Public Discourse and Socially Responsible Market Behavior[*]

Björn Bartling   Vanessa Valero   Roberto A. Weber   Lan Yao

July 31, 2022

We investigate the causal impact of public discourse on socially responsible market behavior. Across three laboratory experiments that vary several characteristics of the discourse and the nature of participation, public discourse generally increases market social responsibility. Discourse positively impacts market behavior by influencing market participants' expectations that others support socially responsible exchange; however, allowing participants to opt out of discourse reduces such positive expectations and impacts. Our findings suggest that campaigns encouraging discussion of appropriate market behavior can have powerful impacts for addressing inefficiencies due to market failures, but that policies encouraging broad public participation may be critical.

JEL Classification: C92, D62, D83, M14

Keywords: Public discourse, market failure, externalities, social responsibility, experiment, communication

1. Introduction

The production, exchange and consumption of goods often negatively impacts the environment or other parties uninvolved in market transactions. Standard prescriptions for such problems are frequently infeasible due to the complexity of determining optimal policy and political inertia. As an alternative remedy, market actors may exhibit social responsibility, voluntarily internalizing externalities generated by their market activities (Bénabou and Tirole, 2010). Public discourse campaigns often encourage market actors to act socially responsibly and internalize harmful impacts. For example, the Fridays for Future movement aims to stimulate worldwide discussions on the negative impacts of carbon emissions to motivate consumers, firms and policymakers to change their behavior.[1] Responsible conduct in pursuit of climate change mitigation is also widely discussed in the media and in policy forums. For instance, the World Economic Forum organizes discussions of how firms and consumers can take actions to mitigate climate change.[2] Other large public campaigns advocate voluntary avoidance of single-use plastics, pesticides and fur.

Whether such discourse impacts market behavior and societal outcomes remains an open question. Identifying the relationship between public discourse campaigns and socially responsible behavior faces the challenge that prominent campaigns are endogenous to the preferences and motivations of members in a society, making a causal interpretation of a campaign's impact on market behavior and outcomes challenging.[3] Moreover, while several studies in marketing demonstrate that nudges and primes can influence individuals' socially and environmentally responsible behavior (Goldstein, et al., 2008; White, Habib and Hardisty, 2019), it is unclear the extent to which such interventions are likely to arise endogenously through public discourse—where countervailing arguments may also arise—or whether they exert impacts on behavior and outcomes in competitive markets. Hence, a better understanding of whether public discourse can affect socially responsible market behavior and improve societal outcomes remains necessary.

We report three laboratory studies, involving 2,457 participants and 187 independent markets, that explore the causal effect of public discourse on socially responsible market behavior.

---

[1] See https://fridaysforfuture.org/ (accessed on July 30, 2022)

[2] See https://www.weforum.org/agenda/archive/climate-change (accessed on July 30, 2022).

[3] For example, in a non-market context, Levy and Mattsson (2022) study the impact of the MeToo movement on sex crime reporting, relying on the assumption that the strength of the movement's adoption in a society is independent of other factors that may impact the reporting of sex crimes. Madestam et al. (2013) show that rainfall-induced variation in participation in political rallies impacts subsequent voting behavior and policy outcomes. For a review of research demonstrating correlational impacts of social movements on political outcomes, see Amenta et al (2010).

Our studies involve stylized product markets in which participants in the roles of *buyers* and *sellers* trade goods that vary in social impact. Market exchange potentially negatively impacts either other passive subjects (Study 1) or donations to a charity that fights climate change and poverty (Studies 2 and 3). In all experiments, sellers and buyers can exchange either a *harmful* product that costs less to produce but creates external harm or a *responsible* product with a higher production cost but no external harm. The two products are otherwise identical. We measure market social responsibility by the extent to which market actors exchange the responsible product type.

Our experimental manipulations focus on the impact of public discourse—an opportunity for people involved with the market to engage in free-form discussion. In all cases, this takes the form of a one-time 8-minute electronic chat forum. We study how the opportunity to engage in this form of communication influences the prevalence of socially responsible exchange. While existing experimental research—reviewed in the next section—documents that communication generally increases pro-social behavior and efficiency, this earlier work focuses on cases where agreements benefit all communicating parties and yield Pareto improvements. An important contribution of our work is to investigate whether communication can yield similar benefits when agreements involve market actors *lowering their own earnings* to produce external benefits *for other parties*, an important feature of real-world discussions about mitigating externalities.

In Study 1, in which the external impact falls on passive participants in the role of *third parties*, our treatments vary who participates in discourse and what the participants know about their roles in the market at the point in time at which they communicate. Our first condition, *Veil*, represents an idealized form of discourse in which everyone—buyers, sellers and third parties—can participate and in which all participants are unaware of their roles in the market when engaging in discourse, though they all learn their roles prior to the market activity. Given that all participants are equally likely *ex ante* to be third parties, concerns based on self-interest, efficiency and fairness coincide and we view this condition as a starting point in which discourse might be most likely to produce "responsibilizing narratives" that advocate for socially responsible market behavior (Bénabou et al., 2020). Discourse behind such a Rawlsian "veil of ignorance" thus represents an admittedly unrealistic potential upper bound for the effects of discourse.

Our second condition, *No Veil*, implements one change by informing participants of their role in the market prior to engaging in discourse. This represents a more realistic case and, correspondingly, we expect more prevalent self-interested perspectives in discourse to result in

lower subsequent levels of socially responsible behavior, consistent with other research showing that knowledge of one's personal interests facilitates egoistic judgments and justifications for self-interested behavior (Babcock et al., 1995; Saccardo and Serra-Garcia, 2021).

Our third condition, *Exclusive*, restricts discourse to only buyers and sellers, who are aware of their roles as in *No Veil*, omitting those harmed by the externality. Discussions of socially responsible market behavior often occur between members of high-income countries, including firms and consumers whose conduct creates the externalities, with less participation from those bearing the external costs. This condition allows us to investigate the importance of participation in discourse by those impacted by negative externalities. Excluding such perspectives may decrease empathy toward third parties (Andreoni and Rao, 2011) and allow discourse to more easily yield "absolving narratives," or self-serving justifications for trading the more harmful and less costly product type (Bénabou et al., 2020). Therefore, we expect the elimination of those harmed by the externality from public discourse to further reduce social responsibility.

Finally, to investigate whether public discourse serves as a *complement* to or *substitute* for existing concerns for social impact, we study the impact of discourse in two populations where earlier work found different levels of baseline market social responsibility. In Bartling et al. (2015), market experiments conducted in Switzerland yielded substantially higher market shares for the responsible product than identical experiments in China. Public discourse might be complementary to baseline social concern if a high number of concerned individuals is needed to promote arguments that convince others to reduce negative external impacts. In contrast, public discourse might be a substitute for baseline social concern if pre-existing high levels of such concern, as in Switzerland, leave less room to further strengthen socially responsible motivations and behaviors.

The results of our first study are striking. First, public discourse in the *Veil* condition has very large, positive and sustained effects on market social responsibility. In Switzerland, discourse essentially yields almost universal exchange of the responsible product, compared to a market share of about 50 percent in a *Baseline* condition absent discourse. Surprisingly, eliminating the veil of ignorance and excluding third parties from discourse has little impact on the market share of the responsible product. Thus, we find that public discourse regarding appropriate market behavior can have profound and persistent positive impacts on market social responsibility.

Turning to the interaction between pre-existing levels of social concern and public discourse, we first closely replicate the observation of a lower baseline market share for the

responsible product in China than in Switzerland. Introducing public discourse has similar positive effects on market social responsibility in the two populations. For example, the market share of the responsible product increases by roughly 50 percentage points from the *Baseline* to the *Veil* condition in both populations. Our findings thus suggest that the effects of public discourse are largely independent of baseline levels of concern for social responsibility.

Study 2 changes two important features. First, we investigate whether discourse has similarly positive effects when the impacts of market exchange are not borne by other similar participants in the laboratory. The laboratory is a context in which high levels of social proximity and norms of equality may make arguments about showing concern for impacts on other laboratory participants quite strong. Outside the laboratory, however, negative externalities typically involve more complex and distant impacts. We thus change the target of the externality to a charity that works to mitigate climate change and economic inequality by employing farmers in low-income countries to plant trees. Aside from being a more complex and distant influence, using a charity of this kind also creates the possibility that laboratory participants can more easily come up with arguments during discourse for why the charity may be ineffective or undeserving (see Exley, 2020). Despite the substantial design change, our first two conditions in Study 2, *Baseline* and *Discourse*, essentially replicate the results from respective conditions in Study 1.

The second change in Study 2 deals with the timing of discourse. In our other conditions, discourse occurs at the beginning of the experiment, before participants engage in market exchange. However, many situations of interest, like climate change, involve changing pre-existing harmful behaviors. Therefore, it is plausible that increasing social responsibility may be more difficult in such contexts, where habits or historical practices may create greater inertia and a desire to advance arguments supporting the status quo. In our *Experienced* condition discourse occurs only after several rounds of market activity. We find that the positive impact of discourse is similar, irrespective of whether discourse occurs before or after experiencing the market activity.

Study 3 addresses several remaining open questions. First, in Studies 1 and 2 we explicitly describe discourse as an opportunity to discuss "appropriate" market conduct, reflecting real-world forums and campaigns that are often focused on topics of ethics and responsibility. But this potentially creates an unintended demand effect from the experimenter regarding what impact the discourse opportunity should have. Study 3 eliminates such guidance and simply asks participants to "discuss the upcoming market activity." We find that this does not limit the effectiveness of

discourse, as this neutrally framed *Discourse (Neutral)* condition again yields substantially higher market social responsibility than a *Baseline* condition with no discourse opportunity.

Second, we investigate the impacts of participation in discourse. In many natural settings involving public discourse campaigns, individuals can choose to opt out of participation or can participate as passive observers of discourse generated by others. We thus conduct an *Optional* condition, in which participants can opt out of participating in discourse and those who participate can leave at any time, and a *Passive* condition, in which market actors simply observe discourse generated by others. Relative to *Discourse (Neutral)*, the *Passive* condition produces slightly weaker positive impacts on market social responsibility. Most strikingly, the *Optional* condition yields no increase relative to the *Baseline*, despite high levels of participation.

Study 3 also includes questionnaire-based measures of values and expectations to help shed light on what, exactly, changes through discourse. We find that public discourse strongly impacts the belief that others value and will act on concerns for responsibility. This impact on beliefs is weaker in *Optional* and, more generally, these impacts closely mirror the treatment effects on the share of socially responsible products. We interpret this as suggestive evidence that discourse impacts behavior partly by changing expectations about others' values and behavior.

This interpretation is further supported by exploratory analysis of the content of discourse, using independent ratings of the transcripts in all our studies. We focus on the frequency of arguments in support of exchanging the socially responsible product and of exchanging the harmful product, using these to construct a measure of the degree to which participants in discourse advocate for or against responsible behavior. Our analysis shows that participants' exposure to *others* advocating for responsible conduct influences both their expectations of how others will behave and their own market conduct. Observing others providing arguments in support of social responsibility, in contrast with arguments to the contrary, leads to more responsible market conduct. We also document that the single condition in which discourse yields no aggregate positive impact—the *Optional* condition in Study 3—is the one in which participants receive the lowest exposure to others advocating for social responsibility.

Viewed jointly, our results suggest that public discourse can have powerful effects on socially responsible market behavior. When enough market participants advocate for socially responsible conduct, such public support can influence others' expectations and subsequent market behavior. However, sufficient participation—particularly by people who generate

"responsibilizing" arguments—is critical for its success. Our findings mirror anecdotal evidence from successful campaigns that change market behavior by creating awareness of negative impacts and convincing market actors that others support acting responsibly.[4]

The remainder of the paper is as follows. Section 2 reviews related work. Sections 3 to 5 present, respectively, the experimental designs and results of Studies 1, 2 and 3. Section 6 presents a combined analysis of the content of discourse from all three studies. Section 7 concludes.

2. Related Literature

Our research closely relates to a growing body of work that investigates the conditions under which individuals choose to *voluntarily* internalize the external impacts of their market activity (Rode et al., 2008; Bénabou and Tirole, 2010; Dufwenberg et al., 2011, 2022; Bartling et al., 2015, 2019, 2020; Hainmueller et al., 2015; Kirchler et al., 2015; Pigors and Rockenbach, 2016; Irlenbusch and Saxler, 2019; Ockenfels et al., 2020; Sutter et al., 2020; Danz et al., 2022). Much of this research uses laboratory experiments, which have the advantage of allowing tight control of the market environment and the establishment of causal relationships. While questions about external validity are naturally important, preferences for more socially responsible products in the laboratory can predict willingness to pay more for responsible products in real product markets (Engelmann et al., 2018). Our work is novel to this literature, since no earlier papers study the effects of communication, or discourse, on socially responsible market behavior.

Closer to our work, numerous studies demonstrate that communication can be efficiency enhancing in other domains of social behavior, such as in social dilemmas (Dawes et al., 1977; Isaac and Walker, 1988; Ostrom et al., 1992; Bochet et al., 2006), in coordination games (Cooper et al., 1992; Blume and Ortmann, 2007; Brandts and Cooper, 2007; Kriss et al., 2016) and under incomplete contracting (Charness and Dufwenberg, 2006; Kessler and Leider, 2012; Krupka et al., 2017). Relatedly, appeals to act pro-socially can enhance cooperation in public good games (Dal Bo and Dal Bo, 2014; Antonakis et al., 2021). In these papers, providing communication opportunities generally means that individuals act more cooperatively, making communicating parties better off. This suggests that we may similarly observe more efficient outcomes, with fewer

---

[4] For example, the Dutch non-profit Wakker Dier employed a campaign to make consumers aware of poor animal welfare conditions in chicken farming, and then used consumers' heightened concern to create pressure on supermarket chains to voluntarily forgo selling fast-growing "exploded chickens." This approach yielded a universal ban on this type of chicken farming by firms in 2021 (see: https://sustainablefoodtrust.org/news-views/exploded-dutch-chickens-plofkip/, accessed on July 30, 2022).

externality-producing products, with discourse in our market experiments. However, an important distinction is that in our study discourse only improves efficiency and social responsibility if it convinces buyers and sellers *to incur greater personal monetary costs to benefit others* impacted by their behavior. Thus, relative to the above work, our study is unique in investigating whether communication can lead to more pro-social, but personally costly, actions.[5]

To our knowledge, only one other paper experimentally investigates how communication affects decision making in contexts where efficiency involves lower earnings for those who are communicating. Ellman and Pezanis-Christou (2010) study two-person laboratory firms with varying hierarchical structures, where production entails a bad that generates profits for the firm but harms a third party. Their treatments manipulate communication between a manager and a subordinate. Communication has a positive impact on socially responsible behavior, lowering the negative externality, only in a vertical structure in which the manager decides on a production level and the employee decides whether to implement this action or quit,[6] while communication has no impact if decisions are made in a horizontal structure. This finding suggests the need for additional research to test the robustness of the benefits of communication on pro-social concerns toward outsiders. Moreover, the extent to which such beneficial effects of communication also obtain in market contexts is unclear.[7]

A separate line of research studies how communication influences distributional outcomes in dictator or bargaining games. Agranov and Tergiman (2014) study communication in a Baron-Ferejohn bargaining context, where one individual makes a proposal regarding how to divide a fixed pie and a majority of committee members must approve the proposal for it to be implemented. Communication produces proposals closer to the theoretical prediction of minimum-winning coalitions that only reward coalition members, suggesting that communication can be employed to produce more favorable outcomes for a few, at the expense of others with less strategic power. In our experiments, this suggests that discourse may lead to outcomes that advantage the buyers and sellers at the expense of the third parties, contrary to our results.

---

[5] Communication may not produce Pareto improvements in contexts when parties have strategic incentives to manipulate outcomes (see, e.g., Sutter and Strassmair, 2009; Hargreaves-Heap and Zizzo, 2011; Biais, Bisière and Pouget, 2014). Communication may facilitate dishonesty and less concern for external impacts by groups (d'Adda, et al., 2017; Kocher, Schudy and Spantig, 2018), though see Mazar, Amir and Ariely (2008) for evidence that statements priming moral concerns can induce more honest behavior.

[6] However, this treatment effect is only statistically significant at $p=0.066$ in a one-tailed non-parametric test.

[7] Bartling et al. (2015) find that pro-social behavior in market contexts differs from substantively similar non-market conduct, suggesting that findings from non-market contexts might not necessarily translate into market contexts.

In dictator games, the presence and nature of communication can impact one-sided sharing. Allowing recipients to communicate with dictators increases giving; but allowing only dictators to send messages yields less sharing (Bohnet and Frey, 1999; Andreoni and Rao, 2011). In our experiments, this suggests that excluding those impacted by externalities from discourse may decrease social responsibility, perhaps even to levels below those in baseline conditions without discourse. While we find that the positive impact of discourse sometimes decreases when it excludes impacted third parties, socially responsible behavior is more prevalent, relative to the no-discourse baseline, even when impacted third parties are excluded from discourse.

3. Study 1

We implement an experimental product market in which subjects in the roles of sellers and buyers can trade either a low-cost product that generates a negative externality for third parties or a high-cost product that imposes no social harm. Our main interest is the market share of the latter, responsible, product, and how this is affected by providing participants the opportunity to engage in discourse prior to starting market interaction.

3.1 Experimental Design

3.1.1 The Market

A market comprises 16 participants: six sellers, five buyers and five third parties. Roles are randomly assigned and remain fixed throughout the experiment.

The market activity repeats for 24 periods. At the beginning of a period, each subject receives an initial endowment of 100 points. Sellers and buyers can earn additional points from their market transactions. Two product types differ only in their negative impact on the third parties and their production cost. The *responsible* product does not produce a negative externality but costs 10 to produce, while the *harmful* product creates a negative externality of 60 for third parties but costs nothing to produce. Both products have a value of 50 to a buyer.

In each period, sellers simultaneously select product types and prices (between 0 and 50) in a posted-offer market. Once all sellers decide, buyers observe the resulting offers.[8] Buyers enter the market sequentially in an order randomly determined in each period and decide whether to purchase at most one product. Buyers thus observe a menu of up to six product offers, each

---

[8] We eliminate the possibility of cross-period reputation by not showing subjects the identification numbers of other market participants and by randomly ordering the display of product offers in each period.

consisting of a price and a product type. Each seller earns, in case its offered product is sold, the difference between the posted price and the production cost. Each buyer earns, if he or she decides to buy a product, the difference between the product's value of 50 and the price paid.

Third parties are passive. They can neither sell nor buy but can incur losses depending on the types of products exchanged. In every period, third parties and buyers are randomly matched into pairs. If a buyer purchases a harmful product, then the randomly matched third party incurs a loss of 60. If the buyer purchases a responsible product or does not purchase any product, then the randomly matched third party incurs no loss.

3.1.2 Treatments

In our *Baseline* condition there is no discourse. Subjects directly proceed to the market game after learning their roles as sellers, buyers or third parties.

We implement three treatment conditions that include public discourse. These add an 8-minute interval during which subjects can exchange messages via an electronic chat. The chat interface provides guidance for the public discourse by asking subjects to discuss how "socially appropriate" or "socially inappropriate" it is to trade the harmful product.[9] The messages are not restricted, other than proscribing personally identifying, obscene or insulting statements.

Table 1: Overview of Experimental Conditions in Study 1

	Baseline	*Veil*	*No Veil*	*Exclusive*
t=1	–	Public discourse (all subjects)	–	–
t=2	All subjects learn their roles: seller, buyer or third party			
t=3	–	–	Public discourse (all subjects)	Public discourse (excl. third parties)
t=4	Subjects participate in the market game for 24 periods			

Table 1 presents our treatments. In the *Veil* condition, subjects engage in discourse prior to learning their roles as sellers, buyers or third parties. That is, discussion in this condition takes place behind a Rawlsian "veil of ignorance," though subjects learn their roles prior to the start of the market activity. In *No Veil*, subjects learn their roles prior to engaging in discourse. Apart from

---

[9] We added this statement to the chat interface to focus discourse on the topic of interest and to reflect similar targeted focus in real-world discourse campaigns (e.g., at the World Economic Forum). Study 3 addresses concerns that this may produce potential demand effects, by employing more neutral language. Translations of the instructions for the public discourse that were shown on the participants' screens are provided in Appendix F.2.

the timing of information about subjects' roles, *Veil* and *No Veil* are identical.[10] Finally, in the *Exclusive* condition, subjects learn their roles prior to engaging in discourse, as in *No Veil*, but participation in discourse is limited to only sellers and buyers.[11]

3.1.3   Social Norm Elicitation

In all conditions, we elicit social norms after the final market period, using the elicitation method of Krupka and Weber (2013). We elicit participants' ratings of the social appropriateness of trading the harmful product. Subjects can choose from four possible responses: "very socially appropriate," "somewhat socially appropriate," "somewhat socially inappropriate" and "very socially inappropriate," to describe such behavior. Responses are incentivized: each participant earns additional money (CHF 10 in Switzerland or CNY 10 in China) if that subject's response corresponds to the most frequently chosen answer provided by the other subjects in a session.

3.1.4   Procedures

We conducted the study at the University of Zurich and the Shanghai University of Finance and Economics (between October 2015 and March 2017). We collected eight markets per treatment, both in Switzerland and in China, with each market consisting of 16 participants (six sellers, five buyers and five third parties). A total of 1,024 subjects participated in the above four experimental conditions, half of them in Switzerland and half of them in China. We implemented the experiment using z-Tree (Fischbacher, 2007). When entering the lab, subjects received written instructions and had to answer control questions to ensure understanding of the market activity.[12]

Experimental points were converted into money at a rate of 10 points to CHF 2.50 in Switzerland and CNY 4 in China. The conversion rate aimed to match purchasing power across countries. We selected one period at random for payment at the end of a session. Subjects in Switzerland earned about CHF 49, on average, including a show-up fee of CHF 15; in China they earned about CNY 62, including a show-up fee of CNY 15. Sessions lasted about two hours.

---

[10] Subjects can refer to each other during the chat through fixed ID numbers. Messages are preceded by identifiers ranging from 1-16 in *Veil* and by letter-number combinations (e.g., "S1" through "S6" for sellers) that also identify roles in *No Veil*. However, subjects cannot subsequently match messages to individual market behavior.
[11] We also give third parties the possibility to discuss among themselves to engage all subjects during the discourse period, though such discussion cannot directly affect market outcomes. All subjects are aware of this design feature.
[12] We used German and Mandarin instructions based on those used in Switzerland and China for Bartling, et al. (2015). An English version of the instructions for Study 1 is in Appendix F.

3.2 Hypotheses

We assume that individuals care about their earnings in the market and—to different degrees—about the negative externalities generated by their market activity. Such concern can be captured by a representative utility function of the form, $u = \pi(x) - \theta\, s(x)$, where the first term on the right-hand side corresponds to an individual's pecuniary payoff from exchanging product x and the second term represents the potential disutility from exchanging a product that produces social harm, $s(x)$. The term, θ, captures the weight individuals place on the negative externality, with more weight corresponding to greater social responsibility. Bartling, et al. (2015) find that a simple utility function of this type captures behavior in the market experiment well.

Extending this approach to our experiment, let the weight placed on the externality be given by $\theta(\gamma_j, d_t)$. The first argument, $\gamma_j \geq 0$, denotes the pre-existing level of social concern that prevails in a society, with $j = \{\text{Switzerland, China}\}$ in our study. The second argument, d_t, captures how the weight depends on the type of public discourse, with $t = \{\emptyset,\ Veil,\ No\ Veil,\ Exclusive\}$. $\theta(\gamma_j, d_\emptyset)$ thus denotes the weight placed on negative externalities in society j, in the absence of any opportunities for public discourse, as in our *Baseline* condition.

We first consider the impact of *Veil*, where we expect an idealized form of discourse—conducted behind a Rawlsian veil of ignorance—to have the best chance of increasing social responsibility. Placing all participants in the position where they might be harmed by negative externalities is likely to promote arguments favoring efficiency and empathy for third parties. Our first hypothesis thus predicts a positive effect of discourse on social concern, θ, in *Veil*, and thus a higher market share of the responsible product, relative to *Baseline*.

$$\text{H1.1: } \theta(\gamma_j, d_{Veil}) > \theta(\gamma_j, d_\emptyset)$$

Our next hypotheses deal with the impact of discourse on social concern as we add realistic features. First, when buyers and sellers know their roles—as beneficiaries of low-cost production—we expect that they will be more inclined to generate self-serving arguments exculpating exchanging the harmful product and less easily swayed by appeals to social responsibility (Babcock, et al., 1995). This is captured in our hypothesis H1.2.

$$\text{H1.2: } \theta(\gamma_j, d_{Veil}) > \theta(\gamma_j, d_{No\ Veil})$$

Second, we expect that excluding third parties will further diminish discourse's impacts on concern for third parties' welfare (Andreoni and Rao, 2011). This is captured in hypothesis H1.3.

$$\text{H1.3: } \theta\big(\gamma_j, d_{No\ Veil}\big) > \theta\big(\gamma_j, d_{Exclusive}\big)$$

Note that we do not provide hypotheses for comparisons of our *Baseline* condition with either *No Veil* or *Exclusive*, because the results could go either way. Even in *No Veil*, if enough participants care about efficiency or for the welfare of third parties, they may promote socially responsible behavior through discourse and increase the market share of the responsible product. Alternatively, buyers and sellers may instead generate exculpating arguments, potentially reducing social concern relative to the *Baseline*. Moreover, even if concern for social impact is higher in *No Veil* than in *Baseline*, whether concern for social impact remains higher in *Exclusive*, once third parties are excluded from discourse, is not clear *a priori*. While we refrain from stating directional hypotheses, we will study how the market share of the responsible product in *Baseline* compares with those in both *No Veil* and *Exclusive*, as important exploratory questions.

Finally, our comparison of treatment effects in Switzerland and China allows us to investigate how pre-existing levels of social concern interact with public discourse. Following our earlier discussion, baseline levels of social concern and public discourse could be either *substitutes* or *complements*. Bartling et al. (2015) found that market actors in the *Baseline* condition in China exhibit substantially lower concern for mitigating negative externalities than those in Switzerland. We expect to replicate this finding in our *Baseline* treatment, that is, $\theta(\gamma_{Switzerland}, d_\emptyset) > \theta(\gamma_{China}, d_\emptyset)$. If this obtains, we can investigate, as an exploratory question, whether public discourse has differential effects in populations with varying levels of baseline social concern.

3.3 Results

3.3.1 *Public Discourse Behind the Veil of Ignorance*

Figure 1 shows the market shares of the responsible product (our measure of social responsibility), separately for Switzerland and China.[13] Comparing the two leftmost bars—*Baseline* and *Veil*—for each population reveals that social responsibility increases substantially in both countries when market actors learn their roles after engaging in discourse.[14] The market share of the responsible product in Switzerland is about 50 percent in the *Baseline* condition but rises to almost 100 percent

---

[13] We exclude the 2.3 percent of cases in Switzerland and 3.5 percent of cases in China in which buyers made no purchase, thereby imposing no loss on third parties. Including these cases and counting them as socially responsible behavior does not substantively change our results.

[14] Figure A.1 in Appendix A shows that market shares of the responsible product are generally stable across periods. Figure A.2 shows the cumulative distributions of responsible product market shares by treatment in both countries.

in *Veil*. Turning to China, the *Baseline* market share of the responsible product is only 15 percent, much lower than in Switzerland,[15] but the market share almost quadruples to about 60 percent in *Veil*. Wilcoxon rank-sum tests at the market (buyer) level indicate that the difference between *Baseline* and *Veil* is statistically significant in both countries; p=0.001 (p<0.001) for Switzerland and p=0.005 (p<0.001) for China.[16] The data thus support hypothesis H1.1 in both countries.

> **Result 1.1**: *Public discourse behind the veil of ignorance increases socially responsible market behavior.*

Figure 1: Market Shares of the Responsible Product in Study 1
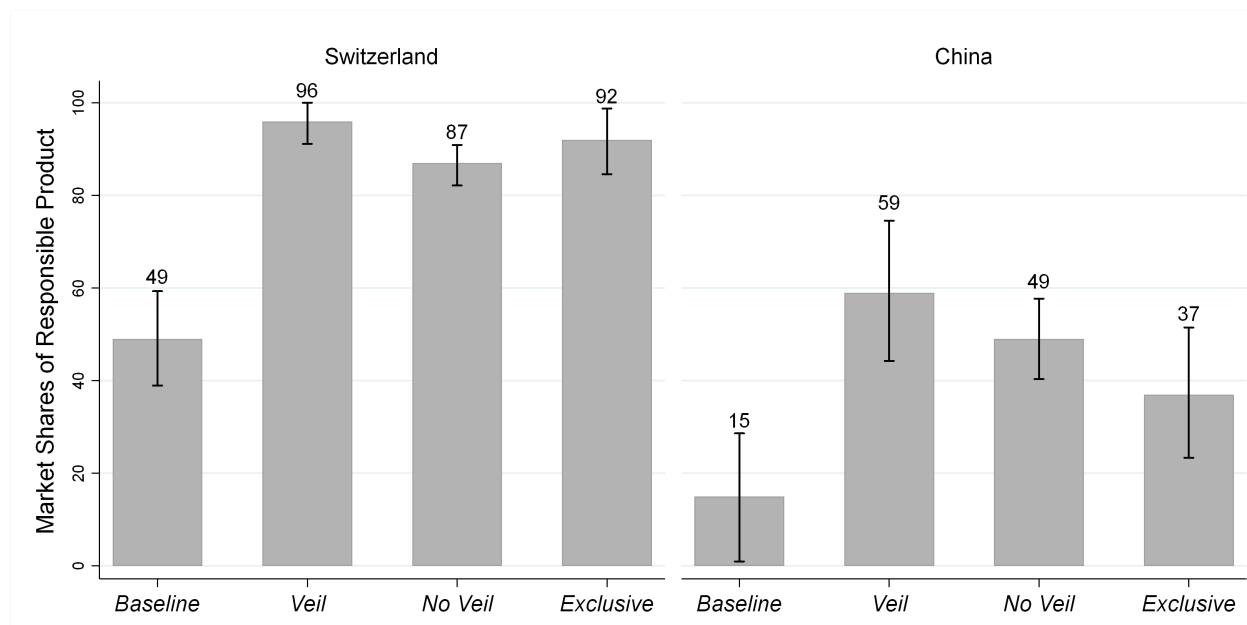
Notes: The figure shows completed transactions, ignoring the small number of cases in which a buyer did not purchase a product. The bars indicate 95-percent confidence intervals, calculated at the market level.

3.3.2   Less Idealistic Forms of Public Discourse

Figure 1 shows that removing the veil of ignorance prior to discourse reduces the market share of the responsible product, from 96 to 87 percent in Switzerland and from 59 to 49 percent in China. Wilcoxon rank-sum tests indicate that the differences between *Veil* and *No Veil* are statistically significant at the market (buyer) level in Switzerland, p=0.014 (p=0.001), but not in China,

---

[15] The *Baseline* condition in this paper is identical to the *Baseline* in Bartling et al. (2015), which also studied the same two populations. The market shares of the responsible product in our *Baseline* conditions closely replicate the market shares in Bartling et al. (2015), both in Switzerland (44 and 48 percent across two studies) and China (16 percent).
[16] Table A.1 in Appendix A provides p-values for all pairwise treatment comparisons. All Wilcoxon rank-sum tests reported in this paper are two-sided.

p=0.248 (p=0.145). Hypothesis 1.2 is thus supported in Switzerland but not in China.

>**Result 1.2**: *The positive impact of public discourse on socially responsible market behavior tends to be slightly weaker when individuals discuss in front of rather than behind the veil of ignorance.*

Our third discourse condition, *Exclusive*, restricts participation in discourse to buyers and sellers. Figure 1 shows that the market share of the responsible product slightly *increases* from *No Veil* to *Exclusive* in Switzerland (from 87 to 92 percent) but decreases in China (from 49 to 37 percent. However, Wilcoxon rank-sum tests at the market (buyer) level indicate that the differences between *No Veil* and *Exclusive* are not consistently statistically significant; p=0.140 (p=0.049) for Switzerland and p=0.293 (p=0.055) for China. Thus, Hypothesis 1.3 is not supported in Switzerland and is directionally, but not statistically, supported in China.

>**Result 1.3**: *Excluding those harmed by externalities from public discourse does not substantially weaken its positive impact on socially responsible market behavior.*

While we refrained from stating hypotheses regarding the impact of discourse in *No Veil* and *Exclusive* relative to the *Baseline*, Wilcoxon rank-sum tests indicate that the market share of the responsible product is significantly higher in *No Veil* and *Exclusive* than in *Baseline*, both in Switzerland and China, irrespective of whether we test at the market or buyer level (p≤0.001 in all tests in Switzerland; p≤0.027 in all tests in China; see Appendix Table A.1).

>**Observation 1.1**: *Public discourse increases socially responsible market behavior even when individuals discuss in front of the veil of ignorance and even when negatively affected third parties are excluded from the discourse.*

As a complement to the above non-parametric tests, Table 2 reports random-effects GLS regressions with buyers' product choices—i.e., whether a buyer purchases a responsible product in a period—as the dependent variable.[17] The *Baseline* serves as the omitted category. We include binary variables, *Veil*, *No Veil* and *Exclusive*, which take on value 1 in the respective condition and 0 otherwise. In models 2 and 4 we control for time effects by including the variable *Period*, taking on integer values between 1 and 24, and its interactions with the treatment variables. Models 1 and 2 present results for Switzerland and models 3 and 4 for China.

---

[17] We report the results of probit regressions in Table A.2 in Appendix A.

Table 2: Random-effects GLS regressions of responsible buyer product choice

	Switzerland		China	
	(1)	(2)	(3)	(4)
Veil	0.457***	0.416***	0.446***	0.450***
	(0.057)	(0.067)	(0.100)	(0.111)
No Veil	0.371***	0.436***	0.342***	0.419***
	(0.055)	(0.067)	(0.079)	(0.102)
Exclusive	0.424***	0.382***	0.244**	0.151
	(0.061)	(0.077)	(0.093)	(0.121)
Period		-0.003		-0.004**
		(0.002)		(0.002)
Period × Veil		0.003		-0.000
		(0.003)		(0.005)
Period × No Veil		-0.005		-0.006
		(0.004)		(0.005)
Period × Exclusive		0.003		0.007**
		(0.003)		(0.004)
Constant	0.484***	0.533***	0.149**	0.203***
	(0.051)	(0.061)	(0.067)	(0.084)
Observations	3770	3770	3705	3705
Subjects	160	160	160	160
R^2	0.371	0.371	0.247	0.249

Notes. The dependent variable in all models takes on value 1(0) if a buyer purchased a responsible (harmful) product. We omit 70 cases in Switzerland and 135 cases in China in which a buyer purchased no product. *Baseline* serves as omitted category. *Period* takes on integer values between 1 and 24. Standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Looking first at Switzerland, the coefficients for *Veil*, *No Veil* and *Exclusive* are positive, large in magnitude, and statistically significant at the one percent level in both models, indicating large, positive treatment effects of all discourse treatments that do not vary over time. For China, model 3 finds the level effects of discourse to be positive and statistically significant, at least at the five percent level. In model 4, the interaction *Period × Exclusive* is positive and significant at the five percent level, while the coefficient for *Exclusive* is not statistically significant, indicating that the effect of discourse develops over time in this condition in China.[18] These results confirm our earlier observations from non-parametric Wilcoxon rank-sum tests.[19]

---

[18] The coefficients for *Veil* are consistent with the earlier stated results regarding H1.1 in both countries. Post-estimation tests of equality of the coefficients for *Veil* and *No Veil* in models 1 and 3 fail to reject equality in China but not in Switzerland (see p-values in Table A.3 in Appendix A). Post-estimation tests of equality of the coefficients for *No Veil* and *Exclusive* fail to reject equality in both countries.

[19] We also investigate a methodological point relevant for understanding the general impact of communication in experiments. A standard interpretation of the treatment effect from a communication opportunity is that it is due to the *exchange* of messages. However, introducing a communication opportunity also means that subjects are provided with time to *reflect* on the topic about which they communicate. In our experiment, even if subjects did not actively

Table 3: Random-effects GLS regressions of responsible buyer product choice

	(1)	(2)
Veil	0.457***	
	(0.056)	
No Veil	0.371***	
	(0.055)	
Exclusive	0.424***	
	(0.061)	
Pooled discourse conditions		0.417***
		(0.053)
China	-0.344***	-0.344***
	(0.084)	(0.084)
China × Veil	-0.010	
	(0.114)	
China × No Veil	-0.029	
	(0.096)	
China × Exclusive	-0.180	
	(0.111)	
China × Pooled discourse conditions		-0.073
		(0.094)
Constant	0.494***	0.494***
	(0.051)	(0.051)
Observations	7,475	7,475
Subjects	320	320
R^2	0.500	0.479

Notes. The dependent variable in all models takes on value 1 (0) if a buyer purchased a responsible (harmful) product. We omit 205 cases in which a buyer purchased no product. *Baseline* in Switzerland serves as the omitted category. All standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

3.3.3 Public Discourse and Pre-Existing Social Concern

The substantially different *Baseline* levels of social responsibly in Switzerland and China allow us to investigate whether public discourse and pre-existing levels of social concern are substitutes or complements. Table 3 reports random-effects GLS regressions with pooled data from both countries. The dependent variable is the choice of the responsible product. *Baseline* in Switzerland serves as the omitted category. The large and highly significant coefficients for the four treatment

---

communicate, the 8-minute discourse interval might also influence behavior by prompting them to think about appropriate behavior (cf. Krupka and Weber, 2009). To provide insights into this distinction, we conducted a *post hoc* treatment in which individuals spend eight minutes composing private statements regarding appropriate market behavior, but these are not shared with other participants. This *Reflection* condition increases market social responsibility relative to the *Baseline*. However, the effect of actual discourse extends beyond the effects of reflection in Switzerland, but not in China. Therefore, part of the impact of communication, and a great part of it in our experiment in China, seems to be driven by asking people to reflect. This suggests a role for public campaigns that do not require communication, but instead simply ask people to consider their behavior. Given the *post hoc* nature of this part of our study, we report the details of the design and results of our *Reflection* condition in Appendix B.

variables in model 1 confirm our earlier findings for Switzerland. The large, negative and highly significant coefficient for *China* confirms the lower level of socially responsible behavior in the *Baseline* condition in China, relative to Switzerland.

We next consider interactions between the treatment variables and the indicator *China*. The coefficients for *China × Veil* and *China × No Veil* in model 1 are small and statistically insignificant, indicating that discourse in these conditions has similar impacts in Switzerland and China. The coefficient for *China × Exclusive* indicates that public discourse in this condition has a smaller impact in China than in Switzerland but is not statistically significant. To evaluate a possible differential impact of discourse in general, we create the variable *Pooled discourse conditions,* taking on value 1 in all three discourse treatments and 0 otherwise. The coefficient for *China × Pooled discourse conditions* in model 2 confirms that the impact of public discourse is similar in Switzerland and China. The effect of public discourse on market social responsibility thus seems independent of pre-existing levels of market social responsibility. [20]

> ***Observation 1.2****: The positive effect of public discourse on socially responsible market behavior is independent of the pre-existing level of social concern.*

3.3.4 Prices and profits

We find that the higher production cost of the responsible product translates into higher market prices for these products. Across conditions, responsible products trade at a price of about 28 and harmful products at a price of about 22.[21] Buyers and sellers who trade the responsible product thus share the additional production cost of 10. This implies that buyers forgo monetary payoffs when buying a responsible product and sellers obtain lower profits when offering these products (sellers' sales probabilities do not depend much on the type of product offered).

While buyers and sellers are willing to pay higher prices and forgo profits, respectively, we also observe that market participants react to prices and expected profits. Table A.5 in Appendix A shows that buyers are more likely to purchase the responsible product if the price of the cheapest available responsible (harmful) product is lower (higher). Likewise, Table A.6 shows that sellers

---

[20] Coefficient estimates of random-effects probit regressions are reported in Table A.4 in Appendix A. We also estimated a version of model 2 with *Period* as an explanatory variable and the full set of interactions between *Period*, *China* and *Pooled discourse conditions*. None of the period variables is statistically significant, and their inclusion does not change the results.

[21] Figures A.3 and A.4 in Appendix A show average prices and sellers' average profits, respectively, in all conditions and both countries, separately for both types of products.

are more likely to offer the responsible product as the expected profit from offering the responsible product rather than the harmful product, based on prior rounds' profits, increases (recall that sellers can observe in all periods which products are sold and at what prices).

3.3.5 Social norms

At the end of each session, subjects rated the perceived social appropriateness of trading harmful products, using the incentivized social norm measure introduced by Krupka and Weber (2013). Figure 2 shows mean appropriateness ratings in Switzerland (left) and China (right). Harmful market behavior is generally perceived as more appropriate in China than in Switzerland.[22] In addition, ratings of the appropriateness of harmful market behavior are lower in all discourse conditions, both in Switzerland and China, indicating that public discourse and subsequent market experience yield stronger norms against socially harmful market behavior.

Figure 2: Effect of Public Discourse on Social Norms in Study 1
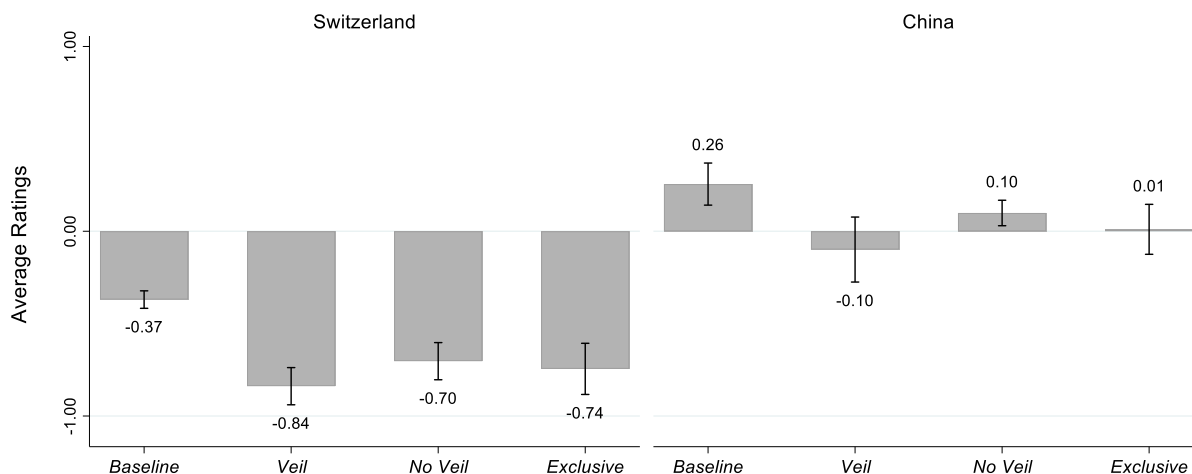
Notes. The figure shows the average rating of the appropriateness of exchanging the harmful product. "Very socially appropriate = 1," "Somewhat socially appropriate = 1/3," "Somewhat socially inappropriate = -1/3," "Very socially inappropriate = -1." The numerical rating values follow Krupka and Weber (2013). The bars indicate 95-percent confidence intervals, calculated at the market level.

4. Study 2

In drawing conclusions about the observation in Study 1 that public discourse increases socially responsible market behavior, it is important to consider whether features of laboratory experiments that may not be present outside the laboratory might exaggerate this positive impact. For instance,

---

[22] Table A.7 in Appendix A reports regressions of the social norm ratings, confirming the statistical significance of the treatment effects in Figure 2.

an external effect that falls on another experimental subject, who differs from market actors only in a random draw of roles, might make earnings inequalities salient and clearly resolvable in the context of the experiment. Outside the lab, market externalities typically involve more distant impacts, not as easily quantifiable or remediable. In such contexts, discourse about the "right" thing to do might be more nuanced and may facilitate exculpatory arguments. Study 2 thus changes the external impact to affect, rather than another experimental subject, a charity committed to fighting climate change and poverty. We additionally increased the production cost, to test the robustness of the effects of discourse to higher costs of producing the responsible product.

Moreover, public discourse outside the laboratory about appropriate market behavior typically occurs after people have a history of engaging in externality-producing behaviors. This could be important because changing established behavior might be particularly challenging, thus mitigating the impact that discourse can have on social responsibility, or perhaps even leading to rationalizations for existing behavior that further depress social responsibility. In Study 2, we thus also examine whether public discourse has a positive effect when it is introduced only after sellers and buyers have already traded for several periods.

4.1   Experimental Design and Procedures

A market in Study 2 comprises 11 subjects: six sellers and five buyers. At the beginning of every period, each participant receives an initial endowment of 100 points. In addition, we allocate to each market a 500-point donation (corresponding to 100 points for each buyer) to the charitable organization *Carbon Offsets to Alleviate Poverty* (COTAP), which funds programs fighting climate change and poverty in low-income countries (see https://cotap.org/).

Subjects can exchange two types of products, which differ in their impact on the COTAP charity. If a seller and a buyer exchange the responsible product (or no product at all), then there is no reduction of the donation; exchanging a product with a negative external impact reduces the donation by 60. While the harmful product costs nothing to produce, the responsible product's production cost is 20. Both types of products have the identical value of 50 to a buyer.

As in Study 1, sellers simultaneously select product types and prices (between 0 and 50) in a posted-offer market. Once all sellers make their choices, buyers enter the market sequentially and decide whether to buy at most one product. By selling, a seller earns the price minus the production cost. A buyer who buys a product earns 50 minus the price. If a buyer purchases a harmful product, the donation is reduced from 100 to 40, while there is no impact when a buyer

purchases a responsible product or no product at all. The market repeats for 24 periods. One period is randomly drawn at the end of a session to determine payments.

Table 4: Overview of Experimental Conditions in Study 2

	Baseline	*Discourse*	*Experienced*
t=1	–	Public discourse	–
t=2			8 periods of market game ("Part I")
t=3	24 periods of market game		Public discourse
t=4			16 periods of market game ("Part II")

We implement three treatment conditions. In *Baseline*, as in Study 1, subjects proceed to 24 periods of the market game after learning their role as sellers or buyers. In *Discourse*, the market is preceded by eight minutes of public discourse, in which sellers and buyers can discuss the appropriateness of exchanging the harmful product without participation by those impacted by the externality, as in the *Exclusive* condition of Study 1. The third condition, *Experienced*, is identical to *Discourse*, except that sellers and buyers enter discourse only after eight periods of the market game ("Part I"). After discourse, market interaction continues for 16 additional periods ("Part II").[23] Table 4 provides an overview of the sequence of events in all conditions in Study 2.

We conducted the study at the University of Zurich between May 2019 and June 2019, following the same procedures as in Study 1. We collected 16 markets per treatment, with each market consisting of 11 subjects, involving a total of 528 subjects. In all conditions, we elicit social norms at the end of the market, using the same elicitation method as in Study 1. On average, subjects earned about CHF 51, including a show-up fee of CHF 15.

4.2 Hypotheses

Based on the results of Study 1, we expect public discourse to have a positive effect on market social responsibility, even when those impacted by the externality do not participate.[24]

$$\text{H2.1: } \theta(d_{Discourse}) > \theta(d_{Baseline})$$

However, the *Discourse* versus *Baseline* comparison in Study 2 is not a direct replication of Study

---

[23] The translations of the instructions are provided in Appendix G. In the experimental instructions, we did not use the terms Part I (Part II) to refer to the first eight (last 16) periods.

[24] Studies 2 and 3 involve only one population, in Switzerland. We henceforth omit for simplicity the society-specific term, γ_j, from the earlier notation, $\theta(\gamma_j, d_{Discourse})$.

1, due to the distinct impact of the externality on a charity rather than on other experimental subjects. Therefore, as we note earlier, there are compelling reasons to expect no positive impact of public discourse, or even a negative impact, in such a setting.

Conditional on a positive impact of *Discourse* in Study 2, we expect this positive impact to be smaller when participants have a history of engaging in exchange that yields negative externalities and a desire to rationalize or continue with their pre-existing behavior.

$$\text{H2.2: } \theta(d_{Discourse}) > \theta(d_{Experienced})$$

Whether *Discourse* and *Experienced* end up at higher, equal or lower levels of market social responsibility than *Baseline* are key research questions for which we have no *a priori* predictions.

4.3   Results

4.3.1. *Market Shares of the Responsible Product*

Figure 3 shows the market share of the responsible product. Across all 24 periods, the market share in the *Baseline* is 50 percent. When public discourse occurs before market interaction, the share of responsible products increases to 79 percent. Wilcoxon rank-sum tests at the market (buyer) level indicate that the difference in market shares between *Baseline* and *Discourse* is significantly different (p=0.002 (p<0.001)). This supports Hypothesis 2.1 and qualitatively replicates the impact of the *Exclusive* condition in Study 1, despite varying the nature of the external impact.

> **Result 2.1**: *Public discourse increases socially responsible market behavior even when the negative impact of the externality falls on a charity absent from discourse.*

We next examine whether discourse retains its positive impact if market participants have prior market experience. Figure 3 shows that the share of the responsible product increases in *Experienced* from 63 percent at the end of Part I, before discourse, to 79 percent in Part II. Wilcoxon rank-sum tests at the market (buyer) level confirm that the average market shares differ in Parts I and II in *Experienced* (p=0.041 (p<0.001)).[25] The market shares of the responsible product in Part II in *Discourse* and *Experienced*, which differ only in whether public discourse took place either prior or subsequent to Part I, are almost identical (76 vs. 79 percent; not significantly different in Wilcoxon rank-sum tests at the market (buyer) level; p=0.568 (0.357)).[26]

---

[25] Figure C.1 in Appendix C shows the cumulative distributions of responsible product market shares by treatment.
[26] The market share increases between Parts I and II in *Experienced* despite the market share of the responsible product in Part I already being somewhat high (63 percent), relative to the *Baseline* (50 percent). Wilcoxon rank-sum tests at

Observation 2.1: *Public discourse increases socially responsible market behavior even with experienced market participants.*

Figure 3: Market Shares of the Responsible Product in Study 2
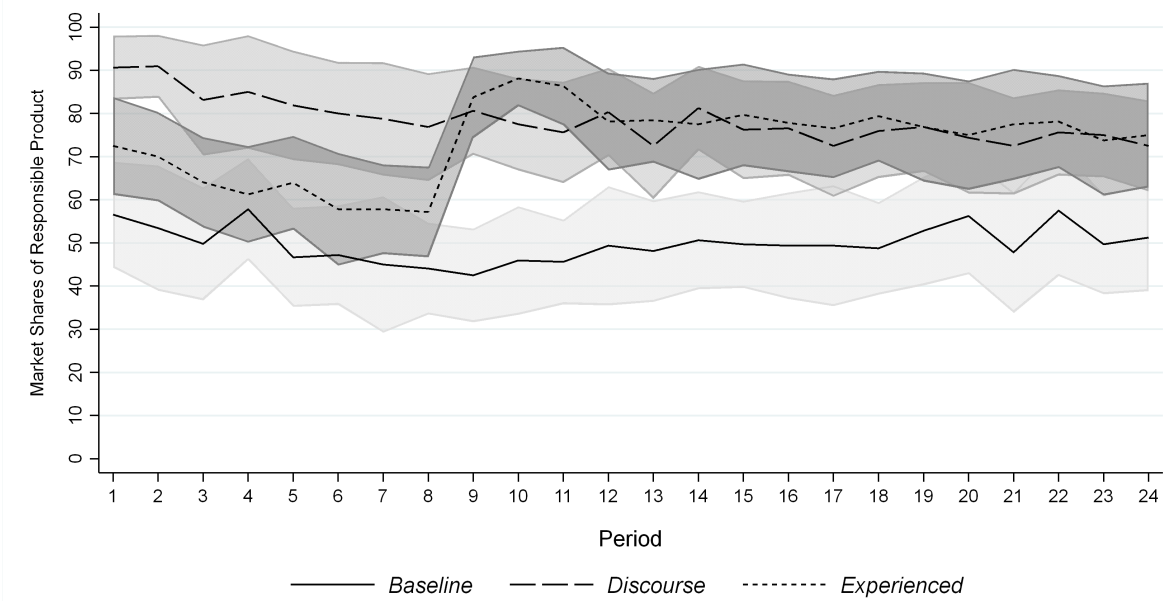
Notes: The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. Shaded areas indicate 95-percent confidence intervals, calculated at the market level.

The regressions in Table 5 corroborate the above findings and allow a more precise test of Hypothesis 2.2 that controls for differences in Part I behavior. The dependent variable is the buyers' choice of the responsible product. Both models report coefficient estimates of random-effects GLS regressions.[27] The binary treatment variables *Discourse* and *Experienced* take on values of 1 in the corresponding conditions, while *Baseline* is the omitted category.

In model 1, the large and positive coefficient for *Discourse* indicates that, relative to *Baseline*, socially responsible behavior is higher in Part I, following public discourse. The marginally significant coefficient for *Experienced* captures the unexpected slightly higher frequency of responsible products exchanged in Part I in this condition, relative to the *Baseline*. More importantly, the large and highly significant coefficient for *Part II × Experienced* indicates that the frequency of socially responsible behavior increases substantially following discourse. Model 2 additionally allows for time trends. *Discourse* and *Part II × Experienced* retain their large, positive and statistically significant coefficients.

---

the market (buyer) level show that the difference in Part I (periods 1 to 8) is at least marginally significant; p=0.083 (0.036), despite the instructions and procedures in *Baseline* and *Experienced* being identical until the end of period 8.
[27] We report the coefficient estimates of random-effects probit regressions in Table C.1 in Appendix C.

Table 5: GLS (random-effects) regression of responsible buyer product choice

	(1)	(2)
Discourse	0.326***	0.362***
	(0.073)	(0.073)
Experienced	0.126*	0.176***
	(0.064)	(0.063)
Part II	-0.004	-0.038**
	(0.025)	(0.017)
Part II × Discourse	-0.071*	-0.025
	(0.039)	(0.037)
Part II × Experienced	0.159***	0.291***
	(0.055)	(0.053)
Period		0.003
		(0.002)
Period × Discourse		-0.008***
		(0.002)
Period × Experienced		-0.011***
		(0.003)
Constant	0.509***	0.497***
	(0.051)	(0.052)
Observations	5,619	5,619
Number of subjects	240	240
R^2	0.121	0.121

Notes: The dependent variable in all models takes on value 1 (0) if a buyer purchased a responsible (harmful) product. We omit 141 cases in which a buyer did not purchase a product. *Baseline* and *Part I* (periods 1 to 8) serve as omitted categories. *Part II* is a binary variable taking on value 1 for data from period 9 to 24 and 0 otherwise. *Period* takes on integer values between 1 and 24. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Turning to Hypothesis 2.2, we can test whether the impact of discourse is equivalent when it occurs before or after market experience. Wald tests of the equality of the two key treatment coefficients, *Discourse* and *Part II × Experienced*, are not statistically significant (model 1: p=0.075; model 2: p=0.443). Therefore, while directionally the results suggest that the impact of discourse is slightly lower for experienced market participants, this difference is not significant and might at least partly be driven by idiosyncratic differences in Part I behavior. Thus, both public discourse interventions have large and positive effects on socially responsible market behavior.

> **Result 2.2**: *Public discourse has equally strong positive impacts for experienced and inexperienced market participants on socially responsible market behavior.*

4.3.2. Prices and profits

As in Study 1, the responsible product trades at higher prices, on average, than the harmful product. The responsible product trades at prices of about 34 and the harmful product at prices of about 23.

Recall that the production cost of the responsible product is 20 in Study 2 and zero for the harmful product. As in Study 1, buyers are thus willing to forgo monetary payoffs and sellers are willing to forgo profits when exchanging the responsible product.[28]

4.3.3. Social norms

Finally, we observe an effect of discourse and resulting market experience on social norms. Using a scale from "very socially inappropriate" (-1) to "very socially appropriate" (1), exchanging the harmful product is perceived to be substantially less socially appropriate in both the *Discourse* (-0.43) and *Experienced* (-0.53) conditions than in the *Baseline* (-0.14). This confirms similar impacts of discourse and subsequent market experience on social norms as in Study 1.[29]

5. Study 3

Public discourse substantially and consistently increased socially responsible market behavior in Studies 1 and 2. However, important questions remain regarding the robustness of this positive impact across additional contexts and the underlying mechanisms through which it operates. Our third study tests whether additional features, involving potentially limited participation, that are present in more natural market contexts might influence the impacts of discourse. We also introduce additional measures, elicited immediately after discourse, to identify what, exactly, changes as a result of discourse. Finally, we also modify the instructions to limit concerns that the framing of the communication interface in earlier versions of our study produced demand effects.[30]

5.1. Experimental Design

5.1.1. Treatments

Study 3 comprises four treatments. A *Baseline* condition without discourse is identical to the *Baseline* in Study 2. The second treatment, *Discourse (Neutral)*, differs from *Discourse* in Study 2 only in that we omit the statement in the chat interface in our earlier studies that participants discuss how "socially appropriate" or "socially inappropriate" it is to trade the product with negative impact on third parties. While non-laboratory public discourse often involves guided

---

[28] Figures C.2 and C.3 in Appendix C show average prices and sellers' average profits, respectively, in all conditions, separately for Parts I and II and both types of products. Tables C.2 and C.3 show that buyers respond to relative prices and sellers to expected profits, mirroring the analysis reported in Tables A.5 and A.6 in Appendix A for Study 1.

[29] Appendix Table C.4 tests treatment effects on elicited social norms; the coefficients for *Discourse* and *Experienced* are both negative and statistically significant (p<0.01). Figure C.4 presents means, as in Figure 2 for Study 1.

[30] We thank three anonymous referees for suggesting these additional versions of our experiment.

discussion, in an experiment the prompt potentially creates a demand effect of the experimenter's expectations. In *Discourse (Neutral)* we only instruct participants that they "have the opportunity to communicate" with others in a forum to "discuss the upcoming market activity."[31] If the positive impacts of discourse in our earlier studies are driven by wording in the interface, then we expect this positive impact not to obtain in *Discourse (Neutral)*.[32]

We conducted two additional conditions to investigate the degree to which active participation in public discourse is necessary for it to have positive effects. These conditions also mimic features present in non-laboratory settings.

First, in *Optional*, discourse works identically to *Discourse (Neutral)*, including the neutral framing, except that participation is voluntary. Given that public discussions of appropriate market behavior often involve self-selected subsets of market actors, such sorting may play an important role. In this condition, each participant initially states whether he or she wants to participate in discourse, and those who opt out do not enter the chat room and therefore neither produce messages nor read messages produced by others. If at least two participants opt to engage in discourse, the chat interface opens. Participants who enter can leave at any time but cannot re-enter. The discourse period lasts up to eight minutes or until one or fewer participants remain. Subjects who participate can see at any time how many other participants are present in the discourse.

In the *Passive* condition, participants do not actively participate in discourse but are instead exposed to discourse generated by others. Thus, if the production of arguments by those involved in market exchange is necessary for discourse to be effective, *Passive* discourse may yield limited benefits. The *Passive* condition also provides insights into whether externally generated campaigns can be effective by shaping the market behavior of individuals who play no role in their development. In each market, participants spend eight minutes reading discourse generated by one other set of market participants from the *Discourse (Neutral)* condition. Participants are told how the messages were generated—including the instructions shown to participants in *Discourse (Neutral)*—and that all 11 participants in their market will observe the same discourse generated by one other group of participants. They then observe the same chat window as in one other market from the *Discourse (Neutral)* condition, with messages appearing with the same order and exact

---

[31] Complete instructions for Study 3 are provided in Appendix H.
[32] It is worth noting, however, that we only asked subjects in Studies 1 and 2 to discuss *whether* it is socially appropriate or inappropriate to trade the product with impact. Thus, even the wording used in our first two studies is likely to create only weak demand effects, in contrast to the stronger forms studied by, e.g., De Quidt et al. (2018).

timing as in the original discourse. Participants in the *Passive* condition are not told anything about what took place in the subsequent market activity for the group whose messages they observe.

5.1.2. Elicitation of Preferences, Beliefs and Social Norms

To better understand why discourse impacts socially responsible market behavior, we included several measures of participants' values and perceptions following discourse. We administered a questionnaire immediately after the discourse period—or, in the *Baseline*, after the instructions. This included several questions dealing with personal values ("I believe that it is important to trade the product that does not reduce the donation") and expectations ("I am confident that other participants in my group will exchange the product that does not reduce the donation"). In conditions with discourse, we additionally included items asking participants whether they paid attention and believe others paid attention to the chat. Table D.4 in Appendix D lists all 12 items.

We also included one additional measurement of social norms regarding the (in)appropriateness of exchanging the socially harmful product. Recall that in Studies 1 and 2, we administered an incentivized elicitation of social norms after the market experience. This prevents us from identifying the degree to which discourse directly changes social norms, or whether such impact occurs indirectly through market experience. Therefore, in Study 3, we measure social norms twice, both before and after the 24 periods of market interaction.

5.1.3. Procedures

The study took place at the University of Zurich between October 2021 and February 2022. We followed the same procedures as in Studies 1 and 2, except that instructions were in English, while Zurich sessions in Studies 1 and 2 took place in German. We collected 14 markets in *Baseline*, 13 in *Discourse (Neutral)* and 19 in *Optional*; we oversampled *Optional* due to the expectation that analyzing variation in participation would require more observations. We also collected 13 markets in *Passive*, with each market observing the discourse transcript from one group in *Discourse (Neutral)*. With each market consisting of 11 participants, a total of 649 subjects participated in Study 3. On average, subjects earned about CHF 51, including a CHF 15 show-up fee.

5.2. Hypotheses

We expect that the public discourse will have positive effects on market social responsibility, replicating our earlier findings, even when participants are not instructed to focus their discussion on how socially appropriate or inappropriate it is to trade the product with external harm.

$$\text{H3.1: } \theta\big(d_{Discourse(Neutral)}\big) > \theta(d_{Baseline})$$

This would replicate the main finding from our earlier studies and address concerns that the impact of discourse was driven by an experimental demand effect created by instruction wording.

Conditional on finding a positive impact in *Discourse (Neutral)*, we expect that this positive impact will be smaller when the involvement of market actors in discourse is weaker, either because they can avoid discourse altogether or consume it passively.

$$\text{H3.2: } \theta\big(d_{Discourse\ (Neutral)}\big) > \theta\big(d_{Optional}\big)$$

$$\text{H3.3: } \theta\big(d_{Discourse\ (Neutral)}\big) > \theta(d_{Passive})$$

As before, we refrain from predictions regarding whether socially responsible market behavior will be greater in *Passive* and *Optional* than in the *Baseline*, though this is a key research question.

5.3. Results

5.3.1. Market Shares of the Responsible Product

Figure 4 shows the market share of the responsible product across treatments. The market share is 59 percent in *Baseline*, which is close to the Study 2 market shares in the *Baseline* (50 percent) and in Part I of *Experienced* (63 percent).[33]
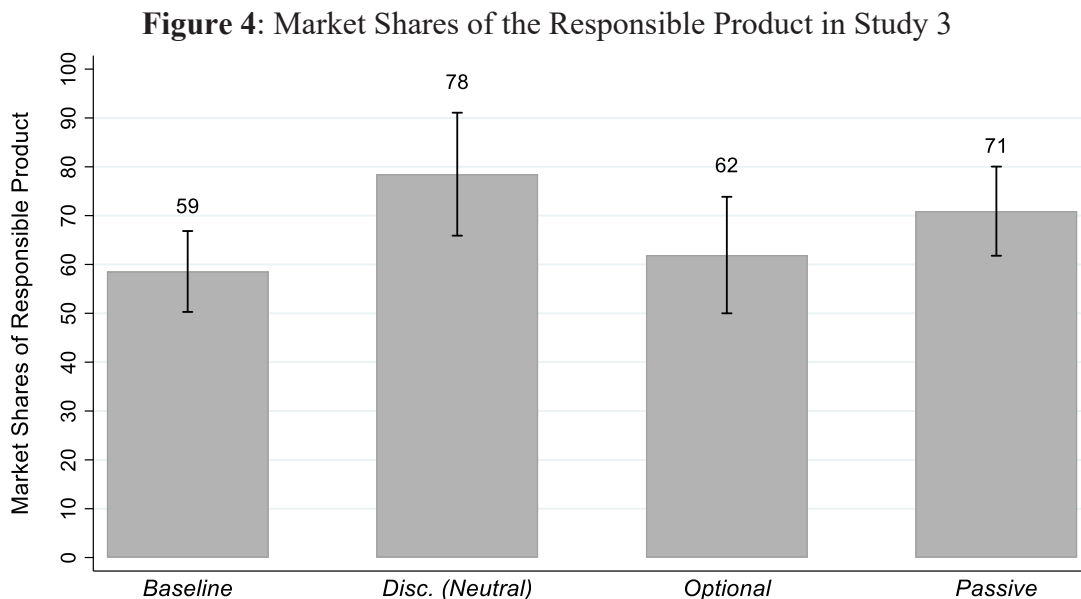
Figure 4: Market Shares of the Responsible Product in Study 3

Notes: The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. The bars indicate 95-percent confidence intervals, calculated at the market level.

---

[33] Figure D.1 in Appendix D shows that market shares of the responsible product are generally stable across periods.

Discourse (Neutral) yields a market share of the responsible product of 78 percent, substantially higher than in the *Baseline*. Wilcoxon rank-sum tests at the market (buyer) level indicate that the difference in the average market share of the responsible product between *Baseline* and *Discourse (Neutral)* is statistically significant; p=0.006 (p=0.001). This supports Hypothesis 3.1, replicating the key finding from our earlier studies and indicating that our earlier results are not primarily driven by instruction wording encouraging discussion of "appropriate" behavior.

> **Result 3.1**: *Public discourse with neutrally framed instructions increases socially responsible market behavior.*

We next examine whether the positive impact of public discourse is weaker when market participants are not required to participate. Figure 4 shows that the market share of the responsible product in *Optional* is substantially lower than in *Discourse (Neutral)* (62 percent vs. 78 percent), providing support for Hypothesis 3.2 (Wilcoxon rank-sum tests at the market (buyer) level; p=0.081 (p=0.020)). The market share of 62 percent is very similar to that in *Baseline*, and the difference between these two conditions is not statistically significant (Wilcoxon rank-sum tests at the market (buyer) level; p=0.743 (p=0.337)). Interestingly, the cumulative distributions in Appendix Figure D.2 show that, relative to *Baseline*, *Optional* yields a wider dispersion of responsible products shares across individual markets—markets at the lower end of the distribution tend to have lower market shares in *Optional* than *Baseline*, while those at the upper end of the distribution tend to have higher market shares in *Optional* than in *Baseline*.

> **Result 3.2**: *The effect of public discourse on socially responsible market behavior is weaker when participants can opt out of discourse. The aggregate level of social responsibility is similar when participants can opt out of public discourse than in markets without public discourse, though there is more variation at the market level when participation is optional.*

Despite the potential opportunity cost of time associated with participating (a session is longer if discourse takes place), a substantial majority of participants opted to participate: 91 percent (87 percent of buyers, 94 percent of sellers). Interestingly, participation in the *Optional* condition does not seem to substantially correlate with socially responsible behavior. For example, buyers who entered purchased socially responsible products 63 percent of the time, which is higher than the share for those who did not enter (53 percent), but this difference is not statistically significant (Wilcoxon rank-sum: p=0.500). At the market level, markets with participation rates

strictly above and below the median participation rate (91 percent) both had market shares of 62 percent. Thus, it appears that actual engagement with discourse has little relationship with socially responsible market behavior, creating a puzzle regarding why discourse has limited positive impacts when it is optional—which we address in Section 5.4 and Section 6.

Finally, we investigate behavior in *Passive*, where participants could only view the discourse generated by participants in an earlier market of *Discourse (Neutral)*. The market share of the responsible product in *Passive* (71 percent) is slightly lower than the corresponding share (78 percent) in *Discourse (Neutral)*. The average market shares of the responsible product are not different in *Passive* and *Discourse (Neutral)* at the market level (Wilcoxon rank-sum: p=0.144), but at the buyer level this difference is statistically significant (p=0.040).[34] Appendix Figure D.2 shows that the cumulative distribution of responsible products shares in individual markets for *Passive* lies between that of *Baseline* and *Discourse (Neutral)*. We thus find modest support for Hypothesis 3.3, that eliminating active participation in discourse limits its effectiveness.[35]

> **Result 3.3:** *The effect of public discourse on socially responsible market behavior is smaller, though not consistently statistically significantly so, when participants passively consume public discourse.*

In addition, the market share in *Passive* is somewhat higher than in the *Baseline* (71 vs. 59 percent); Wilcoxon rank-sum tests show that the difference is not statistically significant at the market level (p=0.115) but is marginally significant (p=0.074) at the buyer level.

> **Observation 3.1:** *Public discourse increases socially responsible market behavior even when participants passively consume it, but the effect of passive participation in discourse is not consistently statistically significant.*

The regressions in Table 6 corroborate the above findings. The dependent variable is the purchase of a responsible product by a buyer, in cases where a buyer purchased a product. Both models report coefficient estimates of random-effects GLS regressions. The binary treatment

---

[34] Since each of the individual markets in *Passive* viewed the discourse from one *Discourse (Neutral)* market, we can investigate the relationship between market shares for "paired" markets. The Spearman correlation coefficient is positive (0.28), but not statistically significant.

[35] The *Passive* condition can be related to the *post hoc Reflection* condition conducted for Study 1 (see footnote 19 and Appendix B). In *Passive*, subjects *consume* (but do not produce) contributions to discourse, while in *Reflection* they *produce* (but do not consume) contributions. Both conditions positively impact market social responsibility, but these impacts generally fall short of those of full participation. This suggests that both production and consumption of contributions to discourse have desirable effects, but that neither alone can account for their combined impact.

variables *Discourse (Neutral), Optional* and *Passive* take on values of 1 in the corresponding conditions, while *Baseline* is the omitted category.[36]

Table 6: GLS (random-effects) regression of responsible buyer product choice

	(1)	(2)
Discourse (Neutral)	0.201***	0.228***
	(0.074)	(0.074)
Optional	0.038	0.103
	(0.071)	(0.079)
Passive	0.126**	0.148***
	(0.060)	(0.056)
Period		-0.002
		(0.002)
Period × *Discourse (Neutral)*		-0.002
		(0.003)
Period × *Optional*		-0.005*
		(0.003)
Period × *Passive*		-0.002
		(0.002)
Constant	0.585***	0.608***
	(0.040)	(0.040)
Observations	6,933	6,933
Number of subjects	295	295
R^2	0.043	0.042

Notes: The dependent variable in all models takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. We omit the 147 cases in which a buyer did not purchase a product. *Baseline* serves as omitted categories. *Period* takes on integer values between 1 and 24. Standard errors (in parentheses) are clustered at the market level. * significant at 10%, ** significant at 5%, *** significant at 1%.

Model 1 identifies treatment effects relative to the *Baseline*. The coefficient for *Discourse (Neutral)* indicates that neutrally framed discourse increases socially responsible market behavior, supporting Hypothesis 3.1. The coefficient for *Optional* is small and not statistically significant, indicating that voluntary discourse yields little impact. Comparing the coefficients for *Optional* and *Discourse (Neutral)* yields a marginally statistically significant difference (Wald test: p=0.056), providing support for Hypothesis 3.2. Finally, the statistically significant coefficient for *Passive* indicates a positive effect of being exposed to messages generated by others. The size of the coefficient is roughly 60 percent of the one for *Discourse (Neutral)*, suggesting a weakened positive impact on market behavior when individuals do not participate in generating messages,

---

[36] The coefficient estimates of random-effects probit regressions are reported in Table D.1 in Appendix D. The effect of *Passive* is not statistically significant in the respective model 1 and only marginally significant in model 2.

though the difference between these two coefficients is not statistically significant (p=0.323).

Model 2 adds time trends, allowing these to differ across the treatment conditions. The positive coefficients for the treatments are, if anything, slightly larger. There is a general negative trend of the frequency with which buyers purchase socially responsible products over the course of the experiment. This negative trend is slightly larger in the three treatments with discourse, particularly in *Optional*, suggesting that this treatment not only produces weaker initial effects, but also effects that lose their impact over time.

5.3.2. Prices and Profits

As in Studies 1 and 2, responsible products trade at higher prices than harmful products. The responsible product trades, on average, at a price of about 33 and the harmful product at a price of about 21. We thus find again that buyers and sellers share the additional cost of avoiding the negative external impact.[37]

5.4. Impact of discourse on values and expectations

The above results provide further evidence that public discourse can increase socially responsible market behavior, but also yield a case where there is little positive impact. We next attempt to shed light on why discourse increases market social responsibility, and why it may sometimes fail. We use the questionnaire responses collected immediately after discourse in all discourse conditions, or after instructions in the *Baseline*. These questions elicited participants' values and motivations and beliefs about others' values and expectations (see Tables D.4 and D.5 in Appendix D).

To identify common dimensions across the questionnaire items, we conducted an exploratory factor analysis on the nine items common to all treatments. We obtain three factors (with eigenvalues larger one) that jointly explain 70 percent of the variation in the nine items (see Table D.6). The factor loadings of specific items (Table D.7) yield straightforward interpretations for each factor. First, *Beliefs about others* includes expectations that others value and expect to trade the responsible product. Second, *Personal values* include personal support for exchanging different types of products. Finally, *Coordination* indicates the belief that everyone knows what to do when it comes to product types and prices.

Table 7 reports regressions that explore how these distinct values and expectations are

---

[37] Figures D.3 and D.4 in Appendix D show average prices and sellers' average profits, respectively, in all conditions separately for both types of products. The regression analyses reported in Tables D.2 and D.3 replicate the findings from Studies 1 and 2 that buyers react to prices and sellers react to expected profits.

influenced by discourse. All three treatments have positive impacts on *Beliefs about others*, with the strongest effects for the *Discourse (Neutral)* and *Passive* conditions, and weaker effects for *Optional*. The impacts of the discourse treatments on this factor mirror the treatment effects on the share of responsible products. Model 2 reveals that the treatments have little effect on *Personal values*, suggesting that discourse does not substantially impact the degree to which participants believe it is personally important, either for intrinsic or image-based reasons, to trade the socially responsible product. Finally, the third model indicates that both *Discourse (Neutral)* and *Optional* have strong impacts on *Coordination*, that is, on perceived agreement about prices and products, but there is no effect for the *Passive* condition.[38]

Table 7: Treatment effects on values and beliefs (OLS)

	(1) Beliefs about others	(2) Personal values	(3) Coordination
Discourse (Neutral)	0.498***	0.117	0.567***
	(0.180)	(0.118)	(0.120)
Optional	0.283*	-0.079	0.487***
	(0.148)	(0.086)	(0.133)
Passive	0.394***	0.043	-0.073
	(0.091)	(0.101)	(0.134)
Constant	-0.288***	-0.010	-0.266***
	(0.048)	(0.069)	(0.091)
Observations	649	649	649
R^2	0.032	0.005	0.078

Notes: The dependent variable in each model is one of the factors constructed from the nine questionnaire items. In all models, *Baseline* serves as the omitted category. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 8 studies how variation in the above factors relate to the treatment effects on market behavior. In Table 8a, which studies buyers' choices, we first replicate (model 1) the treatment effects from Table 6. We then introduce the three factors, first separately (models 2 through 4) and then jointly (model 5). Both *Beliefs about others* and *Personal values* provide explanatory power for buyers' product purchases and their inclusion slightly lowers the treatment effects for *Discourse (Neutral)* and *Passive*, by about 10-20 percent. Introducing all factors jointly lowers the treatment effects by about 35 percent, indicating that at least part of the treatment effects on buyers'

---

[38] Table D.8 in Appendix D reports corresponding analyses using each questionnaire item separately. Tables D.9 and D.10 show the analysis in Table 7 separately for buyers and sellers. The patterns are generally similar to those in Table 7. There are no treatment effects on *Personal values* for either role. The treatment effects on *Beliefs about others* and *Coordination* are statistically stronger for sellers than for buyers, though the coefficients are similar for both roles.

behavior can be accounted for by discourse changing personal values and beliefs about others.

Table 8: GLS (random-effects) regression of responsible product choice

	(a) Buyers				
	(1)	(2)	(3)	(4)	(5)
Discourse (Neutral)	0.201***	0.179**	0.162**	0.195***	0.127*
	(0.074)	(0.071)	(0.071)	(0.073)	(0.069)
Optional	0.038	0.022	0.034	0.033	0.009
	(0.071)	(0.067)	(0.069)	(0.071)	(0.066)
Passive	0.126**	0.100	0.106*	0.131**	0.082
	(0.060)	(0.062)	(0.060)	(0.059)	(0.063)
Beliefs about others		0.058**			0.068***
		(0.024)			(0.022)
Personal values			0.183***		0.186***
			(0.018)		(0.018)
Coordination				0.016	0.019
				(0.022)	(0.019)
Constant	0.585***	0.602***	0.604***	0.588***	0.628***
	(0.040)	(0.042)	(0.039)	(0.041)	(0.043)
Observations	6,933	6,933	6,933	6,933	6,933
Number of buyers	295	295	295	295	295
R^2	0.043	0.071	0.285	0.045	0.323

	(b) Sellers				
	(1)	(2)	(3)	(4)	(5)
Discourse (Neutral)	0.179**	0.116	0.172***	0.131*	0.070
	(0.075)	(0.072)	(0.054)	(0.076)	(0.054)
Optional	0.029	-0.002	0.060	-0.012	-0.006
	(0.070)	(0.063)	(0.065)	(0.066)	(0.054)
Passive	0.108*	0.071	0.110**	0.097*	0.067
	(0.058)	(0.058)	(0.053)	(0.057)	(0.052)
Beliefs about others		0.107***			0.095***
		(0.022)			(0.019)
Personal values			0.197***		0.197***
			(0.018)		(0.016)
Coordination				0.067***	0.065***
				(0.025)	(0.020)
Constant	0.593***	0.622***	0.579***	0.615***	0.626***
	(0.040)	(0.043)	(0.032)	(0.044)	(0.035)
Observations	8,496	8,496	8,496	8,496	8,496
Number of sellers	354	354	354	354	354
R^2	0.034	0.102	0.320	0.059	0.403

Notes: Panel (a): The dependent variable in all models takes on value 1 (0) if a buyer purchased a responsible (harmful) product, omitting 147 cases in which a buyer did not purchase a product. Panel (b): The dependent variable in all models takes on value 1 (0) if a seller offered a responsible (harmful) product. Both panels: *Baseline* serves as omitted category. Standard errors (in parentheses) clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 8b performs a similar analysis for sellers, using the type of product offered by each seller in a period as the dependent variable. Model 1 confirms the general treatment effects we observed earlier: a strong positive effect for *Discourse (Neutral)*, a weaker positive effect for *Passive* and no effect for *Optional*. Model 2 reveals that a substantial proportion of the treatment effects, about 35 percent, can be accounted for by changing *Beliefs about others*, and including this factor eliminates the statistical significance of the treatment effects. Introducing *Personal values* (model 3) has little impact on the treatment effects, though variation in this factor explains seller behavior. Model 4 finds that about 10 to 25 percent of the treatment effects on sellers can be explained by beliefs of improved *Coordination*. Finally, model 5 shows that jointly introducing all factors sharply reduces the magnitude of the treatment effects and their statistical significance.

Taken together, the above analysis provides suggestive evidence that discourse impacts behavior partly by changing values and expectations. The most substantial influence appears to be through changing beliefs about others' expectations and values, particularly for sellers. This is consistent with an interpretation whereby exposure to discourse is effective when it creates the impression that others support exchanging the socially responsible product. Of course, the analysis also suggests roles, though perhaps less significant, for other factors and there remains a substantial proportion of the treatment effects on behavior that these simple factors do not fully explain.[39]

5.5. Impact of Discourse on Social Norms

Study 3 measures norms of market conduct both before and after market interaction. This allows us to separately identify the direct effects of discourse from the joint effects of discourse and market interaction. Figure 5 provides mean ratings of social appropriateness after discourse (after reading instructions in *Baseline*) and following market interaction. Immediately after discourse, exchange of the harmful product is perceived as less socially appropriate in all three discourse conditions than in the *Baseline*, though the effect is strongest for *Discourse (Neutral)* and *Passive*, in which we subsequently observe stronger treatment effects on behavior. The dark bars show that market experience exerts little change on norms in the *Discourse (Neutral)* and *Passive* conditions. However, in *Baseline* and *Optional*, perceived social norms change to indicate weaker social perceptions that exchanging the harmful product is inappropriate.[40] Thus, discourse appears to

---

[39] Tables D.11a and D.11b in Appendix D, repeat the analysis in Table 8a and 8b using individual questionnaire items.
[40] Regression analysis in Appendix Table D.12 indicates that *Discourse (Neutral)* and *Passive* both yield more negative social perceptions of exchanging the harmful product, relative to the *Baseline*, both before and after the

directly influence social norms, but subsequent market experience—particularly when the market share of the responsible product is relatively low—impacts perceived norms.

Figure 5: Effect of Public Discourse and Market Experience on Social Norms
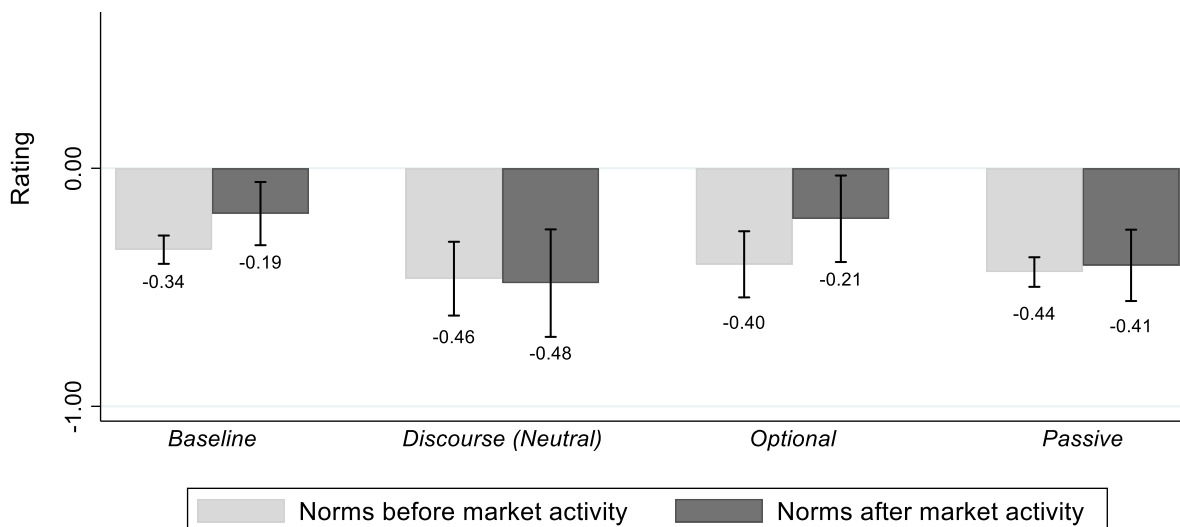
Notes. The figure shows the average rating of the appropriateness of exchanging the harmful product. *Norms before market activity* refers social norms measured prior to interacting in the market; *Norms after market activity* refers to social norms measured after market interaction. "Very socially appropriate = 1," "Somewhat socially appropriate = 1/3," "Somewhat socially inappropriate = -1/3," "Very socially inappropriate = -1." The numerical rating values follow Krupa and Weber (2013). The bars indicate 95-percent confidence intervals, calculated at the market level.

6.   Content of the Public Discourse

To better understand the effects of discourse, we conduct exploratory analysis using the content of the discourse from our three studies. Most subjects actively participated in discourse, sending at least one message—98, 95 and 88 percent of subjects in Switzerland in Studies 1, 2 and 3, respectively, and 98 percent of subjects in China.

We recruited a separate group of individuals—unfamiliar with our experiment—to code the content. We initially provided coders with a general description of the market experiment that was similar to the experimental instructions. The coders' task was to classify the content of the messages into categories. Our primary focus is on the following five categories: Recommending *No impact* on third parties, recommending *Impact* on third parties, *Fairness*, *Efficiency* and *Self-interest*. Recommending *No impact* refers to any statement supporting the exchange of the responsible product or avoiding the harmful one, while *Impact* involves statements supporting the

---

market. These comparisons are at least marginally statistically significant. The coefficients for *Optional* are also negative, but smaller in magnitude and not statistically significant.

harmful product. *Fairness* corresponds to any statement appealing to fairness, the "right thing to do," morality or empathy for third parties. *Efficiency* and *Self-interest* similarly require appeals to such motivations. Coders saw the complete transcript for discourse in a market and rated each independent statement as belonging to any applicable categories. Each market's discourse was evaluated by four different coders.[41] In our analysis, we consider a statement as belonging to a category if at least 3 of 4 coders assigned it to that category (i.e., if 2 or fewer coders assigned a message to a category, the message is not placed in that category).

Our analysis focuses on messages classified as advocating either *No Impact* (i.e., "responsibilizing" messages) or *Impact* (i.e., "exculpatory" messages) on third parties. By construction, these two categories provide the clearest indication of statements that advocate for exchanging either the responsible or harmful product. Using these two categories, we construct a rough measure of the degree to which a participant argued for responsible market conduct. Specifically, for each market participant, we summed the number of *No Impact* messages sent by that participant and subtracted the number of *Impact* messages sent, to construct the variable *Prosocial*. A participant who sent no messages, as in the *Baseline*, is assigned a value of zero.

Table 9 provides a summary of the distributions of participants' *Prosocial* classifications across conditions and experiments.[42] A few observations are apparent from this table. First, across most conditions in Switzerland, the modal participant is classified as *Prosocial*, sending more message encouraging *No Impact* than *Impact*. The one exception is the *Optional* condition of Study 3, in which only 33 percent of market actors are classified as advocating for *Prosocial* conduct. Second, the frequencies of *Prosocial* types are lower in all conditions in China than in Switzerland; in China, the modal classification is always the neutral type (*Prosocial = 0*). Third, in China, we

---

[41] In total, we organized 4 sessions with 128 coders. Each coder classified the discourse transcript in four markets. For sessions conducted in Mandarin or German, research assistants translated the transcripts into English, in which all coding took place. We provided the coders with a detailed description of each category. Besides a residual category (*No category/Unclear*) we also gave coders the following additional categories: *Agreement*, *Questions about what to do in the market game*, *General discussion of the game or the experiment*, and *Discussion of prices*. In Study 2, we also elicited the categories *Cotap* and *Past behavior*; in Study 3, we also elicited *Cotap*, *Engagement* and *Leaving*. Each statement had to be assigned to at least one category (possibly *No Category/Unclear*). Category descriptions provided to coders in each study are in Tables E.1-E.3 in Appendix E. Table E.4 provides Fleiss' Kappa, a measure of interrater agreement, rejecting that the observed level of agreement arose by chance for all primary measures. Tables E.5-E.7 show the proportion of messages assigned to each category in each treatment and country for all three studies.
[42] In Appendix Table E.8, we provide the average numbers of messages appealing to *Fairness*, *Efficiency* and *Self-interest* that are sent by the different types in Table 9. Across all studies, messages appealing to *Fairness* are sent more frequently by individuals classified as *Prosocial > 0* than by either of the other types, while messages appealing to *Self-interest* are sent more frequently by those classified as *Prosocial < 0* than by either other type. This provides some corroboration that the classifications in Table 9 correspond sensibly to individuals' communication strategies.

observe fewer participants adopting *Prosocial* discourse activity in the *Exclusive* condition than in the other two conditions. Importantly, all three of these observations track variation in the market shares of the responsible product across our studies.

Table 9. Proportions of subjects classified according to prosocial orientation in discourse

| | Study 1 | | | | | | Study 2 | | Study 3 | |
| | Switzerland | | | China | | | | | | |
	Veil	No Veil	Exclusive	Veil	No Veil	Exclusive	Discourse	Experienced	Discourse (Neutral)	Optional
Prosocial > 0	57%	65%	50%	36%	33%	16%	49%	50%	49%	33%
Prosocial = 0	36%	34%	46%	59%	63%	69%	43%	40%	46%	56%
Prosocial < 0	7%	1%	4%	5%	4%	16%	8%	10%	6%	12%

Notes. The modal type in each column is shaded. Classification based on the relative frequencies of messages advocating for *No Impact* or *Impact* sent by a participant. *Prosocial>0* (*Prosocial<0*) corresponds to participants who sent strictly more (fewer) messages advocating for the responsible product than for the harmful product. *Prosocial=0* corresponds to participants who sent equal numbers of messages (possibly zero) of both types. For Study 3 *Optional*, participants who did not enter the discussion forum are classified as *Prosocial = 0*.

We next conduct exploratory analysis to investigate whether variation in communication strategies that we observe in Table 9 can help explain variation in the impact of discourse across our experiments. Tables 10a, 10b and 10c report regressions, using observations from both buyers and sellers, of the decision to opt for responsible products (i.e., to purchase a responsible product for buyers and to offer one for sellers).[43] Each panel reports the results for one study. The first regression in each panel identifies the treatment effects on participants' market behavior. The second regression includes a participants' own *Prosocial* classification, according to that participant's messages. The third regression includes the average of *other* market participants' *Prosocial* scores—capturing the degree to which a participant was exposed to others supporting responsible exchange. In both cases, the *Prosocial* variable equals zero in the *Baseline*, where participants neither produce messages nor are exposed to messages produced by others. The fourth regression includes both participants' own and others' average *Prosocial* scores.[44]

---

[43] Appendix Table E.9a, E.9b and E9c report the results separately for buyers and sellers.
[44] Appendix Table E.10 tests how one's own *Prosocial* communication strategy and exposure to others' *Prosocial* communication influence the belief and value measures we collected in Study 3. Exposure to others' *Prosocial* communication has a strong positive impact on beliefs that others support exchanging the socially responsible good.

Table 10.a: GLS (random-effects) regressions of responsible product choice (Study 1)

	Switzerland				China			
	(1)	(2)	(3)	(4)	(1')	(2')	(3')	(4')
Veil	0.456***	0.442***	0.412***	0.406***	0.443***	0.415***	0.404***	0.387***
	(0.055)	(0.056)	(0.062)	(0.063)	(0.099)	(0.103)	(0.126)	(0.129)
No Veil	0.375***	0.360***	0.329***	0.323***	0.343***	0.318***	0.308***	0.292***
	(0.053)	(0.053)	(0.061)	(0.062)	(0.079)	(0.077)	(0.089)	(0.091)
Exclusive	0.417***	0.407***	0.373***	0.371***	0.220**	0.217**	0.213**	0.212**
	(0.061)	(0.062)	(0.071)	(0.071)	(0.093)	(0.091)	(0.088)	(0.087)
Prosocial		0.014*		0.011		0.055**		0.052***
(self)		(0.008)		(0.007)		(0.022)		(0.019)
Prosocial			0.044	0.039			0.077	0.058
(others)			(0.029)	(0.028)			(0.111)	(0.110)
Constant	0.490***	0.490***	0.490***	0.490***	0.149**	0.149**	0.149**	0.149**
	(0.049)	(0.049)	(0.049)	(0.049)	(0.067)	(0.067)	(0.067)	(0.067)
Obs.	12,148	12,148	12,148	12,148	12,018	12,018	12,018	12,018
Nb. subjects	512	512	512	512	512	512	512	512
R^2	0.424	0.427	0.427	0.429	0.277	0.296	0.280	0.297

Notes. Data from both buyers and sellers. The dependent variable takes on value 1 if a buyer (resp. seller) purchased (resp. offered) a responsible product and 0 if the buyer (resp. seller) purchased (resp. offered) a harmful product. We omit the cases in which buyers did not purchase a product. *Baseline* serves as omitted category. Standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 10.b: GLS (random-effects) regressions of responsible product choice (Study 2)

	(1)	(2)	(3)	(4)
Discourse	0.334***	0.314***	0.213***	0.208***
	(0.070)	(0.070)	(0.076)	(0.076)
Experienced	0.116*	0.116*	0.116*	0.116*
	(0.061)	(0.061)	(0.061)	(0.061)
Part II	0.002	0.002	0.002	0.002
	(0.023)	(0.023)	(0.023)	(0.023)
Discourse x Part II	-0.075**	-0.075**	-0.075**	-0.075**
	(0.036)	(0.036)	(0.036)	(0.036)
Experienced x Part II	0.172***	0.153***	0.052	0.047
	(0.054)	(0.053)	(0.060)	(0.061)
Prosocial (self)		0.028**		0.014
		(0.011)		(0.015)
Prosocial (others)			0.173***	0.166***
			(0.053)	(0.055)
Constant	0.498***	0.498***	0.498***	0.498***
	(0.047)	(0.047)	(0.047)	(0.047)
Observations	12,531	12,531	12,531	12,531
Number of subjects	528	528	528	528
R^2	0.121	0.152	0.159	0.172

Notes. Data from both buyers and sellers. The dependent variable takes on value 1 if a buyer (resp. seller) purchased (resp. offered) a responsible product and 0 if the buyer (resp. seller) purchased (resp. offered) a harmful product. We omit the cases in which buyers did not purchase a product. *Baseline* serves as omitted category. Standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 10.c: GLS (random-effects) regressions of responsible product choice (Study 3)

	(1)	(2)	(3)	(4)
Discourse (Neutral)	0.189**	0.104	0.087	0.043
	(0.074)	(0.074)	(0.082)	(0.083)
Optional	0.033	-0.014	-0.023	-0.047
	(0.070)	(0.065)	(0.061)	(0.061)
Passive	0.116**	0.116**	0.013	0.047
	(0.058)	(0.058)	(0.070)	(0.068)
Prosocial (self)		0.125***		0.113***
		(0.016)		(0.016)
Prosocial (others)			0.151***	0.102**
			(0.048)	(0.043)
Constant	0.589***	0.589***	0.589***	0.589***
	(0.040)	(0.040)	(0.040)	(0.040)
Observations	15,429	15,429	15,429	15,429
Number of subjects	649	649	649	649
R^2	0.038	0.131	0.074	0.146

Notes. Data from both buyers and sellers. The dependent variable takes on value 1 if a buyer (resp. seller) purchased (resp. offered) a responsible product and 0 if the buyer (resp. seller) purchased (resp. offered) a harmful product. We omit the cases in which buyers did not purchase a product. *Baseline* serves as omitted category. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

There are two notable observations in these tables. First, the coefficients for *Prosocial (self)* and *Prosocial (others)* are positive in every specification, indicating that making more arguments in favor of responsible market behavior and being exposed to more such arguments made by others is correlated with more responsible market behavior. However, the relationships are not always statistically significant, particularly for Study 1. Second, the coefficients for the treatments are always smaller in magnitude, and often also in statistical significance, when we introduce the variables corresponding to own and others' discourse activities. For Study 1, these decreases are generally quite small—rarely more than 10 percent of the original treatment coefficients. However, for Studies 2 and 3, the introduction of the variables measuring discourse activity explains a substantial portion of the original treatment effects. This is particularly true for the variables that capture exposure to others' prosocial messaging strategies. For example, in Study 2, introducing *Prosocial (others)* decreases the magnitude of the *Experienced × Part II* coefficient by 70 percent. Similarly, in Study 3, introducing *Prosocial (others)* reduces the magnitude of *Discourse (Neutral)* by 54 percent and reduces the magnitude of *Passive* by 89 percent. In all these cases, the treatment coefficients lose their original statistical significance.[45] While these results should be interpreted

---

[45] We also investigated whether variation in *Prosocial* can account for the limited, and varying, effectiveness of discourse in the *Optional* condition. For example, in *Optional*, the mean *Prosocial* value among participants in a given

cautiously, due to their exploratory nature, they suggest that exposure to others' arguments supporting socially responsible market conduct play an important role in the beneficial impacts of public discourse on socially responsible market conduct.[46]

7. Conclusions

We investigate the impact of public discourse on the exchange of responsible products. Our main finding is that all but one of our 11 comparisons between no-discourse baselines and conditions that provide exposure to some form of discourse increase the share of responsible products subsequently traded in a market. This is particularly surprising, as we designed many of our conditions to introduce features that we thought would likely eliminate the positive impacts of discourse, or possibly even yield negative effects on socially responsible conduct. Thus, our study provides consistent evidence that discourse *can* lead groups of anonymous individuals to change their market behavior in a way that reduces negative external impacts and increases aggregate welfare.

The lone discourse condition that appears to produce no substantial increase in socially responsible market behavior occurs when participants can opt out of discourse. This appears to yield reduced exposure to arguments generated by others that advocate for socially responsible conduct, resulting in less confidence that others support exchanging the responsible product. Our findings thus indicate that an important channel for the influence of public discourse is through strengthening the belief that other market actors support social responsibility, suggesting that effective discourse campaigns should create perceptions of widespread participation and support.

While our results echo similar positive impacts of communication in other settings, such as social dilemmas, our findings provide an important novel direction for such research. Unlike earlier work, our study finds large positive impacts of communication in a setting in which discourse leads those communicating to ultimately end up worse off in terms of material outcomes. Aside from demonstrating a new way in which communication can improve efficiency, this finding

---

market is significantly positively correlated with the market share of the responsible product (p=0.014). Additionally, Appendix Table E.11 reports regressions similar to those in Table 10 that investigate whether differences in (exposure to) prosociality in discourse account for the differential effectiveness of discourse in *Discourse (Neutral)* and *Optional* in Study 3. Using a regression that omits the *Baseline* and *Passive* conditions, we find that the introduction of *Prosocial (self)* and *Prosocial (others)* eliminates the (marginally) statistically significant difference of this treatment effect.
[46] We also conduced exploratory analysis using natural-language processing tools. Each chat transcript was coded for valence (positive, negative) and for various sentiments (e.g., approval, caring, sadness). These classifications do not appear to provide much explanatory power for explaining behavior in the experiment or treatment effects.

is of crucial importance for our motivating research question. Public campaigns and discourse can mitigate harmful external impacts of market activity only by stimulating voluntary change towards more responsible, but also more costly, production technologies. Thus, the finding that it is possible for collections of anonymous individuals to use discourse to convince one another to shift their market behavior to incur greater costs in return for positive social impact is important.

Despite the extensiveness of the conditions under which we study the effects of discourse, our work requires several caveats. While our treatment comparisons vary the nature of public discourse in many ways, there are of course additional potentially important factors that we omit. This includes important sources of heterogeneity among market actors, such as nationality, geography and income, which may make it difficult to obtain agreements. Furthermore, the specific nature of discourse—e.g., through institutions and the media—can vary in many ways that extend far beyond the simple kind of discourse in our study. Nevertheless, our design can be easily extended to incorporate additional features worth studying.

Additionally, the degree to which laboratory findings generalize to non-laboratory settings is an important concern with all laboratory studies. Our study is motivated by the observation of large public discourse campaigns intended to promote more responsible market conduct, and the recognition that studying the equilibrium impacts of such campaigns is challenging to address with non-laboratory data, where it is impossible to observe counterfactuals or exogenously manipulate the presence and nature of discourse. Our laboratory evidence provides an indication that the kind of discourse encouraged by such campaigns *can* facilitate socially responsible market behavior. We make no claims that it will always, or even necessarily frequently, do so. Indeed, we document that limited participation—a possibility in many natural settings—may drastically reduce the positive impacts of discourse. Nevertheless, our study documents instances in which discourse can have positive impacts and provides preliminary insights into the mechanisms that might be at work.

References

Amenta, E., Caren N., Chiarello, E., and Su, Y. (2010). The Political Consequences of Social Movements. *Annual Review of Sociology*, 36, 287-307.

Andreoni, J., and Rao, J. M. (2011). The Power of Asking: How Communication Affects Selfishness, Empathy, and Altruism. *Journal of Public Economics*, 95(7-8), 513-520.

Antonakis, J., d'Adda, G., Weber, R. A., & Zehnder, C. (2021). "Just words? Just speeches?" On the economic value of charismatic leadership. *Management Science*.

Agranov, M. and Tergiman, C. (2014). Communication in Multilateral Bargaining. *Journal of Public Economics*, 118, 75-85.

Babcock, L., Loewenstein, G., Issacharoff, S., and Camerer, C. (1995). Biased Judgments of Fairness in Bargaining. *American Economic Review*, 85(5), 1337-1343.

Bartling, B., Valero, V., and Weber, R. (2019). On the Scope of Externalities in Experimental Markets. *Experimental Economics*, 22 (3), 610-624.

Bartling, B., Valero, V., and Weber, R. (2020). The Causal Effect of Income Growth on Consumer Social Responsibility. *SSRN Discussion Paper No. 3249788*.

Bartling, B., Weber, R. A., and Yao, L. (2015). Do Markets Erode Social Responsibility? *Quarterly Journal of Economics*, 130(1), 219-266.

Bénabou, R., Falk, A., and Tirole, J. (2020). Narratives, Imperatives, and Moral Persuasion. *NBER working paper*.

Bénabou, R., and Tirole, J. (2010). Individual and Corporate Social Responsibility. *Economica*, 77(305), 1-19.

Biais, B., Bisière, C., and Pouget, S. (2014). Equilibrium Discovery and Preopening Mechanisms in an Experimental Market. *Management Science*, 60(3), 753-769.

Blume, A., and Ortmann, A. (2007). The Effects of Costless Pre-play Communication: Experimental Evidence from Games with Pareto-ranked Equilibria. *Journal of Economic Theory*, 132(1), 274-290.

Bochet, O., Page, T., and Putterman, L. (2006). Communication and Punishment in Voluntary Contribution Experiments. *Journal of Economic Behavior and Organization*, 60(1), 11-26.

Bohnet, I., & Frey, B. S. (1999). Social distance and other-regarding behavior in dictator games: Comment. *American Economic Review*, 89(1), 335-339.

Brandts, J., and Cooper, D. J. (2007). It's what you say, not what you pay: an experimental study of manager employee relationships in overcoming coordination failure. *Journal of European Economic Association*, 5 (6):1223-1268.

Charness, G., and Dufwenberg, M. (2006). Promises and Partnership. *Econometrica*, 74(6), 1579-1601.

Cooper, R., DeJong, D. V., Forsythe, R., and Ross, T. W. (1992). Communication in Coordination Games. *Quarterly Journal of Economics*, 107(2), 739-771.

d'Adda, G., Darai, D., Pavanini, N., and Weber, R. (2017). Do Leaders Affect Ethical Conduct? *Journal of the European Economic Association*, 15(6), 1177-1213.

Dal Bo, E., and Dal Bo, P. (2014). "Do the right thing:" The effects of moral suasion on cooperation. *Journal of Public Economics*, 117, 28-38.

Danz, D., Engelmann, D., and Kübler, D. (2022). Do Legal Standards Affect Ethical Concerns of Consumers? *European Economic Review*, 144, Article 104044.

Dawes, R. M., McTavish, J., and Shaklee, H. (1977). Behavior, Communication, and Assumptions about other People's Behavior in a Commons Dilemma Situation. *Journal of Personality and Social Psychology*, 35(1), 1.

De Quidt, J., Haushofer, J, and Roth, C. (2018). Measuring and Bounding Experimenter Demand. *American Economic Review*, 108(11), p. 3266-3302.

Dufwenberg, M., Heidhues, P., Kirchsteiger, G., Riedel, F., and Sobel, J. (2011). Other-regarding Preferences in General Equilibrium. *Review of Economic Studies*, 78(2), 613-639.

Dufwenberg, M., Johansson-Stenman, O., Kirchler, M., Lindner, F., and Schwaiger, R. (2022). Mean Markets or Kind Commerce. *Journal of Public Economics*, 209, 104648.

Ellman, M., and Pezanis-Christou, P. (2010). Organizational Structure, Communication, and Group Ethics. *American Economic Review*, 100(5), 2478-91.

Engelmann, D., Friedrichsen, J., and Kübler, D. (2018). Fairness in Markets and Market Experiments (No. SP II 2018-203). WZB Discussion Paper.

Exley, C. (2020). Using Charity Performance Metrics as an Excuse Not to Give. *Management Science*, 66(2), 553-563.

Goldstein, N., Cialdini, R., and Griskevicius, V. (2008). A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels. *Journal of Consumer Research*, 35(3), 472–482.

Hainmueller, J., Hiscox, M. J., and Sequeira, S. (2015). Consumer Demand for Fair Trade: Evidence from a Multistore Field Experiment. *Review of Economics and Statistics*, 97(2), 242-256.

Hargreaves Heap, S. and D. Zizzo (2011). Emotions and Chat in a Financial Markets Experiment. *SSRN Working Paper 1783462*.

Irlenbusch, B., and Saxler, D. (2019). The Role of Social Information, Market Framing, and Diffusion of Responsibility as Determinants of Socially Responsible Behavior. *Journal of Behavioral and Experimental Economics*, 80, 141-161.

Isaac, R. M., & Walker, J. M. (1988). Communication and free-riding behavior: The voluntary contribution mechanism. *Economic Inquiry*, 26(4), 585-608.

Kessler, J. B., and Leider, S. (2012). Norms and Contracting. *Management Science*, 58(1), 62-77.

Kirchler, M., Huber, J., Stefan, M., and Sutter, M. (2015). Market Design and Moral Behavior. *Management Science*, 62(9), 2615-2625.

Kocher, M., Schudy, S., and Spantig, L. (2018). I Lie? We Lie! Why? Experimental Evidence on a Dishonesty Shift in Groups. *Management Science*, 64(9), 3971-4470.

Kriss, P. H., Blume, A., and Weber, R. A. (2016). Coordination with Decentralized Costly Communication. *Journal of Economic Behavior and Organization*, 130, 225-241.

Krupka, E. L., Leider, S., and Jiang, M. (2017). A Meeting of the Minds: Informal Agreements and Social Norms. *Management Science*, 63(6), 1708-1729.

Krupka, E., and Weber, R. A. (2009). The focusing and informational effects of norms on pro-social behavior. *Journal of Economic Psychology*, 30(3), 307-320.

Levy, R., and Mattsson, M. (2022). The Effects of Social Movements: Evidence from #MeToo. *SSRN Working Paper 3496903*.

Madestam, A., Shoag, D., Veuger, S., and Yanagizawa-Drott, D. (2013). Do political protests matter? Evidence from the tea party movement. *Quarterly Journal of Economics*, 128(4), 1633–1685.

Mazar, N., Amir, O., and Ariely, D. (2008). The Dishonesty of Honest People: A Theory of Self-Concept Maintenance. *Journal of Marketing Research*, 45(6), 633-644.

Ockenfels, A., Werner, P., and Edenhofer, O. (2020). Pricing Externalities and Moral Behaviour. *Nature Sustainability*, https://doi.org/10.1038/s41893-020-0554-1.

Ostrom, E., Walker, J., and Gardner, R. (1992). Covenants with and without a sword: Self-governance is possible. *American Political Science Review*, 86(2), 404-417.

Pigors, M., and Rockenbach, B. (2016). Consumer Social Responsibility. *Management Science*, 62(11), 3123-3137.

Rode, J., Le Menestrel, M., and Hogarth, R. (2008), Ethical Differentiation and Market Behaviour: An experimental approach. *Journal of Economic Behavior and Organization*, 66, 265-280.

Saccardo, S., and Serra-Garcia, M. (2021). Cognitive Flexibility or Moral Commitment? Evidence of Anticipated Belief Distortion, *CESifo Working Paper No. 8529*.

Sutter, M., Huber, J., Kirchler, M., Stefan, M., and Walzl, M. (2020). Where to Look for the Morals in Markets? *Experimental Economics*, 23, 30-52.

Sutter, M., and Strassmair, C. (2009). Communication, Cooperation and Collusion in Team Tournaments - An Experimental Study. *Games and Economic Behavior*, 66(1), 506-525.

White, K., Habib, R., and Hardisty, D. (2019). How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. *Journal of Marketing*, 83(3), 22-49.

Public Discourse and Socially Responsible Market Behavior

Björn Bartling   Vanessa Valero   Roberto A. Weber   Lan Yao

Supplemental Appendix

Contents

A. Additional Figures and Tables for Study 1

Figure A.1: Market shares of responsible products over periods by treatment and country
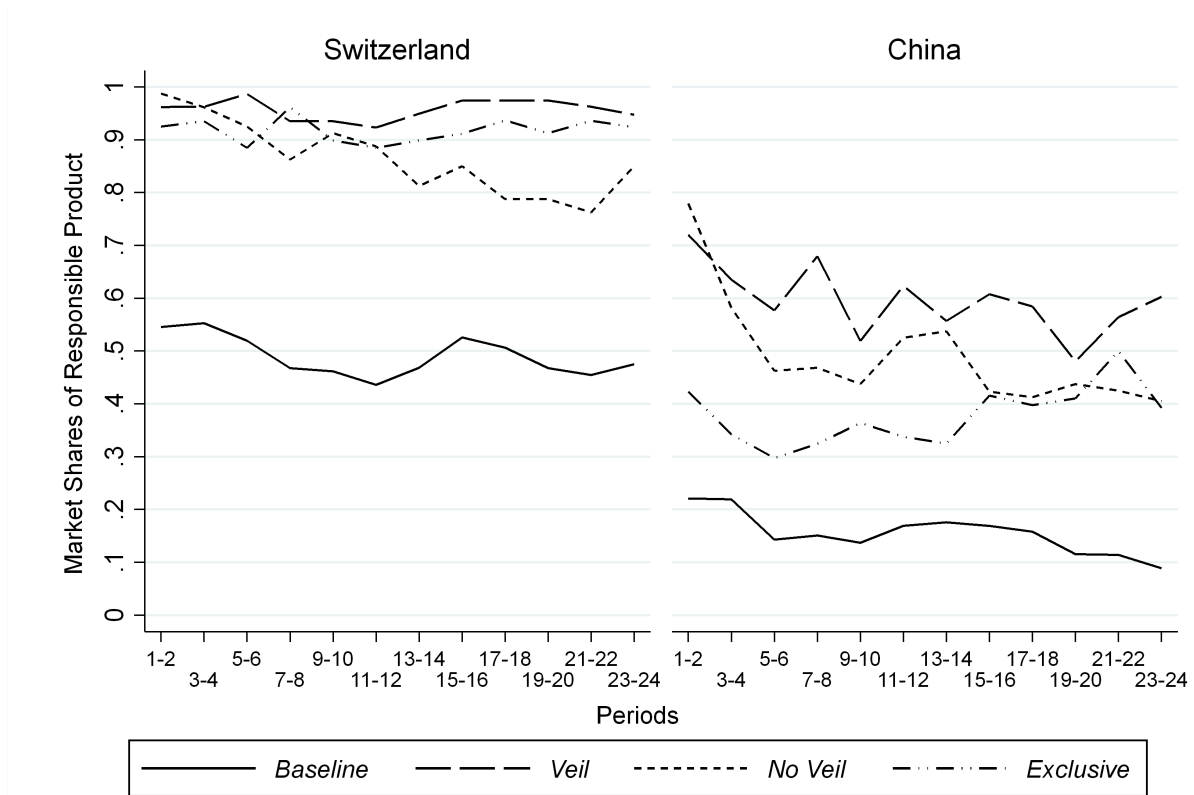
Notes. The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. Data are aggregated in blocks of two periods to smooth random variation across periods.

Figure A.2: CDFs of market shares of responsible products by treatment and country
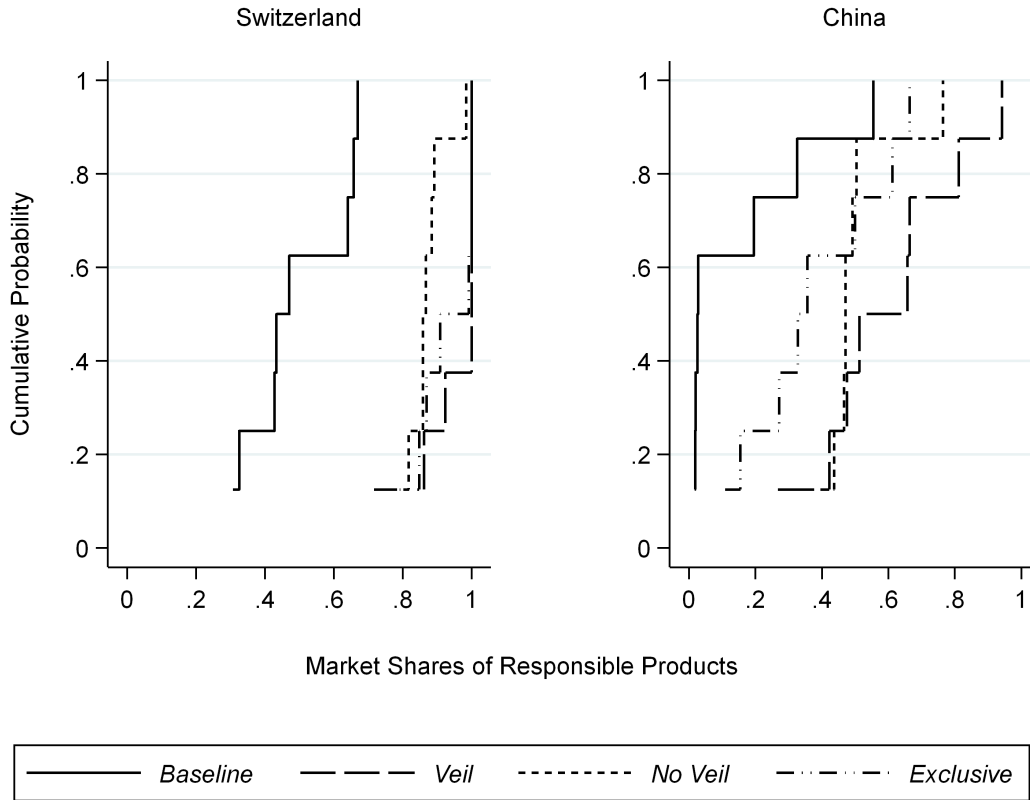
Notes. The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. We conducted eight markets per treatment, which serve as units of observation in the figure.

Table A.1: Wilcoxon rank-sum test p-values at the market (buyer) level, two-sided

p-values	Baseline	Veil	No Veil	Exclusive
Baseline	-	0.005 (0.000)	0.012 (0.000)	0.027 (0.000)
Veil	0.001 (0.000)	-	0.248 (0.145)	0.093 (0.008)
No Veil	0.001 (0.000)	0.014 (0.001)	-	0.293 (0.055)
Exclusive	0.001 (0.000)	0.340 (0.126)	0.140 (0.049)	-

Notes. The p-values in the lower triangle correspond to Switzerland, the p-values in the upper, shaded area correspond to China.

Table A.2: Random-effects Probit regressions of responsible buyer product choice

	Switzerland		China	
	(1)	(2)	(3)	(4)
Veil	3.368***	3.171***	1.966***	1.798***
	(0.516)	(0.550)	(0.392)	(0.359)
No Veil	1.827***	2.538***	1.571***	1.603***
	(0.364)	(0.514)	(0.336)	(0.330)
Exclusive	2.635***	2.399***	1.149***	0.591
	(0.530)	(0.570)	(0.373)	(0.418)
Period		-0.013*		-0.033**
		(0.007)		(0.013)
Period × Veil		0.018		0.016
		(0.019)		(0.018)
Period × No Veil		-0.049***		0.000
		(0.019)		(0.019)
Period × Exclusive		0.021		0.047***
		(0.021)		(0.017)
Constant	0.191	0.357*	-1.560***	-1.190***
	(0.149)	(0.189)	(0.316)	(0.285)
Observations	3770	3770	3705	3705
Subjects	160	160	160	160

Notes. The dependent variable in all models takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. We omit the 70 cases in Switzerland and the 135 cases in China in which a buyer did not purchase a product. *Baseline* serves as omitted category. *Period* takes on integer values between 1 and 24. The table reports raw probit coefficients. Standard errors (in parentheses) are clustered at the market level, *** p<0.01, ** p<0.05, * p<0.1.

Table A.3: Wald tests of equality of coefficients from regressions of responsible buyer product choice

p-values	*Veil*	*No Veil*	*Exclusive*
Veil	-	0.217	0.038
No Veil	0.009	-	0.203
Exclusive	0.448	0.186	-

Notes. To test for equality of coefficients, we use the results of model 1 for Switzerland and model 3 for China of Table 2. The p-values in the lower triangle correspond to Switzerland, the p-values in the shaded area correspond to China.

Table A.4: Random-effects probit regressions of responsible buyer product choice

	(1)	(2)
Veil	3.028***	
	(0.477)	
No Veil	1.681***	
	(0.303)	
Exclusive	2.370***	
	(0.432)	
All discourse conditions		2.297***
		(0.297)
China	-1.758***	-1.779***
	(0.447)	(0.451)
China × Veil	-0.976	
	(0.683)	
China × No Veil	-0.039	
	(0.512)	
China × Exclusive	-1.169*	
	(0.646)	
China × All discourse conditions		-0.649
		(0.513)
Constant	0.132	0.139
	(0.222)	(0.224)
Observations	7475	7475
Number of Subjects	320	320

Notes. The dependent variable in both models takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. We omit the cases in which a buyer did not purchase a product. *Baseline* in Switzerland serves as omitted category in both models. All standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Figure A.3: Prices of products by type, treatment and country
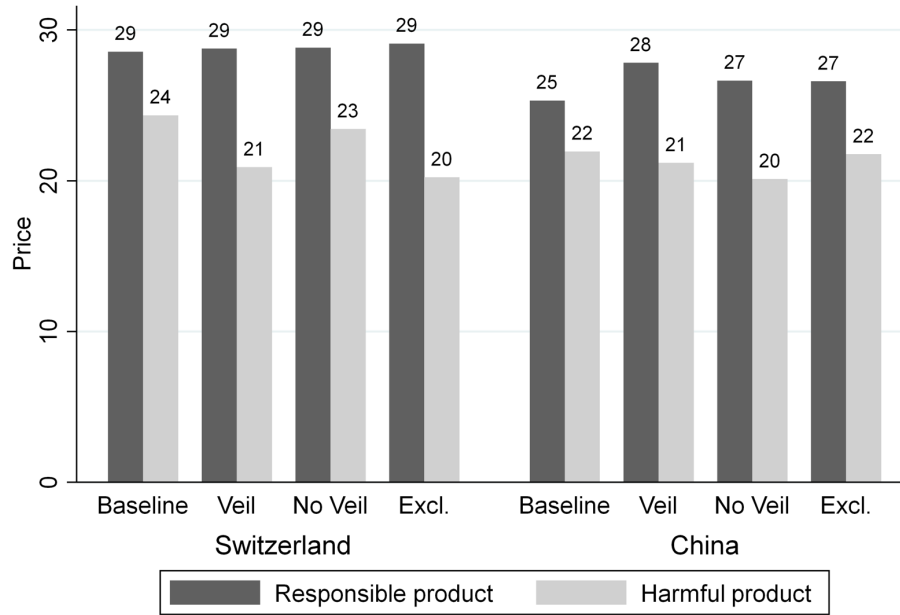
Notes: The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. "Excl." is short for Exclusive.

Figure A.4: Sellers' profit by product type, treatment and country
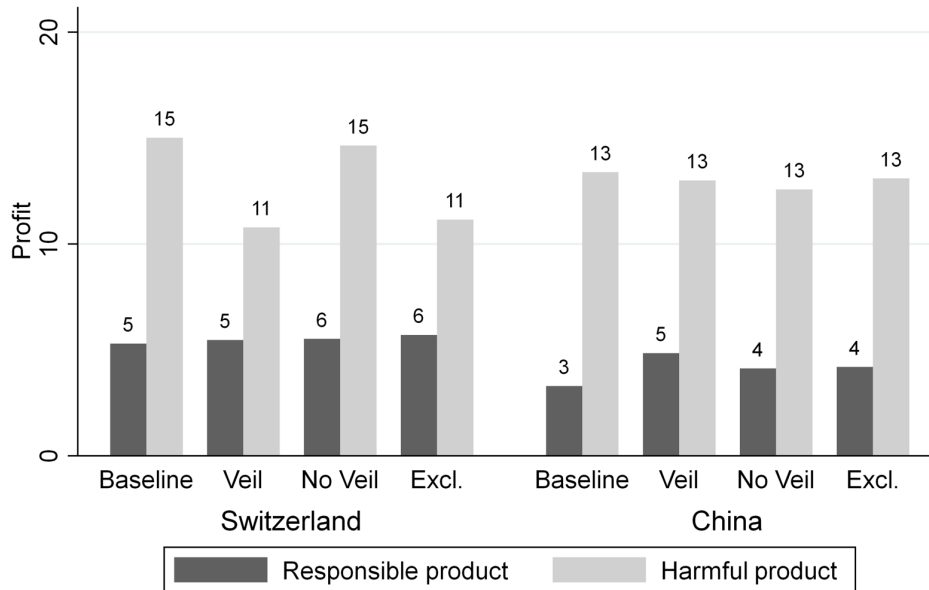
Note: "Excl." is short for Exclusive.

Table A.5: Fixed-effects panel regressions of responsible buyer product choice

	Switzerland (1)	China (2)
Lowest price of responsible product	-0.027*** (0.005)	-0.032*** (0.003)
Lowest price of harmful product	0.024*** (0.004)	0.033*** (0.004)
Constant	0.807*** (0.138)	0.639*** (0.057)
Observations	1,641	2,101
Number of buyers	145	158
R^2	0.127	0.176

Notes: The dependent variable in both models takes on value 1 if a buyer purchased a responsible product and 0 otherwise. *Lowest price of responsible product* and *Lowest price of harmful product* refer to the prices of products available to the buyer. Both models omit the cases in which a buyer made no product purchase and cases in which either only responsible or harmful products were available to a buyer. The models allow for individual level fixed effects. Standard errors (in parentheses) clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.6: Fixed-effects panel regressions of responsible seller product decisions

	(1)	(2)
Expected responsible product profit premium	0.005*** (0.001)	0.006*** (0.001)
Constant	0.677*** (0.001)	0.457*** (0.004)
Observations	2,532	3,324
Number of sellers	174	192
R^2	0.017	0.011

Notes: The dependent variable in all models is a binary variable taking on value 1 if a seller offered a responsible product and 0 otherwise. The variable *Expected responsible product profit premium* measures the average realized profit difference between offering a responsible product and offering a harmful product in the preceding period. Standard errors (in parentheses) clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.7: Regressions of social appropriateness

	OLS			Ordered probit		
	(1)	(2)	(3)	(4)	(5)	(6)
	Switz.	China	Pooled	Switz.	China	Pooled
Veil	-0.469***	-0.354***	-0.469***	-1.358***	-0.951***	-1.389***
	(0.054)	(0.102)	(0.054)	(0.228)	(0.276)	(0.228)
No Veil	-0.333***	-0.156**	-0.333***	-0.859***	-0.447**	-0.888***
	(0.054)	(0.065)	(0.054)	(0.158)	(0.181)	(0.161)
Exclusive	-0.375***	-0.245***	-0.375***	-0.985***	-0.672***	-1.032***
	(0.071)	(0.086)	(0.071)	(0.226)	(0.238)	(0.234)
China			0.625***			1.528***
			(0.060)			(0.171)
China × Veil			0.115			0.507
			(0.115)			(0.338)
China × No Veil			0.177**			0.477**
			(0.084)			(0.232)
China × Exclusive			0.130			0.411
			(0.111)			(0.318)
Constant	-0.370***	0.255***	-0.370***	-	-	-
	(0.023)	(0.055)	(0.023)	-	-	-
Observations	512	512	1,024	512	512	1,024
R^2	0.161	0.087	0.481	-	-	-

Notes. The dependent variable in all models take values from -1 to 1. Models 1 and 4 concern Switzerland, while models 2 and 5 concern China. In these models, *Baseline* serves as omitted category. For models 3 and 6, we pooled the data from both countries. In this cases, *Baseline* in Switzerland serves as the omitted category. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

B. Supplementary Condition in Study 1: Reflection

In this section, we report the results of an additional, *post hoc*, treatment added to Study 1 in order to investigate the extent to which the positive impact of public discourse on market social responsibility is due to discourse *per se*—i.e., the *exchange* of views and arguments between market participants—or due to prompting individuals to spend time *thinking* about appropriate market behavior, which does not necessarily involve discourse. In fact, earlier experiments that study the role of communication in strategic settings typically confound these two mechanisms.

To separate these two possible channels, we conducted condition *Reflection*. As in *No Veil*, subjects in *Reflection* first learn their roles in the market game. In contrast to *No Veil*, however, subjects do not have the opportunity to enter into a public discourse with others but can, instead, write their thoughts about what constitutes "appropriate" or "acceptable" market behavior privately into the computer interface. This way, subjects are encouraged to think about appropriate market behavior without being influenced by others.[1]

The *Reflection* condition also allows us to investigate a kind of prime often present in campaigns that are intended to foster socially responsible behavior by encouraging people to think about their behavior and the right thing to do. Does encouraging people to think about the appropriateness of their behavior change their market behavior?

Figure B.1 illustrates that encouraging people to think about the appropriateness of their market behavior fosters socially responsible behavior in our experimental markets, both in Switzerland and China. The market share of the responsible product is 67 percent in *Reflection* in Switzerland, compared to 49 percent in *Baseline*. The same result prevails in China, where the market share of the responsible product is 43 percent in *Reflection*, compared to 15 percent in *Baseline*. Wilcoxon rank-sum test at the market (buyer) levels indicate that these differences are statistically significant; p=0.036 (p=0.023) for Switzerland and p=0.016 (p=0.000) for China.[2]

Figure B.1 further illustrates the additional impact of discourse *per se*, i.e., the impact of discourse on top of making people think about appropriate market behavior, by comparing markets shares of the responsible product in *Reflection* and *No Veil*. The effect of discourse in *No Veil* is

---

[1] We collected data from 8 markets with 16 participants each in both countries; hence, 256 subjects participated in total in condition *Reflection*. We followed the same procedures as described in Section 3.1.4.

[2] The prices of the responsible and harmful products in *Reflection* are comparable to all other conditions. The responsible and harmful products trade, on average, at 26 and 20, respectively, in Switzerland and at 26 and 18, respectively, in China.

about twice as large as the effect of private deliberation in *Reflection* in Switzerland. In China, in contrast, the effect of private deliberation is almost as large as the effect of discourse. Indeed, the difference between *Reflection* and *No Veil* is statistically significant only in Switzerland, p=0.002 (p=0.011), but not in China, p=0.207 (p=0.196). Overall, the data show that a sizable part of the effect of public discourse on socially responsible market behavior is driven by encouraging people to think about the appropriateness of their behavior, suggesting that public campaigns can also be effective when they prompt individuals to think about the consequences of their market activities. Indeed, many campaigns take this form.

Figure B.1: Public Discourse vs. Reflection
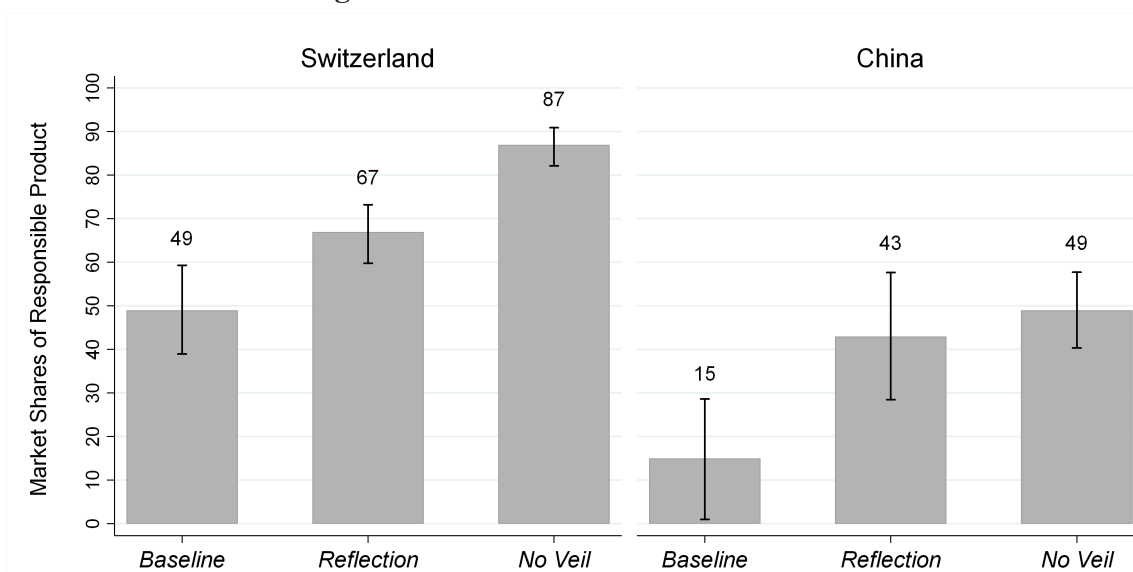
Notes: The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. The bars indicate 95-percent confidence intervals, calculated at the market level.

The results from this section might be of broader interest, beyond our particular research question, in light of the large literature on communication in games. Experimental papers that study the effect of adding some form of communication among players to a game typically do not disentangle whether communication *per se* causes treatment differences or whether these differences are observed because the option to communicate prompts players to think about their behavior and provides them with time to do so. However, in many cases it can be of interest to better understand the underlying mechanisms that drive behavioral change. In our particular case, for example, it is valuable to know that a policy that encourages people to think about what constitutes "appropriate" market behavior can be effective, even without providing the opportunity to engage in a public discourse.

C. Additional Figures and Tables for Study 2

Figure C.1: CDFs of market shares of responsible products by treatment

Notes. The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. Each market serves as a unit of observation in the figure.

Table C.1: Random-effects probit regressions of responsible buyer product choice

	(1)	(2)
Discourse	1.783***	2.061***
	(0.464)	(0.486)
Experienced	0.433	0.721**
	(0.311)	(0.316)
Part II	-0.048	-0.246***
	(0.139)	(0.017)
Part II × Discourse	-0.491**	0.185
	(0.249)	(0.257)
Part II × Experienced	0.832***	1.609***
	(0.309)	(0.334)
Period		0.016
		(0.010)
Period × Discourse		-0.057***
		(0.014)
Period × Experienced		-0.063***
		(0.014)
Constant	0.241	0.173
	(0.264)	(0.270)
Observations	5,619	5,619
Number of subjects	240	240

Notes: The dependent variable in all models takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. We omit the cases in which a buyer did not purchase a product. *Baseline* and *Part I* serve as omitted categories. *Part II* is a binary variable taking on value 1 for data from period 9 to 24 and 0 otherwise. *Period* takes on integer values between 1 and 24. Standard errors (in parentheses) are clustered at the market level; *** p<0.01, ** p<0.05, * p<0.1.. Wald tests of the equality of the two coefficients *Discourse* and *Part II × Experienced* are not statistically significant at conventional levels (model 1: p = 0.09, model 2: p = 0.45).
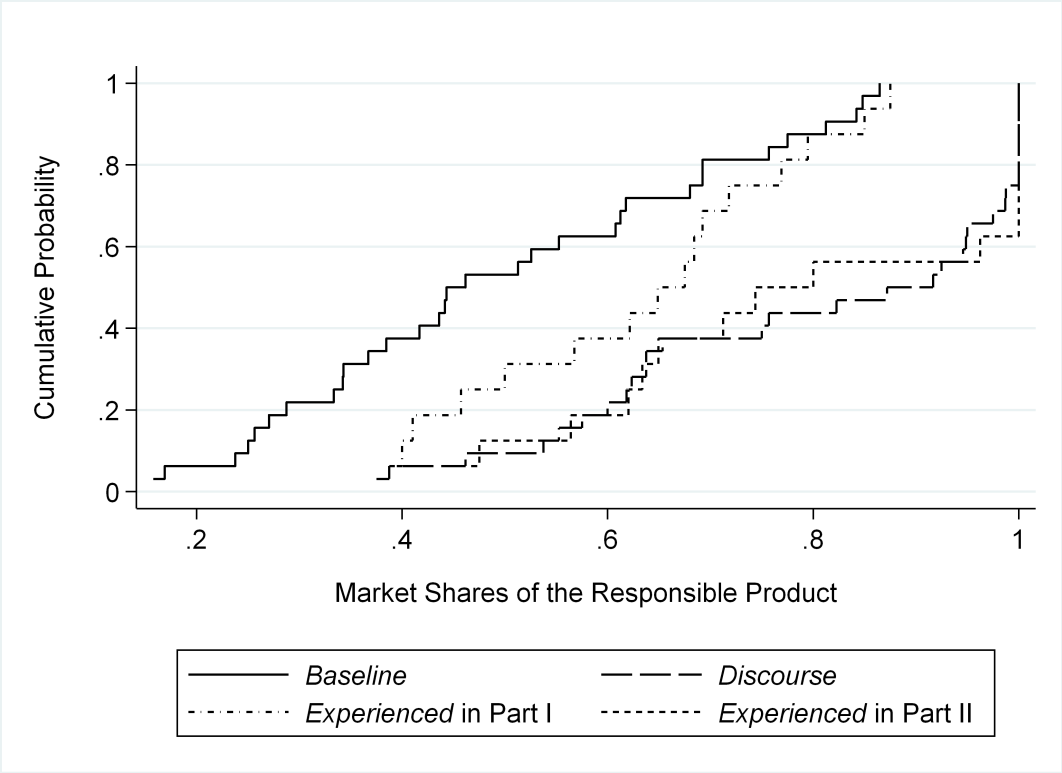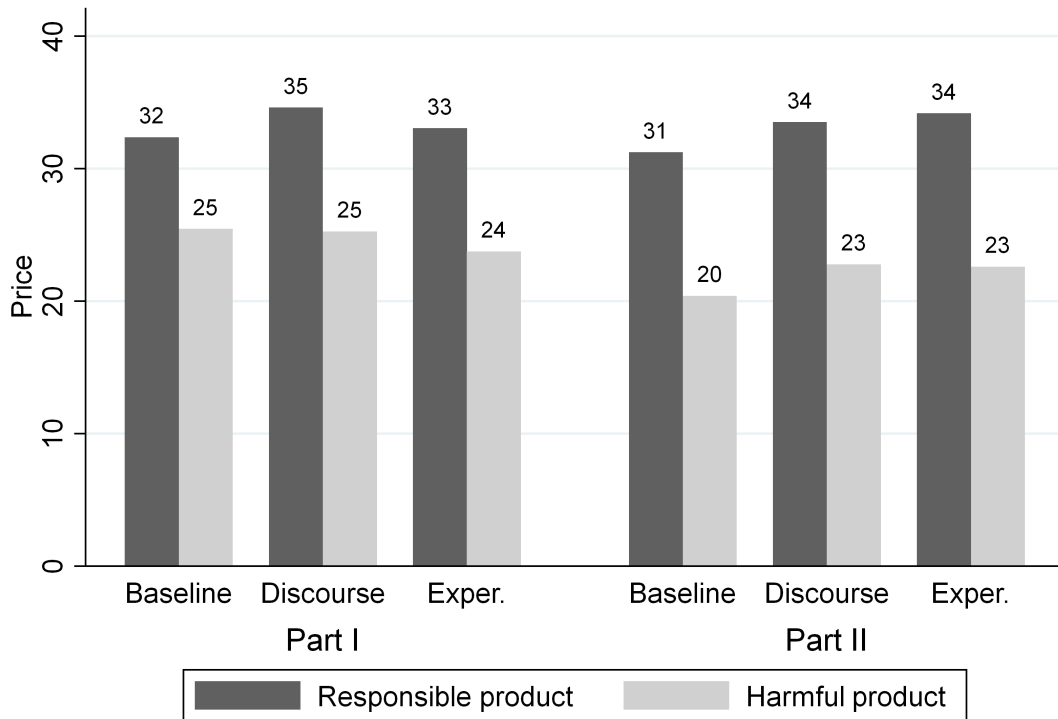
Figure C.2: Prices of products by type, treatment and part

Notes: The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. "Exper." is short for *Experienced*.

Figure C.3: Sellers' profit by product type, treatment and part
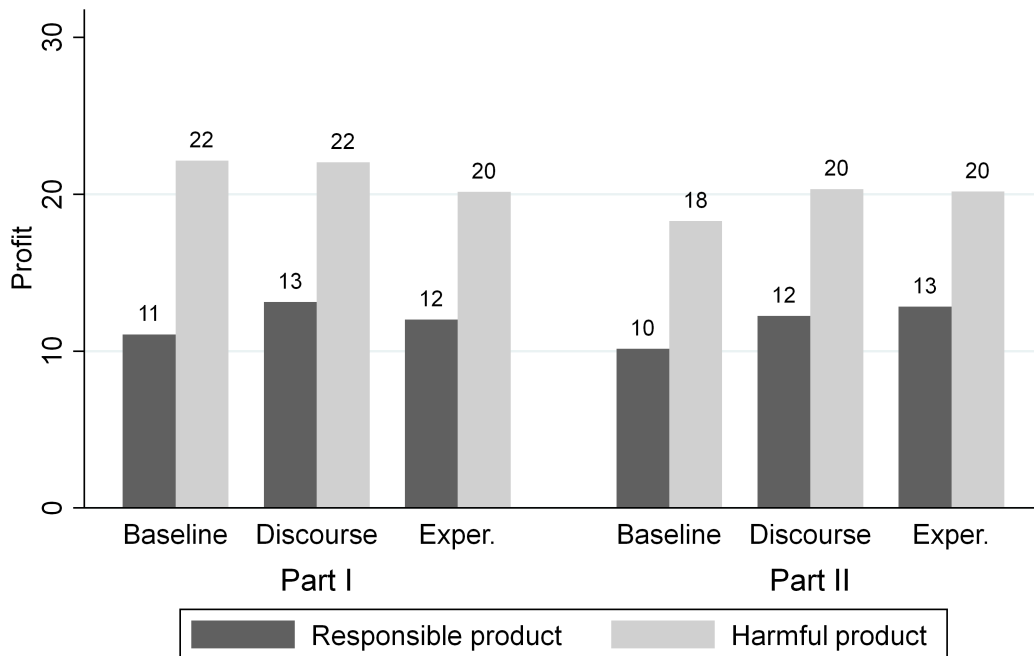
Note: "Exper." is short for *Experienced*.

Table C.2: Fixed-effects panel regressions of responsible buyer product choice

	(1)
Lowest price of responsible product	-0.021***
	(0.003)
Lowest price of harmful product	0.022***
	(0.003)
Constant	0.713***
	(0.077)
Observations	3,080
Number of buyers	222
R^2	0.110

Notes: The dependent variable takes on value 1 if a buyer purchased a responsible product and 0 otherwise.. *Lowest price of responsible product* and *Lowest price of harmful product* refer to the prices of products available to the buyer. The model omits the cases in which a buyer made no product purchase and cases in which either only responsible or harmful products were available to a buyer. The models allow for individual level fixed effects. Standard errors (in parentheses) clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table C.3: Fixed-effects panel regressions of responsible seller product decisions

	(1)
Expected responsible product profit premium	0.005***
	(0.001)
Constant	0.556***
	(0.000)
Observations	4,776
Number of sellers	270
R^2	0.013

Notes: The dependent variable in all models is a binary variable taking on value 1 if a seller offered a responsible product and 0 otherwise. The variable *Expected responsible product profit premium* measures the average realized profit difference between offering a responsible product and offering a harmful product in the preceding period. The models allow for individual level fixed effects. Standard errors (in parentheses) clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table C.4: Regressions of social appropriateness

	OLS	Ordered Probit
Discourse	-0.292***	-0.686***
	(0.102)	(0.235)
Experienced	-0.394***	-0.914***
	(0.081)	(0.190)
Constant	-0.136**	-
	(0.055)	
Observations	528	528
R^2	0.108	-

Notes. The dependent variable in all models take values from -1 to 1 corresponding to the numerical scores previously described. *Baseline* serves as omitted category. All standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Figure C.4: Effect of Public Discourse on Social Norms
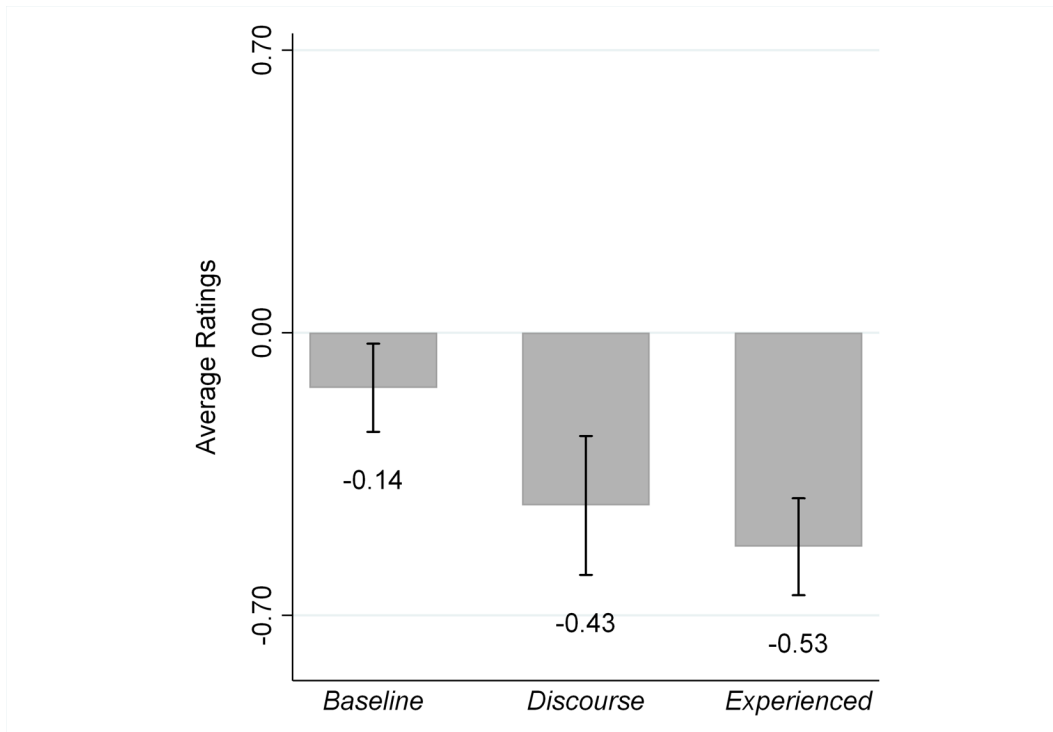
Notes. The figure shows the average rating of the appropriateness of exchanging the harmful product. "Very socially appropriate = 1," "Somewhat socially appropriate = 1/3," "Somewhat socially inappropriate = -1/3," "Very socially inappropriate = -1." The numerical rating values follow Krupa and Weber (2013). The bars indicate 95-percent confidence intervals, calculated at the market level

15

D. Additional Figures and Tables for Study 3

Figure D.1: Market shares of responsible products over periods by treatment
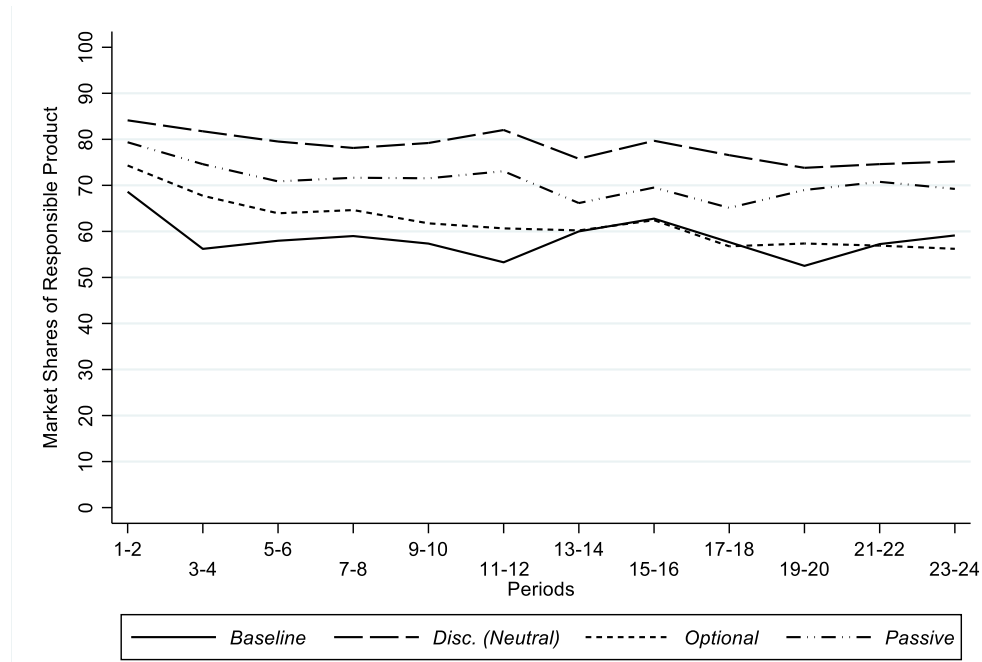
Notes. The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. Data are aggregated in blocks of two periods to smooth random variation across periods.

Figure D.2: CDFs of market shares of responsible products by treatment
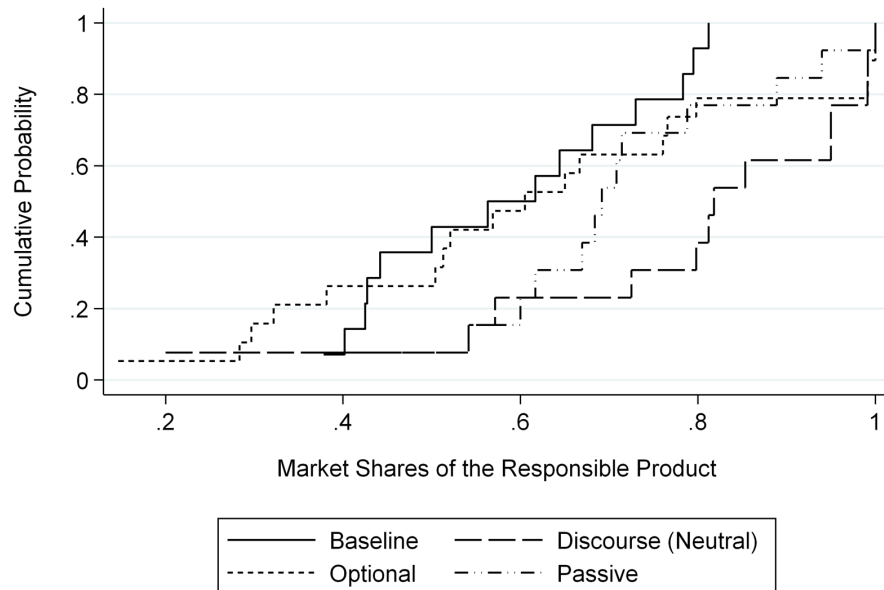
Notes. The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product. Each market serves as a unit of observation in the figure.

16

Table D.1: Random-effects probit regressions of responsible buyer product choice

	(1)	(2)
Discourse (Neutral)	1.337***	1.661***
	(0.463)	(0.517)
Optional	0.326	0.809
	(0.445)	(0.545)
Passive	0.544	0.687*
	(0.362)	(0.359)
Period		-0.009
		(0.009)
Period × Discourse (Neutral)		-0.025
		(0.021)
Period × Optional		-0.038**
		(0.018)
Period × Passive		-0.011
		(0.013)
Constant	0.667***	0.788***
	(0.222)	(0.241)
Observations	6,933	6,933
Number of subjects	295	295

Notes: The dependent variable in all models takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. We omit the cases in which the buyer purchased no product. *Baseline* serves as omitted categories. *Period* takes on integer values between 1 and 24. Standard errors (in parentheses) are clustered at the market level; *** p<0.01, ** p<0.05, * p<0.1.

Figure D.3: Prices of products by type and treatment
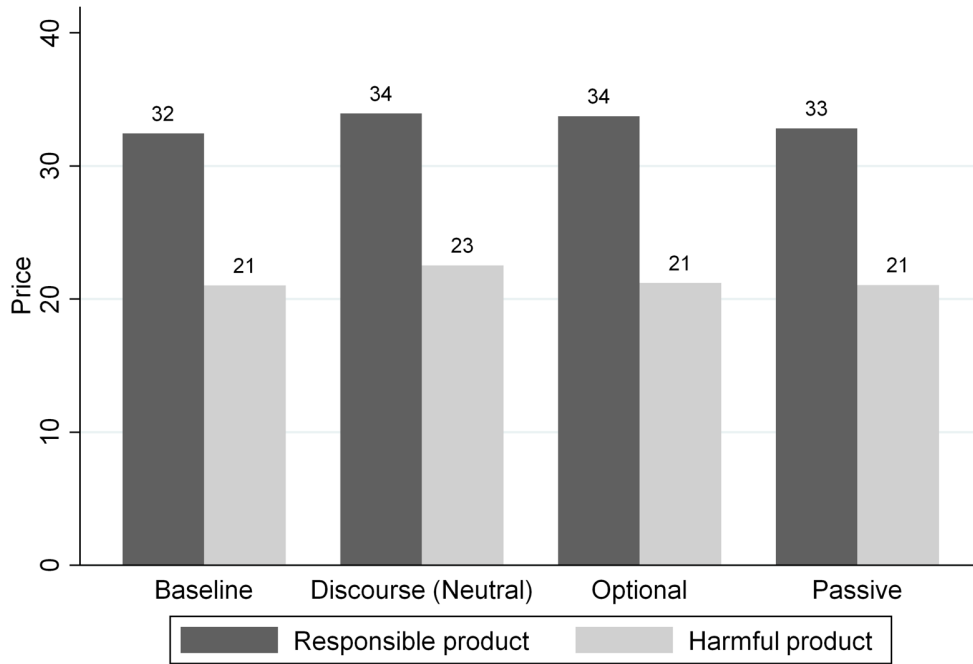
Note: The figure shows completed transactions and ignores the cases in which a buyer did not purchase a product.

Figure D.4: Sellers' profit by product type and treatment
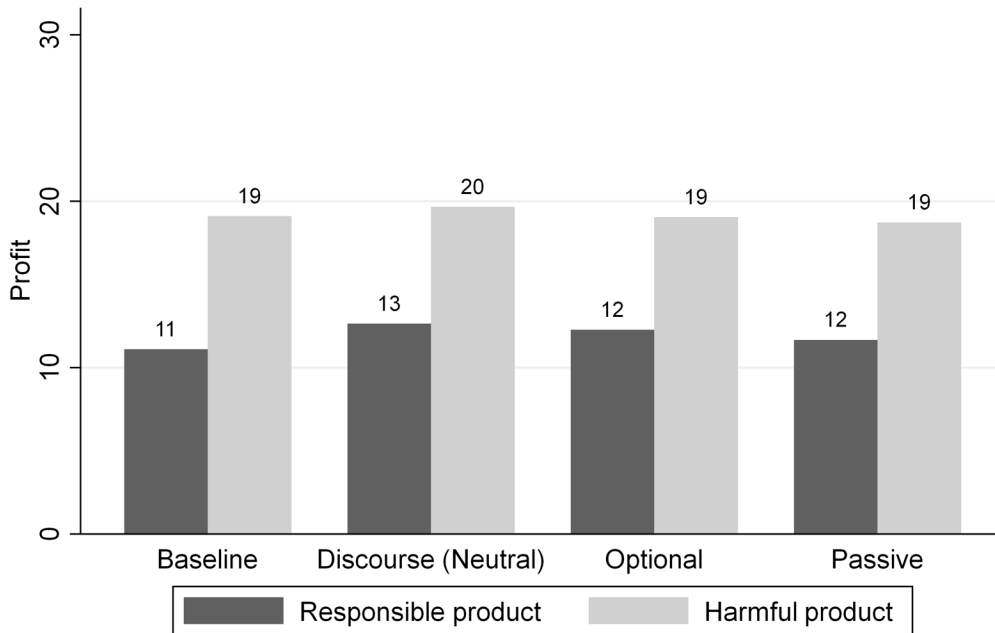
Table D.2: Fixed-effects panel regressions of responsible buyer product choice

	(1)
Lowest price of responsible product	-0.024***
	(0.003)
Lowest price of harmful product	0.019***
	(0.002)
Constant	0.920***
	(0.078)
Observations	4,151
Number of buyers	272
R^2	0.093

Notes: The dependent variable takes on value 1 if a buyer purchased a responsible product and 0 otherwise.. *Lowest price of responsible product* and *Lowest price of harmful product* refer to the prices of products available to the buyer. The model omits the cases in which a buyer made no product purchase and cases in which either only responsible or harmful products were available to a buyer. The models allow for individual level fixed effects. Standard errors (in parentheses) clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.3: Fixed-effects panel regressions of responsible seller product decisions

	(1)
Expected responsible product profit premium	0.004***
	(0.001)
Constant	0.573***
	(0.001)
Observations	6,282
Number of sellers	330
R^2	0.009

Notes: The dependent variable in all models is a binary variable taking on value 1 if a seller offered a responsible product and 0 otherwise. The variable *Expected responsible product profit premium* measures the average realized profit difference between offering a responsible product and offering a harmful product in the preceding period. The models allow for individual level fixed effects. Standard errors (in parentheses) clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.4: Description of the questionnaire items

Variable	Description
Item 1	I believe that it is important to trade the product that does not reduce the donation.
Item 2	I think that it is more important to keep the cost down that to pay more for products that avoid impacting the donation.
Item 3	All the other participants in my group believe that it is important to trade the product that does not reduce the donation.
Item 4	I am confident that other participants in my group will exchange the product that does not reduce the donation.
Item 5	Other participants in my group expect me to trade the product that does not reduce the donation.
Item 6	Participants in my group know what type of product will be traded.
Item 7	Participants in my group know at what prices products will be traded.
Item 8	I paid attention to the messages sent in the discussion forum. (asked in *Discourse (Neutral)*, *Optional* and *Passive*)
Item 9	It was important for me to express my opinions in the market forum. (asked in *Discourse (Neutral)* and *Optional*)
Item 10	Other participants in my group paid attention to the messages sent in the discussion forum. (asked in *Discourse (Neutral)*, *Optional* and *Passive*)
Item 11	I would think less of myself if I traded the product with a reduction to the donation.
Item 12	I believe that other people would think less of me if I traded the product with a reduction to the donation.

Note: Questionnaire administered immediately after discourse, or in *Baseline* after the instruction. Participants must select one of seven answers that best describes their agreement or disagreement with the respective statement, from "Strongly disagree" (-3) to " Strongly agree" (3).

Table D.5: Descriptive statistics

Variable	N	Mean	SD	Min	Max
Item 1	649	1.30	1.73	-3	3
Item 2	649	-0.48	1.82	-3	3
Item 3	649	0.64	1.76	-3	3
Item 4	649	0.54	1.66	-3	3
Item 5	649	1.09	1.65	-3	3
Item 6	649	0.69	1.87	-3	3
Item 7	649	0.84	1.75	-3	3
Item 8	495	2.40	1.39	-3	3
Item 9	352	0.70	2.01	-3	3
Item 10	495	1.66	1.33	-3	3
Item 11	649	-0.01	2.01	-3	3
Item 12	649	0.57	1.72	-3	3
Beliefs about others [*]	649	-0.00	1.00	-3.47	2.57
Personal values [**]	649	-0.00	1.00	-3.15	1.99
Coordination [***]	649	0.00	1.00	-2.84	2.09

[*] Corresponding to Factor 1 in Tables D.6 and D.7.
[**] Corresponding to Factor 2 in Tables D.6 and D.7.
[***] Corresponding to Factor 3 in Tables D.6 and D.7.

Table D.6: Results of factor analysis

Factor	Eigenvalue	Proportion of variance explained	Cumulative
Factor 1	3.63	0.40	0.40
Factor 2	1.49	0.17	0.57
Factor 3	1.17	0.13	0.70
Factor 4	0.73	0.08	0.78
Factor 5	0.57	0.06	0.84
Factor 6	0.42	0.05	0.89
Factor 7	0.38	0.04	0.93
Factor 8	0.32	0.04	0.97
Factor 9	0.28	0.03	1.00

Table D.7: Factor loadings

Variable	Beliefs about others (Factor 1)	Personal values (Factor 2)	Coordination (Factor 3)
Item 1	0.37	0.75	0.06
Item 2	0.06	-0.79	-0.13
Item 3	0.83	0.06	0.17
Item 4	0.76	0.22	0.18
Item 5	0.82	0.15	0.18
Item 6	0.15	0.09	0.91
Item 7	0.14	0.04	0.91
Item 11	0.22	0.80	0.03
Item 12	0.55	0.38	0.07

Table D.8: Treatment effects on values and beliefs, separately by item

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 11	Item 12
Discourse	0.599**	-0.522***	1.037***	0.881***	0.902***	0.986***	1.103***	0.171	0.406
(Neutral)	(0.246)	(0.178)	(0.278)	(0.288)	(0.279)	(0.221)	(0.227)	(0.274)	(0.292)
Optional	0.289*	-0.031	0.575**	0.471**	0.514**	0.699***	1.005***	-0.149	0.201
	(0.171)	(0.150)	(0.268)	(0.204)	(0.251)	(0.238)	(0.247)	(0.209)	(0.233)
Passive	0.474***	-0.089	0.478***	0.510***	0.433**	-0.112	0.082	-0.158	0.643***
	(0.153)	(0.168)	(0.142)	(0.169)	(0.201)	(0.213)	(0.249)	(0.254)	(0.203)
Constant	0.974***	-0.338***	0.123*	0.084	0.630***	0.273*	0.253	0.039	0.273**
	(0.084)	(0.122)	(0.063)	(0.085)	(0.099)	(0.146)	(0.155)	(0.142)	(0.133)
Obs.	649	649	649	649	649	649	649	649	649
R^2	0.016	0.013	0.040	0.032	0.035	0.057	0.083	0.004	0.018

Notes: The dependent variable in each model is one of the items from the questionnaire. *Baseline* serves as the omitted category. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.9: Treatment effects on values and beliefs (OLS, buyers only)

	Beliefs about others	Personal values	Coordination
Discourse (Neutral)	0.388	0.216	0.403**
	(0.245)	(0.164)	(0.168)
Optional	0.277	0.021	0.358**
	(0.201)	(0.124)	(0.161)
Passive	0.453***	0.107	-0.343*
	(0.159)	(0.127)	(0.174)
Constant	-0.302**	-0.106	-0.196
	(0.122)	(0.097)	(0.119)
Observations	295	295	295
R^2	0.024	0.007	0.075

Notes: The dependent variable is *Beliefs about others* in model 1, *Personal values* in model 2 and *Coordination* in model 3. *Baseline* serves as omitted categories. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.10: Treatment effects on values and beliefs (OLS, sellers only)

	Beliefs about others	Personal values	Coordination
Discourse (Neutral)	0.589***	0.034	0.704***
	(0.175)	(0.172)	(0.150)
Optional	0.289*	-0.162	0.595***
	(0.168)	(0.136)	(0.178)
Passive	0.344***	-0.010	0.153
	(0.107)	(0.195)	(0.188)
Constant	-0.276***	0.070	-0.324**
	(0.081)	(0.108)	(0.127)
Observations	354	354	354
R^2	0.046	0.006	0.097

Notes: The dependent variable is *Beliefs about others* in model 1, *Personal values* in model 2 and *Coordination* in model 3. *Baseline* serves as omitted categories. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.11a: Coefficients of GLS (random-effects) regressions of responsible buyer product choice

	Coefficient	Discourse (Neutral)	Optional	Passive	Obs.	Number of Subjects	R^2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
a.		0.201***	0.038	0.126**	6,933	295	0.034
		(0.074)	(0.071)	(0.060)			
b. Item 1	0.100***	0.142**	-0.009	0.052	6,933	295	0.328
	(0.014)	(0.071)	(0.067)	(0.063)			
c. Item 2	-0.066***	0.146*	0.118*	0.118*	6,933	295	0.241
	(0.012)	(0.076)	(0.061)	(0.061)			
d. Item 3	0.036**	0.170**	0.014	0.105*	6,933	295	0.112
	(0.014)	(0.072)	(0.065)	(0.060)			
e. Item 4	0.058***	0.150**	0.009	0.087	6,933	295	0.201
	(0.014)	(0.070)	(0.068)	(0.063)			
f. Item 5	0.055***	0.162**	0.014	0.101*	6,933	295	0.125
	(0.013)	(0.070)	(0.066)	(0.061)			
g. Item 6	0.015	0.190***	0.030	0.134**	6,933	295	0.084
	(0.011)	(0.073)	(0.070)	(0.059)			
h. Item 7	0.026**	0.181**	0.019	0.135**	6,933	295	0.073
	(0.012)	(0.074)	(0.069)	(0.060)			
i. Item 11	0.084***	0.190***	0.044	0.132**	6,933	295	0.267
	(0.010)	(0.064)	(0.064)	(0.057)			
j. Item 12	0.038***	0.193***	0.115*	0.115*	6,933	295	0.095
	(0.012)	(0.068)	(0.064)	(0.064)			
k. All items	-	0.113	-0.011	0.070	6,933	295	0.425
	-	(0.072)	(0.062)	(0.059)			

Notes: Each row of the table summarizes a separate regression. The dependent variable in all models takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. We omit the cases in which the buyer did not purchase a product. *Baseline* serves as the omitted category. Row a reports the coefficients from regressions that include only the treatment binary variables (identical to model 1 in Table 9). Each of rows b-j introduces a single questionnaire item as an additional explanatory variable. *Coefficient* (Column 1) reports the coefficient for the included item. Row k reports the treatment coefficients when all items are introduced jointly. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.11b: Coefficients of GLS (random-effects) regressions of responsible seller product choice

	Coefficient	Discourse (Neutral)	Optional	Passive	Obs.	Number of Subjects	R^2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
a.		0.179**	0.029	0.108*	8,496	354	0.034
		(0.075)	(0.070)	(0.058)			
b. Item 1	0.120***	0.106*	0.012	0.078	8,496	354	0.328
	(0.011)	(0.058)	(0.060)	(0.059)			
c. Item 2	-0.094***	0.154**	0.040	0.101**	8,496	354	0.241
	(0.011)	(0.061)	(0.063)	(0.050)			
d. Item 3	0.062***	0.106	-0.002	0.082	8,496	354	0.112
	(0.012)	(0.075)	(0.062)	(0.060)			
e. Item 4	0.096***	0.094	-0.014	0.071	8,496	354	0.201
	(0.013)	(0.065)	(0.057)	(0.051)			
f. Item 5	0.070***	0.105	-0.012	0.079	8,496	354	0.125
	(0.013)	(0.069)	(0.065)	(0.056)			
g. Item 6	0.048***	0.120	-0.011	0.095*	8,496	354	0.084
	(0.012)	(0.075)	(0.063)	(0.056)			
h. Item 7	0.047***	0.114	-0.029	0.087	8,496	354	0.073
	(0.014)	(0.079)	(0.069)	(0.058)			
i. Item 11	0.092***	0.160***	0.049	0.129**	8,496	354	0.267
	(0.009)	(0.059)	(0.063)	(0.051)			
j. Item 12	0.055***	0.147**	0.011	0.055	8,496	354	0.095
	(0.012)	(0.071)	(0.066)	(0.058)			
k. All items	-	0.070	-0.002	0.088*	8,496	354	0.425
	-	(0.053)	(0.057)	(0.053)			

Notes: Each row of the table summarizes a separate regression. The dependent variable in all models takes on value 1 if a seller offered a responsible product and 0 if the seller offered a harmful product. *Baseline* serves as the omitted category. Row a reports the coefficients from regressions that include only the treatment binary variables (identical to model 1 in Table 10). Each of rows b-j introduces a single questionnaire item as an additional explanatory variable. *Coefficient* (Column 1) reports the coefficient for the included item. Row k reports the treatment coefficients when all items are introduced jointly. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.12: Regressions of social appropriateness

	Before market activity		After market activity	
	OLS	Ordered Probit	OLS	Ordered Probit
Discourse (Neutral)	-0.122	-0.361*	-0.292**	-0.687**
	(0.082)	(0.210)	(0.130)	(0.293)
Optional	-0.062	-0.177	-0.022	-0.054
	(0.076)	(0.184)	(0.113)	(0.226)
Passive	-0.094**	-0.220**	-0.217**	-0.445**
	(0.043)	(0.108)	(0.099)	(0.210)
Constant	-0.342***	-	-0.190***	-
	(0.030)	-	(0.066)	-
Observations	649	649	649	649
R^2	0.009		0.053	

Notes. The dependent variable in all models take values from -1 to 1 corresponding to the numerical scores previously described. *Baseline* serves as omitted category. All standard errors (in parentheses) are clustered at the market level, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

E. Content Analysis

Table E.1: Different coding categories and their description (Study 1)

Category	Description
Recommending no impact on Cs	Any statement supporting the exchange of the "products with no effect on Participant C", or the boycott of the "products with a loss for Participant C," irrespective of whether or not a reason is given. Note that the statements can be explicit or implicit.
Recommending impact on Cs	Any statement supporting the exchange of the "products with a loss for Participant C," irrespective of whether or not a reason is given. Note that the statements can be explicit or implicit.
Discussion of prices	Any statement mentioning or discussing the prices of the products exchanged.
Fairness	Any statement supporting an argument by appealing to fairness, the "right thing to do" or morality, or demonstrating empathy for Participants C.
Efficiency	Any statement supporting an argument by appealing to efficiency (maximizing the total earnings of everybody), sustainability, or comparing the cost of having no impact on Participants C with the loss incurred by Participants C.
Self-interest	Any statement supporting an argument by appealing to selfishness, maximization of own profit or earnings.
Agreement	Any statement agreeing with or supporting a previous argument.
Questions about what to do in the market game	Any statement questioning what participants should do in the market game, in the form of a question or not.
General discussion of the game or the experiment	Any statement that mentions or discusses the market game or the experiment without clearly prescribing, supporting or justifying any particular behavior.
No category / Unclear	Any statement that does not fit in any category or for which the meaning is unclear. Use this category for any messages that you cannot otherwise categorize. You should not use this category if you also assign another category to a message.

Table E.2: Different coding categories and their description (Study 2)

Category	Description
Recommending no impact on the donation	Any statement supporting the exchange of the "products with no effect on the donation", or the boycott of the "products with a reduction for the donation," irrespective of whether or not a reason is given. Note that the statements can be explicit or implicit.
Recommending impact on the donation	Any statement supporting the exchange of the "products with a reduction for the donation," irrespective of whether or not a reason is given. Note that the statements can be explicit or implicit.
Discussion of prices	Any statement mentioning or discussing the prices of the products exchanged.
Fairness	Any statement supporting an argument by appealing to fairness, the "right thing to do" or morality, or demonstrating some concern for the environment and/or poverty.
Efficiency	Any statement supporting an argument by appealing to efficiency (maximizing the total earnings of everybody), sustainability, or comparing the cost of having no impact on the donation with the loss incurred by the donation.
Self-interest	Any statement supporting an argument by appealing to selfishness, maximization of own profit or earnings.
Agreement	Any statement agreeing with or supporting a previous argument.
Mentioning COTAP and/or its purposes	Any statement that mentions or discusses the charity (COTAP) and/or its objective to fight climate change and poverty. It can be any statement that expresses support or aversion for the charity, irrespective of whether or not a reason is given.
Referring to past behavior	Any statement referring to past behavior to justify supporting either no impact or impact on the donation.
Questions about what to do in the market game	Any statement questioning what participants should do in the market game, in the form of a question or not.
General discussion of the game or the experiment	Any statement that mentions or discusses the market game or the experiment without clearly prescribing, supporting or justifying any particular behavior.
No category / Unclear	Any statement that does not fit in any category or for which the meaning is unclear. Use this category for any messages that you cannot otherwise categorize. You should not use this category if you also assign another category to a message.

Table E.3: Different coding categories and their description (Study 3)

Category	Description
Recommending no impact on the donation	Any statement supporting the exchange of the "products with no effect on the donation", or the boycott of the "products with a reduction for the donation," irrespective of whether or not a reason is given. Note that the statements can be explicit or implicit.
Recommending impact on the donation	Any statement supporting the exchange of the "products with a reduction for the donation," irrespective of whether or not a reason is given. Note that the statements can be explicit or implicit.
Discussion of prices	Any statement mentioning or discussing the prices of the products exchanged.
Fairness	Any statement supporting an argument by appealing to fairness, the "right thing to do" or morality, or demonstrating some concern for the environment and/or poverty.
Efficiency	Any statement supporting an argument by appealing to efficiency (maximizing the total earnings of everybody), sustainability, or comparing the cost of having no impact on the donation with the loss incurred by the donation.
Self-interest	Any statement supporting an argument by appealing to selfishness, maximization of own profit or earnings.
Agreement	Any statement agreeing with or supporting a previous argument.
Mentioning COTAP and/or its purposes	Any statement that mentions or discusses the charity (COTAP) and/or its objective to fight climate change and poverty. It can be any statement that expresses support or aversion for the charity, irrespective of whether or not a reason is given.
Engagement or attention	Any statement that mentions the extent to which participants are engaged in or attentive to the discussion.
Leaving the discussion	Any statement that recommends ending the discussion and/or starting the market game.
Questions about what to do in the market game	Any statement questioning what participants should do in the market game, in the form of a question or not.
General discussion of the game or the experiment	Any statement that mentions or discusses the market game or the experiment without clearly prescribing, supporting or justifying any particular behavior.
No category / Unclear	Any statement that does not fit in any category or for which the meaning is unclear. Use this category for any messages that you cannot otherwise categorize. You should not use this category if you also assign another category to a message.

Table E.4. Fleiss' Kappa-statistic measure of interrater agreement by study and country

| | Study 1 | | | | Study 2 | | Study 3 | |
| | Switzerland | | China | | | | | |
	Kappa	Prob.	Kappa	Prob.	Kappa	Prob.	Kappa	Prob.
No Impact	0.448	0.000	0.410	0.000	0.419	0.000	0.546	0.000
Impact	0.282	0.000	0.283	0.000	0.324	0.000	0.407	0.000
Fairness	0.406	0.000	0.337	0.000	0.327	0.000	0.258	0.000
Efficiency	0.269	0.000	0.229	0.000	0.230	0.000	0.190	0.000
Self-interest	0.356	0.000	0.326	0.000	0.212	0.000	0.236	0.000

Notes. *Kappa* refers to Fleiss' Kappa, a measure of agreement for ratings provided by multiple, possibly non-overlapping, coders. Prob. refers to the probability of the observed level of agreement arising by chance.

Table E.5: Fraction of all messages assigned to each category (Study 1)

| | Veil | | No Veil | | Exclusive | |
	Switz.	China	Switz.	China	Switz.	China
No impact on Cs	0.13	0.06	0.22	0.06	0.15	0.02
Impact on Cs	0.01	0.01	0.01	0.01	0.01	0.02
Prices	0.12	0.04	0.05	0.07	0.13	0.04
Fairness	0.11	0.06	0.18	0.07	0.16	0.03
Efficiency	0.02	0.02	0.07	0.01	0.04	0.01
Self-interest	0.02	0.02	0.02	0.03	0.03	0.03
Agreement	0.19	0.05	0.23	0.05	0.18	0.04
Questions	0.05	0.05	0.06	0.03	0.08	0.05
General discussion	0.15	0.22	0.14	0.22	0.20	0.23
No category	0.27	0.25	0.18	0.22	0.10	0.27

Notes. The table reports coding where at least three of the four coders agreed. Coders could assign a message to several categories.

Table E.6: Fraction of all messages assigned to each category (Study 2)

	Discourse	Experienced
No impact on the donation	0.17	0.17
Impact on the donation	0.03	0.04
Prices	0.15	0.20
Fairness	0.09	0.11
Efficiency	0.03	0.05
Self-interest	0.02	0.02
Agreement	0.20	0.19
COTAP	0.01	0.02
Past behavior	0.00	0.01
Questions	0.09	0.06
General discussion	0.10	0.08
No category	0.19	0.19

Notes. The table reports coding where at least three of the four coders agreed. Coders could assign a message to several categories.

Table E.7: Fraction of all messages assigned to each category (Study 3)

	Discourse (Neutral)	Optional
No impact on the donation	0.15	0.12
Impact on the donation	0.02	0.05
Prices	0.18	0.21
Fairness	0.04	0.06
Efficiency	0.03	0.03
Self-interest	0.03	0.04
Agreement	0.21	0.21
COTAP	0.02	0.01
Engagement	0.00	0.02
Leaving	0.00	0.03
Questions	0.05	0.06
General discussion	0.10	0.10
No category	0.12	0.06

Notes. The table reports coding where at least three of the four coders agreed. Coders could assign a message to several categories.

Table E.8. Average number of messages sent belonging to *Fairness*, *Efficiency* and *Self-interest* categories, by prosocial position in discourse

| | Study 1 | | | | | | Study 2 | | | Study 3 | | |
| | Switzerland | | | China | | | | | | | | |
	Fairness	Efficiency	Self-interest	Fairness	Efficiency	Self-interest	Fairness	Efficiency	Self-interest	Fairness	Efficiency	Self-interest
Prosocial > 0	1.20	0.31	0.09	1.16	0.35	0.26	0.84	0.30	0.05	0.47	0.31	0.12
Prosocial = 0	0.47	0.11	0.13	0.33	0.06	0.24	0.14	0.13	0.09	0.10	0.05	0.14
Prosocial < 0	0.40	0.31	0.73	0.19	0.00	0.77	0.58	0.23	0.55	0.38	0.38	0.88

Note. Data from participants in all conditions involving discourse. *Prosocial > 0* indicates that a participant sent strictly more messages supporting exchange of the product with *No Impact* than supporting exchange of the product with *Impact*. *Prosocial < 0* indicates that the participant sent strictly more messages supporting exchange of the product with *Impact* than supporting exchange of the product with *No Impact*. Prosocial = 0 indicates that a participant sent the same number of messages supporting exchange of products with *No Impact* and *Impact*, or sent no messages that were assigned to either category. The numbers in each column indicate the average number of messages assigned to each category (Fairness, Efficiency, Self-interest) by subjects in that study and condition who are assigned to the particular prosocial communication strategy. The table reports coding requiring that at least three of the four coders agree.

Table E.9a: GLS (random-effects) regressions of responsible product choice (Study 1)

	Buyers							
	Switzerland				China			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Veil	0.457***	0.437***	0.424***	0.426***	0.446***	0.391***	0.436***	0.386***
	(0.057)	(0.056)	(0.066)	(0.064)	(0.100)	(0.106)	(0.125)	(0.133)
No Veil	0.371***	0.349***	0.338***	0.338***	0.342***	0.317***	0.332***	0.312***
	(0.055)	(0.056)	(0.065)	(0.063)	(0.079)	(0.075)	(0.090)	(0.091)
Exclusive	0.424***	0.401***	0.394***	0.390***	0.244***	0.229**	0.242***	0.228***
	(0.061)	(0.063)	(0.070)	(0.070)	(0.093)	(0.089)	(0.092)	(0.088)
Prosocial (self)		0.023***		0.022**		0.100***		0.100***
		(0.009)		(0.009)		(0.023)		(0.022)
Prosocial (others)			0.032	0.013			0.020	0.011
			(0.029)	(0.027)			(0.098)	(0.105)
Constant	0.494***	0.494***	0.494***	0.494***	0.149**	0.149**	0.149**	0.149**
	(0.051)	(0.051)	(0.051)	(0.051)	(0.067)	(0.068)	(0.067)	(0.068)
Obs.	3,770	3,770	3,770	3,770	3,705	3,705	3,705	3,705
Nb. subjects	160	160	160	160	160	160	160	160
R^2	0.371	0.379	0.373	0.379	0.247	0.307	0.247	0.307

	Sellers							
	Switzerland				China			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Veil	0.448***	0.423***	0.412***	0.392***	0.439***	0.406***	0.410***	0.405***
	(0.056)	(0.058)	(0.062)	(0.062)	(0.097)	(0.107)	(0.122)	(0.125)
No Veil	0.378***	0.356***	0.341***	0.324***	0.346***	0.305***	0.320***	0.304***
	(0.051)	(0.053)	(0.058)	(0.059)	(0.078)	(0.077)	(0.087)	(0.091)
Exclusive	0.403***	0.380***	0.367***	0.351***	0.195**	0.192**	0.190**	0.192**
	(0.061)	(0.066)	(0.070)	(0.071)	(0.091)	(0.087)	(0.087)	(0.086)
Prosocial (self)		0.024*		0.023*		0.084**		0.084**
		(0.014)		(0.013)		(0.042)		(0.040)
Prosocial (others)			0.037	0.032			0.057	0.002
			(0.025)	(0.024)			(0.102)	(0.109)
Constant	0.487***	0.487***	0.487***	0.487***	0.149**	0.149**	0.149**	0.149**
	(0.049)	(0.049)	(0.049)	(0.049)	(0.067)	(0.067)	(0.067)	(0.067)
Obs.	4,608	4,608	4,608	4,608	4,608	4,608	4,608	4,608
Nb. subjects	192	192	192	192	192	192	192	192
R^2	0.342	0.349	0.345	0.351	0.237	0.266	0.239	0.266

Notes. For buyers, the dependent variable takes on value 1 if the buyer purchased a responsible product and 0 if a buyer purchased a harmful product; we omit the cases in which buyers did not purchase a product. For sellers, the dependent variable takes on value 1 if the seller offered a responsible product and 0 if a seller offered a harmful product. *Baseline* serves as omitted category. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table E.9b: GLS (random-effects) regressions of responsible product choice (Study 2)

	Buyers			
	(1)	(2)	(3)	(4)
Discourse	0.326***	0.310***	0.206**	0.205**
	(0.073)	(0.073)	(0.081)	(0.080)
Experienced	0.126*	0.125*	0.126**	0.126**
	(0.064)	(0.064)	(0.064)	(0.064)
Part II	-0.004	-0.004	-0.004	-0.004
	(0.025)	(0.025)	(0.025)	(0.025)
Discourse x Part II	-0.071*	-0.071*	-0.071*	-0.071*
	(0.039)	(0.039)	(0.039)	(0.039)
Experienced x Part II	0.159***	0.143**	0.040	0.038
	(0.055)	(0.057)	(0.062)	(0.063)
Prosocial (self)		0.029		0.014
		(0.021)		(0.027)
Prosocial (others)			0.167***	0.159***
			(0.055)	(0.061)
Constant	0.509***	0.509***	0.509***	0.509***
	(0.051)	(0.051)	(0.051)	(0.051)
Observations	5,619	5,619	5,619	5,619
Number of subjects	240	240	240	240
R^2	0.121	0.157	0.160	0.175

	Sellers			
	(1)	(2)	(3)	(4)
Discourse	0.340***	0.319***	0.218***	0.211***
	(0.069)	(0.071)	(0.076)	(0.074)
Experienced	0.108*	0.108*	0.108*	0.108*
	(0.060)	(0.060)	(0.060)	(0.060)
Part II	0.007	0.007	0.007	0.007
	(0.023)	(0.023)	(0.023)	(0.023)
Discourse x Part II	-0.079**	-0.079**	-0.079**	-0.079**
	(0.036)	(0.036)	(0.036)	(0.036)
Experienced x Part II	0.184***	0.163***	0.062	0.056
	(0.054)	(0.054)	(0.061)	(0.057)
Prosocial (self)		0.025		0.012
		(0.026)		(0.030)
Prosocial (others)			0.178***	0.174***
			(0.055)	(0.061)
Constant	0.488***	0.488***	0.488***	0.488***
	(0.045)	(0.045)	(0.045)	(0.045)
Observations	6,912	6,912	6,912	6,912
Number of subjects	288	288	288	288
R^2	0.121	0.147	0.158	0.168

Notes. The dependent variable takes on value 1 if the buyer (resp. seller) purchased (resp. offered) a responsible product and 0 if a buyer (resp. seller) purchased (resp. offered) a harmful product. We omit the cases in which buyers did not purchase a product. *Baseline* serves as omitted category. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table E.9c: GLS (random-effects) regressions of responsible product choice (Study 3)

	Buyers			
	(1)	(2)	(3)	(4)
Discourse (Neutral)	0.201***	0.123	0.106	0.068
	(0.074)	(0.076)	(0.082)	(0.086)
Optional	0.038	-0.008	-0.014	-0.037
	(0.071)	(0.066)	(0.062)	(0.063)
Passive	0.126**	0.126**	0.030	0.066
	(0.060)	(0.060)	(0.073)	(0.071)
Prosocial (self)		0.118***		0.110***
		(0.015)		(0.017)
Prosocial (others)			0.141***	0.088*
			(0.051)	(0.049)
Constant	0.585***	0.585***	0.585***	0.585***
	(0.040)	(0.040)	(0.040)	(0.040)
Observations	6,933	6,933	6,933	6,933
Number of subjects	295	295	295	295
R^2	0.043	0.151	0.074	0.163

	Sellers			
	(1)	(2)	(3)	(4)
Discourse (Neutral)	0.179**	0.086	0.071	0.022
	(0.075)	(0.075)	(0.083)	(0.082)
Optional	0.029	-0.019	-0.031	-0.055
	(0.070)	(0.066)	(0.062)	(0.062)
Passive	0.108*	0.108*	-0.000	0.032
	(0.058)	(0.058)	(0.068)	(0.067)
Prosocial (self)		0.133***		0.117***
		(0.024)		(0.024)
Prosocial (others)			0.159***	0.111***
			(0.047)	(0.042)
Constant	0.593***	0.593***	0.593***	0.593***
	(0.040)	(0.040)	(0.040)	(0.040)
Observations	8,496	8,496	8,496	8,496
Number of subjects	354	354	354	354
R^2	0.034	0.115	0.074	0.134

Notes. For buyers, the dependent variable takes on value 1 if the buyer purchased a responsible product and 0 if a buyer purchased a harmful product; we omit the cases in which buyers did not purchase a product. For sellers, the dependent variable takes on value 1 if the seller offered a responsible product and 0 if a seller offered a harmful product. *Baseline* serves as omitted category. Standard errors (in parentheses) are clustered at the market level; *** p<0.01, ** p<0.05, * p<0.1.

Table E.10: OLS regressions of values and beliefs on own and others' communication strategies (Study 3)

	Beliefs about others		Personal values		Coordination	
	(1)	(2)	(3)	(4)	(5)	(6)
Prosocial (self)	0.172***		0.239***		0.119**	
	(0.053)		(0.038)		(0.057)	
Prosocial (others)		0.630***		0.125**		0.100
		(0.081)		(0.053)		(0.116)
Constant	-0.046	-0.264***	-0.064*	-0.052	-0.032	-0.042
	(0.062)	(0.061)	(0.036)	(0.039)	(0.061)	(0.079)
Observations	649	649	649	649	649	649
R^2	0.027	0.115	0.051	0.005	0.013	0.003

Notes. We pooled the data for all treatments. The dependent variable is *Beliefs about others* in model 1 and 2, *Personal values* in model 3 and 4 and *Coordination* in model 5 and 6. Models 1, 3 and 5 include a participants' own Prosocial classification according to the messages that participant sent during discourse. Models 2, 4 and 6 include the average of other participants' Prosocial scores. In all cases, we construct the Prosocial variable so that it equals zero in the *Baseline*, where participants neither produce messages nor are exposed to messages produced by others. In *Passive*, *Prosocial (self)* is also equal to zero since participants do not produce messages. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table E.11: GLS (random-effects) regressions of responsible buyer and seller product choice (Study 3)

	Buyers				Sellers			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Optional	-0.163*	-0.131	-0.105	-0.096	-0.150*	-0.106	-0.090	-0.070
	(0.086)	(0.080)	(0.083)	(0.084)	(0.086)	(0.078)	(0.083)	(0.080)
Prosocial (self)		0.118***		0.106***		0.133***		0.114***
		(0.016)		(0.017)		(0.024)		(0.025)
Prosocial (others)			0.188***	0.122**			0.198***	0.138***
			(0.055)	(0.061)			(0.055)	(0.052)
Constant	0.786***	0.708***	0.658***	0.632***	0.771***	0.679***	0.638***	0.599***
	(0.063)	(0.065)	(0.074)	(0.081)	(0.064)	(0.064)	(0.077)	(0.075)
Observations	3,744	3,744	3,744	3,744	4,608	4,608	4,608	4,608
Nb of subjects	160	160	160	160	192	192	192	192
R^2	0.045	0.237	0.122	0.267	0.039	0.189	0.128	0.229

Notes: In models 1, 2, 3 and 4, we focus on buyers (we omit the cases in which the buyer purchased no product); the dependent variable takes on value 1 if a buyer purchased a responsible product and 0 if the buyer purchased a harmful product. In models 5, 6, 7 and 8, we focus on sellers; the dependent variable in all models takes on value 1 if a seller offered a responsible product and 0 if a seller offered a harmful product. In models 2 and 6, the dependent variable concern own prosociality and models 3 and 7 concern others' prosociality. In models 4 and 8, we include both own and others' prosociality. The data only concern the *Discourse (Neutral)* and *Optional* conditions. Standard errors (in parentheses) are clustered at the market level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

F. Instructions for Study 1

F.1. Market Game

We are pleased to welcome you to this economic study. If you read the following instructions carefully, you can – depending on your decisions and/or those of the other participants – earn money in addition to the 15 Swiss francs that you receive as an initial endowment for participating. It is thus very important that you read the instructions carefully. If you have any questions, please contact us.

Communication with the other participants is strictly forbidden during the study. Violation of this rule will lead to exclusion from the study and loss of all of the associated payments.

During the study, we will not speak of francs, but of points. Your entire income will thus first be calculated in points. The points you earn during the study will be converted to Swiss francs at the end of the study. The following conversion rate applies: 10 points = CHF 2.50.

At the end of today's study, you will receive the number of points earned during the study plus the initial endowment of 15 Swiss francs for appearing in cash. We will explain the exact procedure of the study on the next pages. For the sake of simplicity, we will always use male forms for participants; the instructions also obviously refer to female participants.

The study

There are three types of participants in this study: participants A, B, and C. The participants in this study are divided into groups of 16 people. There are 6 participants A, 5 participants B, and 5 participants C in each group.

Participants A are sellers, participants B are buyers. Participants C can neither sell nor buy, but they can incur losses due to the transactions between the participants A and B.

The study last for 24 periods. In each period, each participant A makes exactly one sales offer for a product. Participant A thereby determines the type of product and the price for the product.

- *There are two types of products:*
    1. *"Products with no effect on participant C" and*
    2. *"Products with a loss for participant C".*
- *Every value from 0 up to and including 50 can be selected as a price.*

The production costs for participants A for a "product with no effect on participant C" amount to 10 points. Participant A bears no costs (0 points) for the production of a "product with a loss for participant C".

The value of a product for a participant B is always 50 points, regardless of what type of product it is.

The five participants B see the sales offers made by the six participants A (the price and the type of product) and can accept one offer each. The participants B can decide one after the other in a random order. Each participant B can only accept one offer. This means that a maximum of five of the six participants A can sell a product.

In each period, each of the five participants B will be randomly assigned to one of the five participants C. If a participant B purchases a "product with a loss for participant C", the assigned participant C incurs a loss of 60 points. If a participant B purchases a "product with no effect on participant C" or no product at all, the assigned participant C incurs no loss.

You will see whether you are participant A, B, or C on your screen at the beginning of the study. Your role as participant A, B, or C remains the same during the entire study.

In each period, each participant A, B, and C first receives an endowment of 100 points. The payment in points of participant A (seller), participant B (buyer), and participant C in a period are thus determined as follows:

Participant A's payment

- *If a participant B accepts his sales offer: 100 – production cost + price of the product*

  where the production cost amounting to 10 points are incurred only with a "product without effect on participant C". The production costs for a "product with a loss for participant C amount to 0.

- *If no participant B accepts his sales offer: 100*

Participant B's payment:

- *If participant B accepts a sales offer: 100 + 50 – price of the product*

- *If participant B does not accept a sales offer: 100*

Participant C's payment:

- *If the randomly assigned participant B chooses a "Product with loss for participant C:" 100 - 60 = 40*

- *If the randomly assigned participant B chooses a "Product without effect on participant C" or does not purchase a product: 100*

Procedures on the computer:

In each period, participants A enter their sales offers on the following screen:

Your offer

What type of product would you like to offer? ○ Product without effect on participant C
                                                ○ Product with a loss for participant C

Which price would you like to ask? [   ]

OK

Participant A must indicate whether he wants to offer a "product without effect on participant C" or a "product with a loss for participant C." to do this, the corresponding type of product must be clicked on.

Furthermore, participant A must indicate the price he wants to request for the product. The corresponding number must be entered in the box. All integers from 0 up to and including 50 are possible.

Once a participant A has made his decisions, he must click on the OK button at the lower right-hand side. The type of product and the price can be changed until the OK button is clicked.

Once all six participants A have made their sales offers, the participants A will see the sales offers (the price and the type of product) of all of the other participants A in a table. Here is an example:

Price of the product	Type of the product	Order of acceptance
This is where the participants A see the price of the product for every sales offer	This is where the participants A see the type of product for every sales offer	accepted SECOND - accepted FIRST -

The participant's own sales offer is always marked in blue. Participants A can always see in the column on the right whether and in which order the participants B accept the offers.

Once all participants B have made their decisions, each participant A will learn of his own payment. If his offer is accepted, participant A will also learn participant B's payment and the payment of the corresponding participant C.

The participants B can see the sales offers on the screen below in each period:

Price of the product	Type of the product	
This is where the participants B see the price of the product for every sales offer	*This is where the participants B see the type of product for every sales offer*	
		ACCEPT
		DO NOT ACCEPT AN OFFER

Participants B see the screen above in a random order and can accept an offer one after the other. Thus only one participant B sees the screen above at any one point in time. Only when the current participant B has made his decisions will the next participant B see the screen above, where he can then accept an offer.

The participant B who is first shown the screen can select from all offers. The participant B who is shown the screen second can only choose from the remaining offers, as each offer can only be accepted by one participant B.

If the five participants B have each accepted an offer, one offer will always remain that can no longer be accepted. The participant A who made this offer cannot conclude a sale in this period.

The order in which the five participants B decide on accepting the six offers will be randomly determined anew in each period.

The prices appear in the left column of the table, and the type of product appears in the right column. Each offer is always in a separate row. In order to accept an offer, the corresponding row must be clicked on with the mouse. The marked row will then appear with a blue background.

In order to accept the offer marked in blue, you must click on the ACCEPT button.

The choice of offer can be changed until the ACCEPT button is clicked on.

If a participant B does not want to accept an offer, he must click on the DO NOT ACCEPT AN OFFER button. Even if a row had already been marked, all offers will be declined if the DO NOT ACCEPT AN OFFER is clicked on.

When all participants B have made their decisions, each participant B will learn of his own payment and that of his assigned participant C.

Participants C cannot make any decisions during this study. We ask the participants C, however, to indicate in each period their expectations about the behaviors of participants A and B.

When all participants A and B have made their decisions, the participants C will learn of their own earnings, which are entirely dependent on the decisions of participants A and B.

After all participants have been informed about their payments in a period, the next period will begin.

Your earnings in this study are the payment out of <u>one</u> randomly selected period.

Because you do not know which period the computer will randomly select, you must consider your decisions in each of the 24 periods very carefully.

At the end of the study, the corresponding point amount will be converted to Swiss francs and paid in cash to you together with the initial endowment.

Do you have any further questions? If yes, please raise your hand. We will come to you at your workplace. Otherwise, we ask you to answer the control questions on the next pages.

Control questions

1. *Assume that participant A offers a "product without effect on participant C" at the price of 40 and participant B accepts the offer.*

   How high are the payments to participants A and B and the corresponding participant C?

2. *Assume that participant A offers a "product with a loss for participant C" at the price of 40 and participant B accepts the offer.*

   How high are the payments to participants A and B and the corresponding participant C?

3. *Assume that participant A offers a "product without effect on participant C" at the price of 15 and participant B accepts the offer.*

   How high are the payments to participants A and B and the corresponding participant C?

4. *Assume that participant A offers a "product with a loss for participant C" at the price of 15 and no participant B accepts the offer.*

   How high is the payment for participant A? How high is the payment for a participant B who does not accept an offer? How high is the payment for the corresponding participant C?

Please raise your hand when you have completed the control questions. We will then come to you at your workplace.

F.2. Public Discourse

The instructions are shown on the screen after subjects read the instructions but before they entered the market game. In the following, we provide the instructions for condition *No Veil*. The instructions for conditions *Veil* and *Exclusive* are identical, except that the subjects are not informed about their role on Screen 1 (in *Veil*) or that participants A and B are informed that participants C will communicate separately (in *Exclusive*).

Screen 1

You are a participant A (seller) / participant B (buyer) / participant C for the entire duration of the study.

Participants C only: *We know that this role might be not satisfying! For scientific reasons it is however necessary that participants C participate in this study. We very much hope for your understanding.*

Screen 2

Before we begin with the study, the 16 participants who will make up a group of 6 players As, 5 player Bs and 5 player Cs will have the opportunity to communicate with each other through a discussion board.

During this time, we ask you to discuss with the other participants how "socially appropriate" or "socially inappropriate" it is to trade the "product with a loss for participant C." That is, as a buyer or seller, to what extent is trading this product consistent or inconsistent with what most people agree is the "appropriate," "right" or "moral" thing to do?

You have eight minutes to discuss with the other participants in your group. Please use this time to discuss this topic.

Please click the "next"-button to get to the chat page.

Screen 3

Please enter your messages in the blue box at the bottom of the page. After typing in your message to the other participants, please press the "Enter" key to display your message. Each participant has been assigned a random number, which is displayed in front of the respective messages. This number is displayed along with the corresponding participant's role (A, B, or C). You see your number when you enter your first message. This number is simply so that you can keep track of each other during the discussion. Afterward, you will not see or use these numbers. Please refrain from sending any messages that could personally identify you.

You are a participant A/B/C. Participants A are sellers, Participants B are buyers. Participants C can incur losses due to the transactions between the participants A and B.

F.3. Norm Elicitation

Screen 1

Thank you very much for taking part in the study. We now ask you to rate how "socially appropriate" or "socially inappropriate" it is to trade the "product with a loss for participant C." That is, as a buyer or seller, to what extent is trading this product consistent or inconsistent with what most people agree is the "appropriate," "right" or "moral" thing to do? You may choose from four possible responses: "very socially appropriate," "somewhat socially appropriate," "somewhat socially inappropriate," and "very socially inappropriate."

The rating you provide affects how much money you earn today. Specifically, we are going to ask you to match your rating to those of the participants in your group with which you interacted in the main part of the study. Note that we do not ask you to provide the rating you believe to be "right" but the rating you believe will be the one most frequently chosen in your group.

At the end of the study today, we will find out which response was selected by the most people in your group. If you give the same response as that most frequently given by the participants in your group, then you will receive an additional CHF 10 (on top of your earnings from the main part of the study). Otherwise you would receive no additional money. The amount you earn from both parts of the study will be paid to you, in cash, at the conclusion of the study.

For instance, suppose that you respond "very socially inappropriate," then you would receive an additional CHF 10 if the most common response in your group is also "very socially inappropriate," but you receive CHF 0 if the most common response is something else. Similarly, if you respond, for example, "somewhat socially appropriate," then you would receive an additional CHF 10 if the most common response in your group is also "somewhat socially appropriate," but you receive CHF 0 if the most common response is something else.

If you have any questions, please raise your hand.

Screen 2

Below, please provide your rating of how socially appropriate or socially inappropriate it is to trade the "product with a loss for participant C." You may provide your rating by placing a check mark in the corresponding box and then confirming this choice.

Recall that you earn additional money if you give the same response as that most frequently selected by the other participants in the group. Specifically, if you match the most common answer in your group, then you will receive an additional CHF 10.

What do you think is the most commonly selected answer? Trading the "product with a loss for participant C" is: very socially appropriate / somewhat socially appropriate / somewhat socially inappropriate / very socially inappropriate

Screen 3

The most common response in your group is that trading the product with a loss for participant C is: [result here]. *Your response was that trading the product with a loss for participant C is:* [choice here] *Your rating did match the most frequently selected rating. Hence you earn an additional 10 CHF. / Your rating did not match the most frequently selected rating. Hence you do not earn an additional 10 CHF.*

G. Instructions for Study 2

G.1. Market Game

The study

There are two types of participants in this study: Participants A and B. The participants are divided into groups of 11 people. There are six Participants A and five Participants B (buyers) in each group. Participants A are sellers and Participants B are buyers. You will see whether you are Participant A or B on your screen at the beginning of the study. Your role as Participant A or B will remain the same during the entire study.

For each participant B, a donation to the charity COTAP of potentially 100 points (25 CHF) will be made. The organization COTAP (Carbon Offsets To Alleviate Poverty) supports certified forestry projects in under-developed countries, which help reduce CO_2 in the atmosphere and create life-changing income for the world's poorest people. More details about COTAP's mission are provided at the end of the instructions. The exact amount of the donation to COTAP depends on what type of product a seller (Participant A) and buyer (Participant B) trade. This will be explained in more detail below.

The study last for 24 periods. In each period, each participant A makes exactly one sales offer for a product. Participant A thereby determines the type of product and the price for the product.

- *There are two types of products:*
    1. *"Products with no effect on the donation" and*
    2. *"Products with a reduction for the donation".*
- *Every value from 0 up to and including 50 can be selected as a price.*

Production cost:

- *The production costs for participants A for a "product with no effect on the donation" amount to 20 points. Participant A bears no costs (0 points) for the production of a "product with a reduction for the donation".*

Value of the product:

- *The value of a product for a participant B is always 50 points, regardless of what type of product it is.*

Effect on the donation:

- *If a participant B purchases a "product with no effect on the donation" or no product at all, the donation will be not be reduced and will be of 100 points.*
- *If a participant B purchases a "product with a reduction for the donation", the donation will incur a reduction of 60 points to 40 points.*

Market Activity

The five participants B see the sales offers made by the six participants A (the price and the type of product) and can accept *one offer each. The participants B can decide one after the other in a random order. Each participant B can only accept one offer. This means that a maximum of five of the six participants A can sell a product.*

Payment

In each period, each Participant A and Participant B initially receives an endowment of 100 points. The payments in points of Participant A (seller) and Participant B (buyer) in a period are then determined as follows:

Participant A's payment

- *If a participant B accepts his sales offer: 100 – production cost + price of the product*

  where the production cost amounting to 20 points are incurred only with a "product without effect on the donation". The production costs for a "product with a reduction for the donation" amount to 0.

- *If no participant B accepts his sales offer: 100*

Participant B's payment:

- *If participant B accepts a sales offer: 100 + 50 – price of the product*
- *If participant B does not accept a sales offer: 100*

Amount donated by Participant B:

- *If a participant B chooses a "Product with reduction for the donation:" 100 – 60*
- *If a participant B chooses a "Product without effect on the donation" or does not purchase a product: 100*

More about COTAP:

The mission of COTAP is to empower individuals and organizations in developed countries to address both climate change and global poverty. COTAP counteracts carbon emissions through certified forestry projects in under-developed regions, which create transparent, accountable, and life-changing earnings for rural farming communities where income levels are less than $2 per day.

COTAP sources carbon offset funds from those who care about both climate change and poverty alleviation, pools those funds, and transparently matches those funds with their partners' forestry projects in order to fill the forestry carbon finance gap, restore landscapes, and create direct, significant, verifiable, and lasting benefits for the most economically vulnerable people in the world.

Through COTAP, you are paying smallholder farmers in developing countries for planting and maintaining trees, which capture and store your CO_2 emissions. A donation of 10 points (= CHF 2.5) offsets 0.25 tons of carbon dioxide (CO_2), or 250 Kg of CO_2.

Procedures on the computer:

In each period, participants A enter their sales offers on the following screen:

Your offer

What type of product would you like to offer? ○ Product without effect on participant C
                                                ○ Product with a loss for participant C

Which price would you like to ask? [   ]

OK

Participant A must indicate whether he wants to offer a "product without effect on the donation" or a "product with a reduction for the donation." To do this, the corresponding type of product must be clicked on.

Furthermore, participant A must indicate the price he wants to request for the product. The corresponding number must be entered in the box. All integers from 0 up to and including 50 are possible.

Once a participant A has made his decisions, he must click on the OK button at the lower right-hand side. The type of product and the price can be changed until the OK button is clicked.

Once all six participants A have made their sales offers, the participants A will see the sales offers (the price and the type of product) of all of the other participants A in a table. Here is an example:

Price of the product	Type of the product	Order of acceptance
This is where the participants A see the price of the product for every sales offer	This is where the participants A see the type of product for every sales offer	accepted SECOND - accepted FIRST -

The participant's own sales offer is always marked in blue. Participants A can always see in the column on the right whether and in which order the participants B accept the offers.

Once all participants B have made their decisions, each participant A will learn of his own

46

payment. If his offer is accepted, participant A will also learn participant B's payment and the corresponding amount donated.

The participants B can see the sales offers on the screen below in each period:

Price of the product	Type of the product	
This is where the participants B see the price of the product for every sales offer	*This is where the participants B see the type of product for every sales offer*	
		ACCEPT
		DO NOT ACCEPT AN OFFER

Participants B see the screen above in a random order and can accept an offer one after the other. Thus only one participant B sees the screen above at any one point in time. Only when the current participant B has made his decisions will the next participant B see the screen above, where he can then accept an offer.

The participant B who is first shown the screen can select from all offers. The participant B who is shown the screen second can only choose from the remaining offers, as each offer can only be accepted by one participant B.

If the five participants B have each accepted an offer, one offer will always remain that can no longer be accepted. The participant A who made this offer cannot conclude a sale in this period.

The order in which the five participants B decide on accepting the six offers will be randomly determined anew in each period.

The prices appear in the left column of the table, and the type of product appears in the right column. Each offer is always in a separate row. In order to accept an offer, the corresponding row must be clicked on with the mouse. The marked row will then appear with a blue background.

In order to accept the offer marked in blue, you must click on the ACCEPT button.

The choice of offer can be changed until the ACCEPT button is clicked on.

If a participant B does not want to accept an offer, he must click on the DO NOT ACCEPT AN OFFER button. Even if a row had already been marked, all offers will be declined if the DO NOT ACCEPT AN OFFER is clicked on.

When all participants B have made their decisions, each participant B will learn of his own payment and the corresponding amount donated.

After all participants have been informed about their payments and the amount donated in a period, the next period will begin.

Your earnings in this study are the payment out of <u>one</u> randomly selected period. This selected period will also determine the actual donation that is made to COTAP.

Because you do not know which period the computer will randomly select, you must consider your decisions in each of the 24 periods very carefully.

At the end of the study, the corresponding point amount will be converted to Swiss francs and paid in cash to you together with the initial endowment.

We will also make the donation to COTAP. If you want to verify that COTAP actually received the money donated, you will be prompted to type in your e-mail address at the end of the study and we will send you a dated receipt indicating the donated amount.

Do you have any further questions? If yes, please raise your hand. We will come to you at your workplace. Otherwise, we ask you to answer the control questions on the next pages.

Control questions

1. *Assume that participant A offers a "product without effect on the donation" at the price of 40 and participant B accepts the offer.*

   How high are the payments to participants A and B and the corresponding amount donated?

2. *Assume that participant A offers a "product with a reduction for the donation" at the price of 40 and participant B accepts the offer.*

   How high are the payments to participants A and B and the corresponding amount donated?

3. *Assume that participant A offers a "product without effect on the donation" at the price of 25 and participant B accepts the offer.*

   How high are the payments to participants A and B and the corresponding amount donated?

4. *Assume that participant A offers a "product with a reduction for the donation" at the price of 25 and no participant B accepts the offer.*

   How high is the payment for participant A? How high is the payment for a participant B who does not accept an offer? How high is the corresponding amount donated?

G.2. Public Discourse

Instructions correspond to the ones in Study 1, with respective minor changes implemented.

G.3. Norm Elicitation

Instructions correspond to the ones in Study 1, with respective minor changes implemented.

H. Instructions for Study 3

H.1. Market Game
Instructions correspond to the ones in Study 2, with only minor changes (e.g., referring to "Sellers" and "Buyers" rather than "Participants A" and "Participants B").

H.2. Public Discourse

H.2.1. Discourse (Neutral)

Screen 1

You are a Seller/Buyer for the entire duration of the study.

Screen 2

Before we start the study, you have the opportunity to communicate with the other people in your group, which consists of 6 Sellers and 5 Buyers, in a discussion forum. This forum provides the possibility to discuss the upcoming market activity.

All participants in your group will participate in the discussion forum.

The discussion forum will last for 8 minutes. Once the forum closes, we will proceed with the study.

During the time that the discussion forum is active, all participants will have access to the forum and can read and post messages. Once the forum closes, participants will no longer see the messages.

Please click the "start discussion" button (that will appear soon) to go to the discussion forum.

Screen 3

You can enter your contributions to the discussion in the blue input field at the bottom of the screen. You have to press the "Enter" key for your message to be displayed in the forum. In the box below, you can also see the messages contributed by other participants in your group.

Each participant has a random number that is displayed in front of the messages sent by that participant. The number is displayed together with the respective role of the participant ("S" for Seller or "B" for Buyer). You have been notified of your role and you will see your number when you post messages.

This number is only used to assign the individual participants to their contributions during the discussion forum. It will not be displayed or used later in the study.

Please do not write any messages that could identify you personally.

Remember that all participants in your group can read and post messages in this discussion forum. In total, there are 6 Sellers and 5 Buyers in the forum.

As a reminder of your role: You are a Seller/ Buyer.

H.2.1. Optional

Screen 1

You are a Seller/Buyer for the entire duration of the study.

Screen 2

Before we start the study, you have the opportunity to communicate with the other people in your group, which consists of 6 Sellers and 5 Buyers, in a discussion forum. This forum provides the possibility to discuss the upcoming market activity.

Each participant in your group will decide, independently, whether or not to participate in the discussion forum. Any participants who decide to participate are free to leave the forum at any point. If you decide either not to participate or to leave, you cannot (re-)enter the forum later on.

The discussion forum will last for up to 8 minutes. The forum will close early, i.e., before 8 minutes elapse, if at any point there are less than two participants in the forum. Once the forum closes, the first period of the market activity will begin. If less than two participants decide to initially participate in the forum, then there will be no forum and we will proceed with the study.

During the time that the discussion forum is active, those participants who are currently participating in the forum can read and post messages. Once the forum closes, participants will no longer see the messages. If a participant does not participate in the forum, that participant will not see the messages; if a participant leaves the forum, that participant will no longer have access to the messages.

Please click the "start discussion" button (that will appear soon) to go to the discussion forum or the "skip discussion" button (that will appear soon) if you do not want to join the discussion forum.

Screen 3

You can enter your contributions to the discussion in the blue input field at the bottom of the screen. You have to press the "Enter" key for your message to be displayed in the forum. In the box below, you can also see the messages contributed by those other participants in your group who are currently participating in the forum.

Each participant has a random number that is displayed in front of the messages sent by that participant. This number is displayed together with the respective role of the participant ("S" for Seller or "B" for Buyer). You have been notified of your role and you will see your number when you post messages.

This number is only used to assign the individual participants to their contributions during the discussion forum. It will not be displayed or used later in the study.

Please do not write any messages that could identify you personally.

Remember that not all participants in your group may be participating in this discussion forum. Only participants in your group who are currently in the forum can read and post messages.

As a reminder of your role: You are a Seller/ Buyer.

Number of Sellers currently in the forum:[amount]

Number of Buyers currently in the forum:[amount]

H.2.1. Passive

Screen 1

You are a Seller/Buyer for the entire duration of the study.

Screen 2

In a previous session, a separate group of participants took part in the same market activity. Before starting the study, these participants had the opportunity to communicate with the other people in their group, which also consisted of 6 Sellers and 5 Buyers, in a discussion forum. The forum provided the possibility to discuss the upcoming market activity.

All participants in the group participated in the discussion forum.

The discussion forum lasted for 8 minutes. During the time that the forum was active, all participants had access to the forum and could read and post messages. Once the forum closed, participants could no longer see the messages.

Before we start the study in this session, you have the opportunity to view the discussion that took place in this earlier group's discussion forum. Specifically, all the participants in your group, which consists of 6 Sellers and 5 Buyers, will see the messages that participants in the earlier group typed into their discussion forum. These messages will be displayed on your screen in the same manner as they appeared for the earlier group.

Once you are done viewing the discussion forum, we will proceed with the study.

During the time that you are viewing the discussion forum, all participants in your group can read the messages posted by the earlier group, but you cannot write any messages. Once the forum closes, participants will no longer see the messages.

Please click the "view discussion" button (that will appear soon) to view the earlier group's discussion forum.

Screen 3

In the box below, you can see the messages contributed by participants in a previous session of this study. These contributions appear sequentially, in the order in which they were posted.

Each participant had a random number that was displayed in front of the messages sent by that participant. This number was displayed together with the respective role of the participant ("S" for Seller or "B" for Buyer). These participants were notified of their role and could see their number when posting messages.

This number was only used to assign the individual participants to their contributions during the discussion forum. It was not displayed or used later in the study.

All participants in the earlier group could read and post messages in this discussion forum. In total, there were 6 Sellers and 5 Buyers in this forum.

Neither you nor the other participants in your group can post messages to the discussion forum. All participants in your group can only read the messages that were contributed by the participants in a previous session.

As a reminder of your role: You are a Seller/ Buyer.

H.3. Norm Elicitation

H.3.1. Before the market activity

Screen 1

We now ask you to provide a rating of how "socially appropriate" or "socially inappropriate" it is to trade the *product with a reduction to the donation*. You can earn money by providing the rating that is the **most common rating provided in your group** of 6 Sellers and 5 Buyers. We thus do not ask you for the rating that you personally think is the "correct" rating, but for the rating that you think will be the most frequently chosen rating in your group.

In providing your rating, you should think about your group's perspective on how consistent with moral or proper social behavior it is to trade *the product with a reduction to the donation*. You can give one of four possible ratings: "very socially appropriate," "somewhat socially appropriate," "somewhat socially inappropriate," or "very socially inappropriate."

At the end of today's session, we will determine the most frequently chosen rating in your group. If your rating coincides with the most frequently chosen rating, you will earn an additional CHF

5. If your rating does not coincide with the most frequently chosen rating, you will not earn additional money.

You will not find out what is the most common rating until the end of the study. You will receive your earnings from this task at the end of the study, in cash, together with your other earnings from this study.

Please raise your hand if you have a question. An experimenter will come to your desk.

Screen 2

Please indicate your rating on the screen below regarding how "socially appropriate" or "socially inappropriate" it is to trade the *product with a reduction to the donation*.

You provide your rating by ticking the respective box and then confirming your rating by clicking the "OK" button. You earn money by selecting the rating that is the most frequently chosen rating in your group.

Please select a rating:

Trading the *product with a reduction to the donation* is:

<div align="center">

H.3.2. After the market activity

</div>

Screen 1

We now ask you again to provide a rating of how "socially appropriate" or "socially inappropriate" it is to trade the *product with a reduction to the donation*. As before, you can earn money by providing the rating that is the **most common rating provided in your group** of 6 Sellers and 5 Buyers. We thus do not ask you for the rating that you personally think is the "correct" rating, but for the rating that you think will be the most frequently chosen rating in your group.

In providing your rating, you should think about your group's perspective on how consistent with moral or proper social behavior it is to trade *the product with a reduction to the donation*. You can give one of four possible ratings: "very socially appropriate," "somewhat socially appropriate," "somewhat socially inappropriate," or "very socially inappropriate."

After this decision, we will determine the most frequently chosen rating in your group for this decision. Note that the most frequently chosen rating in this decision may differ from the one for the decision you made earlier. If your rating coincides with the most frequently chosen rating in this decision, you will earn an additional CHF 5. If your rating does not coincide with the most frequently chosen rating, you will not earn additional money. Whether or not you earn CHF 5 for this decision is not affected by whether or not you earned CHF 5 in the earlier decision.

Screen 2

Please indicate your rating on the screen below regarding how "socially appropriate" or "socially inappropriate" it is to trade the *product with a reduction to the donation*.

You provide your rating by ticking the respective box and then confirming your rating by clicking the "OK" button. You earn money by selecting the rating that is the most frequently chosen rating in your group.

Please select a rating:

Trading the *product with a reduction to the donation* is: