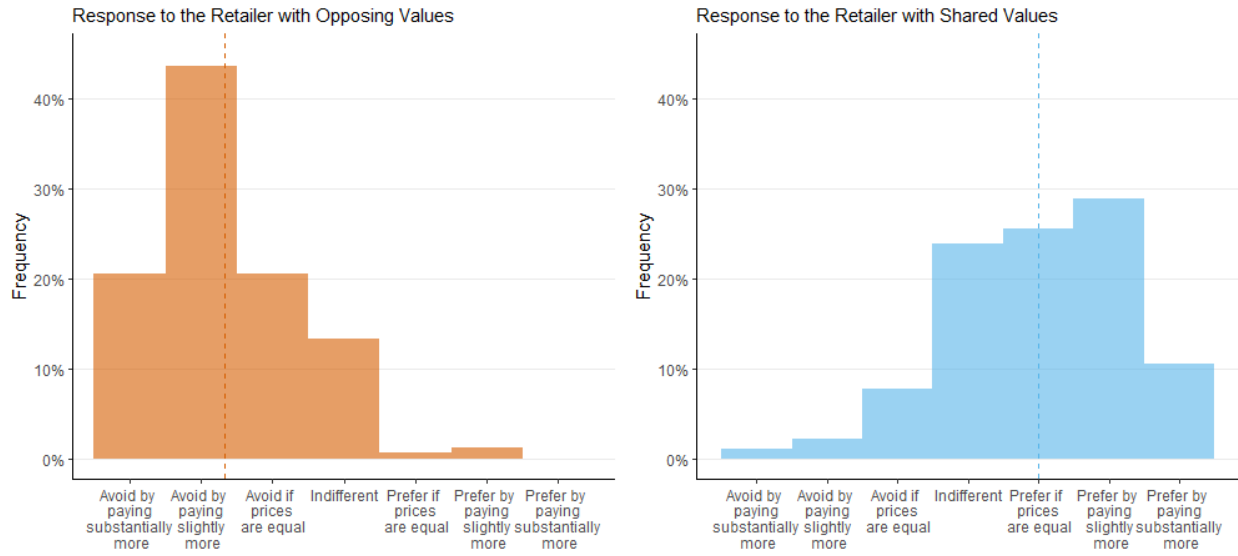
consumers place a great deal of importance on religion, gender equality or patriotism, their preference for sellers who champion these values may lead to societies in which firms publicly adopt and promote such values, even if the products they sell have no relation to such value dimensions and when those making decisions in firms are indifferent to the values.

In this paper, we experimentally study individuals' concerns for the ideological values promoted by their counterparts in market exchange and the causal impact of such concerns on market behavior and outcomes. As our first hypothesis, we investigate if consumers care about whether their counterparts' behavior exhibits support for the consumers' values—even when such values are entirely independent to the exchange. Specifically, we test whether consumers are more willing to buy and pay higher prices for a product from sellers whose behavior exhibits support for the consumers' values, absent any instrumental motives. There are many non-laboratory settings in which consumers *appear* to value purchasing from sellers who support their values—e.g., conservatives in the US supporting corporations such as Hobby Lobby or Chick-Fil-A that promote conservative religious values—or to shun sellers whose behavior supports conflicting causes—e.g., patriotic consumers in China shunning foreign firms that publicly challenge China's positions on political issues. However, the exact motives and beliefs underlying consumers' behavior in such real-world markets are difficult to identify precisely. Our research thus employs experiments in which we can minimize instrumental motives on the part of consumers, by eliminating any direct impact or public observability of their purchasing decisions. We also control important factors and experimentally vary sellers' support for consumers' values. For example, we create products that, inherently, have no moral or societal impacts and vary only the actions taken by sellers and the observability of those actions to consumers.

Our second hypothesis concerns whether such consumer preferences motivate sellers to exhibit support for consumers' values in the presence of opportunities for market exchange. We guide our investigations and formalize our hypotheses using a standard signaling framework, as in Spence (1978), which takes as its starting point that a consumer derives greater utility from exchanging with sellers who support the consumers' values. We are agnostic about whether a consumer desires that sellers intrinsically share the consumer's values or that the consumer instead simply prefers sellers who care enough about (transacting with) the consumer to express support for causes that the consumer values. For purely profit-maximizing reasons, a seller who anticipates exchanging with such consumers may invest in publicly supporting the consumers' values. This

framework thus yields the prediction that firms incur more costly actions in support of consumers' values when there is greater opportunity to benefit from market exchange.<sup>3</sup> Despite its intuitive appeal, causal evidence for this channel has been lacking to date, as it is difficult to rule out other possible factors driving the observed relationships among firms.<sup>4</sup> In our experiments, we test this causal claim by varying whether there exists an opportunity to profit through exchanging a good or whether consumers can observe firms' actions prior to making purchasing decisions.

**Figure 1: Self-reported preferences for exchange based on counterparts' value positions**



*Notes:* The left (right) panel shows the empirical distribution of consumers' self-reported responses to a seller who takes opposing (concordant) positions on an ideological issue rated as important, ranging from a willingness to pay substantially more to avoid transacting with such a seller to a willingness to pay substantially more to do so, relative to a neutral competitor. The issues among which consumers could select include gender equality, racial equality, political correctness, religious freedom, climate change, gun policy, abortion and the behavior of politicians. Variation in retailer opposing or supporting consumers' value positions is between-subjects. Dotted lines refer to the calculated mean responses.

At the core of our study is the idea that consumers may prefer to exchange with a seller who supports their values. Before proceeding, we provide suggestive evidence regarding such preferences with a survey among the US population on the online platform, Amazon Mechanical Turk (mTurk). We first ask respondents to identify an ideological issue that they consider important and then provide these respondents with hypothetical purchasing scenarios in which

<sup>3</sup> Importantly, we do not argue that the values held by consumers and promoted through market exchange are positive from a normative standpoint. Indeed, the mechanisms we investigate have historically promulgated social ills like sectarianism and discrimination. We discuss this point more thoroughly in our Conclusion.

<sup>4</sup> For correlational evidence of positive relationships between firms' profitability and their support for patriotic ideals and LGBTQ rights, see Mohr and Schumacher (2019), Shan, et al. (2017) and Fatmy, et al. (2022).

they choose between a retailer that supports (or opposes) their position on this important issue and another neutral but otherwise similar retailer. Participants rate how likely they would be to purchase or avoid purchasing from such sellers, including at a price premium. As Figure 1 shows, around 66% (40%) of survey participants state a willingness to pay higher prices to avoid (seek) exchange with the retailer who opposes (supports) their values.<sup>5</sup>

Our two principal studies conduct more careful and incentivized tests of such consumer preferences and of the extent to which they influence sellers' behavior. Our first study tests the above two hypotheses in a simple exchange context, relying on naturally occurring ideological positions. We use a sample of consumers in mainland China. We implement two conditions: a non-market control condition and a market condition in which the Chinese consumers decide whether they are willing to purchase a hypothetical product from a seller drawn from a representative sample of participants in the United Kingdom. In both conditions, UK participants indicate agreement or disagreement with a statement expressing support for China's position on human rights, knowing that their translated responses will be shown to a counterpart in China. In the market condition, UK participants can also sell a virtual gift card worth 10 Pounds (90 RMB) to the participant in China, by offering a sales price, which the counterpart in China can either accept or reject. In the non-market condition, we remove the opportunity for exchange. We separately elicit Chinese participants' willingness to purchase the virtual gift card from the UK seller, conditional on different possible degrees of agreement with the statement.

We find strong support for both our hypotheses. First, Chinese participants are substantially more willing to purchase the product from UK sellers who express support for China's position on human rights. Second, participants in the UK anticipate Chinese consumers' preferences and adopt public positions that exhibit greater agreement with the Chinese position on human rights in the market condition than in the non-market condition. In exploratory analysis, we also find that UK participants in the market condition express significantly more positive private attitudes towards China and make slightly higher private donations to a state-funded Chinese-linked organization rather than one promoting human rights internationally, suggesting that the expression of consumers' values by sellers may lead to some internalization of these values.

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<sup>5</sup> We provide the complete results, along with other details of this survey study, in Appendix A. We also elicited reasons for why participants express a preference for purchasing from (avoiding) sellers with concordant (opposing) value positions. Among all the participants, *intrinsic, non-consequentialist considerations* (e.g., "I feel better (worse) giving my money to retailers that support (oppose) causes that share my values") are the modal reason.

Our second study provides complementary evidence from a laboratory market experiment in which we have greater control over value positions and in which sellers' support for consumers' values is financially costly. The design of this second study also allows us to vary important factors—like the strength of consumers' value concerns and sellers' incentives for strategic signaling—that provide insights into the channels driving the results. The experiment involves fixed “buyer” and “seller” roles. In each period, a buyer and a seller are matched for a potential exchange opportunity. Prior to the market exchange, sellers may undertake a costly signaling action: a donation to an organization supported by buyers. Importantly, sellers' signaling actions are sunk and irreversible prior to the market exchange. Thus, at the point of deciding whether to purchase from a seller, buyers cannot influence the sellers' donation, minimizing instrumental motives. Consistent with our first hypothesis, buyers exhibit a greater willingness to pay for products from sellers whose public actions indicate costly support for the buyers' values—specifically, they are willing to pay 32 percent more to purchase from a seller demonstrating the strongest possible support for the organizations they value, relative to one expressing no support.

As in Study 1, we also vary whether the match in a period involves a market transaction or a non-market interaction between each buyer-seller pair. In this experiment, a non-market interaction involves identical procedures, except that we eliminate any possible gains from exchange. Consistent with our second hypothesis, sellers anticipate buyers' preferences and engage in more costly behavior supporting buyers' values *only* when such potential support precedes an opportunity for market interaction. Importantly, an additional treatment further demonstrates that sellers respond to the possibility of market exchange only when their behavior is publicly observable by the buyer, thereby providing direct evidence that it is the anticipation of buyers' responses that drives the effect of market exchange on sellers' donations. We also find evidence, though weak, that increasing the degree to which the seller's donation supports the specific matched buyer's values strengthens the two hypothesized relationships.

Viewed jointly, our results provide support for our two central hypotheses. First, across both studies we document that consumers prefer exchanging with counterparts whose public actions exhibit support for the consumers' values. This is true even though the buyer's behavior cannot directly influence the seller's actions, which are already fixed at the time the buyer makes a choice. Second, we find that sellers anticipate this preference on behalf of consumers and adjust their behavior to exhibit greater support for consumers' values, but only when doing so has the potential



to yield the seller a more favorable market outcome. Thus, we show that opportunities for gains through market transactions may lead to the adoption and promotion of values—orthogonal to the market exchange itself—by market actors who do not inherently hold such values.

Our work contributes to three broad strands of research. First, we build on long-standing interest in the impacts of market exchange on moral values (e.g., Bowles 1998; Henrich et al., 2010; Bruni and Sugden, 2013; Bartling, Weber and Yao, 2015; Jha and Shayo, 2019; Margalit and Shayo, 2020; Dufwenberg et al. 2022; Enke, 2023). Our results contrast with a prominent argument that market exchange inherently erodes concerns for values (e.g., Dufwenberg et al. 2011; Sandel, 2012; Falk and Szech, 2013) by providing evidence for a causal channel through which market exchange can lead to the public promotion and transmission of values.<sup>6</sup> Our novel focus is on the value position adopted by a counterpart, independently of any impacts of the products exchanged or the exchange process itself. We show that when consumers prefer to transact with those whose behavior aligns with their values (or avoid those who do not), opportunities for exchange serve as a mechanism to discipline profit-maximizing sellers to act *as if* they support those values held by their customers.<sup>7</sup> This channel complements empirical work demonstrating that exposure to financial markets influences participants’ social values, political preferences and voting outcomes through the incentives created by market positions (Jha and Shayo, 2019; Margalit and Shayo, 2020) and provides support for theoretical arguments that market competition’s detrimental effects on moral behavior can be mitigated when consumers can express their moral preferences (Dewatripont and Tirole, 2023).<sup>8</sup>

Second, by focusing on the value position adopted by a counterpart, our work extends the literature on social responsibility in market exchange (e.g. Bénabou and Tirole, 2010; Kitzmueller and Shimshack, 2012) to concerns that are completely orthogonal to the exchange itself. Earlier work in this area demonstrates that consumers are willing to pay a premium for products that mitigate social harm or negative externalities, such as fair-trade or environmentally friendly

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<sup>6</sup> Recent empirical work documents a similar channel in the environmental domain by showing that consumers’ environmental concerns can influence firms’ R&D decisions to innovate in “clean” technology (Aghion et al., 2021).

<sup>7</sup> The mechanism we study may not be unique to market interactions. For example, having to spend time interacting with a neighbor may lead an individual to adopt public positions more proximate to those of the neighbor, to make the interaction more pleasant. However, market exchange creates trading opportunities among large numbers of otherwise unrelated individuals that may produce sizable incentives.

<sup>8</sup> Our study thus provides evidence for why one might expect behavioral tendencies—including apparent concern for social causes and ideological values—on the part of firms and corporations that do not inherently care about such values, adding to the literature on firms responding to consumers’ behavioral preferences (see Heidhues and Köszegi (2018) for a review of behavioral industrial organization).

products (e.g. De Pelsmacker, Driesen and Rayp, 2005; Elfenbein and McManus, 2010; Hainmueller, Hiscox and Sequeira, 2015; Loureiro, McCluskey and Mittelhammer, 2001). Laboratory studies provide causal evidence that it is the concern for positive social impact that drives consumer preferences for such products (Bartling, Weber and Yao, 2015; Pigors and Rockenbach, 2016a,b). We show that “social responsibility” in a market context may also extend to preferences over the unrelated “good” behavior of market counterparts. While work in strategic management examines the effects of corporate social advocacy (Dodd and Supa, 2014), acts of social goodwill (Chernev and Blair, 2015) and CEO activism (Chatterji and Toffel, 2017) on consumers’ perceptions, to the best of our knowledge, our studies are the first that empirically document consumers’ revealed preferences (rather than stated intentions) for trading with market counterparts who adopt proximate value positions in dimensions orthogonal to the exchange.<sup>9</sup>

Finally, our work also complements a broader literature on how moral values and identities influence many important aspects of economic and political behavior (e.g., Enke, 2019, 2020; Bénabou, Falk and Tirole, 2020; Bursztyn et al. 2019, 2020; Atkin, Colson-Sihra and Shayo, 2021). Rather than studying the impact of a particular moral value, ideological position, or social identity on economic behavior, we provide causal evidence for how widespread concerns for such values can interact with market incentives to amplify their prominence in a society.

The remainder of the paper proceeds as follows. Section 2 briefly describes our conceptual framework and derives our main hypotheses. Sections 3 and 4 present, respectively, the design and results of Studies 1 and 2. Section 5 discusses the implications of our findings and concludes.

## 2 Conceptual Framework and Hypotheses

Our empirical investigation is guided by a simple model involving a 2-stage signaling game, *à la* Spence (1978). A consumer may be value-sensitive and thus care about the degree to which her

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<sup>9</sup> We also contribute to understanding the intrinsic motives underlying consumer boycotts (Friedman, 1999; Tyran and Engelmann, 2005; Innes, 2006; Peck, 2017), complementing empirical literature, mainly in management, focusing on instrumental motives and the social dilemma structure of boycotts (Baron, 2001; Sen, Gürhan-Canli and Morwitz, 2001; John and Klein, 2003; Klein, Smith and John, 2004; Baron and Diermeier, 2007). Within economics, a small body of empirical work finds mixed evidence on the impact of boycotts driven by international conflicts on product demand (Fershtman and Gandal, 1998; Ashenfelter, Ciccarella and Shatz, 2007; Chavis and Leslie, 2009; Pandya and Venkatesan, 2016; Hendel, Lach and Spiegel, 2017). Our findings suggest that boycotts may also originate from consumers’ aversion to ideological positions held by firms’ owners. On the supply side, our work relates to literature on cause marketing (e.g., Krishna and Rajan, 2009).

trading partner exhibits support for her values.<sup>10</sup> A value-sensitive consumer derives less utility from purchasing and consuming a product when her counterpart is someone who holds a conflicting value position. Thus, consumers hold non-consequentialist preferences over particular exchange opportunities, rather than over broader impacts of sellers' behavior or the products exchanged, meaning that they are not concerned with the general-equilibrium implications of their decisions to buy or not buy from a particular seller (Kaufman and Koszegi, 2023).

Sellers are of two types, either a high type that places greater weight on (supporting) the consumer's value position or a low type for whom the consumer's values are less important. Before the market exchange stage, sellers decide whether to send costly signals that reflect the degree of support for the consumer's value position. Common examples of such costly signals include public statements by corporate leaders, involvement in social or political causes by firms or donations to charities that support ideological causes.

We provide details of the theoretical analysis in Appendix B. Here, we summarize the main results that motivate our hypotheses. First, when value-sensitive consumers can distinguish sellers of different types based on the inference they can draw from different signals—i.e., in cases where a separating equilibrium exists—their maximum willingness-to-pay for products will be influenced by the observed signals. Second, if sellers correctly anticipate consumers' reactions, sellers' signals will be jointly determined by their own signaling costs, the degree to which sending a signal allows them to inform consumers about their types and, crucially for our purposes, by the potential opportunity to benefit from the market exchange. Our two main hypotheses are summarized as follows:

- **Hypothesis 1:** As long as consumers' value sensitivity is sufficiently strong, their willingness-to-pay is increasing in sellers' signals of value support.
- **Hypothesis 2:** Sellers anticipate consumers' value concerns and are more likely to send costly signals of value support when the opportunity to benefit from market exchange is sufficiently large.

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<sup>10</sup> We leave open the exact interpretation of what it means for sellers to support consumer's values, instead adopting a reduced-form approach that encompasses several possible motivations. For example, a consumer may care about whether a seller intrinsically shares her values or may prefer exchanging with sellers who believe it is important to support positions that are important to consumers. We provide further discussion of this point when presenting the theoretical framework in Appendix B and when discussing our findings in the Conclusion.

Our two experiments are designed to test these two hypotheses, which form the basic intuition motivating our research. In addition, our second experiment also tests two additional hypotheses that arise from the model, providing further evidence regarding the underlying mechanism.

- **Hypothesis 3:** As consumers' value sensitivity increases, (i) their willingness-to-pay exhibits more responsiveness to sellers' signals of value support and (ii) sellers become more likely to send costly signals in the presence of potential benefits from market exchange.
- **Hypothesis 4:** Sellers are not intrinsically motivated to take the actions corresponding to the costly signals, meaning that they do not take the corresponding signaling actions when these are unobservable to consumers.

### 3 Study 1: An Online Experiment with Chinese Consumers

Our first pre-registered study creates a potential exchange opportunity between individuals in two different countries, where existing differences in value positions provide a natural context in which to test our main hypotheses. It demonstrates the main results regarding Hypotheses 1 and 2, relying on naturally occurring ideological positions held by many Chinese consumers.

#### 3.1 Experimental Design

##### 3.1.1 Setting and Measurement of Value Positions

In Study 1, we recruit online populations in the United Kingdom to act as sellers and from mainland China to act as buyers. Given the growing international importance of the Chinese consumer market, this sample provides potential insights into the types of value concerns that may matter for firms seeking to sell to such consumers.<sup>11</sup>

During the online study, UK participants are asked to indicate the extent to which they agree with the following position regarding the relevance of international human rights standards for Chinese society, on a 7-point Likert scale, from strongly disagree to strongly agree:

*“Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects*

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<sup>11</sup> We chose to recruit sellers from the United Kingdom, rather than the US, to minimize the potential role of prominent political tensions between the two countries. If anything, we suspect that Chinese consumers' reactions may be stronger were they to face US sellers instead of UK sellers.

*the rights of its own people can only be evaluated from its own citizens' perspective and by its own standards."*

Agreement with the statement indicates rejection of the notion of universal human rights and is thus misaligned with core values of many individuals in Western societies. However, agreement with the statement is consistent with widespread views in China that external notions of human rights are not relevant for its population.

Our study uses UK participants' agreement with this value position and Chinese participants' reactions to such agreement to address our two main hypotheses. First, we test Hypothesis 1 by investigating whether consumers in mainland China exhibit a preference for exchanging with sellers who express support for the value position reflected in the above statement.<sup>12</sup> Second, we test Hypothesis 2 by investigating whether the possibility of market exchange with such Chinese consumers influences the value positions supported by individuals in the UK.

### *3.1.2 Treatment Variations and the Market Activity*

We implement two between-subject treatment conditions, a *Market* condition and a *Non-market* condition. In both conditions, a participant recruited from a representative population of the UK via the Prolific online platform is shown the above statement and asked to express agreement or disagreement with the statement on a 7-point scale, ranging from "strongly disagree" to "strongly agree." They are informed that their answer, along with the content of the statement, will be translated into Chinese and anonymously shared with an individual recruited on the web in China. We separately recruit these Chinese participants from a popular online platform, Tencent survey, in mainland China. These participants are generally representative of and similar to a large part of the mainstream population in mainland China (we alert UK participants to this fact). We describe our samples in more detail in Section 3.1.4.

In the *Non-market* condition, the UK participants state agreement or disagreement with the statement with knowledge that their response will be shown to a participant in China. The experiment then proceeds to additional survey-based measures of attitudes and beliefs, which we describe in Section 3.1.3.

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<sup>12</sup> While agreement with the statement involves no extrinsic costs, potentially making the signal uninformative, such signals are consistent with our theoretical framework if there is a moral cost to lying and stating ideological positions that run counter to one's actual values. That is, it is sufficient for people who disagree with the statement to find it somewhat more costly to state that they agree with it than those who agree with the statement.

In the *Market* condition, the UK participants have the additional opportunity to sell a virtual gift card worth 10 Pounds by offering a sales price to the Chinese counterpart. Importantly, at the time of expressing agreement or disagreement with the statement, UK participants in the *Market* condition are aware of the upcoming exchange possibility and how the exchange outcome will depend on their Chinese counterpart, as described below.

Chinese participants act as consumers and make decisions by indicating their willingness-to-pay for the gift card, based on different possible levels of the sellers' agreement with the statement. Specifically, for each possible level of agreement, the Chinese participants first indicate whether they are willing to exchange with a seller who provided that specific response and, if so, they then report a maximum willingness-to-pay.<sup>13</sup> Market outcome is determined in an incentive-compatible way. Exchange occurs only if the Chinese consumer is willing to exchange and his or her maximum willingness-to-pay is no lower than the price offered by the UK seller. If exchange occurs, payoffs for both participants are determined by the seller's price offer—i.e., exchange occurs at this price, meaning the seller receives the price and the buyer receives the equivalent of 10 pounds minus the price (at the approximate GBP / CNY exchange rate at the time of 1:9).

### 3.1.3 *Additional Variables: Beliefs and Private Attitudes*

After sellers make their price offers, we elicit beliefs about other UK participants and Chinese consumers. Sellers in the *Market* condition are asked to guess the median response to the statement by other UK participants in the *Market* condition as well as in the *Non-market* condition, with a correct guess yielding 0.25 Pounds.<sup>14</sup> The difference between these two beliefs identifies participants' sophistication about the effect of the possibility of market exchange on stated values—i.e., the extent to which they believe the market exchange would influence UK participants' expressed views. UK *Market* participants also guess the percentages of Chinese consumers who will be unwilling to exchange with someone who strongly agrees with the statement and with someone who strongly disagrees with the statement, again with an incentive for accuracy. The difference between these two percentages provides an indication of UK

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<sup>13</sup> The use of the strategy method allows us to observe counterfactual willingness-to-pay values for each possible level of agreement indicated by sellers, thus controlling for individual fixed effects (Brandts and Charness, 2011). In settings with a large heterogeneity in value preferences, such individual fixed effects pose a challenge to identification.

<sup>14</sup> Sellers in the *Non-market* condition only provide beliefs of the median response in their own condition. We did not elicit sellers' beliefs in the *Non-market* condition about the median response in the *Market* condition because explaining a more complex counterfactual condition may create confusion.

participants' perceived benefits of changing statements in the *Market* condition. We also ask UK participants in both conditions to state the extent to which they think Chinese consumers' negative reactions towards someone who disagrees with the statement reflect their personal values or official government positions; this measure is not incentivized.

We further obtain two measures of UK participants' attitudes towards China and human rights. First, we elicit their personal "general attitude" toward China on a scale ranging from "very unfavorable" to "very favorable." Second, we present them with a choice in which they allocate a donation of 1 Pound between Human Rights Watch, an NGO that promotes international human rights, and the Confucius Institute, a state-funded organization that promotes Chinese culture. All these additional choices remained private and we told UK participants explicitly that these would not be disclosed to Chinese participants.

Our primary (pre-registered) outcome measure for the UK participants is their expression of agreement or disagreement with the statement. We use the additional measures of private attitudes toward China for exploratory analysis. Appendices E and F contain the surveys implemented in the UK and China.

### 3.1.4 *Sample and Procedures*

The online studies for UK and Chinese participants were both conducted in August 2020. We collected a representative sample of 508 UK respondents via Prolific, a UK-based online platform that administers panels for research purposes. Prolific administered the sample by cross stratifying on gender, age, and ethnicity so that the set of respondents was representative of the UK population on these dimensions. The survey was advertised with generic information and neither the description nor the name of the study made any reference to China. Each participant was paid 1 Pound for completing the survey, which took approximately 5 to 10 minutes. Participants could earn additional bonus earnings depending on their choices in both treatments, based on the incentivized beliefs and market outcomes in the *Market* condition.

We collected data from a sample of 145 mainland Chinese citizens using a widely used Chinese online platform, Tencent survey. Tencent administered the survey among a subset of users of its multi-purpose messaging mobile app,<sup>15</sup> WeChat, which has over 1 billion active users.

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<sup>15</sup> Each Chinese consumer was matched with approximately four UK responses, meaning their behavior determined the payoffs for these four UK participants and one of the UK participants' choices determined payoffs for the Chinese

Although the sample is to some extent self-selected, the overall set of users on Tencent contains more than 1 million individuals. Each participant was paid 2 RMB for completing the survey, which took approximately 5 minutes.<sup>16</sup>

## 3.2 Results

### 3.2.1 Consumers' Valuations for Exchange

We find strong support for Hypothesis 1 in both Chinese consumers' willingness to engage in exchange and in the prices that they are willing to pay. Figure 2 shows the proportion of Chinese buyers willing to buy from the UK seller (left panel) and the average prices at which they are willing to buy the good (right panel), for different possible levels of agreement with the statement by the UK seller.<sup>17</sup> In both cases, we observe substantially greater willingness to engage in exchange and to pay for products sold by UK sellers who express agreement with the statement reflecting mainstream Chinese ideological positions on human rights.<sup>18</sup>

The relationships in Figure 2 are statistically supported in the regression analysis in Table 1. Greater agreement with the statement on the part of a UK seller corresponds to a higher willingness to engage in exchange (Models 1 and 2) and a greater willingness to pay (Model 3). In both cases, we observe strong positive relationships between the Chinese consumers' desire to purchase the product and the UK seller's value position. This finding provides support for Hypothesis 1 in a context with naturally occurring value positions.

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buyer. We pre-registered the recruitment of fewer Chinese consumers to minimize the risk of our Chinese survey getting shut down unexpectedly due to censorship, which actually happened during the course of the experiment.

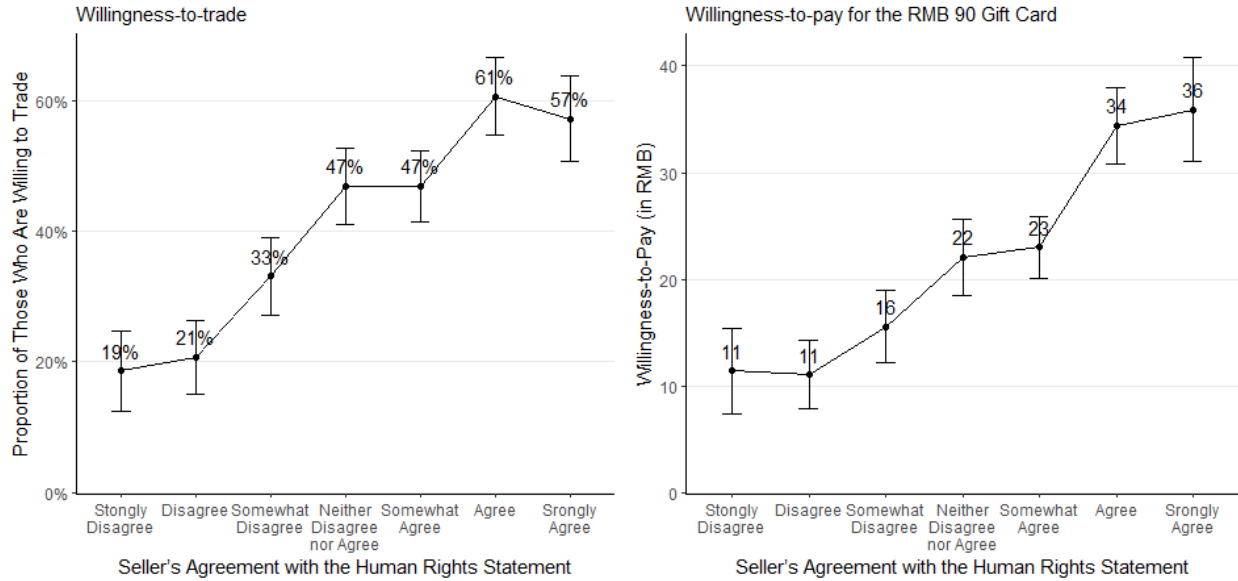
<sup>16</sup> We designed and implemented the survey via Tencent. Unfortunately, it unexpectedly proved impossible, *ex post*, to deliver the incentive payment in China. We only realized after our registered data collection that Tencent survey (like most survey platforms in mainland China) implements the bonus function differently than other online platforms we had used previously. Bonuses can only be sent out as a fixed prize of a raffle built into Tencent's system, but cannot be manually set by us. We could not contact survey participants to make direct payments, as participant tracking was not supported by the platform. We also worried that asking for additional personal information for direct payments might trigger another censorship alert, since our survey had been shut down once during the experiment..

<sup>17</sup> One potential concern is that Chinese consumers may tend to self-censor either due to social pressure or political fear instead of expressing their "genuine" preference. We believe that the online anonymous market exchange setting makes this concern unlikely, since each consumer's response is not observed by any other Chinese consumers. Moreover, such pressure is unlikely to play a role in Study 2, where we use a population with more heterogeneous value positions among consumers and where political retaliation is unlikely to be a concern.

<sup>18</sup> We were surprised by the overall low percentage of consumers willing to exchange even with someone who strongly agrees with the statement. The 90 Yuan gift card has roughly the same value as 1/1000 of the average annual income in China (<https://www.statista.com/statistics/278350/average-annual-salary-of-an-employee-in-china-by-region/>). To investigate possible reasons, we read through answers to an open-ended question asking participants to explain their rationale behind their choices. Many of those who refused to exchange expressed patriotic views, saying that they are only willing to deal with people who respect China, possibly reflecting rising nationalistic sentiments in recent years.



**Figure 2: Chinese Buyers' Value Preferences**



*Notes:* The left panel shows the average proportion of consumers who are willing to engage in the exchange for each possible level of expressed (dis)agreement with the statement regarding human rights. The right panel captures our main outcome variable, the average willingness-to-pay (in RMB) for the RMB 90 gift card, for each possible level of expressed (dis)agreement with the statement. As pre-registered, we code consumers' willingness-to-pay as zero for those who are unwilling to exchange at all. Error bars represent 95-percent confidence intervals.

**Table 1: Chinese Buyers' Value Preferences**

Dependent variable:	<i>Willingness-to-trade</i>		<i>Willingness-to-pay</i>
	Probit (1)	OLS (2)	OLS (3)
Seller's agreement with Human Rights Statement	0.203*** (0.0254)	0.0749*** (0.00865)	4.549*** (0.581)
Constant	-0.259*** (0.0756)	0.406*** (0.0271)	21.93*** (1.944)
Observations	1,015	1,015	1,015
# Subjects	145	145	145
R-squared	-	0.093	0.078

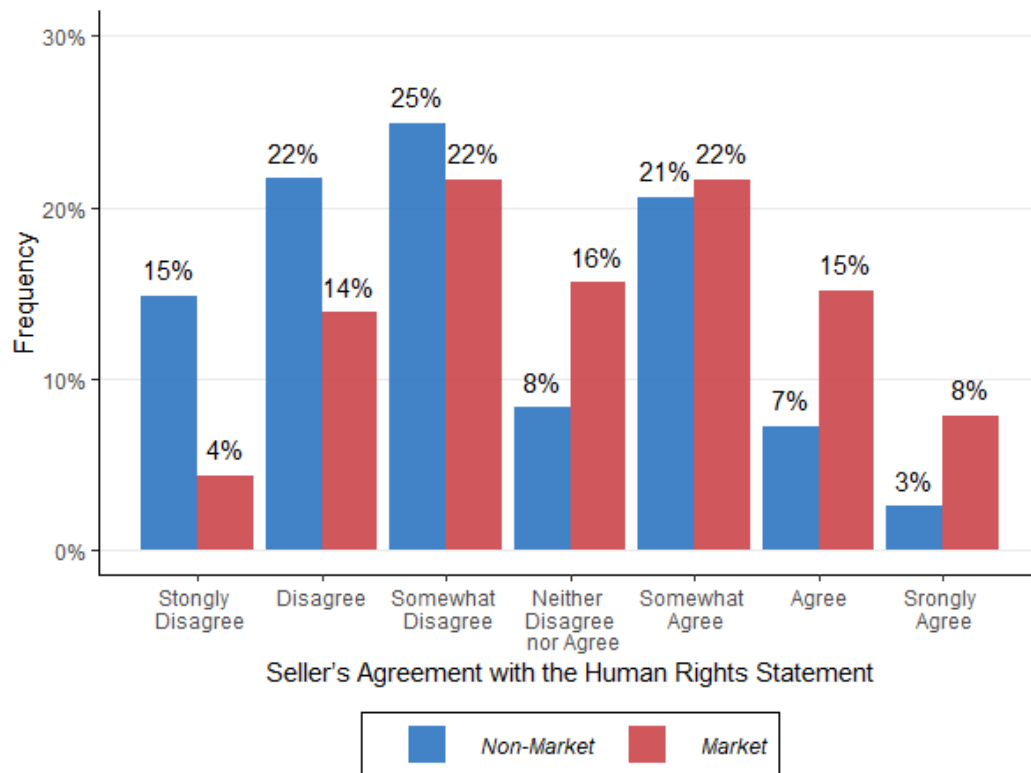
*Notes:* Column (1) reports results from a Probit regression of consumers' willingness-to-trade with sellers' expressed agreement with the human rights statement (on a 7-point scale, from -3 "strongly disagree" to 3 "strongly agree"). Column (2) reports a similar regression using OLS. Column (3) reports an OLS regression of consumers' willingness-to-pay on sellers' expressed agreement. Standard errors clustered at the individual level are reported in parentheses. Women are more likely to pay higher prices than men at the  $p < 0.05$  level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### 3.2.2 Effect of Market Exchange on Sellers' Attitudes

Figure 3 presents the impact of market exchange on our primary (pre-registered) outcome measure for sellers: UK participants' agreement with the statement supporting China's human rights

position. Consistent with Hypothesis 2, UK participants publicly agree with the Chinese position on human rights to a greater extent in the presence of market exchange (Wilcoxon rank-sum:  $p < 0.01$ ). For example, the median response shifts from “somewhat disagree” in the *Non-market* condition to “neither disagree nor agree” in the *Market* condition. Ordered probit regression analysis in Columns (1) and (2) in Table 2 further supports the observation that the *Market* condition yields statistically significantly greater agreement with the statement ( $p < 0.001$ ).

**Figure 3: Agreement with Human Rights Position by Market vs. Non-market Condition**



*Notes:* The figure shows the empirical distribution of sellers' agreement with the statement supporting China's position on human rights, in the *Non-market* ( $n=277$ ) and *Market* ( $n=231$ ) conditions.

Recall that we also asked UK participants in the *Market* condition to guess the percentage of Chinese buyers who would be unwilling to exchange with someone who strongly disagreed with the statement and with someone who strongly agreed—the difference between the two percentages provides a rough indication of sellers' perceived benefits from adjusting their statements in the direction of buyer's values. Interestingly, while sellers anticipate that buyers will be more likely to refuse to trade with sellers who strongly disagree with the statement (48 percent) than with sellers who strongly agree (40 percent), the gap is much smaller than the empirical gap in buyers'

behavior.<sup>19</sup> That is, sellers perceive the benefits from changing views to be somewhat limited, but nevertheless shift their expressed views to reflect greater agreement. We also find that sellers who express greater agreement with the statement request slightly higher prices, though this relationship is not statistically significant.<sup>20</sup>

**Table 2: Sellers' Expressed Support for Consumer Values and Private Attitudes**

Dependent variable:	<i>Agreement with statement</i>		<i>Private attitudes toward China</i>		<i>Donation</i>	
	Ordered probit		Ordered probit		OLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Market	0.533*** (0.0919)	0.553*** (0.0959)	0.266*** (0.0940)	0.255*** (0.0980)	2.634 (2.522)	3.017 (2.517)
Constant					26.64*** (3.857)	28.79*** (7.119)
Observations	508	508	508	508	508	508
R-squared					0.002	0.072
Controls	No	Yes	No	Yes	No	Yes

*Notes:* Columns (1) and (2) report results from ordered Probit regressions of sellers' expressed agreement with the statement. Columns (3) and (4) report results from ordered Probit regressions of sellers' private attitudes toward China. Column (5) and (6) report results from OLS regressions of the size of the donation allocated by sellers to the Confucius Institute. Sellers' expressed agreement with the human rights statement is measured using a 7-point scale, from -3 "strongly disagree" to 3 "strongly agree;" private attitude is measured on a 5-point scale, from -2 "very unfavorably" to 2 "very favorably;" donation is a continuous variable from 0 to 100. Market is a binary variable indicating the *Market* condition, equal to zero for the *Non-market* condition. Robust standard errors are reported in parentheses. Control variables include gender, age, education, a self-reported political scale from 0 (left) to 100 (right), as well as several measures reflecting familiarity with China (the extent to which sellers think they understand ordinary Chinese people, frequency of interactions with Chinese people in the past year, familiarity with news on Hong Kong security laws), beliefs about other UK sellers (belief about the median agreement with the statement in the *Non-market* condition) and about Chinese consumers (beliefs about whether consumers' reactions are mostly motivated by official positions or own views). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<sup>19</sup> We have suggestive evidence regarding UK participants' sophistication about the influence of the market incentive on their stated views. Recall that we also asked participants in both conditions to guess the median response provided by other participants in the *Non-market* condition, and additionally asked participants in the *Market* condition to guess the median response provided by other participants in the *Market* condition. This provides a measure of sellers' sophistication about the degree to which (other) sellers adjust their responses strategically. On average, participants in the *Market* condition believed that the median view would reflect greater agreement in the *Market* condition than in the *Non-market* condition (mean guess, on a 7-point scale from -3 to 3: -0.10 in *Non-market* vs. -0.34 in *Market*; paired Wilcoxon rank-sum: p < 0.01).

<sup>20</sup> For instance, sellers who either agreed or strongly agreed with the statement requested an average price of 5.15 Pounds, while sellers who either disagreed or strongly disagreed requested an average price of 5.72 Pounds. More details about sellers' pricing behavior can be found in C.2 Sellers' Pricing Behavior. On average, sellers asked for 5.6 Pounds, which correspond to around 50 RMB. This average price is substantially higher than Chinese consumers' average willingness-to-pay (see Figure 2).

We also investigate, in exploratory analysis, whether *public* expressions of support for a cause, which we show are influenced by the opportunity for market exchange, can affect *privately* held values. Our study included two measures of UK participants' private attitudes toward China. The first is a question directly eliciting their stated attitudes toward China. Interestingly, UK participants in the *Market* condition expressed significantly more positive attitudes towards China than those in the *Non-Market* condition (Wilcoxon rank-sum:  $p < 0.01$ ), even though the instructions made clear that their response on this measure would not be disclosed to the Chinese counterpart. Turning to our second measure of private attitudes, UK participants in the Market condition also make slightly higher donations to a state-funded Chinese-linked organization (the Confucius Institute), rather than one promoting human rights (Human Rights Watch), but the effect is not statistically significant (Wilcoxon rank-sum:  $p = 0.34$ ). These findings are also supported by regression analysis in Columns (3) through (6) in Table 2 and figures in Appendix C.1.

Both measures of private attitudes were pre-registered as secondary measures and, therefore, these results should be interpreted cautiously. One possible interpretation of these relationships is that the adjustment of private attitudes may reflect a means to rationalize one's manipulated public support for China's human rights position, in the manner of cognitive dissonance or the manipulation of social or self-image (Festinger, 1957; Bénabou and Tirole, 2011; Acharya et al., 2018).

## **4 Study 2: A Laboratory Market Experiment**

Study 1 provides clear evidence supporting both of our main hypotheses in an online experiment using sellers' public value positions on human rights, which may agree or disagree with the ideological positions held by a sample of consumers in China. However, the experiment relies on a politically sensitive measure of ideological value positions and no material cost for sellers to signal their value support. Our second study complements Study 1 by testing our hypotheses in settings involving more heterogeneous and less charged ideological values. We also introduce additional treatment variations that provide clearer insights into the mechanisms driving the hypothesized relationships.

We use a laboratory setting in which buyers who care about ideological causes are confronted with sellers who can take a costly action supporting such causes. In addition to making the sellers' support for the buyers' values materially costly, we also attempt to minimize sellers'

intrinsic motivations to engage in such costly support, thus isolating the strength of buyers' preferences as the key factor. As with Study 1, the primary treatment variation involves the presence or absence of market exchange, though we utilize procedures in this study to make the two environments more comparable. We also introduce additional treatments that vary the observability of the seller's action to buyers and the degree to which the sellers' actions support consumers' values; these treatments provide us with insights into the precise mechanisms driving sellers' signals of support for consumers' values.

## **4.1 Experimental Design**

### *4.1.1 Implementing Value Preferences in the Laboratory*

For each session, we recruit subjects into fixed “buyer” and “seller” roles. Since Study 1 provides evidence of the relevance of consumers' value concerns with naturally occurring ideological positions, in Study 2, we implement a screening procedure to generate samples of consumers likely to exhibit such value preferences in a more abstract laboratory context, in order to study the causal impact of such preferences on sellers' actions. Specifically, we recruit half of the subjects as buyers while informing them that as part of their participation in the experiment they might potentially generate a donation to one of 16 organizations listed in the recruitment message.<sup>21</sup> Buyers know that at the beginning of the experiment they will select one of these organizations. Sellers are recruited using standard procedures. At the beginning of the experiment, the recruitment procedures are publicly announced to all subjects via written instructions distributed to the participants that are also read aloud (see Appendix G for sample instructions). This means that buyers are at least somewhat likely to have been selected based on an interest in at least one of the organizations, that sellers were recruited using more standard procedures and that this is common

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<sup>21</sup> The list includes a variety of organizations with diverse, and sometimes competing, objectives: Caritas (an anti-poverty organization); Cruelty Free International (supporting animal rights), Family First (advocating traditional marriage and family values), Fur Europe (supporting sustainable development of the fur sector in Europe), Global Warming Policy Foundation (challenging science on climate change), Greenpeace Fund, International Alliance of Women, Swiss Muslim Society, Swiss Refugee Council, WikiLeaks, Wikipedia, and several prominent political parties (Christian Democratic People's Party (CVP), Green Party (GPS), Social Democratic Party (SP), Swiss People's Party (SVP), The Liberals (FDP)). To minimize sellers' intrinsic support for these causes, the list includes some unpopular organizations or organizations with missions that conflict with the progressive values likely to be held by the student population from which our participants are drawn. Some organizations are indeed deemed unpopular by our subjects (see Appendix D.1, together with description of each organization which we displayed to experimental participants).

knowledge in a session. Buyers then proceed to select their preferred organization from the list using the computer screens.

#### *4.1.2 Donations and Market Interactions*

The remainder of the experiment consists of 14 periods, in each of which buyers and sellers are paired and can potentially interact in a bilateral market. Each buyer and seller are matched at most only once. Furthermore, we implement a “turnpike” or “zipper” matching design in which participants’ actions cannot influence the behavior of any other participants they encounter in future periods (Cooper, et al. 1996). We clearly explain this property of the matching procedure to participants. Each period proceeds as follows.

**Donation.** At the beginning of each period, every seller has an opportunity to make an *unconditional* donation of up to 5 Swiss francs (CHF) out of their participation fee to one of the 16 organizations. Each seller can select a donation amount from CHF 0 to CHF 5, in CHF 1 increments and any donation made by the seller is trebled. The specific way that the organization receiving the donation is determined varies by treatment, as we describe in Section 4.1.3. Sellers do not know which specific organization receives their donation in a period, but are informed of the procedure used to select the organization. This way, we attempt to minimize sellers’ intrinsic motives to donate.

**Market exchange.** After the seller makes a donation decision in a period, the seller and buyer interact. They each receive an endowment of CHF 10 and participate in a potential exchange opportunity in which the sale of a virtual good from the seller to the buyer generates CHF 40 of value.<sup>22</sup> Exchange creates a cost to the seller, which varies randomly across periods by treatment, as we describe in Section 4.1.3. The cost is known to both buyers and sellers.

The seller selects a price, between CHF 0 and CHF 40 at which to offer the good for sale in that period. Without observing the price offer, each buyer reports a maximum willingness-to-pay for purchasing from the matched seller in that period. The procedures for eliciting willingness-to-pay vary by treatment, as we describe below. Trade occurs in a period only if the buyer’s willingness-to-pay is no lower than the offered sales price, in which case the transaction occurs at the seller’s offered price. If exchange occurs, the buyer’s earnings are CHF 50 minus the price,

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<sup>22</sup> We denominated earnings from the market activity in “points,” which had a value of 5 points to CHF 1. We use the corresponding monetary values here for clarity.

while the seller earns CHF 10 plus the price minus the cost. If no exchange occurs, both the buyer and seller receive CHF 10.<sup>23</sup> At the end of the experiment, one of the 14 market periods is randomly selected for payment.

**Feedback.** After each period, subjects are re-matched and perform the donation and market activity again, with a new randomly matched buyer-seller pairing and a new random draw of the seller's cost. We provide no feedback on the actions of the matched counterparts (cost, price, donation, or exchange outcome) in the first four periods; this allows us to obtain repeated measures of behavior across multiple cost realizations before any influence of learning. In the remaining periods (5 through 14), subjects are provided with feedback about the exchange at the end of each period. Specifically, each consumer observes the seller's realized cost, sales price offer, donation amount, whether the exchange takes place and both roles' realized earnings; each seller observes whether the exchange takes place and the realized earnings.

#### 4.1.3 Treatment Variations and Relation to Hypotheses

We test Hypothesis 1, regarding consumers' preference for exchanging with sellers who support their values, by examining the relationship between buyers' willingness-to-pay and the sellers' donations. We adopt a 2×3 design to allow us to test the remaining hypotheses. We vary, within subjects, the presence or absence of an opportunity for market exchange, allowing us to test Hypothesis 2. We further vary, between sessions, the consumers' value sensitivity and the observability of the seller's signal, to test Hypotheses 3 and 4, respectively.

**Opportunity for market exchange.** Our first treatment dimension varies the presence or absence of an opportunity for market exchange. Rather than eliminating trading opportunities altogether, as in Study 1, and thereby having different procedures in the *Market* and *Non-market* conditions, we instead implement the variation in a subtler way by varying the production cost across rounds. Recall that the seller makes the donation after observing the cost for that period. In a *Market* condition, the seller's cost equals CHF 0, meaning that the potential surplus from market exchange is CHF 40. In the *Non-market* condition, the seller's cost equals CHF 40, which is

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<sup>23</sup> In the unique subgame-perfect Nash equilibrium to this game, the seller offers the maximum price (CHF 40) and the buyer accepts. Based on earlier research (e.g., on ultimatum games), we anticipated that both average price offers and willingness-to-pay thresholds would be substantially below this prediction, providing room for other considerations to influence buyers' valuations.

equivalent to the buyer's valuation, eliminating possible gains from exchange. We vary the cost randomly across rounds, with equal probability of encountering either cost level in a period.

**Consumers' value intensity.** We vary the strength of the relationship between sellers' donations and support for consumers' values, across sessions, by manipulating the process through which the organizations to which donations will be made are selected. In the *Matched* condition, each seller's donation goes to the organization selected by the specific buyer with whom the seller is matched in that period. In the *Random* treatment, the donation goes to an organization randomly chosen from among the organizations selected by different buyers in a previous session. This treatment allows us to test the impact of varying the degree to which sellers' costly signals support a specific consumers' values—as opposed to the broader population of consumers. Importantly, in neither the *Matched* nor *Random* conditions do sellers know to which specific organization they are donating—only whether the organization corresponds to the specific matched buyers' preferences or to the preferences of a random buyer—thereby reducing sellers' intrinsic motivations for donating.

In both the *Matched* and *Random* conditions, we use the strategy method to elicit the buyer's maximum willingness-to-pay for every possible donation amount by the seller. This allows us to test Hypothesis 1, by providing counterfactual comparisons of the willingness-to-pay for individual buyers across different possible donation amounts by the seller. The willingness-to-pay that corresponds to the actual donation made by the matched seller in that period determines the market outcome.

**Observability.** We additionally implement a *Control* condition, in which the donation goes to the organization selected by the matched buyer as in the *Matched* treatment, but the donation by the seller is not observed by the buyer during the market exchange stage. Each buyer in this treatment only reports one willingness-to-pay value that cannot depend on the donation made by the matched seller. This treatment allows us to control for other possible motives underlying donations by sellers, including intrinsic valuation of the organizations and (expected) income effects due to the variation of costs between the *Market* and *Non-market* conditions.

Table 3 presents an overview of our treatment conditions and the number of observations. This design allows us to test our two main hypotheses by, first, comparing whether buyers in the *Matched* and *Random* conditions exhibit greater willingness-to-pay when sellers make higher donations (Hypothesis 1) and, second, whether sellers anticipate the potential benefits of such



preferences in a market context by making higher donations in *Market* than *Non-market* rounds (Hypothesis 2). We test Hypothesis 3 by comparing the strength of the above relationships between the *Matched* and *Random* conditions, to evaluate whether a stronger correspondence between sellers’ donations and buyers’ values strengthens the relationships in Hypotheses 1 and 2. Finally, the *Control* condition allows us to test Hypothesis 4 regarding whether sellers’ responsiveness to the market is driven by the potential signaling value of a donation.

**Table 3: Overview of 2×3 Experimental Design and Number of Observations**

	<b>Matched</b>		<b>Random</b>		<b>Control</b>	
	<b>Market</b>	<b>Non-Market</b>	<b>Market</b>	<b>Non-Market</b>	<b>Market</b>	<b>Non-Market</b>
<i>Organization selected by</i>	Matched consumer	Matched consumer	Other consumer	Other consumer	Matched consumer	Matched consumer
<i>Buyer can condition WTP on donation?</i>	Yes	Yes	Yes	Yes	No	No
<i>Surplus from exchange?</i>	Yes	No	Yes	No	Yes	No
<i># of subjects</i>	182		184		118	
<i># of sessions</i>	6		6		4	

#### 4.1.4 Additional Variables of Interest

At the end of the experiment, before subjects learn their final payoffs, we elicit several individual measures of preferences over the organizations potentially receiving donations. We elicit each subject’s willingness to donate to each of the 16 organizations using an incentivized dictator game in which participants receive an additional CHF 5 that they can choose to either donate to one of the organizations on the list or keep for themselves. They indicate the amount, up to CHF 5, that they would like to donate to each of the organizations, assuming that the donation will be tripled. The computer then randomly selects one of their 16 decisions to implement with an equal chance. This serves as a proxy of subjects’ general support for these organizations.

We also ask subjects whether the list of 16 organizations contains any organization that they dislike and whether the list contains any organization that they like. Additional variables include two survey-based questions similar to the questions used in the mTurk survey we discuss in the Introduction and Appendix A (specifically, we ask each subject to what extent they are more or

less likely to purchase from a firm that supports a social cause that they either support or oppose); the extent to which each buyer agrees that sellers' donation behaviors reflect the buyer's value (on a scale of 1 to 7); whether each buyer thinks his or her willingness-to-pay decisions during the experiment were influenced by sellers' donation decisions and whether each seller believes that their donation decisions influenced buyers' willingness-to-pay decisions. The questionnaire additionally includes several items to explore whether the measured value preferences in the experiment are related to real life behaviors.<sup>24</sup> We also elicited demographic characteristics, including gender and a self-reported political orientation. See Appendix H for the exact wording of the questionnaire.

#### *4.1.5 Sample and Procedures*

All 16 experimental sessions were conducted in the laboratory of the Department of Economics at the University of Zurich. The subject pool contains around 15,000 students from the University of Zurich and the Swiss Federal Institute of Technology. Students from economics or psychology were excluded at the recruitment stage. Our experiment consists of 484 subjects in total. Each session consisted of between 28 and 34 participants, ensuring at least 14 participants in each role to prevent repeated re-matching. We implemented the experiment using the software z-Tree (Fischbacher 2007), and organized recruitment with the software hroot (Bock, Nicklisch, Baetge 2012).

Each session lasted around 75 minutes. On average, subjects earned CHF 30.5 (Matched: CHF 29.5; Random: CHF 30.3; Control: CHF 32.3), including a show-up fee of CHF 10.

## **4.2 Results**

### *4.2.1 Consumers' Willingness-to-Pay*

We first test whether, consistent with Hypothesis 1, buyers' valuations for exchange are positively correlated with the seller's donation amount in the Matched and Random treatments. Figure 4 shows, for each possible donation level, the average willingness-to-pay reported by buyers in the Matched and Random conditions. The figure reports only data from the Market periods, in which the seller's realized cost created opportunities for exchange.<sup>25</sup> In both the Matched and Random

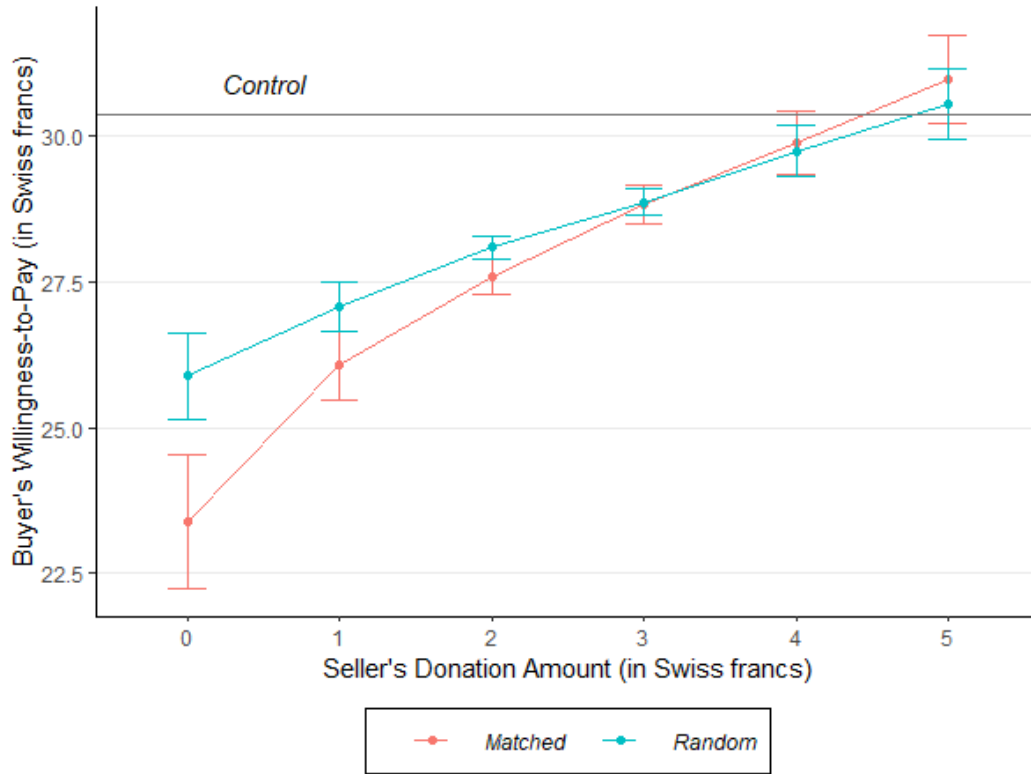
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<sup>24</sup> For example, we ask whether a subject has participated in boycotts or demonstrations. In addition, we ask whether they use the ride-sharing service Uber, and ask Uber users if they are likely to change their behaviors after providing them with news of Uber's ex-CEO mishandling scandals of sexual harassment.

<sup>25</sup> We provide analysis for observations in the Non-market periods in Appendix C.2.

conditions, buyers are willing to pay higher prices to purchase from sellers who previously made a higher donation. Within each condition, pairwise comparisons of willingness-to-pay between any two consecutive donation levels are significant (paired one-sided rank-sum tests,  $p < 0.01$ ).<sup>26</sup> This positive relationship between donations and willingness-to-pay survives learning dynamics and the provision of feedback, as shown in Appendix D.4.<sup>27</sup>

**Figure 4: Willingness-to-Pay in Market Periods of Matched and Random Conditions**



*Notes:* The figure shows the average willingness-to-pay (in Swiss francs) for a product worth CHF 40 in the Market periods for each possible donation level (in Swiss francs) in the Matched and Random conditions, respectively. Error bars represent confidence intervals at 95% confidence level.

Figure 4 also shows the average willingness-to-pay in the Control condition, in which buyers could not condition their valuations on the donation amounts. Interestingly, the willingness-to-pay values for purchasing the good in both the Matched and Random conditions tend to be lower than

<sup>26</sup> Throughout the analysis, unless specified otherwise, we constructed the individual average across periods as the observational unit for statistical tests, thus treating each buyer as a single observation.

<sup>27</sup> Amid the positive relationship between buyers' willingness-to-pay and sellers' donations on the aggregate level, we observe substantial heterogeneity at the individual level. Consistent with heterogeneity in value-sensitivity in our theoretical framework, we observe roughly 30 percent of buyers who appear insensitive to the donation and state a willingness-to-pay for all donations of at least 39.75 Swiss francs, consistent with earnings maximization.

in the Control, except for at the highest possible donation levels. These patterns indicate that buyers might have a greater aversion to exchanging with sellers who fail to signal support for their values when having the opportunity to do so than attraction to buyers who actually make donations; this is consistent with the asymmetric pattern in our mTurk survey (see Figure 1).

**Table 4: Buyers' Willingness-to-Pay in Market Condition**

Dependent variable:	(1) WTP	(2) WTP	(3) WTP
Donation	0.913*** (0.113)	0.744*** (0.125)	0.744*** (0.125)
Matched condition	-2.359 (1.721)	-2.523 (1.810)	-1.561 (1.974)
Donation × Matched condition	0.518*** (0.194)	0.555*** (0.201)	0.555*** (0.201)
Reflect Value		-2.148* (1.101)	-1.100 (1.114)
Donation × Reflect Value		0.483*** (0.104)	0.483*** (0.104)
Constant	25.26*** (0.914)	26.02*** (0.982)	27.03*** (1.416)
Observations	7,686	7,686	7,686
R-squared	0.042	0.044	0.111
Controls	NO	NO	YES

*Notes:* Wild bootstrap standard errors reported in parentheses. The calculation is based on 1000 simulations where the clustering is at the session level. The sample includes WTP from all Market periods in the Matched and Random condition. “*Matched condition*” is a binary indicator for the corresponding condition. “*Reflect Value*” is a binary variable indicating that buyers agree with the statement that sellers’ donation behaviors reflect their values. Control variables include gender, self-reported political orientation from 0 (left) to 100 (right), a binary variable indicating whether the consumer’s own average donation to all 16 organizations at the end of the experiment is above the median, a binary variable indicating whether the list of organizations includes disliked ones, and a binary variable indicating whether the buyer reported that his or her willingness-to-pay decisions during the experiment were influenced by sellers’ donation decisions. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4 presents results from linear regressions using all observations from Market periods in the Matched and Random conditions. Column (1) shows the patterns in Figure 4 without additional controls. Donation refers to the size of the donation, indicating that buyers in the Random condition are willing to pay roughly CHF 0.91 more for each additional CHF 1.00 donation made by the seller. The positive and statistically significant coefficient for the Matched-Donation interaction term indicates buyers are more responsive to the donation in the Matched

condition—they are willing to pay roughly CHF 1.43 for each additional CHF 1.00 donated. These results provide strong support for Hypothesis 1, and also for the first part of Hypothesis 3.

We further investigate the extent to which buyers perceive a donation by the seller as reflecting support for the buyers' values and the roles that such beliefs play in determining the willingness-to-pay for exchange. Recall that we asked buyers, at the end of the study, the extent to which they agree that the sellers' donations in the experiment reflects support for their values, from strongly disagree to strongly agree. We use this question to construct a binary variable, "*Reflect Value*," indicating cases in which respondents indicate agreement (*Reflect Value* = 1) versus a lack of agreement (*Reflect Value* = 0) with the statement.<sup>28</sup> Column (2) shows that the interaction term between Donation and this variable is positive and statistically significant, indicating that the positive relationship between willingness-to-pay and donations is stronger for buyers who state that a donation reflects sellers' support for their values. Buyers who do not think sellers' donations reflect their values are willing to pay roughly CHF 0.74 more in the *Random* condition and CHF 1.29 (0.74 + 0.55) more in the *Matched* condition for each additional CHF 1.00 donation made by the seller. Buyers who think sellers' donations reflect their values are willing to *additionally* pay CHF 0.48 for each additional CHF 1.00 donation by the seller. For robustness we add in Column (3) additional individual control variables, which do not change the results.<sup>29</sup>

The linear coefficient estimates suggest that it is slightly unprofitable for sellers to donate in the *Random* condition but profitable in the *Matched* condition. Looking back at Figure 2, we see that each marginal increase in the donation amount up to CHF 3 is roughly equivalent to the response of buyers' willingness-to-pay in the *Random* condition, but is profitable in the *Matched* condition. For example, the increase in average willingness-to-pay as the donation changes from CHF 0 to CHF 1 is CHF 1.21 in the *Random* condition but CHF 2.68 in the *Matched* condition. However, the marginal impact of higher donation amounts is smaller in both conditions.

Recall that we included two survey-based questions similar to the items used in our mTurk survey asking respondents the extent to which they are willing to buy from (avoid) sellers whose

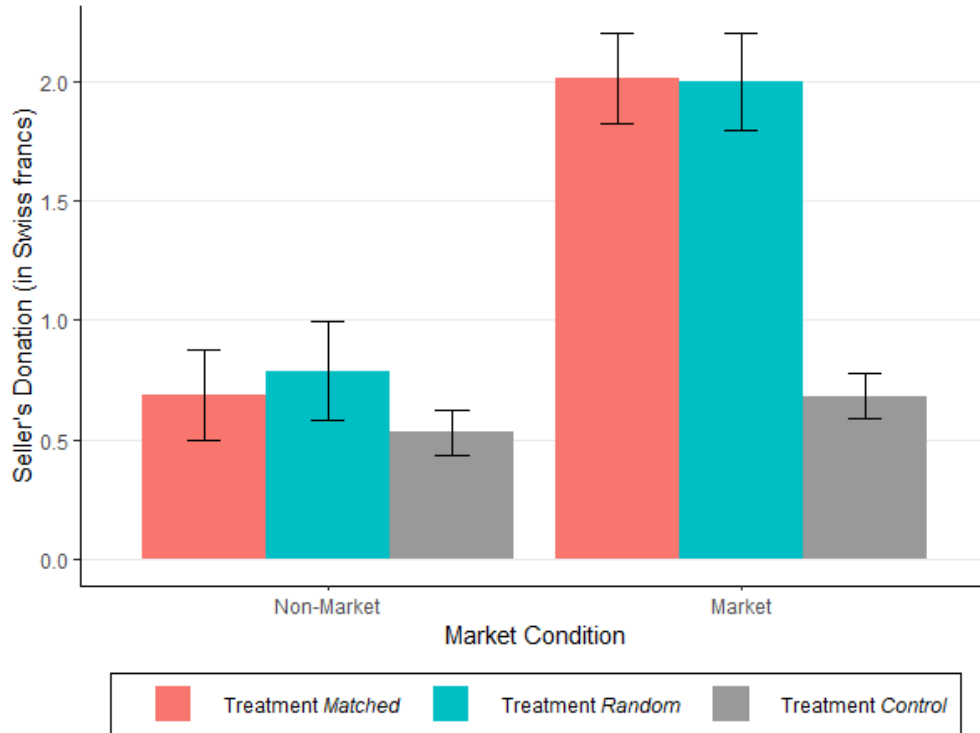
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<sup>28</sup> Overall, roughly one third of buyers tend to agree, one third of buyers tend to disagree and the other one third of buyers neither agree nor disagree that the sellers' donations in the experiment reflect their values. Surprisingly, there is no difference between the Random and Matched conditions (two-sided K-S test:  $p > 0.9$ ).

<sup>29</sup> In this table and all remaining regression tables for Study 2, we present wild bootstrap standard errors, where the clustering is at the session level. See Bertrand, Duflo and Mullainathan (2004) and Cameron, Gelbach and Miller (2008) on why wild bootstrap procedures can fix the inference problem caused by too few clusters. Nevertheless, our results are robust to the use of other conventional methods.

actions support (oppose) their values. We replicate the asymmetric pattern from our survey experiment (see Figure D2 in Appendix D.3). Moreover, these self-reported measures of behavior outside the laboratory concord with the elicited willingness-to-pay in the Market condition (see Figure D3 in Appendix D.3). Those participants who report that they are less likely to buy from sellers outside the laboratory who support causes that conflict with their values are significantly more responsive ( $p < 0.01$ ) to sellers' donations in the experiment.<sup>30</sup>

**Figure 5: The Impact of Market Exchange Opportunities on Sellers' Donation Decisions**



Notes: The figure shows sellers' average donations (in Swiss francs) in different treatment conditions. Error bars represent 95% confidence intervals.

#### 4.2.2 Sellers' Donation Decisions

We next investigate Hypothesis 2, which predicts that sellers will anticipate buyers' value concerns and send costly signals of value support, but only when there is a possibility of market exchange. Figure 5 shows the average donations made by sellers across the different conditions. Consistent

<sup>30</sup> We also find that buyers' value preferences elicited in the laboratory are correlated with other self-reported decisions outside the laboratory in meaningful ways. For instance, buyers who are more responsive to sellers' donations in our market experiment also report greater participation in boycotts ( $p < 0.01$ ). Details are in Table D2 in Appendix D.3.

with Hypothesis 2, sellers make greater donations in Market periods than in Non-market periods in both the *Matched* (one-sided Wilcoxon rank-sum:  $p < 0.01$ ) and *Random* ( $p < 0.01$ ) conditions.

To address the concern that other differences than the strategic signaling motive (such as mechanically higher expected payoffs in the Market condition) may drive the increase in sellers' donations in the Market condition, the *Control* condition keeps everything fixed relative to the *Matched* condition, but removes the observability of the seller's donation by the buyer. In this case, and consistent with Hypothesis 4, sellers do not increase donations in the market relative to the non-market conditions (one-sided Wilcoxon rank-sum:  $p = 0.32$ ). This provides causal evidence that sellers are making donations to signal support for buyers' values.

We do not find strong support for Hypothesis 3—that sellers respond to buyers' stronger value sensitivity in the Matched than Random condition by increasing their donations. The increase in sellers' average donations from the Non-market to the Market condition is slightly higher in Matched than in Random, but this difference is not statistically significant (one-sided Wilcoxon rank-sum:  $p = 0.20$ ). While consumers do value donations to their own preferred organization more than donations to other organizations, as shown in Section 4.2.1, sellers do not sufficiently anticipate or respond to such a difference in the intensity of value preferences.<sup>31</sup>

Table 5 presents results from linear regressions of sellers' donations. *Market*, *Matched* and *Random* are all binary indicators of corresponding treatment conditions, and we include interactions between the *Matched* and *Random* conditions and *Market*; the omitted treatment condition is the Non-market condition in the *Control*. Column (1) shows the pattern in Figure 5 without adding any controls. Consistent with Figure 5, donations are not significantly different, relative to the Non-market Control in either the Non-market Matched or Non-market Random treatment conditions, nor in the Market condition of the Control. However, donations are significantly higher in both the *Matched* and *Random* conditions when subjects are in Market periods with opportunities for gains from exchange.

We separately report results using observations from Period 1 to 4, where feedback is not provided, in Column (2), and results using observations from Period 5 to 14, where feedback is

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<sup>31</sup> To understand sellers' failure in responding to such a difference, we calculate seller's "optimal" donations that can lead to the highest possible earnings given consumers' empirical WTPs in both *Matched* and *Random* treatments. The average "optimal" donation is 2.6 in Matched as opposed to 2 in the Random condition. The difference in the "optimal" donations does not seem to be big enough to translate into significantly different responses from the perspective of sellers. In addition, while sellers seem to be slightly more sensitive to this difference in later rounds when feedback is provided, as captured in Figure D5 in Appendix D.4, the differential sensitivity is not statistically significant.

provided, in Column (3). While subjects in Non-market periods in the Matched and Random conditions initially donate slightly more than in the Non-market Control condition, they quickly stopped doing so after the provision of feedback. If anything, by comparing Columns (3) and (2), the results indicate that the provision of feedback strengthens the effect of market exchange, particularly in the Matched condition.

**Table 5: Treatment effects on sellers' donation decisions**

Dependent variable:	(1) <i>Pooled</i> Donation	(2) <i>Period 1-4</i> Donation	(3) <i>Period 5-14</i> Donation	(4) <i>Pooled</i> Donation
Market	0.153 (0.0931)	0.178* (0.105)	0.142 (0.0907)	0.153 (0.0931)
Matched	0.157 (0.199)	0.483** (0.244)	0.0270 (0.189)	-0.0609 (0.157)
Matched $\times$ Market	1.176*** (0.181)	0.707*** (0.166)	1.363*** (0.198)	1.176*** (0.181)
Random	0.257 (0.266)	0.565** (0.282)	0.134 (0.277)	-0.0375 (0.217)
Random $\times$ Market	1.060*** (0.228)	0.719*** (0.134)	1.197*** (0.279)	1.060*** (0.228)
CareMore				0.766*** (0.109)
Constant	0.530*** (0.186)	0.517** (0.205)	0.536*** (0.182)	0.280 (0.221)
Observations	3,388	968	2,420	3,388
R-squared	0.165	0.125	0.187	0.272
Control	NO	NO	NO	YES

*Notes:* Clustered bootstrap standard errors are reported in parentheses. The calculation is based on 1000 simulations where the clustering is at the session-level. The sample includes donations in all periods by 242 sellers from Matched, Random and Control treatments in Model 1 and Model 4. Model 2 and Model 3 include, respectively, subsamples in corresponding periods without (i.e. Period 1-4) and with (i.e. Period 5-14) feedback. Market, Matched and Random are all binary indicators of corresponding treatment conditions. *CareMore* is a binary variable indicating whether the seller's own average donation to all 16 organizations at the end of the experiment is above the median. Control variables include gender, a self-reported political scale from 0 (left) to 100 (right), two binary variables indicating whether the list of organizations includes disliked ones and liked ones, and a binary variable indicating whether the seller believes that their donation decisions influenced buyers' willingness-to-pay decisions. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$



Additionally, the coefficient of the interaction term between Market and Matched is significantly larger for Periods 5-14 than for Periods 1-4 (two-sided z test:<sup>32</sup>  $p < 0.05$ ), while the coefficient of the interaction term between Market and Random is only slightly larger but not significantly so (two-sided z test:  $p = 0.12$ ). In general, the relationships providing support for Hypothesis 2 (and only weak support for Hypothesis 3) do not change with the provision of experience. Figures D5 demonstrating the dynamics of donations are provided in Appendix D.4.

For robustness we add in Column (4) individual control variables, which does not influence the results. One control variable worth noting is sellers' baseline support for organizations elicited at the end of the experiment, *CareMore*. We introduce it as a binary variable indicating whether the seller's own average donation to all 16 organizations at the end of the experiment is above the median. The significantly positive coefficient of this variable shows that sellers with a higher baseline level of support make more donations in the experiment unconditionally. Thus, while our design does not appear to completely rule out sellers' intrinsic preferences for donating, controlling for such preferences does not change our results.

We find further evidence of sellers' strategic motives from their pricing decisions. On average, sellers ask for higher prices when they make higher donations in Market periods. In a regression using the sellers' offer prices as the dependent variable, the coefficient for the donation amount is positive and statistically significant ( $p < 0.01$ ) in both the *Matched* and *Random* conditions. Yet, the price increases do not exceed the cost of donations by much: in the *Matched* condition, sellers on average ask for prices that are CHF 1.15 higher when they increase their donation by CHF 1.00; in the *Random* condition, the requested price increases on average by only CHF 0.68. Regression analysis supporting these observations is provided in Appendix D.5.

Comparing prices across conditions, the average price in Market periods is CHF 22.86 in *Matched*, CHF 22.94 in *Random* and CHF 23.74 in the *Control* (Wilcoxon rank-sum test, *Matched* vs. *Control*:  $p = 0.29$ ; *Random* vs. *Control*:  $p = 0.43$ ). Thus, sellers in the *Matched* and *Random* conditions do *not* ask for higher prices than those in the *Control*, even though they donate more. Recall from Figure 4 that consumers express their value preferences by lowering their willingness-to-pay values in the *Matched* and *Random* conditions for sellers who forgo making large donations, relative to their willingness-to-pay in the *Control*. As a result, sellers receive lower payoffs in both the *Matched* and *Random* conditions than in the *Control*. The average payment for sellers

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<sup>32</sup> See Clogg et al. (1995) for the construction of z-test that compares regression coefficients between different models.

(excluding donations) across Market periods is CHF 27.79 in the Control, CHF 25.06 in *Matched* and CHF 26.14 in *Random* (Wilcoxon rank-sum test, *Matched* vs. *Control*:  $p < 0.01$ ; *Random* vs. *Control*:  $p = 0.07$ ; *Random* vs. *Matched*:  $p = 0.04$ ). In contrast, buyers receive similar payoffs across all three treatments.<sup>33</sup> It seems that the existence of a channel through which buyers can express their value concerns “disciplines” sellers to support buyers’ values without increasing sellers’ bargaining power in pricing.

## 5 Discussion and Conclusion

We use surveys and incentivized laboratory and online experiments to document consumers’ preferences for exchanging with counterparts whose actions support the consumers’ ideological value positions. Specifically, we test and find support for two primary hypotheses. First, consumers are willing to pay more for products when interacting with counterparts who express support for values that the consumers hold as important. Second, sellers anticipate this preference and adjust the extent to which they engage in actions demonstrating such support, but only when the possibility of market interaction provides an opportunity to obtain more favorable outcomes by signaling such support. This behavior can be rationalized by a model in which consumers’ utility from market exchange is increasing in the degree to which sellers hold proximate value positions and in which sellers’ costly actions signaling such support are meaningful.

Our findings are important for understanding the interaction of ideological value concerns and market behavior. They suggest that there is more to such concerns than the direct impacts of one’s market behavior or the external impacts of the products one purchases. People may also care about the personal characteristics and ideological positions of their market counterparts, preferring to trade with others who share their values and shunning market exchange with those who do not. Such preferences on the part of consumers, if sufficiently strong, create a potential channel for firm differentiation, whereby some sellers can attain greater demand for their products by signaling commitment to consumers’ values. In cases where there are heterogeneous values in a population, firms may segment market demand by adopting distinct value positions and catering to different sets of consumers. The ability of a single firm to offer multiple products may also be constrained

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<sup>33</sup> The average payment for consumers across Market periods is CHF 23.76 in *Control*, CHF 22.74 in *Matched* and CHF 23.26 in *Random* condition (Wilcoxon rank sum test, *Matched* vs. *Control*:  $p = 0.25$ ; *Random* vs. *Control*:  $p = 0.65$ ; *Random* vs. *Matched*:  $p = 0.44$ ).

by the ideological positions held by the distinct customer pools for the different products, thereby putting limits on diversification. Our findings have potentially important implications for market competition and structure, creating valuable avenues for future research to better understand the broader impacts of consumers' preferences for exchanging with ideologically like-minded sellers.

One very important caveat to our work is that we make no normative claims regarding the specific ideological and social values that consumers seek to promote through market exchange. In fact, value concerns are highly subjective even in our experiments. For instance, the values promoted in Study 1 are controversial and there is substantial disagreement on their normative merit, as is evident in the different positions held by participants from the two populations we study. Indeed, history also provides many examples of where consumers' desire to buy from sellers who promote the "right" kinds of values have supported discrimination or the promotion of other socially harmful practices.

Finally, throughout this paper we are agnostic regarding what, precisely, are the value positions about which consumers care. In developing our theoretical framework (in Appendix B), we discuss several motives that can underly our reduced-form approach. For example, consumers may only want to reward sellers who intrinsically share their values and concern for specific causes. While such an interpretation may seem at odds with the findings in our second experiment in which consumers are informed that sellers do not know which specific organization will receive their donation, it could be that consumers are inattentive to the fact that sellers lack information regarding the specific charities supported and thus interpret sellers' strategic donation as intrinsic support. Similarly, consumers in our first experiment may neglect or not care about sellers' strategic motives for making statements in support of consumers' values or may instead believe that simply making the statement demonstrates sufficient support. This is consistent with an interpretation whereby consumers do not care whether sellers' support is genuine at all, but rather mainly value sellers' willingness to support causes and values that are important to consumers, independent of the whether sellers intrinsically value the causes. Thus, it may not be necessary that sellers convince consumers that they inherently support a cause, but simply that they care enough that consumers support it to make costly investments reflecting such support. Returning to some of our motivating examples, it may not be necessary that conservative or liberal consumers in the US necessarily believe that owners or executives of firms inherently support their ideological values, but instead it may be sufficient that consumers believe that firms like Disney care enough

about what their consumer base considers important to publicly support—or at least not publicly contradict—such values. While we believe it is important to unpack the ultimate underlying motives, we leave these important and challenging questions for future research.

Importantly, regardless of the specific motives underlying consumers' value concerns, the mechanism that we document in this paper can lead to sellers taking actions that promote ideological values in a society, to a greater extent than would be reflected in the sellers' own preferences or ideology. Thus, we provide one mechanism through which the possibility of market exchange may enhance the public support for social and ideological values in a society.

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## Appendix A Survey Evidence of Value Preferences

### A.1 Study Design and Implementation

Our first question is to what extent consumers prefer (not) to trade with sellers who (do not) exhibit support for their ideological values even when such values are completely orthogonal to the market exchange. We first provide evidence that value preferences exist among a sample of ordinary US individuals through a survey study. To do so, we provide a sample of survey respondents in the US with a scenario in which they indicate a preference for purchasing a product from one of two retailers. We exogenously vary whether one of the retailers supports or opposes an ideological value that the consumer believes is important.

In the survey, participants are first asked to rank several societal and political issues by importance. These issues are: gender (in)equality, racial (in)equality, political correctness, religious freedom, climate change, gun policy, abortion and the conduct of politicians.<sup>34</sup> Participants then express their opinions on why the most highly ranked issue is particularly important and what their positions are on that issue.

Then in the next step, we link the issue that each participant cares the most about to further questions regarding purchasing decisions. Specifically, participants are asked about the extent to which they are either more or less willing to purchase from a neutral retailer as opposed to a retailer that takes a stand on the issue that they care about. We randomize, between subjects, whether the retailer taking a stand either supports or opposes the cause rated as most important by the participant. Specifically, we inform participants that the retailer “shares/conflicts with your views on {the issue}. In fact, this retailer recently made a large donation to an organization that supports your/the opposite side of this policy issue.”

Afterwards, we collect respondents’ self-reported motives underlying their behaviors, their past experiences with engaging in similar purchasing behaviors and their attitudes towards consumer and firm responsibility. We also collected several demographic characteristics.

We implemented the study using the software Qualtrics on a sample of 345 respondents recruited via mTurk. We targeted respondents based in the US and have an approval rate higher

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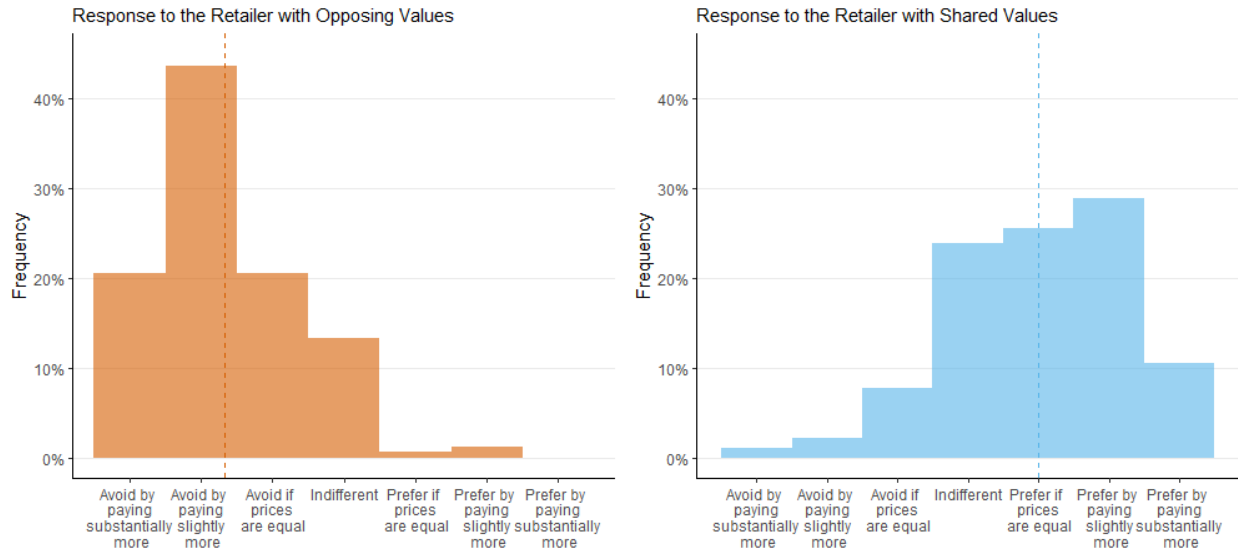
<sup>34</sup> The top 3 issues that participants reported as important were climate change (32%), gun policy (19%) and the behavior of politicians (14%). A large majority (91%) reported that the issue they ranked the highest is either fairly important or extremely important.

than 98% for the recruitment. Among the recruited sample, 180 participants were informed that the retailer shared their values and 165 that the retailer opposed their values.<sup>35</sup> Participants were compensated \$0.5 for completing the survey, which took 5 minutes on average. The complete survey is provided in Section A.3 of this appendix.

## A.2 Survey Results

We find clear evidence that consumers report having a preference for exchanging with counterparts who support their values. Figure A1 (Figure 1 in the paper) summarizes how the distribution of consumers' responses is affected by the retailer's value position.

**Figure A1: Self-reported preferences for exchange based on counterparts' value positions**



*Notes:* The left panel shows the empirical distribution of consumers' self-reported responses to a seller who takes opposing positions on an ideological issue rated as important, ranging from preferring to avoid transacting with such a seller to preferring to do so, relative to a neutral competitor. The right panel shows the empirical distribution of consumers' self-reported responses to a seller who takes concordant ideological positions. The issues among which consumers could select include gender equality, racial equality, political correctness, religious freedom, climate change, gun policy, abortion and the behavior of politicians. Variation in retailer opposing or supporting consumers' value positions is between-subjects. Dotted lines refer to the calculated mean responses.

<sup>35</sup> Basic demographics of participants are similar to average characteristics of the general body of mTurk respondents (e.g. as in Huff and Tingley, 2015): 41.2% female, 69% age below 40, 68% Caucasian, 87% with more than college education, 87% full time or part time employed, 47% Democrats and 23% Republican.

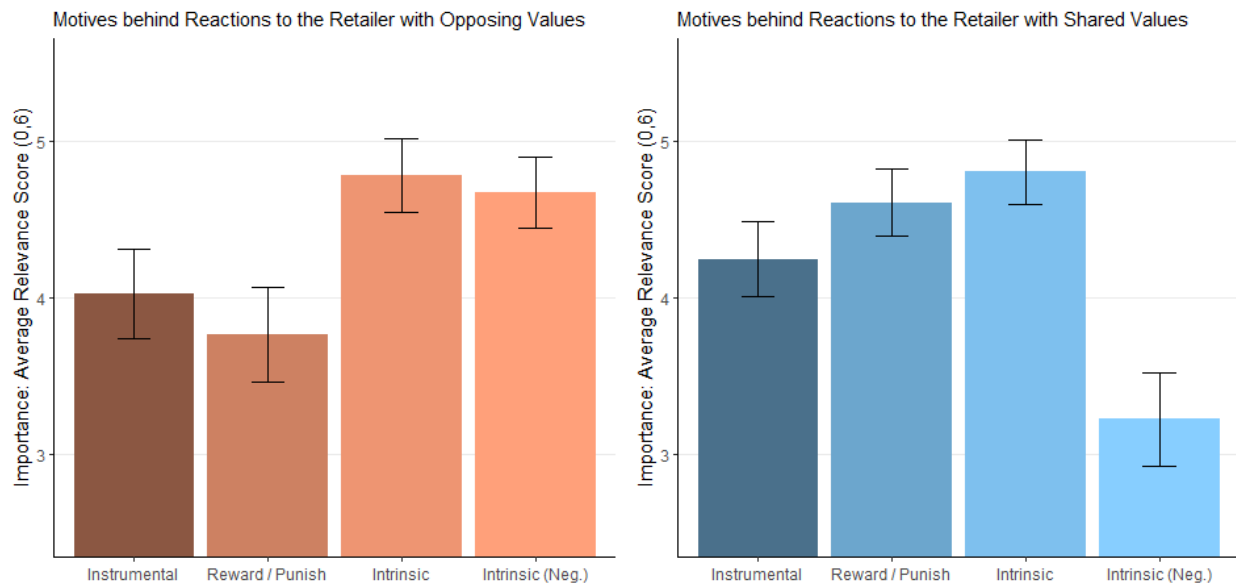
Among participants who are asked about whether to purchase from a neutral retailer or a retailer that supports the ideological value they rate as most important, 11% are willing to pay a substantially higher price and 29% are willing to pay a slightly higher price to purchase from the latter. Another 26% prefer the value concordant retailer when prices are equal. Among participants who are asked about whether to purchase from a neutral retailer or a retailer that opposes their ideological values, 21% are willing to pay a substantially higher price and 44% are willing to pay a slightly higher price to purchase from the latter. Another 21% prefers the latter when prices are equal.

The responses suggest an asymmetry in consumers' reactions to sellers who support versus oppose their values. Consumers are more sensitive and more willing to express their preferences via purchasing behaviors when the retailer supports opposing values than when the retailer supports shared values (The cumulative distributions of consumer sensitivity towards opposing and shared values are significantly different: two-sided KS test  $p < 0.01$ ).

We further investigate respondents' motives by asking those respondents who are not indifferent between the two sellers what factors drive their behavior. Specifically, we ask those respondents to what extent they think each of the factors we listed "influence their purchasing choices in situations like the previous one (the scenario we described)" on a 7-point scale (from 0 "not relevant at all" to 6 "extremely relevant").

Figure A2 shows the degree to which respondents self-report different factors as being relevant. When the retailer supports their values, participants think the most relevant factors are that they feel better giving money to retailers that share their values and that they want to reward such retailers. They agree to a lesser extent that they do so to encourage retailers to adopt closer value positions. The feeling of obligation (i.e., they feel worse not giving) plays a trivial role. When the retailer opposes their values, the most relevant factors are that participants feel worse giving money to retailers that conflict with their value and that they feel good not giving money to them. The instrumental objective and the reward/punishment motive seem to play a smaller role. This suggests that consumers react to sellers' value positions based more on intrinsic and hedonic considerations than on instrumental objectives, contradicting traditional views regarding the motives underlying boycotts.

**Figure A2: Motives underlying Consumers' Value Preferences**

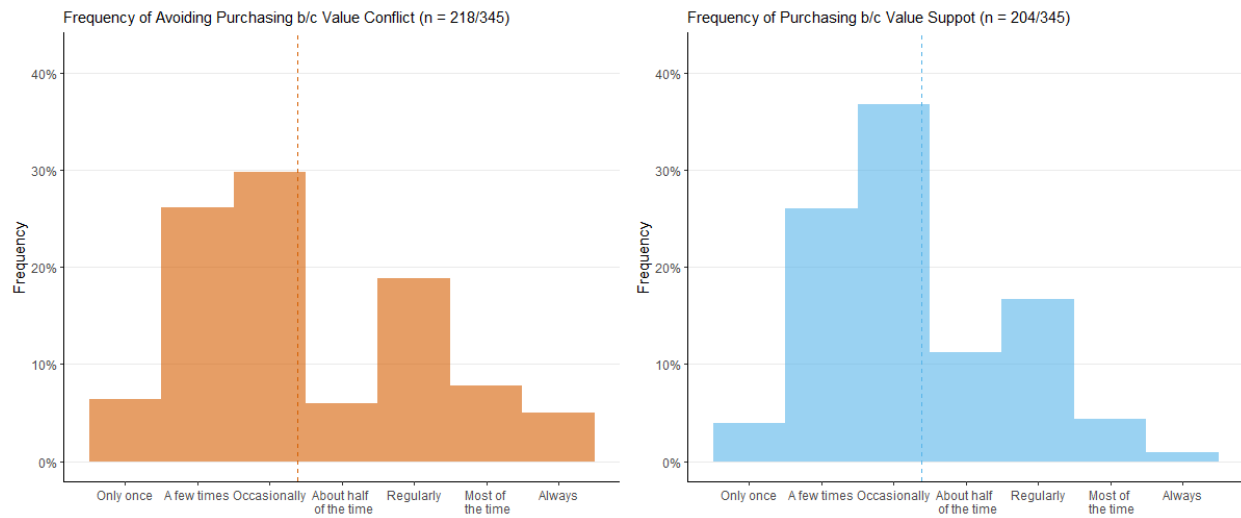


*Notes:* Only those who were not indifferent when reacting to sellers are asked to report their motives (n=280). The left panel shows the mean self-reported relevance from 0 “not relevant at all” to 6 “extremely relevant” for all motives of consumers’ reaction to the retailer with opposing values. The right panel shows the self-reported relevance from 0 “not relevant at all” to 6 “extremely relevant” for all motives of consumers’ reactions to the retailer with shared values. *Instrumental* motive: “I want to influence retailers to change their positions to be closer to those I hold.” *Reward/Punish* motive: “I want to punish/reward retailers that support causes that conflict with/share my values.” *Intrinsic* motive: “I feel worse/better giving my money to retailers that support causes that conflict with/share my values.” *Intrinsic (negative)* motive: “I feel good/bad not giving my money to retailers that support causes that conflict with/share my values.”

In terms of self-reported experiences, more than half of the participants report that they have actively chosen to purchase or avoid purchasing products or services from certain sellers mainly because of value considerations. Specifically, 59.1% of the participants have purchased products or services from a seller mainly because they value the seller’s position on a certain issue and they want to support it; whereas 63.2% of the participants have avoided purchasing products or services from a seller mainly because they do not like the seller’s position on a certain issue and they do not want to support it. Among those who report such experiences, they engage in such type of activities occasionally (more than “a few times”). Figure A3 shows the self-reported frequency of

participants' past activities. In addition, most of them are able to recall and precisely describe such occurrences, providing some credibility to their reports.<sup>36</sup>

**Figure A3: Frequency of Past Activities Related to Value Concerns**



*Notes:* Only those who have had experience related to value considerations are asked to report their frequency (n=218/204). The left panel shows the empirical distribution of consumers' self-reported frequency of actively avoiding purchasing products or services from a seller mainly because they do not like their position on a certain issue, ranging from only once to always. The right panel shows the empirical distribution of consumers' self-reported frequency of actively purchasing products or services from a seller mainly because they value the seller's position on a certain issue. Dotted lines refer to the calculated mean responses.

### A.3 Survey

Welcome to our study!

This study is conducted by a non-partisan group of researchers from the University of Zurich.

By completing this survey, you are contributing to producing knowledge. There are no “right” or “wrong” answers to these questions and it is most helpful to us if you answer honestly.

It is also very important that, once you have started, you complete the survey until the end. This survey takes around 5 minutes to complete. For completing the survey, you will be paid 0.5 dollars.

<sup>36</sup> Among all occurrences that they described, Chick-fil-A was mentioned the most times (45). Most participants who report such an occurrence have avoided the firm for its anti-LGBTQ position.

All your answers will be anonymized and stored confidentially.

Participation is voluntary. If you choose not to participate, please click “I do NOT want to participate” at the bottom of this page.

- I do NOT want to participate

- I want to participate

1. Please rank the following issues in order of their current importance, in your opinion, for the United States, from the most to the least important:

- Gender (in)equality
- Racial (in)equality
- Political correctness
- Religious freedom
- Climate change
- Gun policy
- Abortion
- The behavior of politicians

2. You ranked “xxx” as the most important issue in the US nowadays. Please rate how important you think it is:

- 1: Not important at all
- 2: fairly unimportant
- 3: slightly unimportant
- 4: neither unimportant nor important
- 5: slightly important
- 6 fairly important
- 7 Extremely important

3. Please tell us why you think “xxx” is particularly important and what your position is on this issue. [open question]

4. (randomize) Suppose two retailers both sell a product that you are presently considering buying. The two retailers are quite similar in almost all aspects that you care about. However, you just learned that one of them shares your views on “xxx.” In fact, this retailer recently



made a large donation to an organization that supports your side of this policy issue. In contrast, the other retailer is neutral about this issue. To what extent are you more or less likely to purchase from the retailer that supports your cause as opposed to the neutral one, holding everything else equal?

- 1: I prefer to purchase from the neutral retailer, and am willing to pay a substantially higher price to do so
- 2: I prefer to purchase from the neutral retailer, and am willing to pay a slightly higher price to do so
- 3: I prefer to purchase from the neutral retailer, but only if the two prices are equal
- 4: I am indifferent between purchasing from either retailer if they offer equal prices
- 5: I prefer to purchase from the retailer that supports my cause, but only if the two prices are equal
- 6: I prefer to purchase from the retailer that supports my cause, and I am willing to pay a slightly higher price to do so
- 7: I prefer to purchase from the retailer that supports my cause, and I am willing to pay a substantially higher price to do so

5. (randomize) Suppose two retailers both sell a product that you are presently considering buying. The two retailers are quite similar in almost all aspects that you care about. However, you just learned that one of them conflicts your views on “xxx.” In fact, this retailer recently made a large donation to an organization that supports the opposite side of this policy issue. In contrast, the other retailer is neutral about this issue. To what extent are you more or less likely to purchase from the retailer that supports the opposite cause as opposed to the neutral one, holding everything else equal?

- 1: I prefer to purchase from the neutral retailer, and am willing to pay a substantially higher price to do so
- 2: I prefer to purchase from the neutral retailer, and am willing to pay a slightly higher price to do so
- 3: I prefer to purchase from the neutral retailer, but only if the two prices are equal
- 4: I am indifferent between purchasing from either retailer if they offer equal prices
- 5: I prefer to purchase from the retailer that opposes my cause, but only if the two prices are equal

- 6: I prefer to purchase from the retailer that opposes my cause, and I am willing to pay a slightly higher price to do so
  - 7: I prefer to purchase from the retailer that opposes my cause, and I am willing to pay a substantially higher price to do so
6. (if not indifferent, randomize) In the previous situation, to what extent do you think the following factors influence your purchasing choices in situations like that? [1 not relevant at all 7 extremely relevant]
- I want to encourage retailers to adopt positions closer to those I hold
  - I want to reward retailers that support causes that share my values
  - I feel better giving my money to retailers that support causes that share my values
  - I feel bad not giving my money to retailers that support causes that share my values
  - Other reason (please specify)
  - I want to influence retailers to change their positions to be closer to those I hold
  - I want to punish retailers that support causes that conflict with my values
  - I feel worse giving my money to retailers that support causes that conflict with my values
  - I feel good not giving my money to retailers that support causes that conflict with my values
  - Other reason (please specify)
7. Have you ever purchased products or services from a seller mainly because you value their position on a certain issue and you want to support them? (If yes) How often have you engaged in such type of activities? [1 only once – 7 always]
8. Have you ever avoided purchasing products or services from a seller mainly because you do not like their position on a certain issue and you do not want to support them? (If yes) How often have you engaged in such type of activities? [1 only once – 7 always]
9. (if yes in 7 or 8) Please tell us about one such occurrence. [open question]

10. Have you ever participated in any boycott activities? (If yes) Please tell us about one boycott activity that you have participated. [open question]

11. To what extent would you agree with the following statement: [1 strongly disagree – 7 strongly agree]

- Consumers should take into account firms' stands on social issues when deciding on whether to buy their products or services.
- Firms have a responsibility to take a stand on social issues that are unrelated to their business.

12. Demographics:

- What is your gender identity?
- How old are you?
- What is your ethnic background?
- What is the highest degree you have received?
- What is the range of your gross yearly income?
- What is your political party affiliation?

## Appendix B A Simple Framework of Value-Signaling

Consider a two-stage signaling game model à la Spence (1978), in which a consumer  $i$  cares about the value position of her trading partner, seller  $j$ . The seller  $j$ 's private type is identified by the distance from the consumer on a value dimension important to the consumer:  $s_j \in \{s_L, s_H\} = \{-1, 0\}$ . We assume that a high type of seller ( $s_H = 0$ ) is proximate to the consumer on this value dimension, while a low type of seller ( $s_L = -1$ ) is more distant. A fraction  $\lambda \in (0, 1)$  of sellers are low types in the market with  $s_j = -1$ .

There are several different ways to interpret how consumers perceive value proximity and why consumers value sellers who exhibit support for their values. A strict interpretation is that consumers care about whether business owners *sincerely* support their specific values, such as holding the same fundamental religious values. Under this interpretation, buyers experience greater utility from transacting with counterparts whose underlying value preferences are closer to their own, meaning that sellers' actions would be discounted if they are deemed strategic and insincere. A looser interpretation is that consumers value whether sellers care enough about consumers to support something that the consumers consider important. Under this interpretation, it is sufficient for sellers to show concern for consumers' values, even if the sellers do not intrinsically care about the underlying causes. This could reflect, for instance, a desire that sellers publicly support values that are important to consumers—regardless of whether sellers intrinsically hold these values themselves—as part of a business approach that emphasizes satisfying the consumers' wishes. Accordingly, sellers' private types could reflect the distance from any of these value dimensions. Throughout the paper, we are generally agnostic about what precisely are these value positions, though our studies shed some light on their underlying nature.

In the first stage, each seller selects a costly signal  $d_j = d \in \mathbb{R}^+$  that reflects the degree of support for the consumer's value position. This signal is more costly for low type sellers than for the high type:  $c(d, s_L) > c(d, s_H)$  for all  $d > 0$ ,  $c(0, s_j) = 0$  and  $c_d(d, s_j) > 0$ . The differential cost could be due to differing preferences regarding certain actions, like assigning importance to supporting a social cause, or to a psychological aversion to publicly compromising on one's own value positions. When signals are publicly observable, consumers update their beliefs about the seller's value stance based on the signal in a Bayesian sense.

In the second stage, each seller operates in a market where he proposes a price  $p$  of an indivisible good to a consumer. The consumer then decides whether to accept or reject this sales offer. The consumer's default valuation for consuming the product,  $v$ , and the seller's cost  $c$  of the good are common knowledge.

The consumer  $i$  holds a degree of sensitivity to the seller's value position,  $\gamma_i \in [0,1]$ , which reflects how much that consumer cares about the public values espoused by the seller. If  $\gamma_i = 0$ , the consumer behaves in a manner predicted by standard theory or, alternatively, in a manner predicted by any theory of fairness that is independent of the seller's value position. That is, the framework is also compatible with any consequentialist motives (e.g., distributional or reciprocity-based) that are orthogonal to the perceived stand on values.

The consumer then decides on her maximum willingness-to-pay,  $\bar{p}$ , to transact with the seller  $j$  based on the objective of maximizing her utility:

$$u_i = u(v, \gamma_i s_j) - p,$$

where  $u(v, 0) = v$ ,  $\frac{d u(v, \gamma_i s_j)}{d v} > 0$ ,  $\frac{d u(v, -\gamma_i)}{d \gamma_i} < 0$  and  $\frac{d^2 u(v, -\gamma_i)}{d v d \gamma_i} < 0$ . The fact that  $u(v, 0) = v$  means that in either the case when the consumer does not care about the seller's value position ( $\gamma_i = 0$ ) or when the seller's position concords with that of the buyer ( $s_j = s_H = 0$ ), then the consumer is willing to pay up to her full consumption value ( $\bar{p} = v$ ). However, when the consumer cares about counterparts' value positions ( $\gamma_i > 0$ ) and the seller holds a conflicting position (i.e., when  $s_j = s_L = -1$ ), then consumer's valuation of the exchange is less than her intrinsic consumption utility of the product ( $\bar{p} = u(v, -\gamma_i) < v$ ). As a result, the more value-sensitive a consumer is, the lower the transaction utility with a low-type seller and the lower the reservation price.

Each consumer's sensitivity is assumed to be private and the seller holds an expectation of it,  $\hat{\gamma}_i \in [0,1]$ . Therefore, when engaging in market activities, consumers act according to a maximum willingness-to-pay in a fashion that guarantees them zero utility from the transaction, whereas sellers' responses depend on their expectations over consumers' sensitivity.

Importantly, we assume that a consumer experiences disutility directly from exchanging with a seller who holds conflicting value positions, rather than from any impacts on the seller or external

parties. That is, the consumer is not driven by a consequentialist motive related to social impact or positive or negative externalities, meaning that the consumer does not care about the influence of her decision whether to buy or not buy from a seller on other consumers' decisions (Kaufmann and Koszegi, 2023).

Note also that we model the consumer's preference by a distaste for trading with sellers who do not share their values,  $s_j \leq 0$ , in line with most motivating examples as well as our survey evidence. However, one may also consider an alternative specification where consumers prefer to trade with sellers who share their values, that is,  $s_j \geq 0$ . While most likely both motives could operate simultaneously, we restrict to one specification for illustration purpose, since the other specification generates similar predictions.

### B.1 Degenerate case when $\hat{\gamma}_i = 0$

When sellers expect that consumers are not sensitive to their value position,  $\hat{\gamma}_i = 0$ , they will have no incentive to send any signal because it is costly and has no influence on sellers' payoffs. There will be no signal in the degenerate equilibrium regardless of consumers' updating process.

### B.2 Pooling equilibrium when $\hat{\gamma}_i > 0$

In a pooling equilibrium when sellers anticipate consumers' sensitivity to their value stance, sellers of both types send the same signal  $d^*$ . As a result, consumers cannot distinguish between the two types even though the signals are observable. Sellers' value positions can only be inferred from the distribution of  $s_j$ . Let  $\mu(d) = \Pr(s_j = -1|d)$  be the belief of consumers that a seller is a low type when the seller sends a signal  $d$ . Proposition 1 characterizes the seller's signal and the consumer's highest acceptable price in a pooling equilibrium.

**Proposition 1:** *A pooling Perfect Bayesian Nash equilibrium (PBE) exists, in which sellers always send the same observable signal  $d^*$  and  $\mu(d^*) = \lambda$ . The consumer  $i$  would accept any  $p \leq \bar{p}$  and the highest acceptable price  $\bar{p} \leq v$  is decreasing in  $\lambda$  when  $\gamma_i > 0$ .*

**Proof for Proposition 1:**  $\bar{p}$  follows directly from  $u_i = 0$ . □

Proposition 1 states that, when consumers cannot distinguish between low type and high type sellers, and if they are sensitive to sellers' value positions, they would only accept prices that are weakly lower than what they would have accepted if neutral so that the seller obtains a smaller

surplus. Note that multiple pooling equilibria exist and can be supported by different equilibrium beliefs,  $\mu(d^*) = \Pr(s_j = -1|d^*) = \lambda$  without further refinements. The scenario where sellers of both types do not send a signal, i.e.  $d^* = 0$ , can be seen as a special case with unobservable signals as in Corollary 1.

**Corollary 1:** *When sellers' signals are unobservable to consumers, sellers do not send any signal,  $d^* = 0$ , and consumers do not update their beliefs  $\mu(d^*) = \lambda$  regardless of  $\gamma_i$ .*

### B.3 Separating equilibrium when $\hat{\gamma}_i > 0$

Let  $d_H$  and  $d_L$  be the equilibrium signals sent by high types and low types, respectively. In a separating equilibrium, high type and low type sellers send different signals so that consumers are perfectly able to distinguish their types from their signals. That is,  $\mu(d_H) = 0$  and  $\mu(d_L) = 1$ . This leads to different maximum willingness-to-pay based on the seller's signal. When observing  $d_H$ , consumers infer that they are dealing with high type sellers who hold proximate value positions and thus are willing to accept any prices that are not higher than  $\bar{p}_H = v$ . Yet, when observing  $d_L$ , consumers infer that they are dealing with low type sellers who do not reflect their values and thus are only willing to accept any prices that are not higher than  $\bar{p}_L = u(v, -\gamma_i) \leq v$ . Proposition 2 characterizes sellers' signals and consumers' highest acceptable prices in a separating equilibrium.

**Proposition 2:** *A separating Perfect Bayesian Nash equilibrium (PBE) exists, in which there are enough profits from market exchange,  $u(v, -\gamma_i) \geq c$ , low type sellers do not send the signal,  $d_L = 0$ , and high type sellers send the signal,  $d_H \in [\underline{d}_H, \bar{d}_H]$ , where  $c(\underline{d}_H, s_L) = v - u(v, -\gamma_i) = c(\bar{d}_H, s_H)$ . The consumer's maximum willingness-to-pay is  $\bar{p}_L \leq v$  when observing a signal of  $d_L$ , and  $\bar{p}_H = v$  when observing a signal of  $d_H$ .*

**Proof for Proposition 2:**  $d_L = 0$  because  $c(0, s_L) < c(d', s_L)$  for any  $d' > 0$ .  $d_H$  is permissible as long as the following two incentive compatibility constraints are fulfilled:

- $v - c(d_H, s_H) > u(v, -\gamma_i) - c(0, s_H)$
- $v - c(d_H, s_L) < u(v, -\gamma_i) - c(0, s_L)$

That is,  $c(d_H, s_H) < v - u(v, -\gamma_i) < c(d_H, s_L)$ . Recall that  $c(d, s_L) > c(d, s_H)$  for all  $d > 0$  and  $c_d(d, s_j) > 0$ .

Therefore, any  $d_H \in [\underline{d}_H, \overline{d}_H]$  can be supported as an equilibrium where the lower bound  $\underline{d}_H$  is such that  $c(\underline{d}_H, s_L) = v - u(v, -\gamma_i)$  and the upper bound  $\overline{d}_H$  is such that  $c(\overline{d}_H, s_H) = v - u(v, -\gamma_i)$ .

Any off-equilibrium beliefs should be specified such that sellers have no incentive to deviate to other  $d \notin \{d_L, d_H\}$  without further refinements.  $\square$

Proposition 2 reflects a case in which buyers are willing to forgo potential monetary benefits to avoid trading with a seller whose public actions support a conflicting value position. Once again, multiple equilibria exist and can be supported by off-equilibrium beliefs which provide no incentives for sellers to deviate to other  $d \notin \{d_L, d_H\}$  without further refinements.

Note that hybrid equilibria, i.e., semi-separating equilibria, may also exist, in which one type of sellers stick to their equilibrium signal for sure and the other type of sellers randomize between two different equilibrium signals. For instance, it could be that high type sellers always send high signals and low type sellers randomize between sending high signals and not sending signals at all. We omit the analysis for brevity as it is essentially a combination of two types of equilibria that have been analyzed above thus can be solved similarly.

Corollary 2 presents comparative statics with respect to consumers' sensitivity to sellers' value position and the degree of market engagement. The intuition is that, when sellers anticipate consumers' value sensitivity, high type sellers are more likely to send costly signals to distinguish themselves when doing so generates larger benefits. The benefits could come from the intensive margin when consumers are more sensitive, or from the extensive margin when the degree of market engagement is greater.

**Corollary 2:** *In a separating equilibrium, the lower and upper bounds of the equilibrium high signal,  $\underline{d}_H$  and  $\overline{d}_H$ , are greater if value-driven consumers are more sensitive to sellers' value positions (i.e., higher  $\gamma_i$ ). When there is no profit from the market exchange (i.e., the cost of operating in the market,  $c$ , is too high such that  $u(v, -\gamma_i) < c$ ), the separating equilibrium breaks down because all sellers anticipate no benefits from exchange and therefore send no signals.*



## Appendix C Additional Analysis for Study 1

### C.1 Sellers' Private Attitudes towards China

Figure C1: Private Attitudes towards China: Market vs. Non-Market

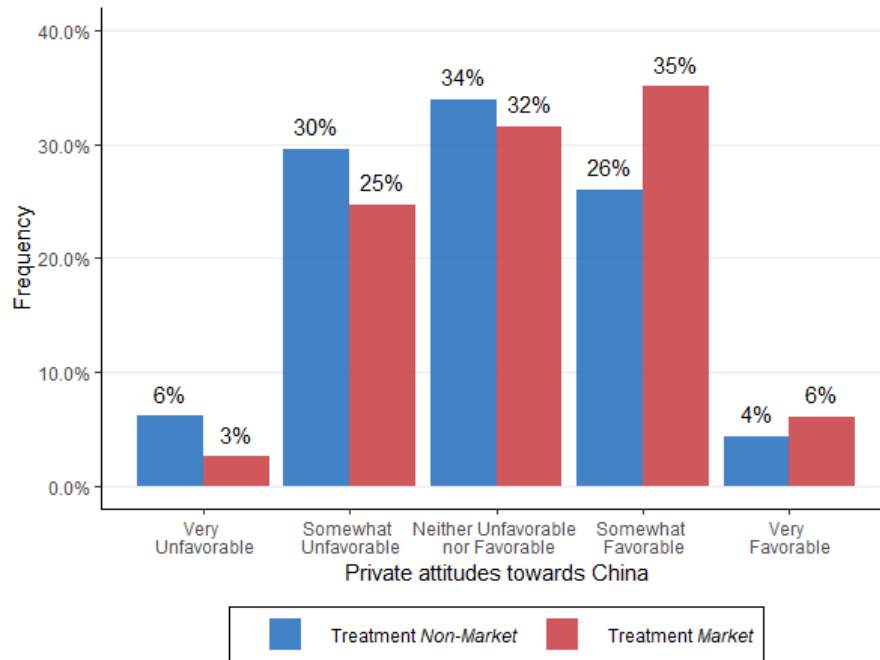
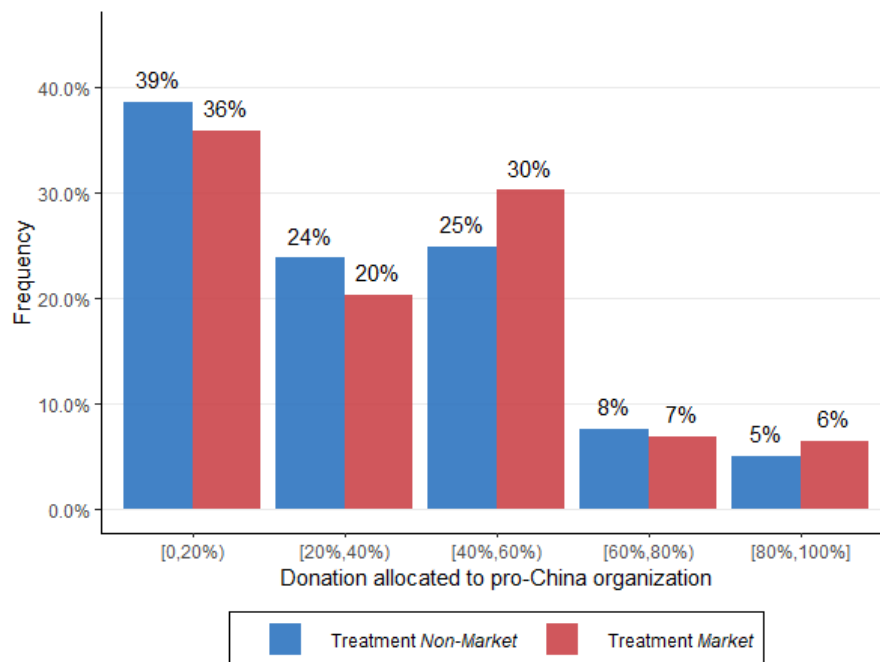


Figure C2: Donation Allocated to Confucius Institute: Non-Market vs. Market



## C.2 Sellers' Pricing Behavior

Sellers' pricing decision as a function of their expressed views are reported in Table C1. Other covariates included in the regressions are belief measures discussed in Section 3.1.2. and 3.1.3: the belief about the median views expressed by UK participants in the non-market condition (*Base belief about other sellers*); a binary variable of sophistication indicating whether the participant anticipates that the median view in the market condition will be closer to agreement than the median view in the non-market condition (*Sophistication about other sellers*); the perceived percentage benefits of changing views from "strongly disagree" to "strongly agree" (*Perceived gain from changing beliefs*); and a binary variable indicating whether the participant thinks that Chinese consumers' negative reactions towards someone who holds disagreement with the statement are not voluntary, i.e., mostly motivated by official positions (*Belief that Chinese reaction not voluntary*).

In all specifications, there is no evidence that sellers on average ask higher prices if they express more agreement to the statement. There is a positive correlation between *Base belief about other sellers*, the belief about the median agreement expressed by UK participants in the non-market condition, and the asked price ( $p < 0.01$ ).

**Table C1: Sellers' Asked Prices**

VARIABLES	(1) price	(2) price	(3) price	(4) price
Seller's agreement with Human Rights Statement	0.102 (0.0720)	0.0754 (0.0784)	0.0751 (0.0801)	0.0515 (0.0856)
Base belief about other sellers		0.238*** (0.0892)	0.238*** (0.0889)	0.250*** (0.0822)
Sophistication about other sellers		0.0972 (0.296)	0.0960 (0.299)	0.259 (0.293)
Perceived gain from changing beliefs		-0.000122 (0.00242)	-9.03e-05 (0.00243)	0.00108 (0.00249)
Belief that Chinese reaction not voluntary			-0.0282 (0.239)	-0.0302 (0.226)
Belief of understanding Chinese people			0.00874 (0.161)	-0.0882 (0.156)
Constant	5.584*** (0.116)	5.630*** (0.150)	5.639*** (0.265)	3.961*** (0.660)
Observations	231	231	231	231
R-squared	0.009	0.041	0.041	0.133
Control	NO	NO	NO	YES

*Notes:* Robust standard errors are reported in parentheses. Sellers' expressed agreement with the human rights statement is measured using a 7-point scale, from -3 "strongly disagree" to 3 "strongly agree". *Base belief about other sellers:* the belief about the median views expressed by UK participants in the non-market condition; *Sophistication about other sellers:* a binary variable of sophistication indicating whether the participant anticipates that the median view in the market condition will be closer to agreement than the median view in the non-market condition; *Perceived gain from changing beliefs:* the perceived percentage benefits of changing views from "strongly disagree" to "strongly agree"; *Belief that Chinese reaction not voluntary:* a binary variable indicating whether the participant thinks that Chinese consumers' negative reactions towards someone who holds disagreement with the statement are not voluntary, i.e., mostly motivated by official positions; *Belief of understanding Chinese people:* the extent to which subjects think they understand ordinary Chinese people, from 0 "not at all" to 4 "a great deal". Control variables include frequency of interacting with Chinese people in the past year, gender, age, education, a self-reported political scale from 0 (left) to 100 (right), and a variable indicating the extent to which the participant has been following news on Hong Kong security laws. Female participants asked higher prices than male participants at the  $p < 0.01$  level. More senior participants asked higher prices than younger participants at the  $p < 0.01$  level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

## Appendix D Additional Analysis for Study 2

### D.1 Description of Organizations and Organizational Preference

Here we list all the 16 organizations and brief descriptions of their objectives, which we displayed to experimental subjects.<sup>37</sup> These descriptions were also included in the experimental instructions:

***Caritas:*** *To share the mission of the Catholic Church, serve the poor, promote justice and restore dignity throughout the world.*

***Christian Democratic People's Party (CVP):*** *To promote the cohesion of communities and stand for the social market economy, which balances concerns for economic liberalism and social justice.*

***Cruelty Free International:*** *To end cruel and old-fashioned animal experiments worldwide by exposing the reality of life for animals in laboratories and embracing progressive policy.*

***Family First:*** *To promote values of strong families and traditional marriage as the foundation of a strong and enduring society, and address concerns about declines in standards and responsibility.*

***Fur Europe:*** *To adhere to the values of openness, transparency and reliability, and work for a sustainable economic, social and environmental development of the fur sector in Europe.*

***Global Warming Policy Foundation:*** *To restore balance to the debate on climate change and challenge many costly policies currently being advocated by governments to mitigate anthropogenic global warming.*

***Green Party (GPS):*** *To promote an environmentally friendly and fair economy, liberal fundamental rights, peace and social responsibility in Switzerland and globally.*

***Greenpeace Fund:*** *To bring about the extraordinary change necessary to realize a greener, more peaceful future, and to expose global environmental problems and promote change.*

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<sup>37</sup> We found out that some of the “controversial” organizations modified their slogans or rebranded completely after our experiment. For instance, Fur Europe re-branded themselves to "Sustainable Fur", See here for an archive: <https://uia.org/s/or/en/1122280540>

***International Alliance of Women:*** To promote women's human rights around the world, focusing particularly on empowerment of women and more broadly on gender equality.

***Social Democratic Party (SP):*** To support more progressive social democratic policies, reject economic liberalization, implement human rights, and prevent discrimination.

***Swiss Muslim Society:*** To provide religious facilities to the local Urdu speaking community and all other Muslims from various origins living in Switzerland.

***Swiss People's Party (SVP):*** To promote disconnection to the EU, reduction of immigration, fight against criminals and asylum abuses, low taxes and less government regulation.

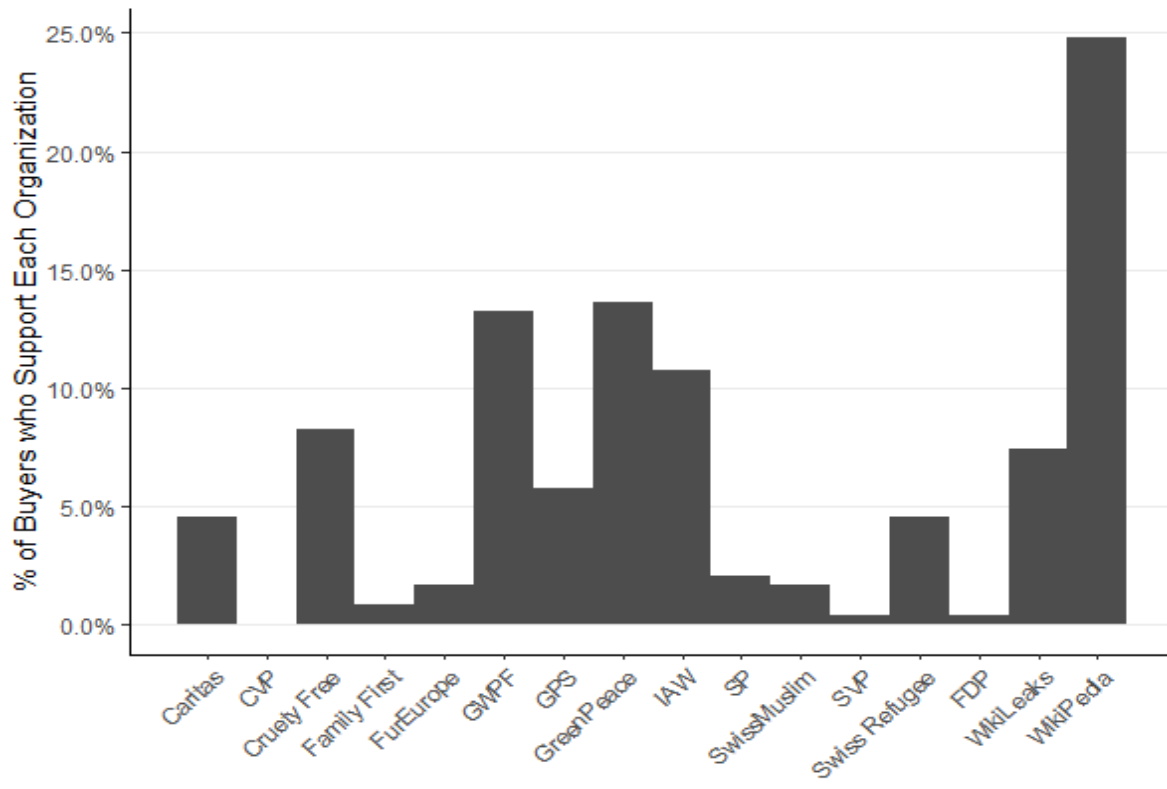
***Swiss Refugee Council:*** To ensure that asylum seekers and refugees obtain a fair procedure and are given equal opportunities to take part in Switzerland economically, socially and culturally.

***The Liberals (FDP):*** To represent a liberal and reformist economic and social policy and stand for self-responsibility, competition and healthy public finances.

***WikiLeaks:*** To bring important news leaks, persecuted documents or otherwise restricted official materials to the public and to resist all censorship attempts.

***Wikipedia:*** To empower a global volunteer community to collect and develop the world's knowledge and to make it available to everyone for free.

**Figure D1: Buyers' Organizational Preference**



## D.2 Consumers' Value Preferences in Non-Market Condition

**Table D1: Buyers' Willingness-to-Pay in Non-Market Condition**

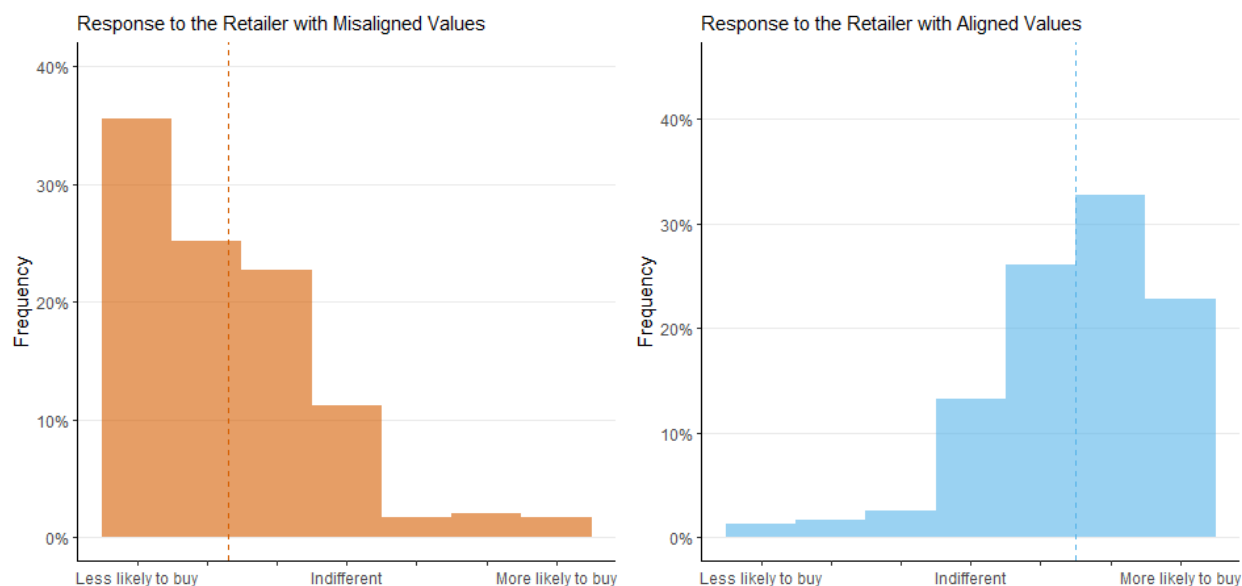
VARIABLES	(1) WTP	(2) WTP	(3) WTP
Donation	0.987*** (0.221)	0.825*** (0.221)	0.825*** (0.221)
Matched condition	-1.918 (1.380)	-2.124 (1.379)	-1.651 (1.441)
Donation × Matched condition	0.476* (0.268)	0.516** (0.255)	0.516** (0.255)
Reflect Value		-2.242 (1.999)	-2.008 (2.035)
Donation × Reflect Value		0.440* (0.249)	0.440* (0.249)
Constant	27.46*** (1.184)	28.28*** (1.141)	26.94*** (2.351)
Observations	7,686	7,686	7,686
R-squared	0.030	0.031	0.048
Controls	NO	NO	YES

*Notes:* Clustered bootstrap standard errors are reported in parentheses. The calculation is based on 1000 simulations where the clustering is at the session-level. The sample includes WTPs in all periods in non-market conditions by 183 buyers from both Matched and Random treatments. “Matched condition” is a binary indicator for the corresponding condition. “Reflect Value” is a binary variable indicating that buyers agree with the statement that sellers’ donation behaviors reflect their values. Control variables include gender, self-reported political orientation from 0 (left) to 100 (right), a binary variable indicating whether the consumer’s own average donation to all 16 organizations at the end of the experiment is above the median, a binary variable indicating whether the list of organizations includes disliked ones, and a binary variable indicating whether the buyer thought his or her willingness-to-pay decisions during the experiment were influenced by sellers’ donation decisions. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### D.3 Validation of Survey-Based Questions

The questionnaire in the end of the experiment includes several additional items to test whether the measured value preferences in the experiment can predict self-reported real life behaviors. We first include two survey-based questions similar to the questions used in our mTurk survey in order to provide behavioral validations of these questions.

**Figure D2: Distribution of Consumers' Self-reported Sensitivity**



*Notes:* The left panel shows the empirical distribution of buyer's self-reported responses to the seller with misaligned values. The right panel shows the empirical distribution of buyer's self-reported responses to the seller with aligned values. Dotted lines refer to the calculated mean responses.

Specifically, we ask each subject to what extent they are more or less likely to purchase from a firm that supports a social cause that they value or disagree with, as opposed to other firms, on a scale from -3 to 3. The two survey-based items can be easily integrated into survey studies if they are behaviorally validated. Figure D2 summarizes the empirical distribution of buyers' self-reported value concerns. We find that consumers on average have a stronger reaction when sellers support misaligned values than aligned values (two-sided rank-sum test  $p < 0.01$ ; Kolmogorov–Smirnov test  $p < 0.01$ ). That is, the degree to which consumers are less likely to buy from sellers who support misaligned values is stronger than the degree to which they are more likely to buy from sellers who support aligned values. This replicates the asymmetry we found in the survey



study in Figure 1 and Appendix A. It is also consistent with our interpretation of buyers' lower willingness-to-pay in the Matched or Random treatments, compared to in Control treatment. It seems more likely that consumers are punishing sellers who donate less instead of rewarding those who donate more.

Based on the self-reported value concerns captured by the two survey questions, we construct two binary measure of value sensitivity. *MoreSensitivetoMisalignedValue* is a binary variable indicating whether the self-reported response to the retailer with misaligned values are above the median response (less likely to buy) provided by all participants; whereas *MoreSensitivetoAlignedValue* is a binary variable indicating whether the self-reported response to the retailer with aligned values are above the median response (more likely to buy) provided by all participants.

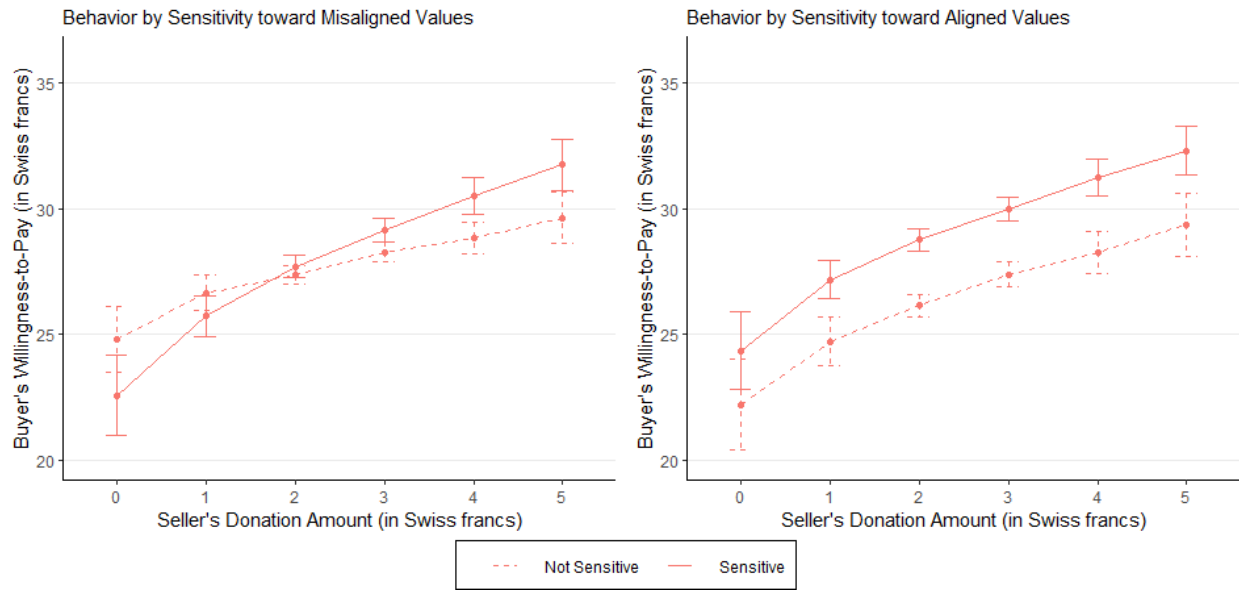
Figure D3 show that both of buyers' self-reported measures can meaningfully predict their willingness-to-pay in the experiment. On the left figure, those who are more sensitive to the retailer with misaligned values according to the survey measure are more responsive in their WTPs to the seller's donation in the experiment. On the right figure, those who are more sensitive to the retailer with aligned values according to the survey measure report unconditionally higher WTPs in the experiment. These relationships are formalized in Column (1) and (2) in Table D2 using regressions.

Recall that we ask in the questionnaire if each subject has participated boycott or demonstrations concerning climate change in their daily life. We also ask their habits of using the ride-sharing service Uber, and ask Uber users if they are going to change their behaviors given the news of Uber ex-CEO mishandling scandals of sexual harassment.<sup>38</sup> Table D2 show that subjects' behavior in the experiment—the responsiveness of their WTPs on sellers' donations—is correlated with these self-reported daily behavior in a meaningful way.

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<sup>38</sup> See: <https://www.nytimes.com/2017/06/21/technology/uber-ceo-travis-kalanick.html>

**Figure D3: WTP conditional on Sensitivity in Matched Treatment**



*Notes:* The left panel shows how consumers condition their WTPs on sellers' donation amount based on their sensitivity to whether sellers have misaligned values (*MoreSensitiveM*). The right panel shows this relationship based on consumers' sensitivity to whether sellers have aligned values (*MoreSensitiveA*).

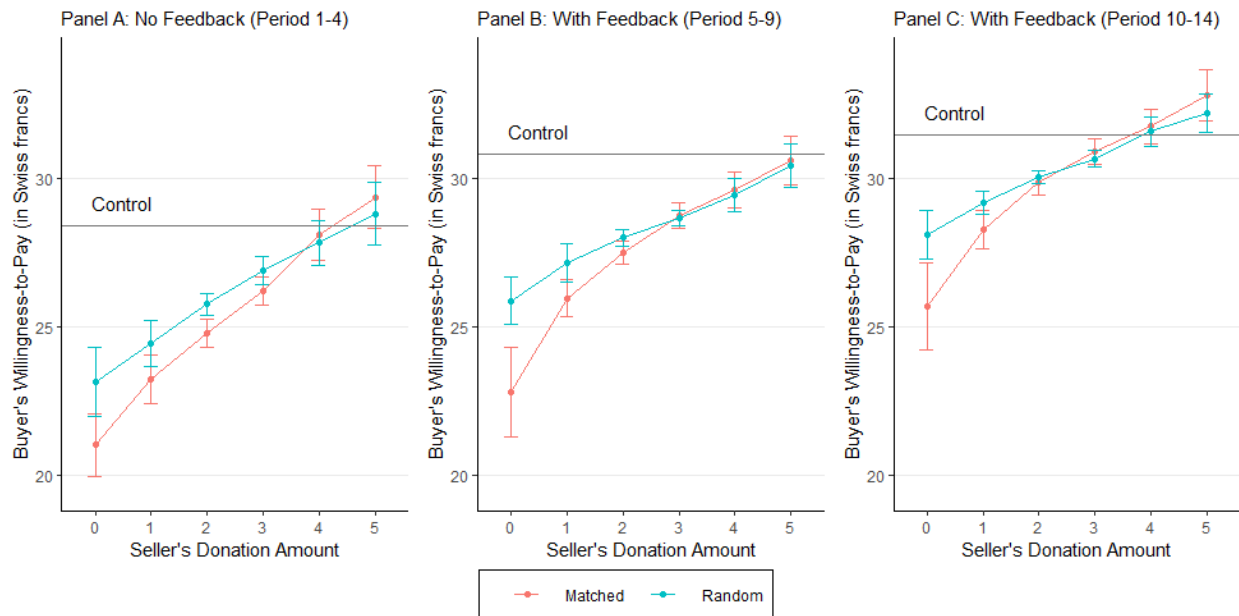
**Table D2: Correlation between Value Preferences and Daily Behavior**

VARIABLES	(1) WTP	(2) WTP	(3) WTP	(4) WTP	(5) WTP
Donation	1.342*** (0.243)	0.895*** (0.166)	1.178*** (0.134)	0.992*** (0.245)	1.322*** (0.180)
MoreSensitivetoAlignedValue	1.965 (2.172)				
Donation× MoreSensitivetoAlignedValue	0.161 (0.315)				
MoreSensitivetoMisalignedValue		-2.708 (2.814)			
Donation× MoreSensitivetoMisalignedValue		0.832*** (0.287)			
Boycott			-2.284** (1.001)		
Donation×Boycott			0.949*** (0.131)		
UberAttitude				6.501* (3.723)	
Donation×UberAttitude				-1.228*** (0.463)	
ClimateStrike					-1.958* (1.097)
Donation× ClimateStrike					0.451*** (0.173)
Constant	21.82*** (1.798)	24.65*** (1.450)	23.52*** (1.250)	27.56*** (1.929)	23.38*** (1.485)
Observations	3,822	3,822	3,822	2,184	3,822
R-squared	0.070	0.060	0.062	0.086	0.057
Control	NO	NO	NO	NO	NO

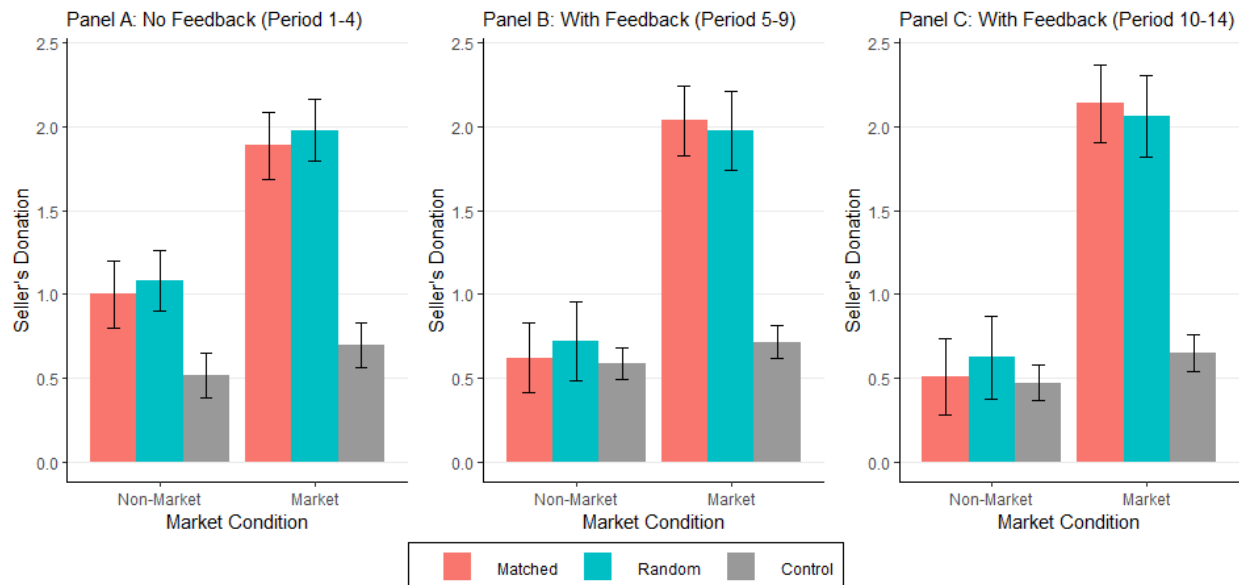
*Notes:* Clustered bootstrap standard errors are reported in parentheses. The calculation is based on 1000 simulations where the clustering is at the session-level. Control variables include gender, a self-reported political scale from 0 (left) to 100 (right), a binary variable indicating whether the list of organizations includes disliked ones, and a binary variable indicating whether the willingness-to-pay decisions were influenced by sellers' donation decisions. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## D.4 Feedback, Learning and Dynamics

**Figure D4: Buyers' Willingness-to-Pay in Market Condition over Time**



**Figure D5: Sellers' Donations over Time**



## D.5 Sellers' Pricing Behavior

**Table D3: Sellers Pricing Strategy in the Market Condition**

VARIABLES	(1) <i>Matched</i> price	(2) <i>Random</i> price	(3) <i>Control</i> price	(4) <i>Pooled</i> price	(5) <i>Pooled</i> price
Donation	5.749*** (0.636)	3.439*** (0.703)	-2.851 (1.881)	-2.851 (2.931)	-2.665 (2.919)
Matched				-17.91*** (4.089)	-17.21*** (4.347)
Matched×Donation				8.600*** (3.016)	8.593*** (3.036)
Random				-12.77*** (4.431)	-11.87*** (4.319)
Random×Donation				6.290** (3.057)	6.281** (3.038)
Constant	102.7*** (2.550)	107.8*** (2.471)	120.6*** (2.807)	120.6*** (3.040)	115.1*** (3.905)
Observations	637	644	413	1,694	1,694
R-squared	0.123	0.046	0.019	0.070	0.084
Control	NO	NO	NO	NO	YES

*Notes:* Clustered bootstrap standard errors are reported in parentheses. The calculation is based on 1000 simulations where the clustering is at the session-level. Control variables include gender, a self-reported political scale from 0 to 100, two binary variables indicating whether the list of organizations includes disliked ones and liked ones, and a binary variable indicating whether the seller believes that their donation decisions influenced buyers' willingness-to-pay decisions. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

To further pin down sellers' strategic motives, we analyze the pricing patters that sellers adopted as a function of their donations in the market condition.<sup>39</sup> The coefficients of donation in both Matched and Random treatments are different from the coefficient of donation in Control treatment (two-sided z-test  $p < 0.01$ ).

<sup>39</sup> Recall that sellers do not offer prices below their costs. Thus, their pricing patterns in non-market condition become irrelevant.

## Appendix E    Screenshots of UK Survey for Study 1

Welcome to our study!

This study is conducted by a group of academic researchers from the University of Zurich. This research is not funded by any external agencies or institutions.

By completing this survey, you are contributing to producing knowledge. There are no “right” or “wrong” answers to these questions and it is most helpful to us if you provide whatever response you believe is most appropriate.

This survey takes around **5 minutes** to complete. For completing the survey, you will be paid **1 Pound**. In addition, you may be able to receive a **bonus payment** depending on some of your choices. It is very important that, once you have started, you complete the survey until the end.

*All your answers will be anonymized and stored confidentially.*

Participation is voluntary. If you choose not to participate, please click “I do NOT want to participate” at the bottom of this page.

I do NOT want to participate

I want to participate



### **Market Treatment:**

In the study, you will interact in a **market activity** with a randomly selected Chinese individual that we recruit separately from mainland China. These individuals are recruited from a popular online platform in China, *and are generally similar to a large part of the mainstream population in mainland China.*

In the market activity, you will have the opportunity **to sell** to this individual a virtual product that is worth **10 Pounds**. You will make a sales offer by setting a **price**, which the Chinese individual can either accept or reject.

Before the market activity, you will first evaluate one statement. **Your response to the statement as well as the content of the statement will be disclosed, in Chinese, to the Chinese individual who is trading with you.** The disclosure will be completely anonymized. The Chinese individual seeing your response will have no way of knowing anything about your identity, other than that you are a UK resident. However, the Chinese individual will see your response before deciding whether or not to accept your sales offer in the market activity.

In particular, the Chinese individual will do the following:

1. The Chinese individual will see your response to the statement.
2. Based on your response, the Chinese individual will decide whether he or she is willing to trade with you in the market activity, or forgo the market activity altogether.
3. If the Chinese individual agrees to participate in the market activity, he or she will decide on the maximum amount he or she is willing to pay (from 0 to 10 pounds) to buy the virtual product from you.

### **Market Treatment:**

The above choices made by the Chinese individual will determine whether or not you are able to sell the virtual product at the price you offer. **Note that the Chinese individual will make these decisions after seeing your response to the statement, but before knowing your price offer.**

Your price offer will be accepted only if this Chinese individual is willing to trade with you and submits a maximum willingness-to-pay that is **greater than or equal** to the price that you offer.

- **If the offer is accepted, you will sell the product to the Chinese individual and will receive an amount equal to the price you set.** You will receive this amount as an additional payment within 72 hours. The Chinese individual will receive the amount of 10 Pounds minus the price that you set, converted into Chinese RMB according to the official exchange rate.
- **If the offer is not accepted by the Chinese individual, neither you nor the Chinese individual will receive any additional payment.**





### **Market Treatment:**

To make sure you understand the instructions, please answer the following questions. For each question, please enter only a number.

You can proceed only if you answer all the following questions correctly.

In case you are unsure about some of the answers, you may go back to the previous page to review the instructions using *the back button at the bottom of the page*.

Suppose you set a price offer of 5 Pounds, the Chinese individual reports his or her maximum Willingness-to-Pay as 8 Pounds, how much (in Pounds) will you get as an additional payment?

Suppose you set a price offer of 5 Pounds, the Chinese individual reports his or her maximum Willingness-to-Pay as 2 Pounds, how much (in Pounds) will you get as an additional payment?

Suppose you set a price offer of 5 Pounds, the Chinese individual refuses to buy the virtual product from you, how much (in Pounds) will you get as an additional payment?



## Market Treatment:

*Recall that your response to the statement as well as the content of the statement will be disclosed, in Chinese, to a randomly selected Chinese individual that we recruit separately from mainland China. This individual will then decide whether he or she is willing to buy a virtual product from you after seeing your response.*

To what extent do you agree with the following statement?

	strongly disagree	disagree	somewhat disagree	neither disagree nor agree	somewhat agree	agree	strongly agree
"Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens' perspective and by its own standards."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please make a sales offer by setting a price for the virtual product. Your price should be **between 0.00 and 10.00 Pounds**:

If the offer is accepted, you will sell the product to the Chinese individual and will receive an additional payment equal to the price you set. You will receive this additional payment within 72 hours. The Chinese individual will receive the amount of 10 Pounds minus the price that you set, converted into Chinese RMB according to the official exchange rate.

If the offer is not accepted by the Chinese individual, neither you nor the Chinese individual will receive any additional payment.



### **Non-Market Treatment:**

In the study, you will interact with a randomly selected Chinese individual that we recruit separately from mainland China. These individuals are recruited from a popular online platform in China, and *are generally similar to a large part of the mainstream population in mainland China.*

Specifically, you will evaluate one statement. **Your response to the statement as well as the content of the statement will be disclosed, in Chinese, to this randomly selected Chinese individual.** The disclosure will be completely anonymized. The Chinese individual seeing your responses will have no way of knowing anything about your identity, other than that you are a UK resident.

This Chinese individual will see your response, **but will not have any way of responding to it.**



## **Non-Market Treatment:**

*Recall that your response to the statement as well as the content of the statement will be disclosed, in Chinese, to a randomly selected Chinese individual that we recruit separately from mainland China. This individual will have no way of responding after seeing your response.*

To what extent do you agree with the following statement?

	strongly disagree	disagree	somewhat disagree	neither disagree nor agree	somewhat agree	agree	strongly agree
"Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens' perspective and by its own standards."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



In the remaining part of the study, you will be asked about your own general perceptions and some demographics.

Note that **none of the remaining responses will be disclosed to anyone.**



**Market Treatment:**

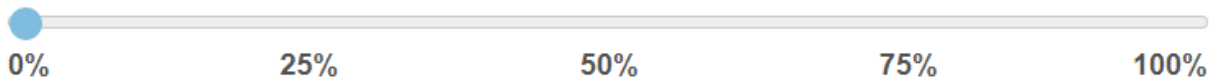
Suppose someone in your role in this experiment **strongly agrees** with the statement,

*“Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”*

**What percentage of Chinese individuals that we recruit from mainland China will be unwilling to exchange with this person at all?**

*Please guess a percentage between 0% and 100%. If your guess is within 5% of the actual number, you will earn an additional bonus of **0.25 Pounds** within 72 hours.*

My guess of the percentage who are unwilling to exchange is



**Market Treatment:**

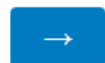
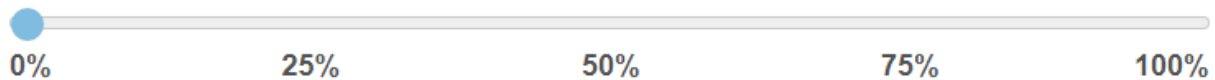
Suppose someone in your role in this experiment **strongly disagrees** with the statement,

*“Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”*

**What percentage of Chinese individuals that we recruit from mainland China will be unwilling to exchange with this person at all?**

*Please guess a percentage between 0% and 100%. If your guess is within 5% of the actual number, you will earn an additional bonus of **0.25 Pounds** within 72 hours.*

My guess of the percentage who are unwilling to exchange is



Suppose that a randomly selected Chinese individual **reacts negatively to someone who disagrees** with the statement you saw earlier.

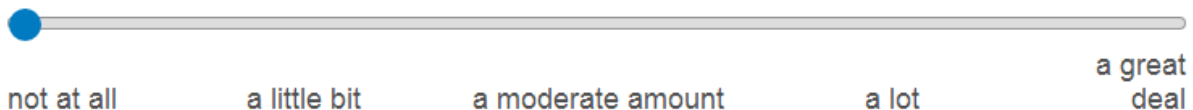
To what extent do you think that this individual's reaction is motivated by his or her own personal view, as opposed to simply echoing the official position of the Chinese government?

I think their reaction is motivated by



How much do you think you understand ordinary Chinese people?

I understand them



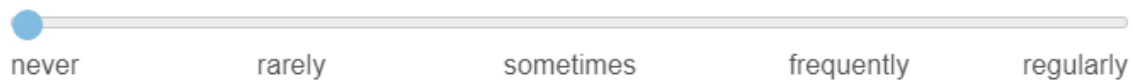
What is your general attitude towards China?

My general attitude towards China is



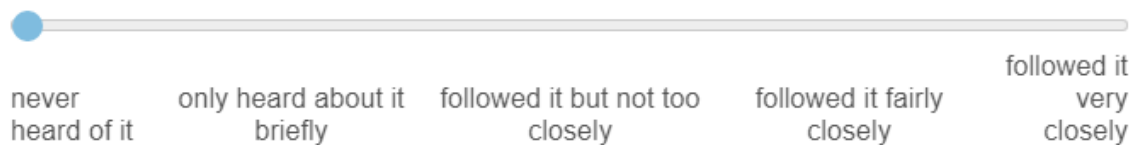
In the past year, how often have you typically interacted with Chinese people?

In the past year, I have interacted with Chinese people



How closely, if at all, have you been following recent news about the Hong Kong national security law?

On the recent news about the Hong Kong national security law, I have





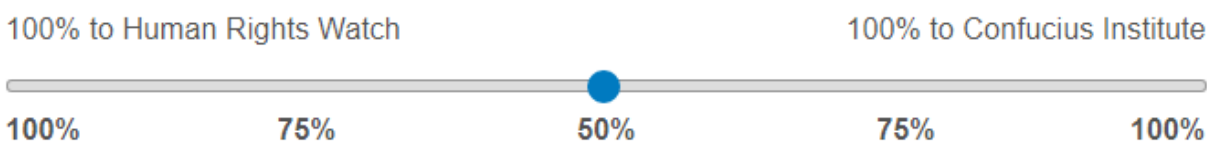
We will donate **1 Pound on your behalf** to the two organizations below after the study. Please select how much of this 1 Pound you would like to donate to each of the organizations.

Organization 1 - **Human Rights Watch**: an international non-governmental organization that conducts research and advocacy on human rights. In particular, it monitors and reports on abusive activities in authoritarian states like China, and pressures governments to denounce oppression and respect human rights.

Organization 2 - **Confucius Institute**: a state-funded public educational organization that aims to promote Chinese language and culture. In particular, it supports local Chinese teaching internationally and facilitates cultural exchanges between China and other nations.

How would you allocate the 1-Euro donation we are going to make? (Note: *this donation will not be disclosed to anyone.*)

I would like to allocate to Human Rights Watch: 50 pence;  
The rest will go to Confucius Institute: 50 pence.



To what extent would you consider a donation made to **Human Rights Watch** as an action in support of or against the Chinese government?

I think a donation made to Human Rights Watch is an action



To what extent would you consider a donation made to **Confucius Institute** as an action in support of or against the Chinese government?

I think a donation made to Confucius Institutes is an action



## Market Treatment:

Recall that you evaluated the following statement,

*“Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”*

You then had a market interaction with a random Chinese individual, in which your response to the statement is disclosed.

In this study, many other UK participants will perform **exactly the same task that you completed**.

Suppose we sort all the responses in an ascending order, from “strongly disagree” to “strongly agree.” **Please guess, what is the median response of people in this group to the statement?** (The median is the response that lies in the middle of all the sorted responses.) If your guess is correct, you will earn an additional bonus of **0.25 Pounds** within 72 hours.

My guess of the **median response** of people in this group to the statement is

strongly disagree	disagree	somewhat disagree	neither disagree nor agree	somewhat agree	agree	strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------

There exists **another group** of UK participants in this study, who also evaluated the same statement. Their response to the statement is also disclosed to a random Chinese individual, who had **no way of responding** to it because there was **no market interaction**.

Suppose we also sort all the responses in an ascending order, from “strongly disagree” to “strongly agree.” **Please guess, what is the median response of people in this group with no market interaction to the statement?** (The median is the response that lies in the middle of all the sorted responses.) If your guess is correct, you will earn another additional bonus of **0.25 Pounds** within 72 hours.

My guess of the **median response** of people with **no market interaction** to the statement is

strongly disagree	disagree	somewhat disagree	neither disagree nor agree	somewhat agree	agree	strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------



### **Non-Market Treatment:**

Recall that you evaluated the following statement,

*“Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”*

You were then randomly matched with a Chinese individual, to whom your response to the statement is disclosed.

In this study, many other UK participants will perform **exactly the same task that you completed.**

Suppose we sort all the responses in an ascending order, from “strongly disagree” to “strongly agree.” **Please guess, what is the median response of people in this group to the statement?** (The median is the response that lies in the middle of all the sorted responses.) If your guess is correct, you will earn an additional bonus of **0.25 Pounds** within 72 hours.

My guess of the **median response** of people in this group to the statement is

strongly disagree	disagree	somewhat disagree	neither disagree nor agree	somewhat agree	agree	strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------



What is your gender identity?

Male

Female

Other/Non-binary

How old are you (in years)?

Where were you born? (Please specify the country in the text)

UK

Non-UK

What is your highest level of education you have completed?

High school

Some college

Bachelor's degree

Postgraduate

Apprenticeships



### **Market Treatment:**

Thanks for your participation!

We will disclose your response to the statement to a randomly selected Chinese individual after the study. This person will then determine whether or not your offer for the virtual product will be accepted.

If this person accepts your offer, you will receive **an additional payment that is equal to your price offer within 72 hours**. Otherwise, you will not receive a bonus payment for the market transaction.

We will donate **50 pence to Human Rights Watch** and **50 pence to Confucius Institute** on your behalf.

We will then calculate the additional payment based on your guesses about the reaction of Chinese individuals and other participants in this study. You will receive **a bonus payment if at least one of your guesses is correct within 72 hours**.

You will receive the payment of **1 Pound** for completing this survey via Prolific for now.

To proceed with your payment, please copy this link and paste it to a separate tab in your browser, and then submit your response:

<https://app.prolific.co/submissions/complete?cc=3F8F4979>

You may explain to us why you answered the survey in the way you did, or simply leave any comments to us here (optional):



**Non-Market Treatment:**

Thanks for your participation!

We will disclose your response to the statement to a randomly selected Chinese individual after the study.

We will donate **59 pence to Human Rights Watch** and **41 pence to Confucius Institute** on your behalf.

We will calculate the additional payment based on your guess about other participants in this study. You will receive **a bonus payment if your guess is correct within 72 hours.**

You will receive the payment of **1 Pound** for completing this survey via Prolific for now.

To proceed with your payment, please copy this link and paste it to a separate tab in your browser, and then submit your response:

<https://app.prolific.co/submissions/complete?cc=3F8F4979>

You may explain to us why you answered the survey in the way you did, or simply leave any comments to us here (optional):



## Appendix F Translated CN Survey for Study 1

### Decision-making survey for market transactions with a UK resident

Hello! This study is conducted by a group of academic researchers from a university in Europe. We appreciate your participation. This survey takes around 5 minutes to complete. Please be assured that all your answers will be anonymized, stored confidentially, and used for academic purpose only.

There are no “right” or “wrong” answers to these questions, and we simply want to know your actual view. We kindly ask that you read the instructions on each page carefully. Please make sure you fully understand each step before moving on to the next page. Depending on some of your choices, you may be able to receive a bonus payment in addition to the base payment for completing the survey. We welcome and look forward to your participation!

In this survey, you will interact with a real UK resident that we recruited separately in a market activity.

This UK resident will sell you a virtual gift card worth 90 RMB by setting a price that you could decide whether to accept later. Before that, the UK resident tells us his view about one statement that reads as the following:

**“Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”**

Before dealing with this UK resident, we want to know if this person's views will influence your willingness to deal with him. On the next page, you will see seven responses from different UK residents. These responses to the statement include Strongly Agree / Agree / Somewhat Agree / Neutral / Somewhat Disagree / Disagree / Strongly Disagree. For each case, please tell us



whether you would be willing to buy that 90 RMB gift card from the UK resident, and if so, the maximum amount you would be willing to pay for the gift card.

After we have collected all of your answers, we will randomly select one of your choices and match it with a random UK resident that we have recruited. Based on your answers, his response to the statement and his sales price offer, the outcome of your interaction will be determined. Specifically, conditional on the UK resident's response:

- If your maximum willingness-to-pay is greater than or equal to his sales price, then there will be a transaction. You will receive 90 RMB minus his price as an additional payment and the UK resident will receive the amount of money that equals to the price as an additional payment. You will receive this bonus payment from us within 72 hours.
- If your maximum willingness-to-pay is smaller than his sales price, or if you refuse to deal with him at all, then there will be no transaction. Neither of you will receive any additional payment. You will only receive the base payment for completing the survey.

To illustrate, consider the following example (which does not represent the actual situation). Suppose that you are not willing to trade with someone who strongly agrees with this statement; for someone who does not strongly agree with this statement, you are willing to pay up to 70 RMB to purchase this gift card.

- Suppose you are matched with a UK resident who asks for 40 RMB and strongly agrees with the statement. Because you are not willing to deal with him in this case, no transaction will take place and neither of you will get any additional payment.
- Suppose you are matched with a UK resident who asks for 40 RMB and strongly disagrees with this statement. Because in this case you are willing to trade and your maximum willingness-to-pay is greater than his sales price, there will be a transaction. You will receive an additional payment of 50 ( $= 90 - 40$ ) RMB, and this UK resident will receive an additional payment of 40 RMB.

Please make sure that you understand all of the above before moving forward to the next page! A proper understanding of the above will help you make the best choice!

Here is a response of a UK resident: he **strongly agrees** that “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_RMB.

Here is a response of another UK resident: he **agrees** that “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_RMB.

Here is a response of another UK resident: he **somewhat agrees** that “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_RMB.

Here is a response of another UK resident: he is **neutral** about “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_ RMB.

Here is a response of another UK resident: he **somewhat disagrees** that “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_ RMB.

Here is a response of another UK resident: he **disagrees** that “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_ RMB.

Here is a response of another UK resident: he **strongly disagrees** that “Foreign countries should stop meddling in the internal affairs of China in the name of human rights, when other countries also confront similar issues. Whether China respects the rights of its own people can only be evaluated from its own citizens’ perspective and by its own standards.”

Would you be willing to deal with him, and if yes, what is the maximum amount you are willing to pay him for that 90 RMB gift card?

- I am not willing to deal with him at all.

- I am willing to deal with him and I am willing to pay up to \_\_\_\_ RMB.

- On questions on the previous page about whether you are willing to deal with the UK resident in different cases, could you please explain to us why did you answer that way? (open form)

- Do you have a passport or the permit for travelling to and from Hong Kong, Macau and Taiwan? (y/n)

- Have you been to any other foreign countries? If so, where? (multiple choices)

- Demographics: gender, age, education, geographical location (automatically recorded)

This is the end of the survey. Thank you for your participation!

We will randomly select one of your choices on whether to trade in different cases, and match it with a UK resident that we have recruited.

If you receive any additional payment according to your answers in the survey, you will receive the bonus payment within 72 hours.

## Appendix G Instruction for Study 2(Matched)

### General Instructions

*Welcome to this study. In order to make good decisions during the study, it is important that you understand the procedures. Therefore, please read the following instructions carefully while I also read them aloud.*

**Communication with other participants is strictly forbidden during the entire study.** Please do not use your mobile phones or other devices. Violation of these rules will lead to exclusion from the study and loss of all the associated payments. If you have any questions, please raise your hand and an experimenter will come to answer your questions.

You will receive **10 Swiss francs** as a participation fee. During the experiment your total earnings will be determined by your decisions and the decisions of other participants.

**Your identity** and the identities of other participants **will not be revealed** during the experiment. This means that no other participant will be able to link any of the precise choices you make to your identity, nor will you be able to identify the specific choices that any other participants make.

During the study your earnings will first be calculated in points. The points you earn during the study will be converted to Swiss francs, and paid to you privately together with the participation fee **in cash** at the end of the study. The following conversion rate applies:

**10 points = 2 Swiss francs**

The study will consist of two parts. In Part 1, participants will be informed of their roles and some of them will have the opportunity to select a non-profit organization that they would like to receive donations. In Part 2, each of you will perform several periods of an activity in which you will be randomly matched with another subject in each period. At the end of the study, you will each make a few individual choices and complete a brief questionnaire.

We will explain the exact procedures of the study on the next pages. Every participant receives the same instructions. The study should last approximately 75 minutes in total.

Now please turn to the next page to start with detailed instructions for Part 1.

## Part 1 - Roles and Selection of Donation Recipients

There are two roles for participants in this study: **Sellers** and **Buyers**. Roles are fixed for the duration of the experiment.

Whether you are a Seller or a Buyer was pre-determined during the recruitment stage, before the start of the experiment. Specifically, we sent two separate recruiting messages: one to participants who would be in the role of Sellers and one to participants who would be in the role of Buyers. Which type of message you received was determined at random.

Buyers were recruited with a message informing them that they would be able to **select a non-profit organization** to which donations will be made. Buyers were informed of the specific 16 organizations from which they would be able to choose. They were encouraged to participate in the experiment if they were interested in supporting **one of these organizations**.

This list of organizations and brief descriptions of their objectives is as follows:

***Caritas:** To share the mission of the Catholic Church, serve the poor, promote justice and restore dignity throughout the world.*

***Christian Democratic People's Party (CVP):** To promote the cohesion of communities and stand for the social market economy, which balances concerns for economic liberalism and social justice.*

***Cruelty Free International:** To end cruel and old-fashioned animal experiments worldwide by exposing the reality of life for animals in laboratories and embracing progressive policy.*

***Family First:** To promote values of strong families and traditional marriage as the foundation of a strong and enduring society, and address concerns about declines in standards and responsibility.*

***Fur Europe:** To adhere to the values of openness, transparency and reliability, and work for a sustainable economic, social and environmental development of the fur sector in Europe.*

**Global Warming Policy Foundation:** *To restore balance to the debate on climate change and challenge many costly policies currently being advocated by governments to mitigate anthropogenic global warming.*

**Green Party (GPS):** *To promote an environmentally friendly and fair economy, liberal fundamental rights, peace and social responsibility in Switzerland and globally.*

**Greenpeace Fund:** *To bring about the extraordinary change necessary to realize a greener, more peaceful future, and to expose global environmental problems and promote change.*

**International Alliance of Women:** *To promote women's human rights around the world, focusing particularly on empowerment of women and more broadly on gender equality.*

**Social Democratic Party (SP):** *To support more progressive social democratic policies, reject economic liberalization, implement human rights, and prevent discrimination.*

**Swiss Muslim Society:** *To provide religious facilities to the local Urdu speaking community and all other Muslims from various origins living in Switzerland.*

**Swiss People's Party (SVP):** *To promote disconnection to the EU, reduction of immigration, fight against criminals and asylum abuses, low taxes and less government regulation.*

**Swiss Refugee Council:** *To ensure that asylum seekers and refugees obtain a fair procedure and are given equal opportunities to take part in Switzerland economically, socially and culturally.*

**The Liberals (FDP):** *To represent a liberal and reformist economic and social policy and stand for self-responsibility, competition and healthy public finances.*

**WikiLeaks:** *To bring important news leaks, persecuted documents or otherwise restricted official materials to the public and to resist all censorship attempts.*

**Wikipedia:** *To empower a global volunteer community to collect and develop the world's knowledge and to make it available to everyone for free.*

Sellers were recruited with a standard message that did not inform them about donations or the organizations.

Before starting the experiment, subjects in the role of Buyers will have the opportunity to select one preferred organization from this list. **These choices are for use later, in Part 2, to determine which organizations actually receive donations.** By choosing a specific organization, a Buyer makes it more likely that organization will receive donations during the course of the experiment. Now please enter your seat number and then click the “Continue” button to proceed to a screen that informs you of your role in this experiment.

- If you are a Buyer, you now see a list of the 16 organizations, with a check box next to each one. **Please select one of the 16 organizations which you want to receive donations in this experiment and confirm your choice.**
- If you are a Seller, you do not see the list on your screen. Please wait while Buyers make their choices.

After all Buyers complete their choices, we will continue with the instructions for Part 2.



## Part 2 - Instructions

Part 2 of the experiment consists of **14 periods**. At the beginning of every period, **each Buyer will be randomly matched with a Seller**. The person with whom you will be matched is different in each period, meaning **you will not interact with the same person more than once**.

A period will consist of two stages.

In the first stage of each period, every Seller will have an opportunity to **make a donation** to the non-profit organization **that was selected by the specific Buyer with whom that Seller is matched in that period**.

In the second stage of each period, after the donation decision has been made, the matched Buyer and Seller will perform **a market activity in which the Seller may sell a product to the Buyer**.

We will now describe the decisions in each stage in more detail.

### Stage 1: Seller's Donation Decision

At the beginning of a period, the Seller will have the opportunity to make a **donation from his or her CHF 10 participation fee** to the organization that is **selected by the specific Buyer matched with that Seller** in the current period.

The Seller can choose to donate any amount from CHF 0 to CHF 5 to the Buyer's selected organization.

The amount donated by the Seller will be **multiplied by 3** and then sent to the Buyer's preferred organization. The amount that remains will be paid to the Seller as part of his or her participation fee. *This means, for example, that if the Seller donates CHF 2, then if that period is selected to count, the organization selected by the Buyer will receive CHF 6 and the Seller will keep CHF 8.*

The Seller **will not know** the specific organization selected by the matched Buyer. Each Seller will only know that it is one of the 16 organizations on the list and that his or her donation in that period will go to the organization that was selected by the Buyer with whom that Seller is matched in the current period.

### Stage 2: Market Activity

In the second stage in each period, the Seller and Buyer will interact in a market activity.

At the beginning of the second stage, each Seller and Buyer **receive an endowment of 50 points**. The Buyer and Seller can potentially increase their earnings in a period by exchanging a product that is worth an additional 200 points to the Buyer. Engaging in exchange means that the Buyer pays a price to the Seller and, in addition, the Seller incurs a cost for producing and selling the product.

#### *The Market Activity for Sellers*

Before the beginning of the period, and before the Seller makes the donation decision, the computer will determine a potential cost,  $c$ , that the Seller will face for exchanging a product in that period. **With a probability equal to  $1/2$  the cost in a period is 0 points ( $c = 0$ ) and with probability equal to  $1/2$  the cost is 200 points ( $c = 200$ ).** If the Seller sells the product to the Buyer in that period, then the Seller will pay this cost; otherwise, the Seller will not pay the cost. The cost faced by the Seller will be shown to both the Buyer and Seller at the beginning of the period, before the Seller makes the donation decision for that period.

After observing the cost and making a donation decision, the Seller will **make a sales offer by setting a price,  $p$** . This will be the price that the Buyer will have to pay to buy the product if the offer is accepted. Any integer value from 0 up to and including 200 points can be selected as the product's price. **This price, however, cannot be lower than the cost determined by the computer in each period.**

#### *The Market Activity for Buyers*

In every period, the Buyer will state **the highest price he or she is willing to pay for a product** in that period, conditional on each possible donation amount. The Buyer can select any integer value from 0 up to and including 200 points. This value will determine whether an exchange takes place at the price offered by the Seller in that period.

To do so, **the Buyer will state this maximum willingness-to-pay (WTP) value for each possible donation made by the matched Seller in that period**. Specifically, the Buyer will enter these willingness-to-pay values on the following screen:

**The product is worth an additional 200 points to you, the Buyer.**  
 (Any integer value from 0 up to and including 200 can be selected as your WTP.)

**What is the highest price (in points) you are willing to pay for the product?**

If the matched Seller donated **CHF 0** to your preferred organization, your maximum **WTP** is:

If the matched Seller donated **CHF 1** to your preferred organization, your maximum **WTP** is:

If the matched Seller donated **CHF 2** to your preferred organization, your maximum **WTP** is:

If the matched Seller donated **CHF 3** to your preferred organization, your maximum **WTP** is:

If the matched Seller donated **CHF 4** to your preferred organization, your maximum **WTP** is:

If the matched Seller donated **CHF 5** to your preferred organization, your maximum **WTP** is:

Out of these six willingness-to-pay values, **only one value will count to determine the outcome and payments in that period.** The one that counts will be **the willingness-to-pay (WTP) value that corresponds to the actual donation made by the Seller.** *So, for example, if the Seller donated CHF 2 to the Buyer's selected organization, then only the third willingness-to-pay value on the screen, corresponding to a donation of CHF 2, will count in that period.*

Note that the Buyer will specify his or her willingness-to-pay values **after** the Seller's donation in that period is already determined in the period's first stage.

### *Market Outcomes*

The relevant willingness-to-pay value specified by the Buyer will then be compared to the price offered by the Seller to determine the outcome of the market activity. Note that **only the willingness-to-pay value that corresponds to the actual donation amount selected by the Seller will be used.**

There are two possible cases

1. **The Buyer's willingness-to-pay is smaller than the price** offered by the Seller ( $WTP < p$ ). In this case, the Buyer is not willing to buy the product at the Seller's offered price and no exchange occurs.  
*For example, if the Seller offers a price of 145 ( $p$ ) and the Buyer's relevant willingness-to-pay value is 110 ( $WTP$ ), then the Buyer is not willing to pay the Seller's offered price ( $WTP < p$ ) and no exchange occurs.*

2. **The Buyer's willingness-to-pay is greater than or equal to the price** offered by the Seller ( $WTP \geq p$ ). In this case, the Buyer buys the product and pays the price offered by the Seller.

*For example, if the Seller offers a price of 115 ( $p$ ) and the Buyer's relevant willingness-to-pay value is 140 ( $WTP$ ), then the Buyer is willing to pay the Seller's offered price ( $WTP \geq p$ ) and buys the product at a price of 115.*

Note that Buyers do not pay their willingness-to-pay, since the actual price they pay is determined only by the price offer made by the Seller. This means that the Buyer's willingness-to-pay only affects whether or not the Buyer buys the product at the Seller's offered price. Therefore, **Buyers should always report their true value for buying the product from a Seller**, as they do not obtain a lower price by reporting a different value.

The payment in points of each participant in the market activity in a period will be determined as follows:

**Each Seller's payment:**

- If the Buyer buys the product:  $50 + \text{Seller's offered price} - \text{production cost}$
- If the Buyer does not buy the product: 50

**Each Buyer's payment:**

- If the Buyer buys the product:  $50 + 200 - \text{Seller's offered price}$
- If the Buyer does not buy the product: 50

Feedback

There will be 14 periods in Part 2. Periods 1 through 4 will differ slightly from Periods 5 through 14 in the feedback that you will receive at the end of each period.

- In Periods 1 through 4, Buyers and Sellers will not receive any feedback on their earnings or other outcomes from those periods. If one of these periods is selected to count at the end of the experiment, Buyers and Sellers will receive their earnings from this period.
- In Periods 5 through 14, Buyers and Sellers will receive information at the end of each period. Specifically, each Buyer will observe the actual donation made by the matched Seller. Both the Buyer and the Seller will find out whether the product was exchanged in that period and the price at which it was exchanged. The Buyer and Seller will also learn their earnings in the period.

After all participants complete their decisions in a period and receive the above information, each of them will be **re-matched with a new counterpart with whom he or she has not interacted previously** and the next period will begin. That is, you will never interact with the same participant more than once. Your choices also have no way of influencing the behavior of anyone you will meet again later in the experiment.

### Payment

At the end of the study, the computer will **randomly select one of the 14 periods for payment**. This will be the **only period** that determines how much each participant earns in the experiment. Because you do not know which period the computer will randomly select, you should consider your decisions in each period very carefully since any period could be the one selected to determine your earnings.

*Do you have any questions? If yes, please raise your hand. We will come to you at your workplace. Otherwise, please click the “Continue” button and answer the control questions on your screen. If you have any questions, please raise your hand and wait for someone to come to you.*

*Once everyone has completed all of the control questions correctly, Part 2, the market activity, will begin.*

## **Appendix H    Post-Survey in Study 2**

At the end of Study 2, we elicit each subject's willingness to donate to each of the 16 organizations using an incentivized dictator game described as follows.

### **Dictator Game Instruction**

Before proceeding to the post questionnaire, you receive an additional CHF 5 for completing a few individual choices.

Specifically, you may additionally choose to personally donate up to CHF 5 to one of the organizations on the list. The amount that remains will be paid to you.

For each of the organizations, please indicate how much (between 0 and 5) you are willing to donate to that organization, assuming that any amount you donate gets tripled.

The computer will randomly pick one of your 16 decisions and will implement your choice in this decision. Each decision is equally likely to be selected.

Please indicate the amount you would like to donate to each of the following organizations

(You can refer to the paper instructions for brief descriptions of their objectives.)

{the list of 16 organizations}

### **Post-Survey**

Suppose a firm expresses a public support for and/or makes a financial commitment to a social cause that you value. To what extent are you more or less likely to purchase from that firm as opposed to other firms, holding everything else equal?

- From Less likely (-3) to More likely (3)

Suppose a firm expresses a public support for and/or makes a financial commitment to a social cause that you disagree with. To what extent are you more or less likely to purchase from that firm as opposed to other firms, holding everything else equal?

- From Less likely (-3) to More likely (3)

Where would you put yourself on the left-right political scale?

- From Left (0) to Right (100)

Have you ever participated in boycott activities?

- Yes or No

Did you participate in any demonstrations concerning climate change this year (e.g.Klimastreik)?

- None of them; The one on Jan. 18; The one on Feb.2; The one on Feb. 20; The one on Mar. 15; The one on Apr. 6; The one on May. 24

Uber Founder and (ex-CEO) Travis Kalanick was accused of sexual harassment last year - would this news make you more or less likely to use Uber?

- NA: not a Uber user anyway; Less likely to use Uber; Not much of an impact; More likely to use Uber

### **Questions only for sellers**

Did you believe that your donation decision would influence the buyers' willingness-to-pay (WTP)?

- Yes or No

Were there any organization on the list that you particularly dislike?

- Yes or No

Were there any organization on the list that you particularly like?

- Yes or No

### **Questions only for buyers**

To what extent would you agree that the donation amount made by the Seller who is matched with you reflects your values?

- From Strongly disagree (-3) to Strongly agree (3)

Were there any organization on the list that you particularly dislike?

- Yes or No

Did the seller's donation decision influence the highest price you are willing to pay in the market activity?

- Yes or No