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Signaling moral values through consumption

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Firms often discourage certain categories of individuals from buying their products, in contrast with typical assumptions about profit maximization. This paper provides a potential rationale for such firm behavior: consumers seek to signal that they have "good" moral values to themselves and others by avoiding products popular among people with "bad" values. In laboratory experiments, I provide causal evidence that demand for a product is lower if its customer base consists of individuals with undesirable moral values. This effect occurs for both observable and unobservable consumption and for products that do not possess any inherent moral or undesirable qualities.

Keywords: Moral values, social image, self-image, signaling, consumption, experiments

JEL Codes: D12, C91, M3

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1. Introduction

A typical assumption in economics is that firms maximize their profits and that they do so by selling their products to everyone who is willing to pay their prices. However, firms' reactions to product adoptions by individuals with certain moral values show that many companies want some types of customers *not* to buy their products. For example, after the neo-Nazi website Daily Stormer claimed Papa John's to be the official pizza brand of the alt-right, the company stated that "we do not want these individuals or groups to buy our pizza" (Washington Post, 2017).[1] Firms are willing to bear substantial costs to avoid customers with "bad" moral values. When the clothing brand Lonsdale purposely broke with their neo-Nazi customers, they lost 35% of their sales volume in Germany (Handelsblatt, 2014). That firms strive for customers not to buy their products seems puzzling from the perspective of profit maximization.

This paper provides a potential rationale for why firms try to avoid certain customers. Two laboratory experiments provide evidence that demand for a product is lower if the product's customer base consists of individuals with undesirable characteristics (or, "types"). This is the case even when the product itself does not possess any inherent attributes or qualities that make it more or less desirable. The evidence I provide is consistent with models of identity signaling: Consumers signal their desirable characteristics to themselves and others by avoiding products popular among people with undesirable characteristics and by conforming to product choices of people with desirable characteristics.[2] Hence, my findings indicate that firms can face clear incentives to purposefully shun customers with undesirable moral values.

The idea that consumers signal desirable characteristics through consumption choices is the focus of a long-standing theoretical literature in economics, philosophy, and sociology (starting with Veblen, 1899/1994; Simmel, 1904/1957; Bourdieu, 1984). Such identity signaling models are widely applied in economics. They provide theoretical foundations for brand images, advertising, and identity-based consumption (e.g., Wernerfelt, 1990; Kuksov,

[1] Several additional examples appear to demonstrate firms caring about the moral values of their customer bases. Wendy's, New Balance, and Depeche Mode reacted similarly after they were claimed to be the official burgers/shoes/band of the alt-right (Washington Post, 2017; Independent, 2017). In preemptive actions, Nike and Ben & Jerry's publicly announced that they were committed to diversity, to prevent their brands from being adopted by hate groups (Washington Post, 2017). Designers refused to take orders from the finance industry (Bloomberg, 2019) and to dress First Lady Melania Trump (Glamour, 2017). Burberry dropped baseball caps from their product line and reduced the visibility of their brand pattern to avoid having football hooligans as customers (BBC News, 2005). Fred Perry pulled a polo shirt from the US market that became popular among far-right groups (CNN, 2020).

[2] Note that "desirable" and "undesirable" characteristics are not limited to moral values. Customers might seek to signal other characteristics such as social status, wealth, intelligence, beauty, or good taste through consumption. My first study, therefore, does not focus exclusively on moral values but also considers intelligence.

2007; Vikander, 2017) and have important implications for individual welfare and market outcomes. Identity signaling can result in distortions of consumption expenditures and poverty traps (Frank, 1985; Ireland, 1994; Moav and Neeman, 2010, 2012), Veblen goods (Bagwell and Bernheim, 1996), and fashion cycles (Karni and Schmeidler, 1990; Pesendorfer, 1995).[3] In all of this work, consumers signal their characteristics through the type compositions of products' customer bases. A fundamental prediction of identity signaling models is, therefore, that consumers care about the types of others who consume a product. While this earlier work extensively explores the theoretical implications of identity signaling, it remains an important open *empirical* question whether customers actually care about type compositions of products' customer bases.[4]

A key challenge in answering this question is to find *ceteris paribus* variation in the type composition of customer bases. Preexisting differences in type compositions likely reflect differences in products' qualities and companies' values. These differences can affect consumption through channels unrelated to customers' types. Consumers might, for example, avoid a product because it does not satisfy their moral standards (e.g., not organic, vegan, or Fair Trade) or because they do not want to support companies with "bad" values. Moreover, changes in type compositions typically do not occur exogenously but in reaction to events that might change several relevant choice aspects, such as the public perception of companies' values.

This paper provides causal evidence that consumers care directly about the type composition of a product's customer base, holding constant other product characteristics. I circumvent the above identification challenges by using laboratory experiments. I introduce novel experimental paradigms that do not rely on products having preexisting associations with certain types of consumers. Instead, such associations are created in the experiment, allowing me to exogenously vary the type composition of products' customer bases. An important feature of my experiments is that I study demand for products that do not have properties that directly connect them to specific characteristics (such as having a fair-trade

[3] Signaling models have also been proposed to explain how firms set (dynamic) prices (Rao and Schaefer, 2013), product lines (Friedrichsen, 2018), and visibility of products (Carbajal, Hall, and Li, 2016).

[4] Previous empirical works on identity signaling and consumption (e.g., Charles, Hurst, and Roussanov, 2009; Heffetz, 2011; Bursztyn et al., 2018; Friedrichsen and Engelmann, 2018) study demand for products that have properties that directly link them to the image to be signaled (the product's price as a signal of wealth or its social impact as a signal of being moral). In all these studies, it remains unclear whether people buy (or avoid) a product because of the product's properties or because of the type composition of the product's customer base. This paper provides unambiguous evidence that consumers care about the type composition, holding constant properties of the product. Another key difference of my work is that I focus on products that do not exhibit properties that relate them directly to specific personal characteristics or identities, as is the case in the examples discussed above. I discuss related work in more detail in Section 2.

label); signals about a consumer's characteristics emerge only through the types of customers who buy the product.

To guide my empirical investigation, I introduce a simple theoretical framework (building on Bernheim, 1994, and Bénabou and Tirole, 2011). In the model, consumers possess individual characteristics that are relevant to their social image. For example, they may differ in terms of moral values, social status, or intelligence. Individuals have imperfect knowledge about others' characteristics but can potentially receive signals through observing these others' consumption. More precisely, signals emerge through the type composition of products' customer bases: A consumer of a product is attributed the typical consumers' types. The model predicts that demand for a product is lower if its customer base consists of individuals with undesirable characteristics than if its customer base consists of individuals with desirable characteristics. Note that this prediction generally arises from models of identity signaling. I do not seek to expand the above theoretical literature but rather to apply it to the specific contexts studied in my experiments.

I test the predictions of the theoretical analysis in two laboratory experiments. In the first experiment, participants are classified into desirable and undesirable types, based on either their moral values or their intelligence.[5] Participants then make consumption choices, which are subsequently revealed to observers. I create a situation in which, from the perspective of the observers, the customer base of one product is statistically associated with certain types of customers. I vary by treatment whether customers' types are desirable or undesirable. If a new consumer then chooses the product, observers may potentially confuse her with the customer type statistically associated with the product and attribute that customer type to her. I then study how the desirability of customers' types affects demand for the product. While the intuition behind these relationships is straightforward, the key parts of the process tested in my experiment are whether consumers care sufficiently about the association with specific customer types to favor or avoid certain products and whether they anticipate that their consumption choices will provide a signal about their own type.

I find that consumers care about the *moral values* of others who consume a product: subjects' willingness to pay for a product is statistically significantly lower if its customer base consists of individuals with undesirable moral values than if its customer base consists of individuals with desirable moral values. The effect size is 14.9% of the average price of the product. Net retail margins for the products used in the experiment are about 5%

[5] I chose these characteristics as they are related to identity and have been successfully used previously to induce image concerns in laboratory experiments.

(Damodaran, 2019), suggesting that product adoption by individuals with undesirable characteristics could have non-negligible consequences for the profitability of products and brands. Surprisingly, I find no treatment effect for intelligence.[6] This second result demonstrates that there are limits to the extent to which customers care about other customers' characteristics. Taken together, these findings suggest that subjects care more about the public perception of their moral values than about the public perception of their intelligence. This might explain why most examples of firms avoiding customers come from the domain of moral values.[7]

While many products are consumed in public (e.g., apparel), products are also often consumed in more anonymous settings than the ones investigated in my first study (e.g., food delivery). Can identity signaling also affect demand for unobservable consumption, or is observability a requirement for its occurrence? In the theoretical analysis, I show that the type composition of products' customer bases might also matter for unobservable consumption if consumers have imperfect knowledge of their own characteristics. Consumption can then serve as a self-signal of consumers' types. In a second study, I test whether image concerns of the type I document in my first study extend to the domain of self-signaling. I apply a double-blind procedure and study how product adoptions by right-wing extremists affect other consumers' demand for the product. Conforming to the choices of right-wing extremists might constitute a negative self-signal about a subject's moral values.

I first collect novel consumption data from right-wing extremists by recruiting participants on German neo-Nazi online forums. The right-wing extremists make multiple binary product choices in a short online survey. It is essential for the purpose of this study that one product be adopted by most participants. I achieve this requirement by using products that have incidental connections to symbols popular (or unpopular) among right-wing extremists, thereby possibly increasing (or decreasing) their attractiveness. One product, for example, features the word "milk," a recent symbol of the alt-right, in its name. However, these associations are subtle and not accessible to most people who are not right-wing extremists—I use a separate survey to document that the products are inherently neither associated with right-wing political views nor seen as particularly popular with neo-Nazis.

[6] Previous studies show that people value *self-image* based on intelligence (e.g., Eil and Rao, 2011; Möbius et al., 2017; Zimmermann, 2020). While my findings were unexpected, they are in line with those of McManus and Rao (2015), who find that subjects considered intelligence a desirable trait but also disliked signaling it to others.

[7] I know of only few examples of firms trying to avoid customers that have undesirable characteristics unrelated to moral values. Abercrombie & Fitch did not produce XL or XXL sizes in women's clothing to avoid having large women wear their products (Business Insider, 2013) and paid stars from MTV's Jersey Shore not to wear their products (Dunn, White, and Dahl 2012). Louis Roederer Champagne stated that they would prefer their products not to be publicly consumed by rappers (Economist, 2006).

I then study how these product adoptions by right-wing extremists affect participants' willingness to pay for the product in a laboratory experiment. Participants first see the choices of right-wing extremists and then choose between the same products. Importantly, their choices are entirely private, even to the experimenter. I vary by treatment whether right-wing extremists' undesirable identities are revealed to subjects: Some are told that they are observing right-wing extremists' choices, while others are told that they are observing the choices of individuals recruited on the internet. This creates a difference in the perceived type composition of the product's customer base. I find that subjects' willingness to pay for the product is statistically significantly lower if it is perceived to have been adopted by right-wing extremists than if it is perceived to have been adopted by consumers with neutral moral values. The effect size is 9.7% of the price of the adopted product, a substantial effect in comparisons to retail net margins for similar products.

In both experiments, I find that subjects care about the moral values of others who consume a product when they make consumption choices. This effect occurs for both observable and unobservable consumption and for products that do not have recognizable properties that directly relate them to certain identities. Thus, I provide unambiguous evidence that the type composition of products' customer bases can affect consumer behavior.

While my findings confirm a key prediction of identity signaling models, they might also be explained by motives unrelated to identity signaling. To shed light on subjects' motives, I supplement my experiments with questionnaire evidence that helps me address potential alternative interpretations. Evaluating these responses and patterns in the choice data, I find that all explanations except identity signaling fail to explain the data. One alternative explanation is that the type compositions of products' customer bases might have affected participants' perceptions of the products. I show that participants' perceptions of product quality and of producers' moral values do not differ between treatment conditions. Other alternative explanations that are excluded by the data are that the statistical association between a product and undesirable types results in feelings of disgust linked to the product and that consumers are more willing to conform to behaviors of others who share similar moral values. Finally, a potential concern is experimenter demand effects, particularly given my use of right-wing extremists as the undesirable type in my second study. I note that this explanation is inconsistent with the fact that I find a treatment effect only for moral values in my first study and not for intelligence; if experimenter demand effects were present, they likely would occur for both moral values and intelligence. Moreover, I provide direct

evidence against the importance of experimenter demand effects in the situations studied in this paper, applying the method developed by de Quidt, Haushofer, and Roth (2018).

The rest of the paper proceeds as follows. The next section discusses how this paper relates and contributes to the previous literature. Section 3 describes the theoretical framework that I use to develop my hypothesis. In Sections 4 and 5, I present the design and results from my first and second study, respectively. In Section 6, I discuss potential explanations for my results. Finally, Section 7 concludes.

2. Contribution to the literature

There is an extensive theoretical literature in economics on signaling and consumption, as discussed in the Introduction. While most of the early work focuses on signaling of social status and wealth (conspicuous consumption), recent models also examine signaling of other aspects of identity that are relevant to consumers' social images (Kuksov, 2007; Kuksov, Shachar and Wang, 2013; Kuksov and Wang, 2013; Carbajal, Hall and Li, 2016; Friedrichsen, 2018). The key prediction for consumer behavior in these models is that individuals care about the type composition of products' customer bases.[8] This paper provides important supportive evidence for this prediction.[9]

The empirical literature has focused on wealth signaling through conspicuous consumption of expensive goods (Bloch, Rao and Desai, 2004; Charles, Hurst, and Roussanov, 2009; Heffetz, 2011, 2018; Bursztyn et al., 2018; Clingingsmith and Sheremeta, 2018; Cosaerts, 2018) and on signaling of moral values through consumption of goods with positive social impact (Sexton and Sexton, 2014; Delgado, Harriger and Khanna, 2015; Friedrichsen and Engelmann, 2018). In these studies, signaling is characterized by a direct link between properties of the product (its price or its social impact) and the image to be signaled (being wealthy or being moral). Most products, however, do not exhibit strong inherent associations with desirable or undesirable personal characteristics. The initial contribution of this paper is to provide evidence that identity signaling motives can also affect demand for such products. In my experiments, signals emerge through statistical associations between products and certain types of customers and not through properties of the products themselves. The second contribution of my work is to provide clear evidence

[8] There are related models that assume people care about the number of other consumers who buy a product ("bandwagon effects"; Leibenstein, 1950), about others' unmet desire for a product (Imas and Madarasz, 2020), and about how their consumption levels compare to others (e.g., Hopkins and Kornienko, 2004). The latter motive is sometimes interpreted as status signaling. In these model, consumers do not care about other consumers' types.

[9] From a theoretical point of view, my studies also provide evidence of a systematic violation of a basic assumption in consumer theory, that is, that consumers do not care about others' consumption bundles. Contrary to this assumption, participants in my studies avoid products consumed by individuals with undesirable moral values.

that people care about the type composition of products' customer bases.[10] Finally, this paper's investigation of self-signaling (Study 2) fills a gap in the previous literature. My findings suggest that identity signaling motives are not limited to observable ("conspicuous") consumption but also affect unobservable consumption.

This paper also relates to identity economics. In the model of Akerlof and Kranton (2000), people belong to a particular category, or, type (e.g., male or female). Each type is linked to "appropriate" behavior (e.g., women should not work as lawyers). If people do not choose an appropriate action, they face costs in terms of a lower self-image.[11] Akerlof and Kranton (2000) propose that people's self-images, or identities, can depend on the choices that other types of people make. They write that "a woman working in a 'man's' job may make male colleagues feel less like 'men,'" which then makes the job less attractive for men. My studies provide supportive evidence of such effects in the domains of consumption and moral values. Product adoptions by consumers with "bad" moral values make the products less attractive for "moral" consumers.

Moreover, my paper contributes to work on ideology and consumption. Groups with different political ideologies systematically differ in their product and brand choices (e.g., Gebru et al. 2017; Bertrand and Kamenica, 2020; Kapner and Chinni, 2019). Recent studies in political science and psychology investigate reasons for this divide, focusing on differences in tastes and personality (Khan, Misra, and Singh, 2013; Kidwell, Farmer, and Hardesty, 2013; Roos and Shachar, 2014) and companies' values (McConnell et al., 2018). My study demonstrates that consumers care about the moral values (or ideology) of products' customer bases. Differences in brand choices between conservatives and liberals might thus reflect consumers' desire to signal their political positions; liberals, for example, might then be attracted to products that are popular among other liberals and avoid products popular among conservatives.

Finally, my investigation adds to the literature on conformity and peer effects (e.g., Krupka and Weber, 2009; Zafar, 2011; Bernheim and Exley, 2015; Lahno and Serra-Garcia,

[10] In prior work, it remains unclear whether people buy (or avoid) a product because of the product's properties or because of the type composition of the product's customer base. There is a small literature in marketing that investigates whether consumers care about who else buys a particular product (White and Dahl, 2006, 2007; Berger and Heath, 2007, 2008). The validity of these studies, however, is limited because they either rely on hypothetical choice situations or suffer from low sample sizes with limited statistical power to detect effects. In addition, it often remains unclear what drives the results. White and Dahl (2006), for example, look at hypothetical choices between steaks of two different sizes. They call the small steak either "chef's cut" or "ladies' cut," and find that men avoid the "ladies' cut." In this setting, treatment differences could be the result of a difference in the perception of whether the small steak satisfies the participant's appetite. Moreover, none of this work investigates conformity to desirable and undesirable types.

[11] Atkin, Colson-Sihra, and Shayo (forthcoming) apply the model of Akerlof and Kranton (2000) to food choices and provide evidence that identity concerns (religion and ethnicity) interact with group salience and group status to shape consumption choices, specifically demand for beef and pork in India.

2015; Gioia, 2017; Bigenho and Martinez, 2018). Bernheim (1994) and Andreoni and Bernheim (2009) study how image concerns can result in conformity to prosocial behavior. Fatas, Hargreaves Heap, and Rojo Arjona (2018) and Dimant (2019) present evidence that conformity to prosocial behavior can depend on similarity to peers. I add to this literature by showing that conformity in consumption choices depends on the desirability of others' types.

3. Theoretical framework

My study is guided by a simple model of identity signaling and consumption, building on Bernheim (1994) and Bénabou and Tirole (2011). I present the detailed model in Appendix B; in this section, I focus on the model's key insights. Note that I do not seek to expand the theoretical literature on identity signaling and consumption but rather to apply it to the specific contexts studied in my experiments.

A critical feature of the model and the situations that I study is that individuals possess individual characteristics, or *types*, that are relevant to their self- or social image. For example, they may differ in terms of moral values. Individuals have undesirable, "neutral," or desirable characteristics, associated with image $v^L < v^M < v^H$. Individuals have imperfect knowledge about others' types but can potentially receive signals through observing these others' consumption. An individual's social image, $E(v|x)$, is, therefore, the expected value of that person's image conditional on that person's consumption choice, x.[12]

Individuals choose between two products, A and B. I study contexts in which individuals with either undesirable or desirable characteristics, which I refer to as the *targets*, adopt product A.[13] Undesirable targets may be, for example, right-wing extremists. I then investigate how the desirability of targets' characteristics affects the popularity of the product among others with relatively "neutral" characteristics, whom I label the *consumers*. Consumers may be, for example, the general population. I compare a situation in which targets have desirable characteristics with a situation in which targets have undesirable characteristics.

The consumers care about the public perception of their type. They maximize $u^t(x) + \theta E(v|x)$, where $\theta > 0$ is the weight they put on their social image and $u^t(x)$ is the consumption utility from product x. There are two types of consumers, reflecting

[12] $E(v|x)$ depends on the equilibrium strategies of all types of individuals and is calculated by applying Bayes's rule.

[13] That is, all targets choose product A. There are multiple assumptions that can rationalize such behavior. For example, targets can be assumed to receive substantially more consumption utility from product A than from product B ($u^{target}(A) - u^{target}(B) > \theta^{target} * max(v^H - v^M, v^M - v^L)$) or not to care about their social image ($\theta^{target} = 0$).

heterogeneity in tastes: a-consumers derive more consumption utility from A ($u^a(A) > u^a(B)$) and b-consumers derive more consumption utility from B ($u^b(B) > u^b(A)$).

How does the desirability of targets' characteristics affect consumers' demand for product A? Suppose that the targets have desirable characteristics. Choosing product A then increases a consumer's image, as others might confuse this person with a target (i.e., $E(v|A) > E(v|B)$). For the a-consumers, there is thus no trade-off between consumption utility and image, so they choose A. If the b-consumers are sufficiently concerned about their social image, they also choose A. Suppose now that the targets have undesirable characteristics. Conforming to the targets' consumption choices then decreases consumers' social image ($E(v|A) < E(v|B)$). Hence, the b-consumers do not face a trade-off between consumption utility and image and choose B. The a-consumers might also choose product B. So the consumers choose product A weakly more often if it is adopted by targets with desirable characteristics than if it is adopted by targets with undesirable characteristics. This inequality holds strictly as long as consumers are sufficiently concerned about their social image (see the Proposition in Appendix B).[14]

In Appendix B, I extend the model to the domain of self-signaling, building on Bénabou and Tirole (2011). In this version of the model, choices are private information and consumers have imperfect knowledge of their own types. Consumers' past choices are then self-signals about their own types. The model predicts that consumers also care about the type compositions of products' customer bases in such settings, if they are sufficiently concerned about their self-image.

In the following, I test the model's main prediction in laboratory experiments. My empirical investigation closely follows the theoretical framework. A product is adopted by certain types of customers, the targets. I then vary by treatment the desirability of targets' characteristics and study how this affects the demand for the product among others, the consumers.

In Study 1, I introduce social image concerns by revealing choices to observers. In this setting, θ captures how much consumers care about observers' beliefs that they have the

[14] Note that right-wing extremists are rare, so the base rate that a person will be a right-wing extremist is low. Thus, if people form their beliefs rationally, their beliefs that an individual will be a right-wing extremist might not change substantially after observing that individual conforming to the choices of right-wing extremist. Indeed, the model predicts that, when the share of targets in the population is low, targets' characteristics only matter when θ is large. However, prior work shows that people tend to ignore base rates and rely on a representativeness heuristic (Kahneman and Tversky, 1973), which may increase the perceived diagnosticity of consumption signals. Moreover, even if the individual is not perceived as an extremist, she might still be perceived as having right-wing attitudes. Study 2 provides evidence that right-wing extremists choices indeed affect consumer preferences.

targets' characteristics. I attempt to choose desirable and undesirable characteristics that induce high levels of θ—a requirement for testing the model's prediction.

In Study 2, I investigate whether identity signaling extends to the domain of self-signaling. A key requirement for self-signaling to occur, according to the model, is that participants are insecure about their own type. Thus, the design attempts to increase participants' insecurity.

4. Study 1: Consumption in public settings

Study 1 tests whether people care about the type of others who buy a product when consumption is publicly observable. As outlined in the theoretical framework, I study contexts in which a product is adopted by a set of people, the targets. I vary the desirability of targets' characteristics and study how this affects the consumption choices of other participants, the consumers. To create social image concerns, the consumers' choices are observed by others, the observers. I relax anonymity by linking choices to portrait photographs. I create a situation in which consumption choices are informative signals about consumers' characteristics: If consumers choose the product that is adopted by the targets, the observers may potentially confuse them with the targets, which affects their social image. However, the presence of the hypothesized effect rests on consumers caring sufficiently about their social image and anticipating that their consumption choices will provide a signal of their image.

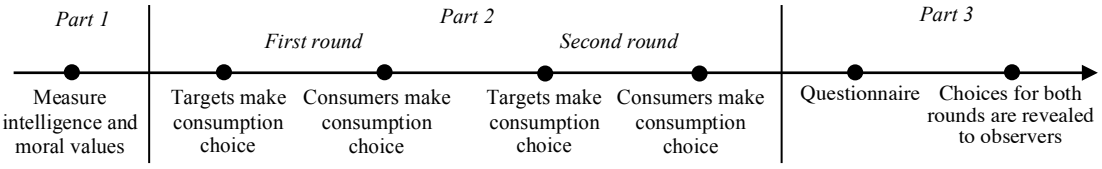
4.1 Experimental design

The experiment consists of three parts. In Part 1, I classify participants into consumers and targets, based on measures of their intelligence and moral values. In Part 2, targets choose between two products. Next, each consumer is matched to one target, learns the choice and type of that target, and chooses between the same two products. There are two rounds of such consumption choices, one related to intelligence and one to moral values. Finally, in Part 3, I reveal the choices of targets and consumers to observers. Figure 1 gives the timeline of the study.

The key part of the design is that choices signal information about consumers' characteristics to observers. This is implemented as follows: The observers see the portrait photograph and choice of either a consumer or that consumer's matched target, each with a probability of 50%. Importantly, observers do not learn whether the portrait they see is that of the target or the consumer. However, they are told the target's characteristics and which

choice the target made. From the observers' perspective, the customer base of the product chosen by the target is thus statistically associated with a certain type of customer. If the consumer conforms to the target's choice, the observers will observe the consumer's photograph with the knowledge that this person chose the product type chosen by the target. This is analogous to, for example, knowing that antisocial individuals wear a particular clothing brand and seeing a person wearing the same clothing brand. However, if the consumer avoids the product chosen by the target, she can signal to the observers that she is not the target. This situation closely reflects the one studied in the theoretical analysis and is explained in detail in Section 4.1.3 and Figure 2.

Figure 1: Timeline



4.1.1 Part 1: Classifying consumers and targets

First, participants' intelligence and moral values are measured, on the basis of which they are classified into consumers and targets. While participants are unaware of what will follow in Parts 2 and 3 of the experiment, it is announced that others might receive noisy signals about their performance in the intelligence test and about their choices in the moral value task.

Measuring intelligence. I measure participants' intelligence with a test consisting of 12 Raven's matrices. Raven's matrices have been successfully used in previous studies to induce image concerns (e.g., in Zimmermann, 2020). Subjects see patterns in which one part is missing. For each pattern, they are given eight possible suggestions for how to complete it. Subjects have 12 minutes to complete the 12 patterns. For every correct pattern, they earn CHF 0.50 (CHF 1 ≈ USD 1). Before subjects start with the test, they solve two training patterns. Subjects are told that Raven's matrices are regularly used to measure general intelligence. They do not receive feedback about their performance.

Measuring moral values. To measure moral values, I give subjects the option to increase their payoff by authorizing the researchers to make a donation on their behalf to Zukunft CH, a conservative Christian organization whose values are perceived negatively among most students in Zurich. Answers collected in a separate online survey suggest that

participants dislike being publicly perceived as donors to Zukunft CH (see Appendix C.1 for details).

Subjects receive an endowment of CHF 6. They then choose one of the seven options shown in Table 1, each jointly determining a payment to the subject and a donation to Zukunft CH. I include both positive and negative donations to increase the perceived discrepancy between the "morally good" and the "morally bad" actions, and to avoid having most subjects choose options on the boundary (Option 1 or Option 7). Negative donations are explained as "preventing donations from other participants from being implemented." To implement subjects' choices, all individual donations are added up.[15] Donations are anonymous and are not subtracted from the participants' payments.

Table 1: Measuring moral values

Option	In addition to the CHF 6.00 endowment, the subject receives	Donation to Zukunft CH on behalf of subject
1	+ CHF 6.00	+ CHF 9.00
2	+ CHF 4.00	+ CHF 6.00
3	+ CHF 2.00	+ CHF 3.00
4	+ CHF 0.00	+ CHF 0.00
5	− CHF 2.00	− CHF 3.00
6	− CHF 4.00	− CHF 6.00
7	− CHF 6.00	− CHF 9.00

Classifying consumers and targets. Subjects are then classified into targets and consumers. For each of the two rounds of consumption choice, two participants are selected to play the role of the (desirable and undesirable) targets in this round. Targets differ between rounds. For one round, targets are selected on the basis of their intelligence score. The subject with the lowest intelligence score among all subjects in the session is selected to be the undesirable target and the subject with the highest intelligence score is selected to be the desirable target.[16] For the other round, targets are selected on the basis of their donation to Zukunft CH. The subject who made the highest donation to Zukunft CH is selected to be the undesirable target and the subject who made the lowest donation to Zukunft CH is selected to be the desirable target. If multiple subjects qualify to play the role of a target, one of them is

[15] Note that this procedure does not preclude a negative total donation. Data from an online pilot survey suggested that this is not an issue (see Appendix C.1). Moreover, the payoffs are scaled to assure that the final donation to Zukunft CH will be small and, therefore, inconsequential. The final experiment resulted in a total donation of CHF 237. No research funds were used to pay for this donation.

[16] The targets are not referred to as "desirable" or "undesirable" in the experiment.

selected at random. Participants who are not a target in a given round are selected to play the role of a consumer in that round. Therefore, in a session with N participants, each round consists of two targets and $N - 2$ consumers.

4.1.2 Part 2: Consumption choices

Next, participants choose between two products twice. Choice sets differ between the first round and the second round. In one round, subjects choose between two packs of chocolate bars, one produced by Camille Bloch and the other by Munz. Both packs consist of 5 chocolate bars, 23 grams each, and are priced at about CHF 3.50. In the other round, subjects choose between a cup and a 4-GB USB stick. The market prices of the cup and the 4-GB USB stick are about CHF 8 and CHF 4, respectively.[17] I randomize the order of choice sets at the session level.

In each round, the round's targets first choose between the two products available in that round.[18] Next, the consumers are matched with one target and learn that target's type and choice. They are, for example, told that "the participant with the lowest intelligence score chose the cup." Which target they observe depends on the treatment condition:

- Subjects in the *undesirable condition* learn the type and choice of the target with undesirable characteristics.
- Subjects in the *desirable condition* learn the type and choice of the target with desirable characteristics.

Assignment to treatment conditions is randomized within sessions. Each subject is assigned to the same treatment condition for both rounds.

After consumers learn the type and choice of their target, they choose between the same products. Instead of one binary choice, I elicit consumers' willingness to pay to receive one product instead of the other product.[19] To do so, consumers make 13 decisions between product-and-money bundles, as shown in Table 2. At the end of the experiment, one of the 13 cases is randomly drawn in each round for possible implementation.

[17] I selected the 4-GB USB stick and the cup, and the two kinds of chocolates, because the responses in an online survey (see Appendix C.1) suggested that the distribution of the willingness to pay to receive the 4-GB USB stick instead of the cup, and the Munz chocolate instead the Camille Bloch chocolate, is symmetric with a mean of zero. (However, as I will discuss later, in the laboratory experiment, the UBS stick was more popular than the cup.)

[18] Targets do not learn about their role in the experiment; they are only told that others might learn about their choice. Not informing targets protects their self-image as it keeps them ignorant about their relative performance. This design choice is valid for the purpose of this study as the focus lies on consumers' choices; targets' choices only serve as a means to create a statistical association between a product and certain types of consumers.

[19] I elicit the willingness to pay to collect more extensive data. Bénabou, Falk, Henkel and Tirole (2020) point out that image concerns can interact with elicitation methods to affect the measurement of moral preferences. While my use of the multiple price list could reinforce or diminish image concern—thereby potentially affecting the size of the treatment effect— it does not affect the sign of the treatment effect, which is the main interest of this paper.

In the first round, participants make the 13 decisions between two products and for a target in one of the two domains—intelligence or moral values. After making the 13 decisions, the second round starts; they are shown the two other products and the target's choice between the products for the other domain.

Table 2: Consumers' choices

Decision	Choice situation		
1	Munz + CHF 3.00	*or*	Camille Bloch
2	Munz + CHF 2.50	*or*	Camille Bloch
3	Munz + CHF 2.00	*or*	Camille Bloch
4	Munz + CHF 1.50	*or*	Camille Bloch
5	Munz + CHF 1.00	*or*	Camille Bloch
6	Munz + CHF 0.50	*or*	Camille Bloch
7	Munz	*or*	Camille Bloch
8	Munz	*or*	Camille Bloch + CHF 0.50
9	Munz	*or*	Camille Bloch + CHF 1.00
10	Munz	*or*	Camille Bloch + CHF 1.50
11	Munz	*or*	Camille Bloch + CHF 2.00
12	Munz	*or*	Camille Bloch + CHF 2.50
13	Munz	*or*	Camille Bloch + CHF 3.00

4.1.3 Part 3: Signaling through consumption

After subjects finish both rounds of consumption choices, choices are revealed to up to 14 observers. The following procedure statistically associates the customer base of one product with certain types of customers. The procedure is illustrated in Figure 2.

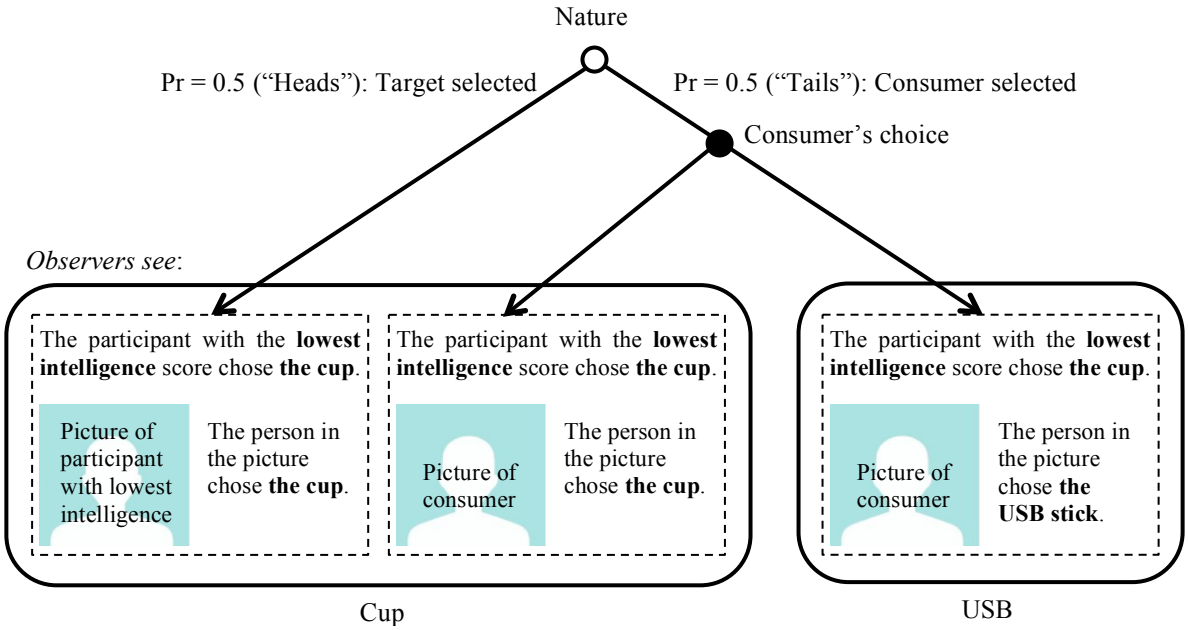
The observers are shown a portrait photograph and the choice made by that person.[20] This person can be either a consumer or that consumer's target, depending on the flip of a computerized fair coin.[21] Importantly, observers do not learn the outcome of the coin flip, that is, they are not told whether they are seeing the consumer or the target. However, I tell observers the type and choice of the target. This creates a statistical association between the product and a certain type of customer. Hence, observers can infer information about the observed person's characteristics by comparing the choice of the person they observe with the target's choice: If the choice of the person corresponds to the target's choice, the person might be the target. However, if the choice differs from the target's choice, the person must be the consumer and not the target. Thus, conforming to the undesirable (desirable) target

[20] The picture is taken at the very beginning of the experiment, before subjects enter the lab.

[21] Remember that the consumer makes choices for 13 cases. If the coin flip selects the consumer, the observer does not see the choices for all 13 cases but only which product the consumer chose for one randomly drawn case. This randomly drawn case is then implemented; that is, the consumer receives the chosen option for this case.

likely decreases (increases) the consumer's social image. Figure 2 illustrates this procedure with an example in which the target—the person with the undesirable quality of scoring lowest on the intelligence test—chose the cup. I explain this procedure in detail to consumers before they make their choices and test their understanding of the instructions through comprehension questions.

Figure 2: Signaling through consumption



Notes: The figure illustrates how choices are revealed to the observers such that the customer base of one product is statistically associated with certain types of customers. In the illustrated case, the consumer is paired with the target with the lowest intelligence score and that target chose the cup. The observers learn the type and the choice of the consumer's target ("The participant with the lowest intelligence score chose the cup"). Moreover, the observers see the picture and choice of either the target or the consumer, depending on the coin flip (see boxes in dotted lines). The observers do not know whether tails or heads is realized. The boxes in solid lines therefore give the observers' information sets.

In each round, choices of only three randomly drawn consumers are implemented and (possibly) revealed to observers. The choices of all other consumers are neither implemented nor seen by any observer, but instead these remaining consumers serve in the role of observers. Each observer is matched to two of the drawn consumers such that each drawn consumer is (possibly) observed by two thirds of all observers.[22] The reason I implement only

[22] The matching between consumers and observers works as follows: Starting with round 1, all consumers of this round are randomly assigned to three groups of equal size (groups 1–3). Next, one member of each group is randomly drawn. The choices of these three subjects are implemented. All members of group 1 play the roles of observers for the drawn consumers of group 2 and group 3. In a similar manner, the members of group 2 play the role of observers for group 1 and group 3, and the members of group 3 play the role of observers for groups 1 and 2. The same procedure is then repeated for the second round. Note that each of the drawn consumers is, thus, observed by two thirds of all consumers, resulting in between 11 and 14 observers.

three choices in each round is (i) to match consumers with many observers while (ii) limiting the number of participants each observer sees. The former is important to induce sufficiently strong social image concerns. The latter is important to ensure that a target's identity is never revealed with certainty to observers, thereby protecting the social image of undesirable targets.[23] Targets' choices are always implemented, that is, they always receive the product they chose. Consumers are informed about the number of observers and about the probability with which their choice will be implemented before they make their choice.

4.1.4 Questionnaire

At the end of the experiment, but before consumers' choices are revealed to observers, subjects fill out a short questionnaire. Most importantly, I measure subjects' perceptions of the four products used in the experiment.[24] I provide additional details on the questionnaire in Section 6, when I discuss different explanations for my findings.

4.1.5 Procedural details

I preregistered the data collection and analysis (AEARCTR-0004268). I aimed for a sample size of 160 participants. According to my simulations, the statistical power with this sample size was 80% to detect an effect size equal to CHF 0.50 (as outlined in my pre-analysis plan). I conducted eight sessions, each consisting of between 19 and 24 participants. In total, 87 subjects participated in the desirable condition and 81 in the undesirable condition. All sessions took place at the Laboratory for Experimental and Behavioral Economics at the University of Zurich, in June 2019. Participants were recruited using hroot (Bock, Baetge, and Nicklisch, 2014) from the joint subject pool of the University of Zurich and the Swiss Federal Institute of Technology. The experiment was implemented using z-Tree (Fischbacher, 2007). Appendix D.1 supplies the instructions for the study. My study obtained ethical approval from the Human Subjects Committee of the Faculty of Economics, Business Administration, and Information Technology at the University of Zurich.

[23] The following procedure guarantees that targets are never revealed with certainty to observers. For each round, consumers play the role of an observer for two other consumers. If these two consumers share the same target and "heads" comes up twice, the observer would see the picture of the same person (the target) twice. This would reveal to the observer that the person in the picture is the target. To avoid this issue, the two coin flips are either tails–heads or heads–tails, each with a probability of 50%. While this procedure creates a dependency in the realization of coin flips, it does not affect the individual probabilities that a target or a consumer is drawn. Hence, the procedure corresponds, from a subject's perspective, to the procedure explained above. Note that this procedure requires participants to play the role of an observer for at most two consumers in each round.

[24] In addition, I elicit subjects' demographics, their willingness to pay to receive each of the products in private, and how much they care about being perceived as intelligent and tolerant. The complete questionnaire is in Appendix D.1.

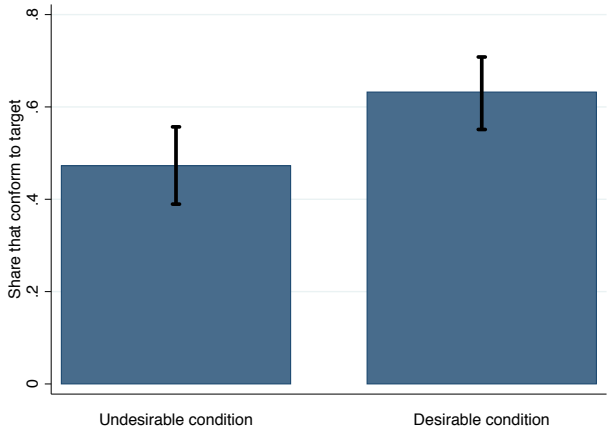
4.2 Results

On average, subjects solved 8.41 of 12 Raven's matrices (std. dev. = 2.01). Only 4.71% of subjects solved all 12 matrices, and the minimal number of matrices solved was 3. For moral values, the median (and modal) choice was the option that neither increased nor decreased the donation to Zukunft CH (Option 4). A total of 32.35% of subjects chose the option that maximized their own payoff and the donation to Zukunft CH (Option 1), while 14.12% of subjects chose the option that minimized the donation to Zukunft CH and their own payoff (Option 7). Figures A1 and A2 in the Appendix provide the full distribution for intelligence and moral values.

A majority of targets preferred Munz chocolate over Camille Bloch Torino chocolate (10 of 16) and the 4-GB USB stick over the cup (11 of 16). Targets' choices are unbalanced between treatment conditions (see Appendix Figure A3).[25] I account for these differences in the analysis of consumer behavior.

In the following, I focus on consumers' choices. Consumers chose between product-and-money bundles. Six subjects made product choices that are non-monotone in money, and one subject did so in both rounds. These seven observations are excluded from my analysis.[26] The fact that most subjects exhibit monotone choice patterns can be seen as an indicator that subjects understood the choices they were facing.

Figure 3: Consumers' consumption by treatment condition



[25] The treatment difference in the share of targets that chose the cup and in the share of targets that chose the Camille Bloch Torino chocolate is not statistically significant different from zero (tests of proportions, $z = 0.54$, $p = 0.59$, and $z = 1.03$, $p = 0.30$, respectively).

[26] Specifically, these subjects chose (A, CHF X) over (B, CHF 0) but (B, CHF 0) over (A, CHF $X - 0.5$), where A and B are either the two kinds of chocolates or the cup and the USB stick. I pre-registered that I drop these observations. Appendix Tables A1 and A2 show that results do not change if I keep them instead.

I now turn to the question of whether the type composition of products' customer bases affects consumers' choices, the focus of this paper. I first pool that data from the moral values round and the intelligence round and look at the binary choice between the two products when neither of them is bundled with a monetary payment.[27] Figure 3 provides supportive evidence for the prediction of the theoretical analyses: Consumers chose the option that was chosen by their target less often in the undesirable condition than in the desirable condition. Table 3, column (1) gives the estimated coefficients of a linear regression of the probability of choosing the same option as the target on a treatment dummy (1 = undesirable condition). Column (2) adds session fixed effects to the specification. Subjects are 16.8 percentage points less likely to choose the product adopted by their target in the undesirable condition than in the desirable condition ($p = 0.003$).

Table 3: Relationship between consumers' choices and targets' types, Study 1

Dependent variable	**Pr(Conform to target)**			**WTP for target's product**		
	(1)	(2)	(3)	(4)	(5)	(6)
1 = undesirable condition	-0.160*** (-2.85)	-0.168*** (-3.01)	-0.209*** (-3.80)	-0.229 (1.50)	-0.267* (-1.82)	-0.329** (-2.20)
1 = target chose Munz			0.166* (1.79)			0.160 (0.78)
1 = target chose cup			-0.045 (-0.44)			-0.193 (-0.63)
1 = target chose USB stick			0.240*** (2.98)			0.400* (1.91)
Constant	0.632*** (16.34)			-0.082 (0.78)		
Log(sigma)				1.337*** (15.06)	1.310*** (15.00)	
N	301	301	301	301	301	301
Session fixed effects	No	Yes	Yes	No	Yes	Yes

Notes: Columns (1)–(3): Linear regressions of probability of choosing the same product as the target when neither of the two products is connected with any payment on a treatment dummy, a constant, and, depending on the specification, session fixed effects and controls for the targets' choices. Columns (4)–(6): Tobit regressions (left-censored at CHF −3, n *= 17; right-censored at CHF +3,* n *= 10) of willingness to pay (WTP) to receive the same product as the target instead of the other product on the same set of variables. The t statistics are given in parentheses; standard errors are clustered at subject level (168 clusters).* * p < *0.1;* ** p < *0.05;* *** p < *0.01.*

[27] I preregistered participants' willingness to pay to receive the same product as their targets instead of receiving the other product as the main outcome variable. I discuss the willingness to pay next. Note that while results are qualitatively similar for both outcome variables, there is a difference in terms of significance (see Table 3).

Remember that targets' choices are unbalanced between conditions. This introduces a bias in the estimation of the treatment effect. Specification (3) accounts for this issue by controlling for the targets' choices; the estimated treatment effect increases to 20.9 percentage points. This issue can also be addressed by estimating treatment effects separately for each possible target choice. I obtain similar results under this approach (see Figure A4a in the Appendix).

The choice data collected allow me to calculate participants' willingness to pay to receive the same product as their target instead of the other product.[28] Note that this variable is left-censored at CHF −3 (10 observations) and right-censored at CHF 3 (17 observations). Figure A5 in the Appendix gives the cumulative distribution of the willingness to pay.

Table 3, column (4) gives the estimates from a tobit regression of the willingness to pay on a treatment dummy. The specification in column (5) adds fixed effects, and the specification in column (6) controls for targets' choices. The estimates support the prediction of the theoretical analysis in that the coefficient is negative in all three specifications. That is, consumers' willingness to pay is lower for a product that is adopted by individuals with undesirable characteristics than for a product that is adopted by people with desirable characteristics. However, the effect is significant (at the 5% level) only in the specification that controls for targets' choices. Results are qualitatively similar (and statistically significant) if treatment effects are estimated separately for each possible target choice (see Figure A4b in the Appendix).

Next, I investigate whether treatment effects differ between the moral values round and the intelligence round. Table 4 replicates the previous analysis, but with treatment effects estimated separately for moral values (TE-M) and intelligence (TE-I). There is a statistically significant treatment effect for moral values in all six specifications. Surprisingly, however, none of the specifications yields a significant treatment effect for intelligence. The difference in treatment effects is statistically significant for the willingness to pay measure.[29] These findings suggest that subjects care more about the public perception of their moral values than the public perception of their intelligence when making consumption choices. In terms of the model, this means that $\theta_{moral\ values}$ is bigger than $\theta_{intelligence}$. This might explain

[28] Note that my data are discrete because I use the list method. Hence, for a subject who chooses Camille Bloch in the choice situation "(Camille Bloch, CHF 1.50) or (Munz, CHF 0)" but Munz in the choice situation "(Camille Bloch, CHF 1) or (Munz, CHF 0)," the difference in monetary value must be in [CHF 1, CHF 1.5]. I set this difference to CHF 1.25.

[29] Results are qualitatively similar if treatment effects are estimated separately for the target choices (see Figure A4c–f in the Appendix). Figure A5 in the Appendix gives the cumulative distribution functions of subjects' willingness to pay conditional on treatment and round. I pre-registered that I would look at both heterogeneous treatment effects for intelligence and moral values and heterogeneous treatment effects for the two choice sets used. I do not find differences for the choice sets: Treatment effects do not differ between the two kinds of chocolates and the cup and the USB stick ($p > 0.80$).

why firms appear to be particularly concerned with the moral values of their customers, as suggested by the examples in the Introduction.

Table 4: Treatment effects for intelligence and moral values

Dependent variable	**Pr(Conform to target)**			**WTP for target's product**		
	(1)	(2)	(3)	(4)	(5)	(6)
1 = undesirable condition × 1 = moral values (TE-M)	-0.272*** (-3.43)	-0.277*** (-3.52)	-0.290*** (-3.76)	-0.600*** (-2.65)	-0.623*** (-2.86)	-0.652*** (-3.04)
1 = undesirable condition × 1 = intelligence (TE-I)	-0.050 (-0.61)	-0.109 (-1.40)	-0.128 (-1.56)	0.134 (0.64)	0.082 (0.39)	-0.009 (-0.04)
1 = intelligence round	-0.111 (-1.43)	-0.109 (-1.40)	-0.015 (-0.18)	-0.209 (-0.97)	-0.197 (-0.92)	-0.010 (-0.05)
Constant	0.688 (12.94)			0.187 (1.22)		
Log(sigma)				1.322*** (15.25)	1.296*** (15.18)	1.277*** (14.85)
p value TE-M==TE-I	0.055	0.065	0.161	0.020	0.024	0.040
N	301	301	301	301	301	301
Session fixed effects	No	Yes	Yes	No	Yes	Yes
Target choice controls	No	No	Yes	No	No	Yes

Notes: Columns (1)–(3): Linear regressions of probability of choosing the same product as the target when neither of the two products is connected with any payment on the interaction between a treatment dummy and a dummy for being in the moral values round (TE-M), the interaction between a treatment dummy and a dummy for being in the intelligence round (TE-I), a dummy for being in the intelligence round, (1 = intelligence round), a constant, and, depending on the specification, session fixed effects and controls for the targets' choices. Columns (4)–(6): Tobit regressions (left-censored at CHF −3, n *= 17; right-censored at CHF +3,* n *= 10) of willingness to pay (WTP) to receive the same product as the target instead of the other product on the same set of independent variables. The* t *statistics are in parentheses; standard errors are clustered at subject level (168 clusters).* *** p *< 0.01.*

How large are these effect sizes? The average price of the product adopted by the target is CHF 4.39. In the pooled data, subjects' willingness to pay is estimated to be CHF 0.33 lower if the product is adopted by the targets with undesirable identities—a decrease of 7.5% of the average product price. For moral values, the treatment effect is estimated to be CHF −0.65—a decrease of 14.8% of the average product price. Given that European net margins for food processing, food retail, general retail, and electronics are only 6.76%, 1.67%, -0.48%, and 11.83%, respectively (Damodaran, 2019), product adoptions by customers with undesirable characteristics could have non-negligible effects on the profitability of products and brands.

To summarize, this study provides evidence that consumers care about the moral values of others who consume a product in a setting where choices are observed by others. However, many products are consumed in more anonymous settings, where such social signaling is unlikely to play an important role. Do the moral values of a product's customer base also matter in such contexts? I address this question in a second study.

5. Study 2: Consumption in private settings

In the second study, I investigate whether people care about the moral values of a product's customer base when product choices are private information. This study allows me to test whether image concerns of the type I document in my first study extend to the domain of self-signaling.

As in Study 1, I investigate contexts in which a product is adopted by a set of people, the targets, and study how the desirability of targets' moral values affects choices of others, the consumers. Unlike Study 1, however, consumers' choices are entirely private, even to the experimenter. The theoretical analysis predicts that consumers might avoid products adopted by undesirable types even in such settings if they are insecure about their own characteristics and sufficiently concerned with their self-image.

Studying self-signaling requires a substantially different design from the one used in Study 1. Apart from applying a double-blind procedure, the design of Study 2 differs in two other important aspects from the first study.

First, in Study 2 a product is adopted by many targets. Self-signaling requires subjects to believe that a significant share of a product's customers base consists of people with certain characteristics in order for consumption to be an informative signal about types.[30] Observing the choice of only one target with a desirable or undesirable type, as done in Study 1, might not alter the perceived composition of a product's customer base in they eyes of consumers.

Second, I attempt to increase subjects' uncertainty about their own moral values. Such uncertainty is a necessary condition for self-signaling to occur, according to the model (see also Bénabou and Tirole, 2011). I do so by threatening subjects' moral identities. Identity threats are commonly used in psychology to investigate self-image concerns (e.g., Dutton and Lake, 1973; Monin and Miller, 2001) and are an integral part of economic models of self-signaling and morality (Bénabou and Tirole, 2011).

[30] For social-signaling, the choice of one target suffices to statistically associate a product with certain types of people *in the view of observers*. The challenge for studying self-signaling is to create a similar association in the view of consumers.

To further strengthen self-image concerns, I recruit targets with characteristics that are likely perceived as very undesirable by the consumers: right-wing extremists. Conforming to the choices of right-wing extremists might constitute a bad signal about a subject's moral values, for example, in terms of racism.

5.1 Experimental design

Participants in a laboratory experiment play the role of consumer and choose between two products. Before consumers make their choices, they are informed about the choices made by others, the targets. The role of targets is served by right-wing extremists who are recruited outside the laboratory. I vary by treatment whether the targets are perceived to have neutral moral values (*neutral condition*) or undesirable moral values (*undesirable condition*). I do so by revealing the political ideology of targets only to the consumers in the undesirable condition; consumers in the neutral condition are kept uninformed about the targets' undesirable moral values. Consumers make their choices in a double-blind setting to eliminate possible image concerns toward the experimenter.

5.1.1 The targets: A sample of right-wing extremists

I collect novel consumption data from 10 individuals recruited on far-right extremist internet forums to participate in a short online survey. The survey consists of eight binary product choices. One of the eight choice situations is randomly drawn, and participants receive the product they chose in this choice situation. I offer an anonymous shipping option.[31] Subjects also fill out a short demographic questionnaire.

For the purpose of my study, it is essential that one product be adopted by most of the right-wing extremists. To achieve this requirement, I select products with incidental connections to symbols liked (or disliked) by right-wing extremists, likely increasing (or decreasing) the attractiveness of products. One product, for example, had the word "milk" (a recent symbol of the alt-right) in its name. I succeeded in that 9 out of 10 of the extremists preferred the "Munz Praliné-Prügeli" milk chocolate over the "Camille Bloch Torino" chocolate. Table C1 in Appendix C.2 gives all choice situations and the corresponding distribution of the extremists' choices.

The incidental associations to symbols liked or disliked by the right-wing extremists are subtle and not accessible to most people who are not right-wing extremists. I document

[31] Hermes, a German postal service company, allows sending packages to pick-up points instead of specific addresses. Alternatively, participants can choose to have the product and the payment sent to an address of their choice. I promise participants that all their information will be kept confidential and that addresses will be deleted directly after their payment is shipped. No research funds were used to pay right-wing extremists.

this in a separate online survey with participants drawn from the same subject pool from which I recruit participants for the laboratory experiment. Participants neither associate Munz (or Camille Bloch) with right-wing extremism nor think that Munz is more useful to or more popular with neo-Nazis than Camille Bloch (see Appendix C.3 for details). Any statistical associations between products and types are, therefore, created in the experiment and emerge through the (perceived) type composition of products' customer bases.

5.1.2 The consumers: A laboratory experiment

Participants in the laboratory experiment play the role of consumers. I investigate how the product adoptions of the right-wing extremists affect consumers' choices. Consumers choose between the Munz chocolate and the Camille Bloch chocolate. As discussed in Section 5.1.1, the Munz chocolate was very popular with the right-wing extremists, which is a key requirement for my study. Another advantage of using the chocolates is that they can be consumed in private, which makes it unlikely that consumers avoid Munz because of social image concerns.

In the laboratory, I first threaten consumers' identities to increase their uncertainty about their moral values. Next, consumers learn the choices of the targets. I manipulate the perception of the type composition of products' customer bases by revealing the targets' moral values only to some consumers, which is the key aspect of Study 2. Then, consumers make their product choice. Finally, they fill out a survey and receive payment in private.

Identity threat. I threaten consumers' personal moral identities to increase their uncertainty about their own types. To do so, consumers complete an implicit association test (IAT)—a popular test in psychology to measure implicit racism—before they make their decision. I use the skin-tone IAT (Nosek et al, 2007). Consumers learn their results from the IAT. The IAT very often reveals racism (65–82% of the population are implicit racists, according to Project Implicit) and thereby threatens subjects' identities. Indeed, 45.23% of participants reported in the survey at the end of the experiment that the IAT at least somewhat threatened their identity. To avoid social-signaling motives, IAT scores are not saved, and as a result, neither the experimenter nor any other person sees the scores. To strengthen the identity threat, consumers receive detailed information about the interpretation of the results from the IAT at the beginning of the experiment.

Treatments. Next, consumers observe the choices of the 10 targets. Consumers are randomly assigned to either the *undesirable* or the *neutral condition*. The treatment is randomized within sessions. In both conditions, consumers observe the choices of the right-

wing extremists. However, the political ideology of targets is revealed only in the undesirable condition. In the neutral condition, consumers are told that the targets were participants in a previous study who were recruited online. Participants in both conditions receive demographic information about the targets (distribution of gender, age, and education) to keep the perception of the targets in domains unrelated to moral values somewhat similar between conditions.

Consumers' choices. Next, consumers choose between the two kinds of chocolate. As in Study 1, consumers make 13 decisions between product-and-money bundles (see Table 2). Unlike in the first study, however, the choices are elicited in two stages. First, consumers make a binary choice between the two products. In this choice situation, none of the products are bundled with money. Then, they make the 13 decisions, where the choice between (Munz, CHF 0) and (Camille Bloch, CHF 0) is set to subjects' first-stage choices (but can be changed). At the end of the experiment, one of the 13 second-stage choices is randomly chosen to be implemented.

Anonymity. To guarantee consumers' anonymity, one participant is randomly selected to be the "monitor" at the beginning of each session. The monitor pays the participants at the end of the study and does not participate in the experiment. The remaining participants are in the role of consumers. Each consumer receives a random ID number hidden in an envelope. The experimenter cannot match the ID number to the participant. Each consumer opens the envelope in private and enters this ID number in the computer terminal at which they sit. At the end of the study, each consumer's monetary payoff and chosen product are placed in an envelope labeled only with the anonymous ID number. The monitor, who does not know the contents of any of the envelopes, distributes the envelopes to the consumers based one their ID numbers at the end of the study.

Survey. Before consumers receive their payment, they fill out a survey. It takes 20 to 30 minutes to fill the payment envelopes after consumers make their product choices. Thus, the survey is very long to keep subjects occupied. Most importantly, the survey elicits consumers' perception of the products and tests for experimenter demand effects.[32] I provide additional details on the questionnaire in Section 6, where I discuss different explanations for my findings.

[32] I included many questions to keep subjects occupied and to potentially inform future research. The questionnaire contains question about political attitudes, expected use of the chocolate, familiarity with the chocolates, familiarity with the IAT and whether the IAT threatened subjects' identities, beliefs about the behavior of the other participants, willingness to pay for a different chocolate brands, image concerns, how prone subjects are to disgust, attitudes toward products popular with neo-Nazis, beliefs about popularity of the products among different groups of people, and demographics. The complete questionnaire is in Appendix D.2.

Sequence. Consumers receive instructions explaining the entire experiment. While the instructions explain that they have to choose between two products ("product A" and "product B") in the 13 cases, it is not revealed what these products are. Instructions announce that participants will observe the choices of "10 participants from a previous study" but do not give any information about the types or choices of the targets. To strengthen the identity threat, the instructions contain detailed information about the IAT. Participants' understanding of the instructions is tested through comprehension questions. Then, depending on the treatment condition, they are told that the 10 other participants are either right-wing extremists or unspecified participants recruited on the internet. Next, it is revealed that the products correspond to Camille Bloch chocolate and Munz chocolate. At the same time, consumers learn that 9 out of 10 targets chose the Munz chocolate. This procedure prevents consumers from evaluating the products before they learn the preferences of the targets. Next, consumers choose between the two chocolates. Finally, consumers fill out a survey and then receive their payment from the monitor.

Procedure. I conducted 11 sessions, each consisting of between 19 and 23 participants, resulting in a total of 243 participants (113 in the neutral condition, 119 in the undesirable condition and 11 monitors). All sessions took place at the Laboratory for Experimental and Behavioral Economics at the University of Zurich, in December 2018. Participants were recruited using hroot (Bock, Baetge, and Nicklisch, 2014) from the joint subject pool of the University of Zurich and the Swiss Federal Institute of Technology. The experiment was implemented using z-Tree (Fischbacher, 2007) and, for the IAT, Minno.js (Zlotnick, Dzikiewicz, and Bar-Anan, 2015). Appendix D.2 supplies the instructions for the study. This study obtained ethical approval from the Human Subjects Committee of the Faculty of Economics, Business Administration, and Information Technology at the University of Zurich.

5.2 Results

I find that consumers' demand for Munz, the product popular with the targets, is lower when targets are perceived to have undesirable moral values, as predicted by the model.[33] Table 5, column (1) gives the estimates of a linear regression of the probability that consumers will choose the Munz chocolate when none of the products are bundled with money on a treatment dummy (1 = undesirable condition). Column (2) adds session fixed effects. In the

[33] Six participants made product choices that are non-monotone in money. These individuals are excluded from the analysis. Appendix Table A3 shows that results do not change if these observations are kept.

undesirable condition, consumers are estimated to be 13.6 percentage points less likely to choose the Munz chocolate than in the neutral condition ($p = 0.036$).

Table 5: Relationship between consumers' choices and targets' types, Study 2

Dependent variable	Pr(Munz)		WTP Munz	
	(1)	(2)	(3)	(4)
1 = undesirable condition	-0.133** (-2.00)	-0.136** (-2.11)	-0.325** (-2.08)	-0.335** (-2.26)
Constant	0.564*** (11.87)		0.078 (0.69)	
Log(sigma)			1.169*** (20.12)	1.108*** (20.14)
N	226	226	226	226
Session fixed effects	No	Yes	No	Yes

Notes: Columns (1) and (2): Linear regressions of probability of choosing Munz chocolate when neither of the two products is connected with any payment on a treatment dummy. Robust standard errors are used. Columns (3) and (4): Tobit regressions (left-censored at CHF −3, n *= 5; right-censored at CHF +3,* n *= 9) of willingness to pay (WTP) to receive the Munz chocolate instead of the Camille Bloch chocolate on a treatment dummy. The* t *statistics are in parentheses.* ** p *< 0.05;* *** p *< 0.01.*

As in Study 1, the data allow me to calculate subjects' willingness to pay to receive the Munz chocolate instead of the Camille Bloch chocolate. Note that this variable is left-censored at CHF −3 (five observations) and right-censored at CHF 3 (nine observations). Appendix Figure A6 shows the cumulative distribution of the willingness to pay.

Table 5, column (3) gives the estimates of a tobit regression of the willingness to pay on a treatment dummy. Column (4) adds session fixed effects. Consumers in the undesirable condition are willing to pay CHF 0.335 less for the product adopted by the targets than consumers in the neutral condition ($p = 0.025$). Note that the effect size is about 10% of the price of the chocolates.[34] This is a substantial effect in comparison to European net margins for food processing and food retail, 6.76% and 1.67%, respectively (Damodaran, 2019).

In summary, I show that the effect demonstrated in Study 1 replicates for unobservable consumption. In complement with Study 1, I thus provide evidence that type composition of products' customer bases affects consumer behavior for both observable and

[34] If a participant cannot eat chocolate, the choice will not reveal any information about that person's type in this experiment. When I hire subjects, I thus ask students not to sign up for this study if they are allergic to chocolate. Nevertheless, 15 students indicated in the survey that they could not eat either the Munz or the Camille Bloch chocolate. If I exclude these subjects from the analysis, treatment effects increase: Estimated treatment effects in Table 5 are then −0.166 ($t = -2.43$, $p = 0.016$) for specification (1), −0.160 ($t = -2.38$, $p = 0.018$) for (2), −0.415 ($t = -2.60$, $p = 0.010$) for (3), and −0.413 ($t = -2.72$, $p = 0.007$) for (4).

unobservable consumption. Importantly, this effect occurs for products that do not have recognizable properties that directly relate them to certain identities.

6. Alternative explanations

In both studies, I find that consumers care about the moral values of others who choose a product, as predicted by models of identity signaling. In the following, I discuss whether explanations other than identity signaling could produce my findings. Understanding the motives of consumer behavior is potentially important for the policy implications of my work; identity signaling, for example, often results in suboptimal consumption behaviors (Frank, 1985; Ireland, 1994; Moav and Neeman, 2010, 2012). Evaluating responses to the questionnaires and patterns in the choice data, I find that all explanations except identity signaling fail to explain the data.

One alternative explanation is that the type compositions of products' customer bases might have affected participants' perceptions of the products or the producer, for example, through forms of social learning (Bikhchandani, Hirshleifer, and Welch, 1998). Such differences in perception might then translate into differences in consumption choices.

To investigate if there are treatment differences in product perceptions, I elicit participants' perceptions of different dimensions of product quality (including price, processing quality, and quality of raw materials) and of the moral values of the producers in both studies. I do not find treatment differences in most dimensions of product quality (see Appendix Tables A6 and A7). Moreover, there are no treatment differences in the perception of the producers' moral values: In Study 1, subjects do not think that the producer of the product that is adopted by the target with undesirable moral values promotes conservative Christian values (Wilcoxon rank-sum, $p = 0.611$; see Table A6). In Study 2, subjects in the undesirable condition do not think that Munz, the producer of the product adopted by right-wing extremists, promotes right-wing extremism or discriminates against minorities (Wilcoxon rank-sum, $p = 0.800$, $p = 0.406$, respectively; see Table A7).

Another explanation is that associating a product with right-wing extremists, as in Study 2, might remind the buyer of unpleasant associations with Nazis and their actions, resulting in feelings of disgust when consuming the product—in line with negative contagion (Rozin, Millman, and Nemeroff, 1986; Nemeroff and Rozin, 1994)—thereby devaluating the product. In the questionnaires, I ask subjects whether they feel disgusted when they think about eating the product chosen by their target. There are no treatment differences in

subjects' responses in either Study 1 or Study 2 (Wilcoxon rank-sum, $p = 0.967$, $p = 0.422$, respectively; see Tables A6 and A7).[35]

Third, people might be more willing to conform to the behaviors of others who have similar personality traits, values or group affiliations than to others who are different (Fatas, Hargreaves Heap and Rojo Arjona, 2018; Dimant, 2019). Treatment differences in the similarity between consumers and targets could therefore potentially explain the treatment differences in consumer behavior.

My data allows me to measure the similarity between the moral values of consumers and targets. For Study 1, I look at the similarity in donations to Zukunft CH. For Study 2, I use subjects' political position, racism and views on right-wing and left-wing extremism to measure similarity: subject that are right-wing and hold racist views are more similar to the right-wing extremists than subjects who hold left-wing views and are opposed to racism. In both studies, the similarity measures can not account for the treatment differences; if anything, controlling for similarity increases estimated treatment effects (see Appendix Tables A4 and A5).[36]

Finally, one might worry about experimenter demand effects, particularly given my use of right-wing extremists as undesirable types in Study 2.[37] I note that this explanation is inconsistent with the fact that I find a treatment effect only for moral values in Study 1, and not for intelligence; if experimenter demand effects were present, they likely would occur in both the moral values round and the intelligence round.

Moreover, I provide direct evidence against the importance of experimenter demand effects in the situations studied in this paper, based on the method developed by de Quidt, Haushofer, and Roth (2018). In the questionnaire of Study 2, subjects are asked to submit an offer (in [0 CHF, 6 CHF]) to buy a USB stick, incentivized by the Becker–DeGroot–Marschak method. Half of the subjects are assigned to a demand condition and the other half to a control condition. In the demand condition, I add the sentence "We expect that

[35] In the survey of Study 2, I also ask subjects how they plan to use the chocolates if they receive them: whether they will eat it, give it to someone else, or throw the chocolate away. If disgust plays an important role, subjects might be less likely to eat the Munz chocolate, but more likely to give it away or throw it away. I do not find a treatment difference in any of the three variables (linear probability model; $t = 0.25$ ($p = 0.801$), $t = 1.54$ ($p = 0.126$), $t = -0.94$ ($p = 0.346$), respectively).

[36] Moreover, in Study 1, the consumers in the undesirable condition are on average *more similar* to their targets than the consumers in the desirable condition: I measure similarity as $1 - |\text{donation} - \text{target's donation}|/6$ and regress this variable on a dummy of being in the undesirable condition. The coefficient estimate is 0.16 ($t = 2.99$; $p = 0.003$). Figure A2 in the Appendix also illustrates that consumers are more similar to the undesirable targets than to the desirable targets. Therefore, if participants are more willing to conform to more similar targets, conformity should be more common in the undesirable condition than in the desirable condition. I find the opposite pattern.

[37] A related explanation is that consumers try to fulfill observers' expectations. Like experimenter demand effects, this explanation is inconsistent with the fact that I find a treatment effect only for moral values in Study 1, and not for intelligence. Moreover, this explanation can not explain behavior in Study 2, which does not involve observers.

participants who are shown these instructions will specify a lower maximum price than they normally would." As de Quidt, Haushofer, and Roth (2018) argue, such a sentence induces experimenter demand effects and makes it possible to test for the importance of experimenter demand effects in a specific setting. The average willingness to pay for the USB stick does not differ between treatment conditions (tobit regression, coefficient = CHF −0.034, t = −0.11, p = 0.916), suggesting that experimenter demand effects are weak for the kind of consumption choices studied in this paper.

7. Conclusion

Many firms appear to shun potential customers with undesirable moral values—for example, alt-right followers and hooligans—which seems at odds with the typical assumption that firms will seek to sell greater quantities of their products where profitable. This paper provides a potential rationale for such firm behavior, based on consumers' image concerns: consumers seek to signal to themselves and others that they have desirable characteristics by avoiding products popular among people with undesirable characteristics and by conforming to the product choices of people with desirable characteristics. Thus, a firm urging undesirable groups not to buy the firm's products might be entirely consistent with profit-maximization, if the perceived negative impacts of such a customer base outweigh the immediate profits from such sales. A condition for such a relationship, however, is that consumers care about a product's customer base and choose to avoid products that are disproportionately purchased by individuals with undesirable characteristics.

I test whether this consumer motive to signal one's type through consumption is sufficiently strong to drive purchasing behavior. In two laboratory experiments, I vary by treatment whether the customer base of a product consists of people with desirable or undesirable characteristics. I find that demand for a product is lower if its customer base consists of individuals with undesirable moral values. This is the case even when consumption is unobservable and can only serve as a self-signal. Hence, my findings indicate that firms can face incentives to purposefully shun customers with undesirable moral values.

The paper also provides some evidence on the limits to such identity signaling. While study participants care about the moral values of products' customer bases, they do not appear to care about the intelligence associated with a product's customer base. This finding suggests that individuals care more about the public perception of their moral values than about the public perception of their intelligence when they make consumption choices. Future research can build on my experimental paradigms to investigate the importance of additional

customer characteristics and explore the conditions under which signaling varied characteristics is relevant for purchasing behavior. The prevalence of gender marketing, for example, suggests that firms often care about the gender composition of products' customer bases.[38] Studying whether consumers seek to signal their masculinity or femininity through consumption seems to be a promising avenue for future research.

A key aspect of my studies is that I investigate demand for products that do not have properties that are inherently related to specific desirable or undesirable characteristics. This stands in contrast to other forms of signaling whereby, for example, an expensive product signals high wealth or income or a product with positive social impact signals prosocial concern. In the settings I investigate, signals about a consumer's characteristics emerge only through the types of customers who buy the product and are entirely unrelated to the products themselves. Hence, my findings indicate that products and brands can convey identities (or, "brand-images") that shape their consumers' images independently of any actual product characteristics.

My findings might help explain why firms spend substantial amounts of money to attract people with desirable characteristics (e.g., celebrities) as visible consumers of their products. While in some cases an individual's traits may convey information about a product's quality—for instance, Michael Jordan endorsing Nike or Gatorade—but in other cases the informational value of a celebrity endorsement seems much less clear—Michael Jordan wearing Hanes underwear. My results provide an explanation of why such celebrity endorsement could nevertheless affect sales: creating the perception that a brand is popular among people with desirable characteristics allows individuals to signal to themselves and others that they share such positive characteristics by consuming the product.

Relatedly, my work also suggests a potential policy tool for behavioral change. Where policy makers desire to change consumption behavior, perhaps away from undesirable products like cigarettes or unhealthy foods,[39] one potential instrument might be to promote associations between such products and undesirable types.

[38] An interesting example of such gender marketing are "pink taxes": products targeted at women are more expensive than similar products targeted at men (Bessendorf and Gans, 2015). Identity signaling could explain price discrimination for homogeneous goods.

[39] Some social groups, for instance, consume unhealthy products (Guendelman, Cheryan, and Monin, 2011), foods with low caloric value (Atkin, 2016), or products that harm the environment (Minton, Johnson, and Liu, 2019).

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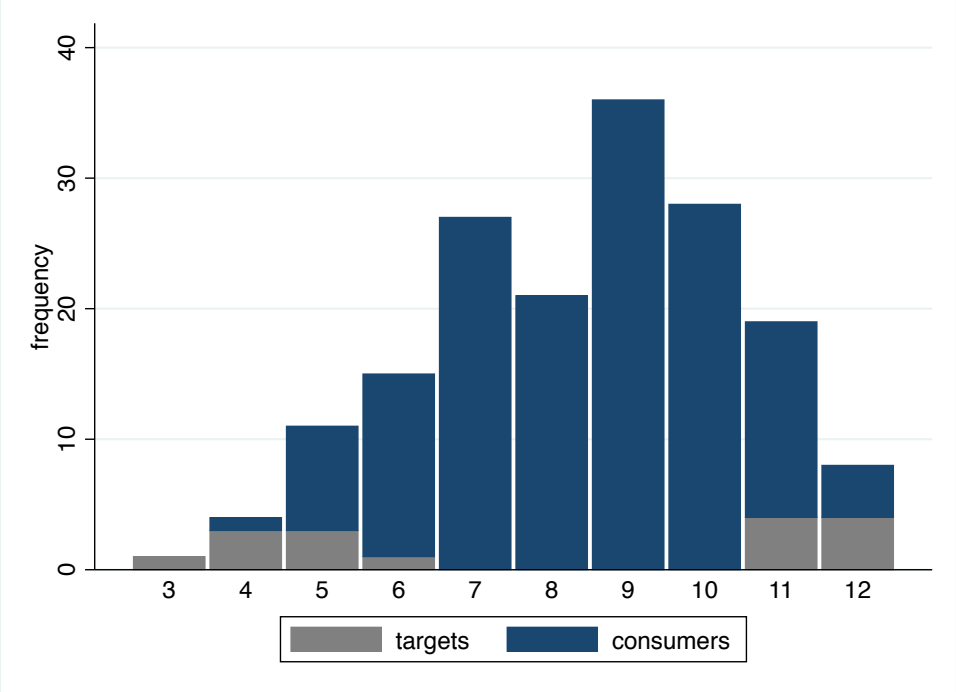
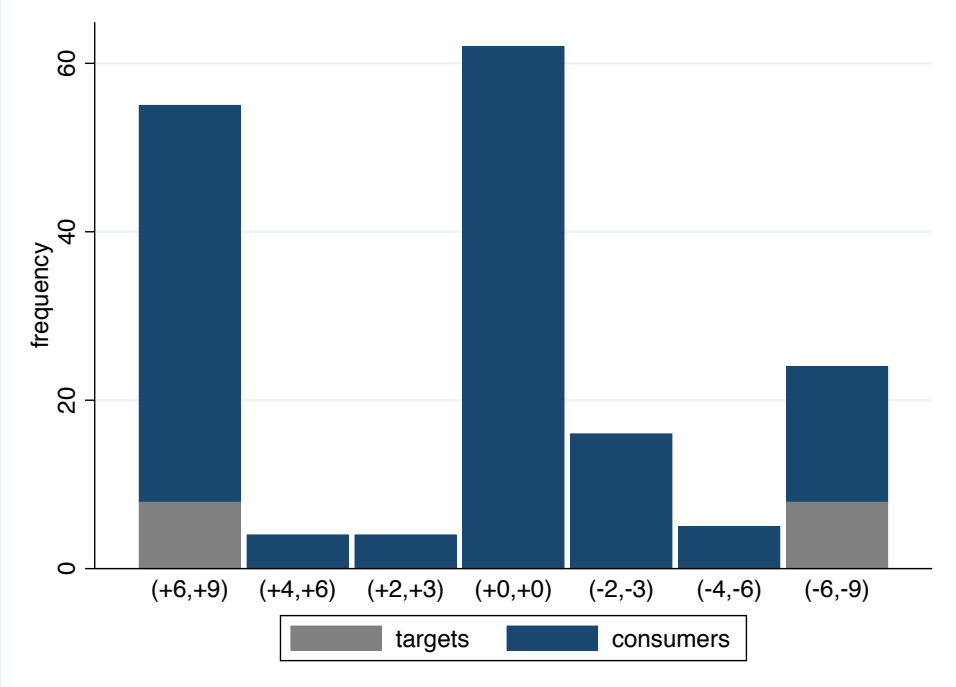
Appendix A: Additional results

Figure A1: Distribution intelligence score, Study 1



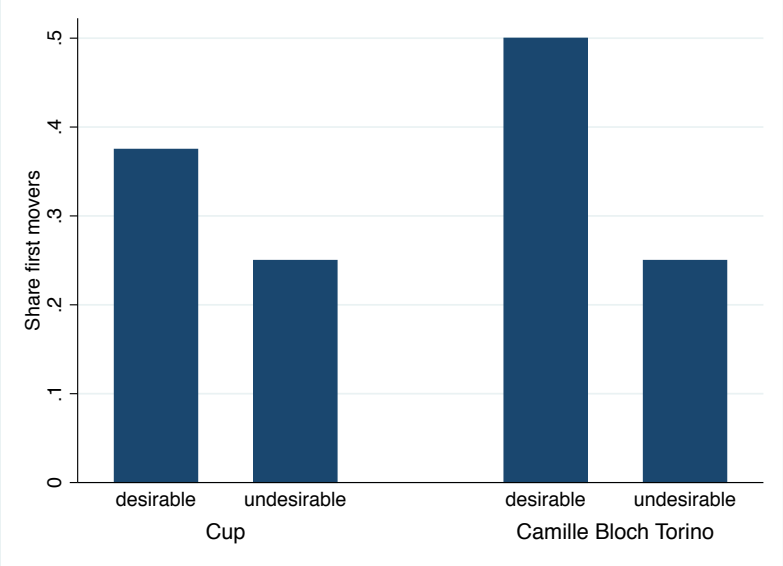
Notes: Distribution of the number correctly solved Raven's matrices.

Figure A2: Distribution moral values, Study 1



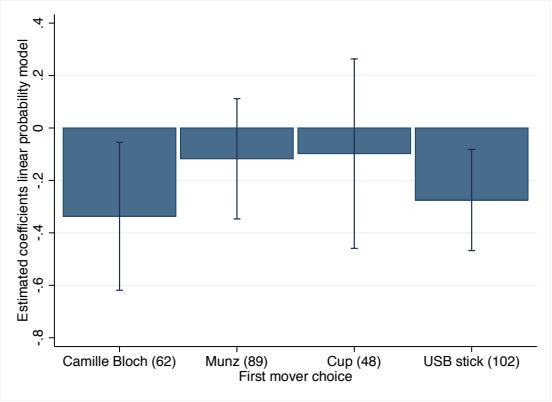
Notes: Distribution of donations to Zukunft CH. (+6, +9) means that the subject chose the option that increases her payoff by CHF 6 and the donation to Zukunft CH by CHF 9.

Figure A3: Targets' choices conditional on treatment condition, Study 1

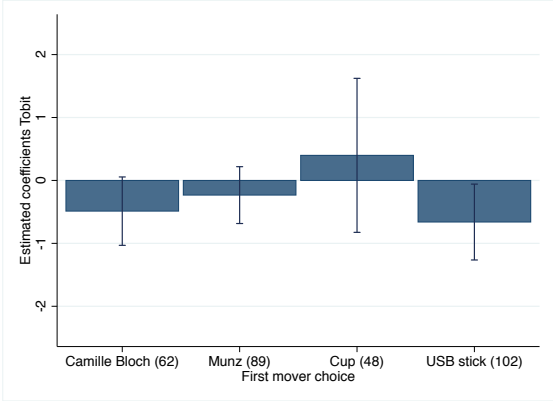


Notes: "Cup" gives the share of targets in each condition that chose the cup over the USB stick. "Camille Bloch Torino" gives the share of targets in each condition that chose the Camille Bloch Torino chocolate over the Munz chocolate.

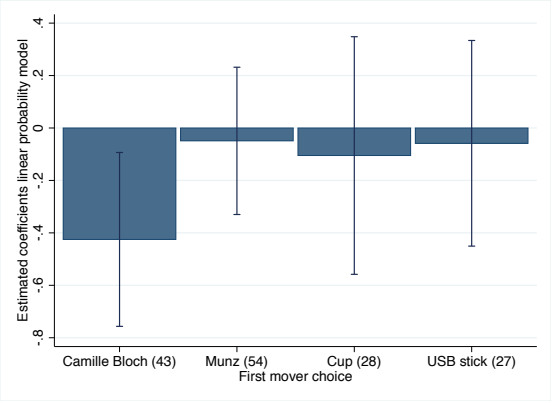
Figure A4: Treatment effects conditional on target choice, Study 1



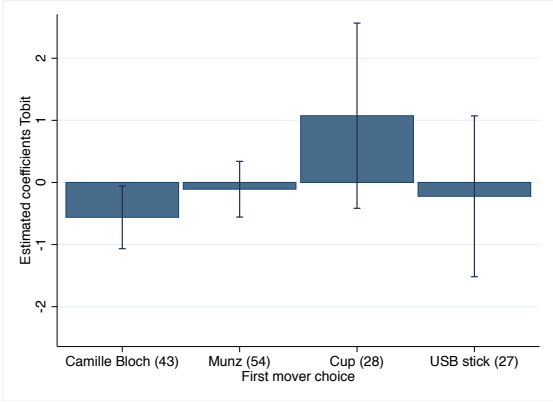
(a) pooled, probability to chose same product as the target (p joint test = 0.002)



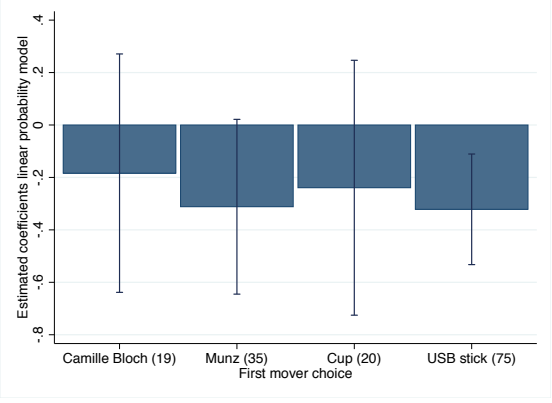
(b) pooled, WTP to receive same product as the target (p joint test = 0.011)



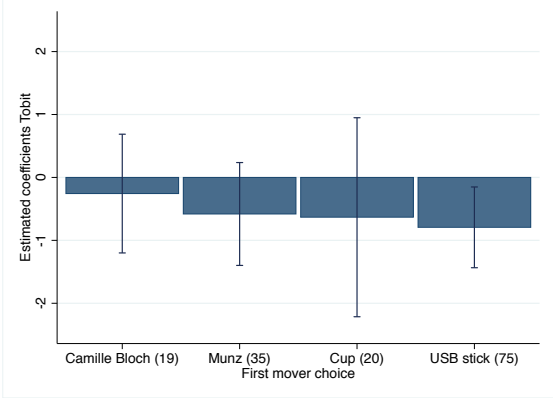
(c) intelligence, probability to chose same product as the target (p joint test = 0.128)



(d) intelligence, WTP to receive same product as the target (p joint test = 0.117)



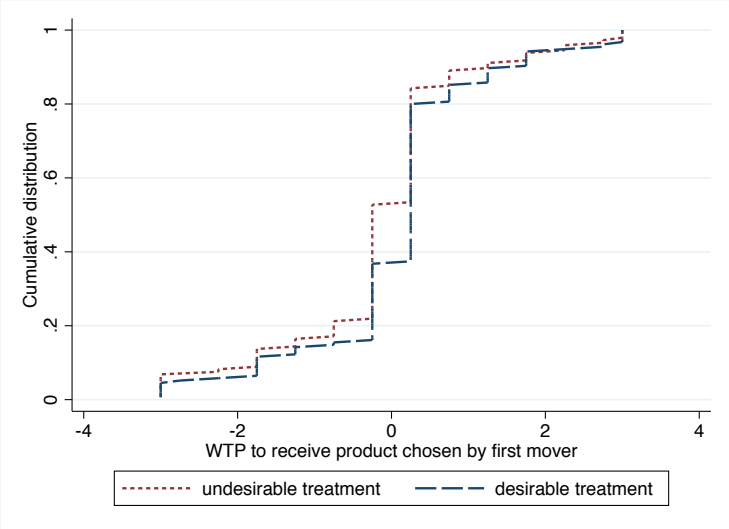
(e) moral values, probability to chose same product as the target (p joint test = 0.006)



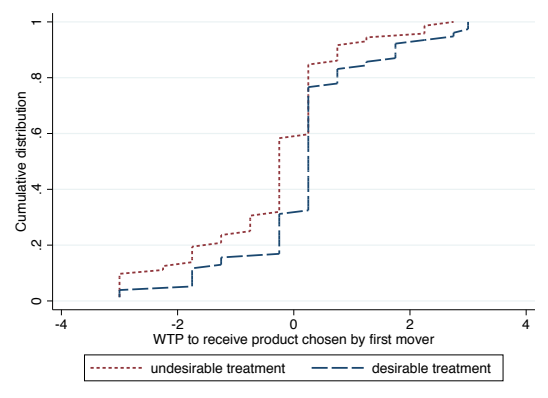
(f) moral values, WTP to receive same product as the target (p joint test = 0.044)

Notes: The bares in the figures give estimated treatment effects condition on targets' choices. In figures (a), (c) and (e), the independent variable is the probability of choosing the same product as the target when neither of the two products is connected with any payment (linear probability model). In figures (b), (d) and (f), the independent variable is the willingness to pay (WTP) to receive the same product as the target instead of the other product (tobit model). Figures (a) and (b) show the estimates when the data from the intelligence and the moral values rounds are pooled, while figures (c) to (f) show effects for the intelligence and moral values data separately. Coefficients in figure (a) and coefficients in figure (b) are estimated jointly by interacting the treatment dummy with dummies for the targets' choices. Moreover, coefficients for figures (c) and (e) and coefficients for figures (d) and (f) are estimated jointly by interacting the treatment dummy with dummies for the targets' choices and a dummy for being in the moral values round. The numbers in brackets indicate the number of observations in this category. "p joint test" reports the p value of a joint test that all four coefficients in the figure are equal to zero. All regressions control for the choice of the target and session fixed effects. Intervals indicate 95%-confidence intervals. Standard errors are clustered at subject level.

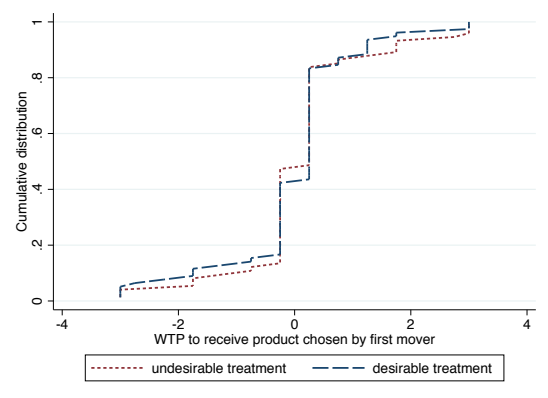
Figure A5: Distribution willingness to pay, Study 1



(a) pooled



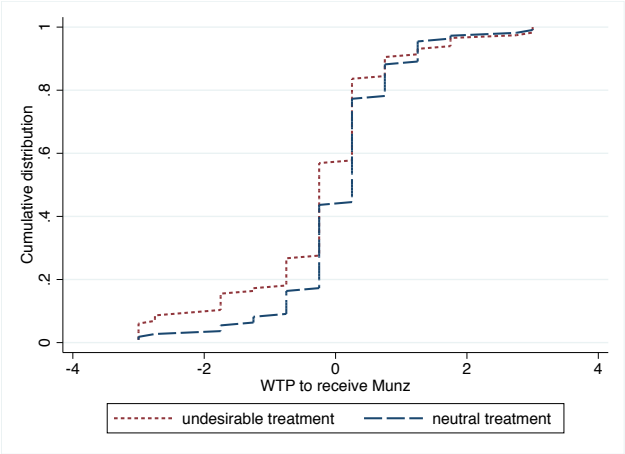
(b) moral values



(c) intelligence

Notes: Cumulative distributions of subjects willingness to pay to receive the product chosen by the target instead of the other product. (a) uses data from both rounds, (b) uses only data from the moral values round and (c) uses only data from the intelligence round. Distributions are statistically significantly different between treatment conditions for moral values (Wilcoxon rank-sum test, z = 2.98, p = 0.003), but not for intelligence (z = 0.15, p = 0.885).

Figure A6: Distribution willingness to pay, Study 2



Notes: Cumulative distributions of subjects willingness to pay to receive Munz product instead of the Camille Bloch product for both treatment conditions. Distributions are statistically significantly different between treatment conditions (Wilcoxon rank-sum test, z = 2.220, p = 0.0264).

Table A1: Treatment effects in Study 1, robustness

Dependent variable	**Pr(Conform to target)**			**WTP for target's product**		
	(1)	(2)	(3)	(4)	(5)	(6)
1 = undesirable condition	-0.147***	-0.155***	-0.191***	-0.236	-0.265*	-0.323**
	(-2.66)	(-2.81)	(-3.47)	(1.59)	(-1.86)	(-2.24)
Constant	0.624***			0.085		
	(16.09)			(0.83)		
Log(sigma)				1.320***	1.294***	1.279***
				(15.17)	(15.13)	(14.96)
N	308	308	308	308	308	308
Session fixed effects	No	Yes	Yes	No	Yes	Yes
Target choice controls	No	No	Yes	No	No	No

Notes: Regressions show that results do not change if I keep the seven observations in which subjects made choices that are non-monotone in money. Columns (1)–(3): Linear regressions of probability of choosing the same product as the target when neither of the two products is connected with any payment on a treatment dummy, a constant, and, depending on the specification, session fixed effects and controls for the targets' choices. Specifications include the non-monotone observations. Columns (4)–(6): Tobit regressions (left-censored at CHF −3, n *= 17; right-censored at CHF +3,* n *= 10) of willingness to pay (WTP) to receive the same product as the target instead of the other product on the same set of variables. Specifications include the non-monotone observations. Given that these observations have multiple switching points, it is unclear how to construct the WTP. I take the average of the WTPs calculated based on the first and on the last switching point. The t statistics are given in parentheses; standard errors are clustered at subject level (168 clusters).* * p < *0.1;* ** p < *0.05;* *** p < *0.01.*

Table A2: Treatment effects for intelligence and moral values in Study 1, robustness

Dependent variable	Pr(Conform to target)			WTP for target's product		
	(1)	(2)	(3)	(4)	(5)	(6)
1 = undesirable condition × 1 = moral values (TE-M)	-0.244*** (-3.11)	-0.252*** (-3.24)	-0.262*** (-3.42)	-0.592*** (-2.71)	-0.610*** (-2.89)	-0.634*** (-3.05)
1 = undesirable condition × 1 = intelligence (TE-I)	-0.051 (-0.63)	-0.059 (-0.72)	-0.120 (-1.45)	0.119 (0.58)	0.078 (0.38)	-0.008 (-0.04)
1 = intelligence round	-0.094 (-1.21)	-0.094 (-1.21)	-0.004 (-0.05)	-0.213 (-1.00)	-0.201 (-0.95)	-0.021 (-0.09)
Log(sigma)				1.307*** (15.39)	1.281*** (15.32)	1.263*** (15.04)
p value TE-M==TE-I	0.092	0.095	0.218	0.021	0.025	0.0422
N	308	308	308	308	308	308
Session fixed effects	No	Yes	Yes	No	Yes	Yes
Target choice controls	No	No	Yes	No	No	Yes

Notes: Regressions show that results do not change if I keep the seven observations in which subjects made choices that are non-monotone in money. Columns (1)–(3): Linear regressions of probability of choosing the same product as the target when neither of the two products is connected with any payment on the interaction between a treatment dummy and a dummy for being in the moral values round (TE-M), the interaction between a treatment dummy and a dummy for being in the intelligence round (TE-I), a dummy for being in the intelligence round, (1 = intelligence round), a constant, and, depending on the specification, session fixed effects and controls for the targets' choices. Specifications include the non-monotone observations. Columns (4)–(6): Tobit regressions (left-censored at CHF −3, n *= 17; right-censored at CHF +3,* n *= 10) of willingness to pay (WTP) to receive the same product as the target instead of the other product on the same set of independent variables. Specifications include the non-monotone observations. Given that these observations have multiple switching points, it is unclear how to construct the WTP. I take the average of the WTPs calculated based on the first and on the last switching point. The* t *statistics are in parentheses; standard errors are clustered at subject level (168 clusters).* *** p < *0.01.*

Table A3: Treatment effects in Study 2, robustness

Dependent variable	**Pr(Munz)**		**WTP Munz**	
	(1)	(2)	(3)	(4)
1 = undesirable condition	-0.129** (-1.98)	-0.133** (-2.09)	-0.315** (-2.08)	-0.326** (-2.26)
Constant	0.566*** (11.87)		0.077 (0.70)	
Log(sigma)			1.154*** (20.42)	1.093*** (20.43)
N	232	232	232	232
Session fixed effects	No	Yes	No	Yes

Notes: Regressions show that results do not change if I keep the six observations in which subjects made choices that are non-monotone in money. Columns (1) and (2): Linear regressions of probability of choosing Munz chocolate when neither of the two products is connected with any payment on a treatment dummy. Specifications include the non-monotone observations. Robust standard errors are used. Columns (3) and (4): Tobit regressions (left-censored at CHF −3, n *= 5; right-censored at CHF +3,* n *= 9) of willingness to pay (WTP) to receive the Munz chocolate instead of the Camille Bloch chocolate on a treatment dummy. Specifications include the non-monotone observations. Given that these observations have multiple switching points, it is unclear how to construct the WTP. I take the average of the WTPs calculated based on the first and on the last switching point. The* t *statistics are in parentheses.* ** p < *0.05;* *** p < *0.01.*

Table A4: Treatment effects and similarity, Study 1

Dependent variable	**Pr(Conform to target)**			**WTP for target's product**		
	(1)	(2)	(3)	(4)	(5)	(6)
1 = intelligence round	0.104 (0.76)	-0.015 (-0.18)	0.135 (0.86)	0.167 (0.48)	-0.010 (-0.05)	-0.113 (-0.28)
Similarity moral values × 1 = moral values	0.135 (1.10)		0.264** (2.16)	0.452 (1.29)		0.744* (1.97)
Similarity intelligence × 1 = intelligence	0.022 (0.12)		-0.070 (-0.36)	0.560 (1.22)		0.591 (1.23)
1 = undesirable condition × 1 = moral values (TE-M)		-0.290*** (-3.76)	-0.334*** (-4.20)		-0.652*** (-3.04)	-0.774*** (-3.29)
1 = undesirable condition × 1 = intelligence (TE-I)		-0.128 (-1.56)	-0.141 (-1.63)		-0.009 (-0.04)	0.059 (0.26)
Log(sigma)				1.290*** (14.96)	1.277*** (14.85)	1.263*** (14.92)
p value TE-M==TE-I		0.161	0.102		0.040	0.012
N	301	301	301	301	301	301
Session fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Target choice controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Columns (1)–(3): Linear regressions of probability of choosing the same product as the target when neither of the two products is connected with any payment on a dummy for being in the intelligence round, (1 = intelligence round), a constant, session fixed effects, controls for the targets' choices and, depending on the specification, the similarity between the consumer with her target for moral values and for intelligence, the interaction between a treatment dummy and a dummy for being in the moral values round (TE-M) and the interaction between a treatment dummy and a dummy for being in the intelligence round (TE-I). Columns (4)–(6): Tobit regressions (left-censored at CHF −3, n *= 17; right-censored at CHF +3,* n *= 10) of willingness to pay (WTP) to receive the same product as the target instead of the other product on the same set of independent variables. Similarity moral values is defined as "1-|donation – target's donation|/6." Similarity intelligence is defined as "1-|intelligence scores – target's intelligence scores|/8." Because similarity moral values is only important for the moral values round, and similarity intelligence is only important for the intelligence round, these measures are interacted with a dummy for being in the moral values round (1=moral values) and a dummy for being in the intelligence round (1=intelligence), respectively. The* t *statistics are in parentheses; standard errors are clustered at subject level (168 clusters).* * p < *0.1;* ** p < *0.05;* *** p < *0.01.*

Table A5: Treatment effects and similarity, Study 2

Dependent variable:	Pr(Munz)					WTP Munz				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Political position	-0.181 (-0.90)				-0.220 (-0.94)	0.447 (0.95)				0.032 (0.06)
Right-wing extremism		0.113 (0.49)			0.091 (0.36)		0.674 (1.24)			0.557 (0.97)
Left-wing extremism			0.088 (0.55)		0.025 (0.14)			-0.382 (-1.07)		-0.368 (-0.94)
Racism				0.086 (0.17)	0.220 (0.45)				1.296 (1.41)	0.894 (0.85)
1 = undesirable condition	-0.136** (-2.11)	-0.140** (-2.14)	-0.140** (-2.16)	-0.136** (-2.10)	-0.140** (-2.13)	-0.335** (-2.27)	-0.355** (-2.39)	-0.319** (-2.15)	-0.332** (-2.25)	-0.335** (-2.25)
N	226	226	226	226	226	226	226	226	226	226
Session Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Columns (1)–(5): Linear regressions of probability of choosing Munz chocolate when neither of the two products is connected with any payment on different measures of similarity and a treatment dummy. Robust standard errors are used. Columns (6)–(10): Tobit regressions (left-censored at CHF −3, n = *5; right-censored at CHF +3,* n = *9) of willingness to pay (WTP) to receive the Munz chocolate instead of the Camille Bloch chocolate on different measures of similarity and a treatment dummy. Political position is in between 0 (=very left-wing) and 1 (=very right-wing), with mean 0.463 (s.d. = 0.160). To measure right-wing (left-wing) extremism, subjects are asked how much they agree (from 1= strongly disagree to 7=strongly agree) with three statements that are typically accepted by right-wing (left-wing) extremists (items taken from Decker et al., 2016 and Deutz-Schroeder and Schroeder, 2016). I re-scaled the responses to lie on the 0 to 1 interval and averaged the three responses. The mean of right-wing extremism is 0.103 (s.d. = 0.139) and the mean of left-wing extremism is 0.331 (s.d. = 0.216). To measure racism, subjects are asked how much they agree with seven statements related to racism, adopted from the Modern Racism Scale (McConahay, 1986). I re-scaled the responses to lie on the 0 to 1 interval and averaged the three responses. The mean of racism is 0.301 (s.d. = 0.082). The* t *statistics are in parentheses.* ** p < *0.05;* *** p < *0.01.*

Table A6: Perception of the products, Study 1

(a) Intelligence and moral values

	Camille Bloch/Munz						**Cup/USB Stick**					
	Product chosen by target, mean rating			*Product not chosen by target, mean rating*			*Product chosen by target, mean rating*			*Product not chosen by target, mean rating*		
	Desirable condition	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*
What do you think, how much does the product currently cost? (in CHF)	3.94	3.88	0.442 (0.658)	3.88	3.70	1.003 (0.316)	8.71	7.56	1.519 (0.129)	7.56	7.26	0.181 (0.856)
How good is the quality of the raw materials used? (1 = "very low quality"; 5 = "very high quality")	3.71	3.52	1.519 (0.129)	3.64	3.26	2.598 (0.009)	3.17	3.01	1.034 (0.301)	3.23	3.07	.799 (0.425)
How well is the product processed? (1 = "very low quality"; 5 = "very high quality")	3.81	3.67	1.454 (0.146)	3.76	3.45	2.232 (0.026)	3.32	3.22	0.681 (0.496)	3.39	3.15	1.638 (0.101)
When you think about using/eating the product, are you disgusted? (1 = "very disgusted"; 5 = "not disgusted at all")	4.42	4.15	0.974 (0.330)	4.33	4.08	1.032 (0.302)	4.51	4.45	-0.179 (0.858)	4.52	4.41	0.496 (0.620)

Notes: "rank-sum"-columns give the z value and p value of a Wilcoxon rank-sum test for the equality of response distributions among conditions.

(b) Moral values only

	Camille Bloch/Munz						**Cup/USB Stick**					
	Product chosen by target, mean rating			*Product not chosen by target, mean rating*			*Product chosen by target, mean rating*			*Product not chosen by target, mean rating*		
	Desirable condition	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*
What do you think, how much does the product currently cost? (in CHF)	3.95	3.95	0.461 (0.645)	3.99	3.73	0.948 (0.343)	8.37	7.35	1.170 (0.242)	7.57	7.31	0.094 (0.925)
How good is the quality of the raw materials used? (1 = "very low quality"; 5 = "very high quality")	3.75	3.58	0.420 (0.674)	3.71	3.42	1.058 (0.290)	3.10	2.93	0.859 (0.390)	3.20	2.98	0.826 (0.409)
How well is the product processed? (1 = "very low quality"; 5 = "very high quality")	3.79	3.62	0.814 (0.416)	3.75	3.42	1.238 (0.216)	3.29	3.13	0.765 (0.444)	3.31	3.13	0.836 (0.403)
When you think about using/eating the product, are you disgusted? (1 = "very disgusted"; 5 = "not disgusted at all")	4.46	4.19	0.041 (0.967)	4.36	3.96	0.646 (0.518)	4.57	4.52	-0.193 (0.847)	4.65	4.46	1.166 (0.244)
Does the producer of the good promote conservative Christian values (e.g, fighting abortions and marriage for same-sex couples)? (1 = "yes, strongly "; 5 = "no, not at all")	3.82	3.96	-0.509 (0.611)	3.57	3.88	-1.054 (0.292)	4.08	4.13	-0.193 (0.847)	4.16	4.02	0.757 (0.449)

Notes: "rank-sum"-columns give the z value and p value of a Wilcoxon rank-sum test for the equality of response distributions among conditions.

(c) Intelligence only

	Camille Bloch/Munz						**Cup/USB Stick**					
	Product chosen by target, mean rating			*Product not chosen by target, mean rating*			*Product chosen by target, mean rating*			*Product not chosen by target, mean rating*		
	Desirable condition	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*	*Desirable condition*	*Undesirable condition*	*rank-sum z (p)*
What do you think, how much does the product currently cost? (in CHF)	3.93	3.84	0.233 (0.816)	3.81	3.68	0.552 (0.581)	9.29	7.92	0.963 (0.336)	7.54	7.18	0.178 (0.859)
How good is the quality of the raw materials used? (1 = "very low quality"; 5 = "very high quality")	3.68	3.49	1.528 (0.126)	3.60	3.17	2.310 (0.021)	3.29	3.15	0.685 (0.493)	3.29	3.22	0.280 (0.780)
How well is the product processed? (1 = "very low quality"; 5 = "very high quality")	3.82	3.70	1.215 (0.224)	3.76	3.47	1.847 (0.065)	3.39	3.37	0.203 (0.839)	3.54	3.19	1.661 (0.097)
When you think about using/eating the product, are you disgusted? (1 = "very disgusted"; 5 = "not disgusted at all")	4.40	4.13	1.139 (0.255)	4.32	4.15	0.804 (0.421)	4.39	4.33	-0.062 (0.951)	4.29	4.33	-0.561 (0.575)

Notes: "rank-sum"-columns give the z value and p value of a Wilcoxon rank-sum test for the equality of response distributions among conditions.

Table A7: Perception of the products, Study 2

	Camille Bloch			Munz		
	Neutral condition, mean rating	*Undesirable condition, mean rating*	*rank-sum, z (p-value)*	*Neutral condition, mean rating*	*Undesirable condition, mean rating*	*rank-sum, z (p-value)*
What do you think, how much does a pack of Camille Bloch Torino (Munz) chocolate bars currently cost at Migros? (in CHF)	3.88	4.01	-0.559 (0.576)	3.77	3.9	-0.757 (0.449)
How healthy are the products? (1 = "very unhealthy"; 5 = "very healthy")	1.94	1.94	-0.027 (0.978)	1.9	1.95	-0.518 (0.604)
How long can you store them? (1 = " spoils soon "; 5 = "long storage life")	4.39	4.26	1.333 (0.182)	4.42	4.23	1.997 (0.046)
How good is the quality of the raw materials used? (1 = "very low quality"; 5 = "very high quality")	3.5	3.47	0.166 (0.868)	3.41	3.46	-0.389 (0.697)
How sustainable are the raw materials used? (1 = "very sustainable"; 5 = "not sustainable at all")	3.38	3.22	1.430 (0.153)	3.41	3.22	1.670 (0.095)
What is the quality of the processing? (1 = "very low quality"; 5 = "very high quality")	3.68	3.78	-0.872 (0.383)	3.55	3.64	-1.159 (0.247)
When you think about eating the Camille Bloch (Munz) chocolate, are you digusted? (1 = "very disgusted"; 5 = "not disgusted at all")	4.34	4.44	-0.693 (0.488)	4.46	4.6	-0.803 (0.422)

See next page for the rest of the table.

	Camille Bloch			Munz		
	Neutral condition, mean rating	*Undesirable condition, mean rating*	*rank-sum, z (p-value)*	*Neutral condition, mean rating*	*Undesirable condition, mean rating*	*rank-sum, z (p-value)*
If you were to eat the chocolate in public, would people associate you with right-wing extremism? (1 = "Yes, for sure"; 5 = "No, certainly not")	4.93	4.86	-0.024 (0.981)	4.89	4.82	0.625 (0.532)
If you were to eat the chocolate in front of your family or friends, would you associate it with right-wing extremism? (1 = "Yes, for sure"; 5 = "No, certainly not")	4.95	4.91	0.276 (0.782)	4.93	4.89	-0.031 (0.975)
What do you think, does Camille Bloch (Munz) in any way promote right-wing extremism (for example, through party donations, employment of right-wing extremists, public support for right-wing extremist ideals)? (1 = "Yes, very strong"; 5 = "No, not at all")	4.39	4.45	-0.547 (0.585)	4.39	4.34	0.254 (0.800)
What do you think, does Camille Bloch (Munz) in any way discriminate against minorities (for example, in the recruitment, payment and promotion of employees)? (1 = "Yes, very strong"; 5 = "No, not at all")	3.96	4.12	-1.445 (0.149)	3.97	4.04	-0.831 (0.406)

Notes: "rank-sum"-columns give the z value and p value of a Wilcoxon rank-sum test for the equality of response distributions among conditions.

Appendix B: A simple model of identity signaling through consumption

In this Appendix, I introduce a simple model to guide my investigation, building on Bernheim (1994) and Bénabou and Tirole (2011). Note that I do not attempt to provide a novel theoretical contribution, but rather use simple economic analysis to guide my empirical investigation.

A critical feature of the model and the situations that I study is that individuals possess individual characteristics, or *types*, that are relevant to their self- or social image. For example, they may differ in terms of moral values. Individuals have undesirable, "neutral," or desirable characteristics, associated with image $v^L < v^M < v^H$. Individuals have imperfect knowledge about others' types but can potentially receive signals through observing these others' consumption. An individual's social image, $E(v|x)$, is, therefore, the expected value of that person's image conditional on that person's consumption choice, x.

Individuals choose between two products, A and B. I study contexts in which individuals with either undesirable or desirable characteristics, which I refer to as the *targets*, adopt product A. Undesirable targets may be, for example, right-wing extremists. I then investigate how the desirability of targets' characteristics affects the popularity of the product among others with relatively "neutral" characteristics, whom I label the *consumers*. Consumers may be, for example, the general population. I compare a situation in which targets have desirable characteristics with a situation in which targets have undesirable characteristics.

Formally, I consider a population of decision makers, normalized to [0,1], each of whom chooses between two products, A and B. Choices are publicly observable. Decision makers differ in their taste (or, consumption utility), u, and in their characteristics that shape their image, v. Each decision makers has a type $t \in \{a, b, target\}$. Both a- and b-types have "neutral" characteristics (v^M), but differ in their taste: a-types derive more consumption utility from A and b-types derive more consumption utility from B. Specifically, I assume that $u^a(A) - u^a(B) = u^b(B) - u^b(A) = \Delta u > 0$. I will refer to the combination of the a- and b-types as *consumers*. The targets are either assumed to have desirable (v^H) or undesirable (v^L) characteristics, and receive more consumption utility from product A. All targets choose product A.[40] While types are private information, the distribution of types is

[40] There are multiple assumptions that can rationalize such behavior. For example, targets can be assumed to receive substantially more consumption utility from product A than from product B ($u^{target}(A) - u^{target}(B) > \theta^{target} * max(v^H - v^M, v^M - v^L)$) or not to care about their social image ($\theta^{target} = 0$).

common knowledge and described by $\Pr(a) = \delta$, $\Pr(target) = \gamma$ and $\Pr(b) = 1 - \gamma - \delta$, with $\delta, \gamma > 0$ and $\delta + \gamma < 1$.

The consumers care about the public perception of their type. They maximize $u^t(x) + \theta E(v|x)$, where $\theta > 0$ is the weight they put on their social image and $u^t(x)$ is the consumption utility from product x. A consumer's social image is the expected value of her image conditional on her choice, x: $E(v|x) = \rho(x)v^{target} + \big(1 - \rho(x)\big)v^M$, where v^{target} is the targets' image (v^H or v^L) and $\rho(x)$ is the probability that an individual is a target given her choice x. This probability is calculated by applying Bayes' rule:[41]

$$\rho(A) = \frac{\gamma x^{target}}{\delta x^a + (1 - \gamma - \delta)x^b + \gamma x^{target}} = \frac{\gamma}{\delta x^a + (1 - \gamma - \delta)x^b + \gamma}$$

$$\rho(B) = \frac{\gamma(1 - x^{target})}{1 - \delta x^a - (1 - \gamma - \delta)x^b - \gamma x^{target}} = 0,$$

where x^t is the probability that a consumer with type *t* chooses product A.

This model can also be interpreted as a self-signaling model, following Bénabou and Tirole (2011). For this alternative interpretation, players have imperfect knowledge of their own types. Consumers' past choices are then signals about their own type. There are two periods. In period 0, the consumer "obtains a momentary insight into his true nature," (Bénabou and Tirole, 2011) and temporarily learns his type. Then, he makes his choice. In period 1, the consumer remembers his type t with probability $1 - \theta$, with probability θ the consumer has no direct access to the motivation behind his behavior in period 0 (that is, his type), and only remembers his choice, x. In the latter case, therefore, his self-image corresponds to $E(v|x)$. In period 0, the consumer cares about his consumption utility and his expected self-image in period 1: he maximizes $u^t(x) + (1 - \theta)v^t + \theta E(v|x)$. This consumer problem corresponds to the consumer problem discussed before. Note that the key requirement for self-signaling to occur is θ>0, that is, that consumers are insecure about their own type.

I follow Bénabou and Tirole (2011) by restricting attention to monotonic Perfect Bayesian equilibria. In a monotonic equilibrium, $x^a = x^b = x^{target} = 1$ implies $\rho(B) = 0$. The Lemma shows that an equilibrium exist, but it might not be unique.

[41] Note that $\rho(B)$ is not defined for $x^a = x^b = 1$. I restrict attention to monotonic Perfect Bayesian equilibria, which implies $\rho(B) = 0$ for this case.

Lemma. If targets have desirable characteristics, there exists a unique monotonic Perfect Bayesian equilibrium. If targets have undesirable characteristics, there are in between one and three monotonic Perfect Bayesian equilibria.

Proof: I will first derive the equilibria for the case that the targets have undesirable characteristics. Note that $x^{target} = 1$ and the restriction to monotonic equilibria implies that $\rho(B) = 0$ and therefore $x^b = 0$. The a-types choose A iff $\Delta u \geq \rho(A)\theta(v^M - v^L)$ with $\rho(A) = \frac{\gamma}{\delta x^a + \gamma}$. There are three potential equilibria:

- $x^a = 0$. In this case, $\rho(A) = 1$. This equilibrium exists iff $\Delta u \leq \theta(v^M - v^L)$.
- $x^a = 1$. In this case, $\rho(A) = \frac{\gamma}{\delta+\gamma}$. This equilibrium exists iff $\Delta u \geq \frac{\gamma}{\delta+\gamma}\theta(v^M - v^L)$.
- $x^a \in (0,1)$. In this case, $\rho(A) = \frac{\gamma}{\delta x^a + \gamma}$ and $x^a = \frac{\gamma}{\delta}\left(\frac{\theta}{\Delta u}(v^M - v^L) - 1\right)$. This equilibrium exists iff $\frac{\gamma}{\delta+\gamma}\theta(v^M - v^L) < \Delta u < \theta(v^M - v^L)$.

Note that for each value of Δu there exists at least one monotone Perfect Bayesian equilibrium, and at most three equilibria.[42]

Next, I will derive the equilibria for the case that the targets have desirable characteristics. Note that $x^{target} = 1$ and the restriction to monotonic equilibria implies that $\rho(B) = 0$ and therefore $x^a = 1$. The b-types choose B iff $\Delta u \geq \rho(A)\theta(v^H - v^M)$ with $\rho(A) = \frac{\gamma}{1-(1-\gamma-\delta)(1-x^b)}$. There are three potential equilibria:

- $x^b = 0$. In this case, $\rho(A) = \frac{\gamma}{\gamma+\delta}$. This equilibrium exists iff $\Delta u \geq \frac{\gamma}{\gamma+\delta}\theta(v^H - v^M)$
- $x^b = 1$. In this case, $\rho(A) = \gamma$. This equilibrium exists iff $\Delta u \leq \gamma\theta(v^H - v^M)$.

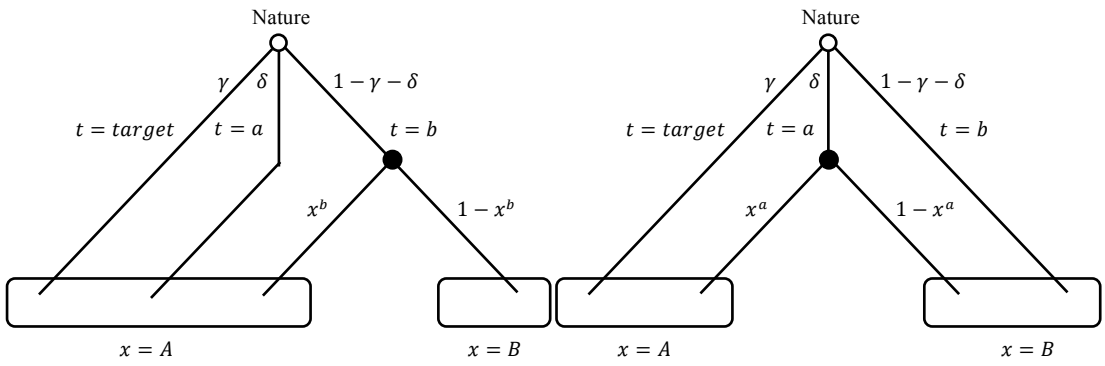
[42] The number of equilibria could be reduced by restricting attention to undominated equilibria, as Bénabou & Tirole (2011) do. This equilibrium refinement criterion eliminates equilibria that are Pareto-dominated (weakly lower payoffs for all types, and a strictly lower payoff for at least one of them). The equilibria would then be given by: $x^a = 0$ for $\Delta u < \theta(v^M - v^L)$, $x^a \in \{0,1\}$ for $\Delta u = \theta(v^M - v^L)$ and $x^a = 1$ for $\Delta u > \theta(v^M - v^L)$. If in addition the targets are assumed to care about their image (but assuming that $x^{target} = 1$ still holds), the equilibrium $x^a = 0$ for $\Delta u = \theta(v^M - v^L)$ would be Pareto-dominated by $x^a = 1$, and the equilibrium would be unique. However, none of this is necessary to proof the Proposition.

- $x^b \in (0,1)$. In this case, $\rho(A) = \frac{\gamma}{1-(1-\gamma-\delta)(1-x^b)}$ and $x^b = \frac{\gamma\theta(v^H-v^M)-\Delta u(\gamma+\delta)}{\Delta u(1-\gamma-\delta)}$. This equilibrium exists iff $\gamma\theta(v^H - v^M) < \Delta u < \frac{\gamma}{\gamma+\delta}\theta(v^H - v^M)$.

Note that for each value of Δu there exists a unique monotone equilibrium. ■

In the following, I investigate how the share of consumers that choose A, $x^{a\cup b} = \frac{\delta x^a+(1-\gamma-\delta)x^b}{1-\gamma}$, depends on the desirability of targets' characteristics. I refer to the shares for desirable and undesirable targets as $x_H^{a\cup b}$ and $x_L^{a\cup b}$, respectively. Suppose that the targets have desirable characteristics. Choosing product A then increases a consumer's image (i.e., $E(v|A) > E(v|B)$). For the a-types, there is thus no trade-off between consumption utility and image, so $x^a = 1$. If the b-types are sufficiently concerned about their social image, they also choose A. Figure B1(i) illustrates this case from the perspective of the b-types. These behaviors imply that $x_H^{a\cup b} \geq \frac{\delta}{1-\gamma}$. Suppose now that the targets have undesirable characteristics. Conforming to the targets' consumption choices then decreases consumers' social image ($E(v|A) < E(v|B)$). Hence, the b-types do not face a trade-off between consumption utility and image and choose B, so $x^b = 0$. The a-types might also choose product B, and, therefore, $x_L^{a\cup b} \leq \frac{\delta}{1-\gamma}$. In summary, $x_L^{a\cup b} \leq x_H^{a\cup b}$, that is, consumers choose product A weakly more often if it is adopted by targets with desirable characteristics than if it is adopted by targets with undesirable characteristics.

Figure B1: Game for desirable and undesirable characteristics



(i) desirable characteristics *(ii) undesirable characteristics*

Notes: Boxes show observers' information sets. Note that for desirable characteristics, a-types do not face a tradeoff between consumption utility and image utility and therefore $x^a = 1$. For undesirable characteristics, the same is true for b-types, $x^b = 0$.

The Proposition shows that this inequality holds strictly as long as consumers are sufficiently concerned about their social image, relative to Δu. Given that there can be multiple equilibria for the undesirable target, the Proposition compares $x_H^{a\cup b}$ with $\max(x_L^{a\cup b})$.

Proposition. The relationship between $x_H^{a\cup b}$ and $x_L^{a\cup b}$ is characterized by a threshold $\underline{\theta}$ such that $x_H^{a\cup b} > \max\left(x_L^{a\cup b}\right)$ if $\theta > \underline{\theta}$ and $x_H^{a\cup b} = \max\left(x_L^{a\cup b}\right) = \frac{\delta}{1-\gamma}$ if $\theta \leq \underline{\theta}$. Furthermore, $\underline{\theta}$ is increasing in Δu.

Proof: If the targets have undesirable characteristics, the results proofed in the Lemma imply that the share of a - and b-types that choose product A is:

$$x_L^{A\cup B} = \begin{cases} 0 & if\ \Delta u < \frac{\gamma}{\delta+\gamma}\theta(v^M - v^L) \\ \left\{0, \frac{\gamma}{1-\gamma}\left(\frac{\theta}{\Delta u}(v^M - v^L) - 1\right), \frac{\delta}{1-\gamma}\right\} & if\ \Delta u \in \left[\frac{\gamma}{\delta+\gamma}\theta(v^M - v^L), \theta(v^M - v^L)\right] \\ \frac{\delta}{1-\gamma} & if\ \Delta u > \theta(v^M - v^L) \end{cases}$$

with $\frac{\gamma}{1-\gamma}\left(\frac{\theta}{\Delta u}(v^M - v^L) - 1\right) \leq \frac{\delta}{1-\gamma}$ for $\Delta u \geq \frac{\gamma}{\delta+\gamma}\theta(v^M - v^L)$. Therefore, $\max\left(x_L^{A\cup B}\right)$=0 for $\Delta u < \frac{\gamma}{\delta+\gamma}\theta(v^M - v^L)$ and $\max\left(x_L^{A\cup B}\right) = \frac{\delta}{1-\gamma}$ for $\Delta u \geq \frac{\gamma}{\delta+\gamma}\theta(v^M - v^L)$. Figure B2 illustrates how $x_L^{A\cup B}$ depends on Δu.

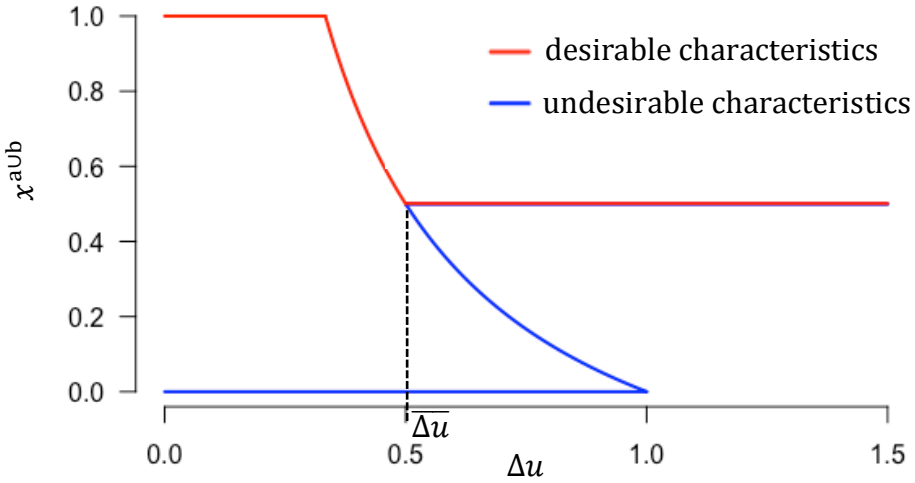
If the targets have desirable characteristics, the results proofed in the Lemma imply that the share of a - and b-types that choose product A is:

$$x_H^{A\cup B} = \begin{cases} 1 & if\ \Delta u \leq \gamma\theta(v^H - v^M) \\ \frac{\gamma}{1-\gamma}\left(\frac{\theta}{\Delta u}(v^H - v^M) - 1\right) & if\ \Delta u \in \left(\gamma\theta(v^H - v^M), \frac{\gamma}{\gamma+\delta}\theta(v^H - v^M)\right) \\ \frac{\delta}{1-\gamma} & if\ \Delta u \geq \frac{\gamma}{\gamma+\delta}\theta(v^H - v^M) \end{cases}$$

with $\frac{\gamma}{1-\gamma}\left(\frac{\theta}{\Delta u}(v^H - v^M) - 1\right) > \frac{\delta}{1-\gamma}$ for $\Delta u < \frac{\gamma}{\gamma+\delta}\theta(v^H - v^M)$. Figure B2 illustrates how $x_H^{A\cup B}$ depends on Δu.

Define $\overline{\Delta u} = \theta \frac{\gamma}{\delta+\gamma} \max(v^M - v^L, v^H - v^M)$ and note that $x_H^{A\cup B} > \max(x_L^{A\cup B})$ for $\Delta u < \overline{\Delta u}$, that $x_H^{A\cup B} = \max(x_L^{A\cup B}) = \frac{\delta}{1-\gamma}$ for $\Delta u \geq \overline{\Delta u}$. To finish the proof, note that $\Delta u < \overline{\Delta u}$ is equivalent to $\theta > \frac{\delta+\gamma}{\gamma} \frac{\Delta u}{\max(v^M - v^L, v^H - v^M)} \equiv \underline{\theta}$ and that $\underline{\theta}$ is increasing in Δu. ■

Figure B2



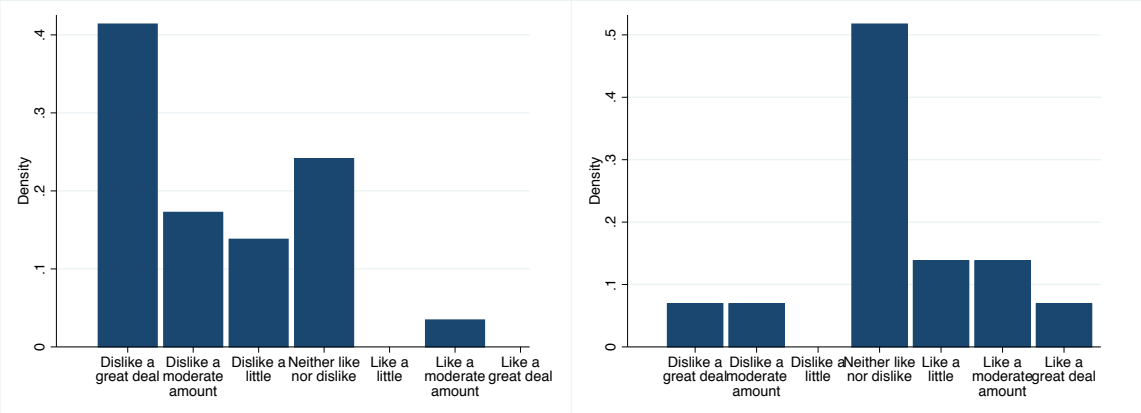
Note: $x^a + x^b$ for desirable and undesirable characteristics. Parameters: $\gamma = \delta = 1/3$, $v^H - v^M = v^M - v^L = \theta = 1$

Appendix C: Results from the additional surveys

C.1 Perception Zukunft CH, Study 1

To elicit participants' perception of Zukunft CH and to decide on several aspects of Study 1's design, I implemented an online survey. I recruit 29 participants, drawn from the same subject pool from which I recruit participants for Study 1.

Figure C1: Participants dislike being publicly perceived as donors to Zukunft CH



(a) increase the donation the most (b) reduced the donation the most

Notes: Participants in an online survey (N=29) are asked to rate how much they would like it if other participants in a hypothetical laboratory experiment would receive information that makes them believe that "you are the participant who increased the donation to Zukunft CH the most," or information that make them believe that "you are the participant who reduced the donation to Zukunft CH the most." Figure C1a (C1b) shows the distribution of responses the first (second) question.

The online survey consists of three parts. In Part 1, subjects repeatedly choose between pairs of products. The choice sets include those used in Study 1. As in Study 1, consumers make 13 decisions between product-and-money bundles (see Table 2 in Section 4.1.2). In Part 2, subjects make choices in four choice situations designed to measure their moral values, including the one used in Study 1 (see Section 4.1.1). In all choice situations, participants face tradeoffs between their own payoff and a donation to an organization (Zukunft CH, ProTell, UNICEF, FAIRMED). In Part 3, subjects rate whether they like or dislike it if they would be publicly associated with these organizations, including Zukunft CH. Specifically, they are asked how much they would like it (from 1 = dislike a great deal to 7 = like a great deal) if other participants in a hypothetical laboratory experiment would receive information that makes them believe that "you are the participant who increased the donation to Zukunft CH the most," or information that make them believe that "you are the participant who reduced the donation to Zukunft CH the most." Figure C1 shows the

distribution of responses to both questions. Participants disliked being publicly associated with Zukunft CH: I can reject the hypothesis that the two distributions are equal (Wilcoxon signed-ranks test, $z = -3.702$, $p = 0.0002$).

C.2 Survey with right-wing extremists, Study 2

In Study 2, targets are played by right-wing extremists (see Section 5.1.1). I collect consumption data from 10 right-wing extremists who are recruited on far-right extremist internet forums to participate in a short online survey. The survey consists of eight binary product choices. For the purpose of my study, it is essential that one product be adopted by most of the right-wing extremists. To achieve this requirement, I select products with incidental connections to symbols liked (or disliked) by right-wing extremists, likely increasing (or decreasing) the attractiveness of products. Table C1 shows the eight choice situations and highlights all symbols that may make a product more attractive (blue) or less attractive (red) for right-wing extremists. The table also gives the distribution of extremists' choices (column "Share right" gives the share of participants that chose the "Right option").

Table C1: Presentation of product choices to right-wing extremists

Left option *(unattractive for right-wing extremists)*	*Right option* *(attractive for right-wing extremists)*	*Share right*
Pack Camille Bloch Torino 5 x 23g (Art. Nr. 3000652) 	Pack Munz Praliné-Prügeli Milch 5 x 23g (Art. Nr. 3928213) 	0.9
Intenso Rainbow Line 4GB USB Stick Blau (Art. Nr. 3502450) 	Butlers HENKELBECHER KREUZ Grau (Art Nr. 10210598) 	0.1

Intenso Rainbow Line 4GB USB Stick Blau (Art. Nr. 3502450) 	Kahla Tasse 0,18l Rot-Weiss (Art Nr. 27508877) 	0.6
Kahla Colore Tasse 0,25l Grau (Art Nr. 204708A70705C) 	Butlers HENKELBECHER KREUZ Grau (Art Nr. 10210598) 	0.2
Kahla Colore Tasse 0,25l Schokobraun (Art Nr. 204708A72605C) 	Kahla Tasse 0,18l Rot-Weiss (Art Nr. 27508877) 	0.7
Intenso Rainbow Line 8GB USB Stick Grün (Art. Nr. 3502460) 	Butlers HENKELBECHER KREUZ Grau (Art Nr. 10210598) 	0.0

Kahla Colore Tasse 0,25l Schokobraun (Art Nr. 204708A72605C) 	Butlers HENKELBECHER KREUZ Grau (Art Nr. 10210598) 	0.3
Intenso Rainbow Line 8GB USB Stick Grün (Art. Nr. 3502460) 	Intenso Rainbow Line 4GB USB Stick Blau (Art. Nr. 3502450) 	0.2

Notes: column "Share right" gives the share of participants that chose the "Right option." The colors show the symbols that might make a product more attractive (red) or less attractive (blue) with right-wing extremists. Camille Bloch Torino, is produced by a firm founded by a Jewish family (Bloch). "Milch," German for milk, is a symbol of the alt-right. "Rainbow" and "Schokobraun" (=chocolate brown) are symbols of cultural diversity (however, brown is also the color of the Nazi Party, besides black-white-red). "HENKELBECHER KREUZ" sounds similar as "Hakenkreuz" (=swastika), "Rot-Weiss" (=red-white) are the colors of the Swiss flag, and 88 is a well known Nazi symbol. In the last choice situation, the left option dominates the right option, if one abstracts from the color difference. I added this option for potential future research on potential limits of identity signaling.

C.3 Measure product perceptions, Study 2

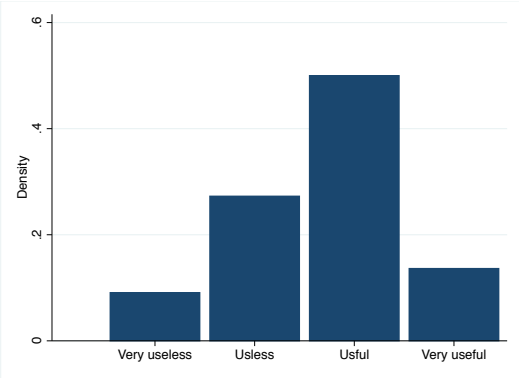
In an online survey, I document that the products used in Study 2 are not associated with right-wing political attitudes. I recruit 22 participants, drawn from the same subject pool from which I recruit participants for Study 2.

Participants rate how useful and how popular different products (including those used in Study 2) are for different groups of people: managers, construction worker, students, accountants, neo-Nazis, left-wing extremists, men and women. While I am only interested in the neo-Nazi ratings, I add the other groups to make the survey feel more natural and to avoid demand effects. I also ask participants whether they associate the products' consumers with a particular political position (left-wing extremist, left-wing, center, right-wing, right-wing extremist, no relation to political position).

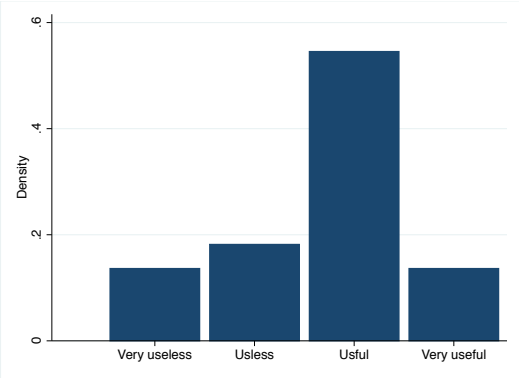
Figure C2 shows that participants neither associate Munz (or Camille Bloch) with right-wing extremism nor think that Munz is more useful to or more popular with neo-Nazis than Camille Bloch.

Figure C2: Associations of chocolates with right-wing extremists

(a) How useful is the product for neo-Nazis? (Wilcoxon signed-rank test, $p = 1.000$, $N = 22$)

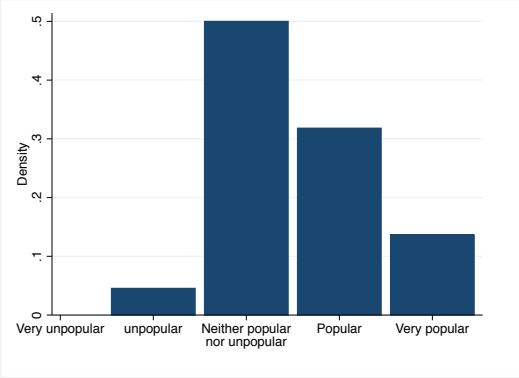


Camille Bloch

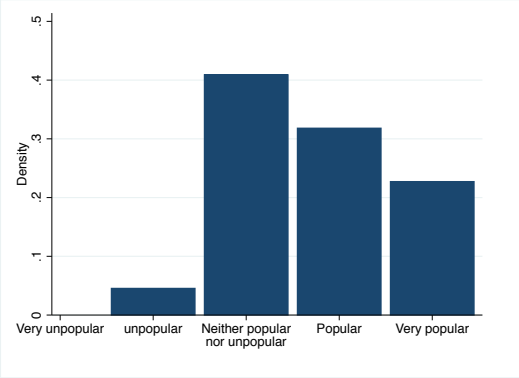


Munz

(b) How popular is the product among neo-Nazis? (Wilcoxon signed-rank test, $p = 0.293$, $N = 22$)

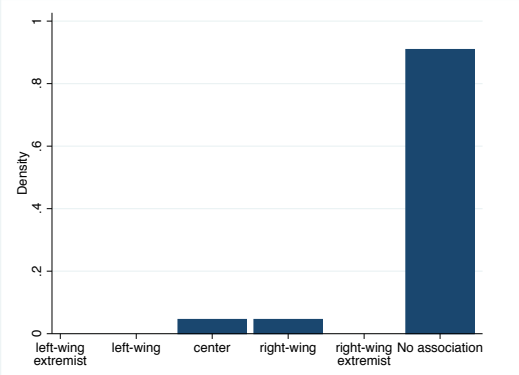


Camille Bloch

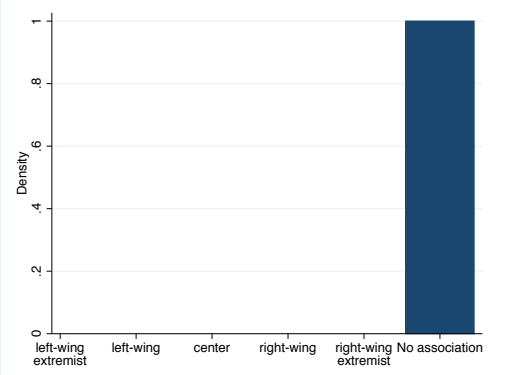


Munz

(c) With which political position would you associate a person that consumes the product?
(Wilcoxon signed-rank test, $p = 0.157$, $N = 22$)



Camille Bloch



Munz

Notes: Answers to an online survey with 21 participants. In figures (c), "No association" was labeled as "I would not associate the product with a specific political position" in the survey.

Appendix D: Instructions

D.1 Instructions Study 1

D.1.1 Overview (on screen)

Welcome to today's study.

Scientific standards

According to the scientific standards of the Laboratory for Behavioral and Experimental Economics, we are not allowed to lie to you or mislead you at any time. All the information gathered in this experiment is kept strictly anonymous and will never be associated with your name.

Rules

Please do not talk to other participants and do not use your mobile phone throughout the study. If you violate these rules, we have to exclude you from the study and cannot pay you.

Questions

If you have questions at any time during the study, please raise your hand. We will come to your place and answer your questions individually.

Payment

You will receive a fixed payment of CHF 10 for participation. You will earn additional money during the experiment, and you will receive a real product that you will select during the experiment. Your earnings will be paid out *anonymously* and in cash at the end of the study.

[OK]

D.1.2 Measuring intelligence and moral values (on screen)

This study consists of 3 parts, Part 1, Part 2 and Part 3. At the end, you will complete a questionnaire.

Part 1

Part 1 consists of two different tasks.

Other study participants might receive some information about your choices in Part 1. However, these participants will only receive information that informs them of the likelihood that you made a particular choice, but this information will not reveal your choice with certainty. That is, *other participants will not learn with certainty what choices you made*.

[OK]

Part 1: Intelligence test

In this task, you will complete an established test that is regularly used to measure general intelligence.

You will *not* learn your score on the intelligence test.

You will see patterns in which one part is missing. You are then given 8 possible suggestions for how to complete the pattern. Your task is to choose the suggestion that you think best completes the pattern.

You will see a total of 14 patterns. The first two patterns are for training. For these training patterns, you have as much time as you want to make your decision.

Afterwards you will have 12 minutes to complete the remaining 12 patterns. Once you have made your decision for one pattern, you will proceed to the next pattern and will not be able to go back.

For every correctly completed pattern, you earn 0.50 CHF. Overall, you can therefore earn an additional 6.00 CHF.

As soon as you are ready to start with the first training pattern, please click the [OK] button.

[OK]

[Intelligence test is implemented]

Part 1: Donation

Your decision in the second task of Part 1 will determine the amount of a donation to Zukunft CH, a non-profit conservative Christian organization.

Please read the box, “Zukunft CH,” which provides information about the organization.

Zukunft CH

Zukunft CH is a conservative Christian organization. Their members fight “the sneaking introduction of the sharia” and marriage for same-sex couples. Furthermore, they advocate conversion therapies for homosexuals and engage in demonstrations against abortions.

On their official website, they write, for example, that every Muslim is committed to the holy war, be it through endeavor, migration, birth or terror. They also argue that same-sex marriage is against nature and the very concept of marriage.

Zukunft CH has significant political impact. For example, Zukunft CH has recently published its own teaching material for children's sex education. They criticize that "mainstream sexual education" is too explicit and makes the children vulnerable to abuse. The material contains many controversial statements, including the claim that masturbation leads to addiction. While professionals do not recommend the use of this material in schools, it cannot be banned.

In this choice situation, you receive an initial endowment of CHF 6.00. You can increase your payment by authorizing the researchers to make a donation to Zukunft CH on your behalf. The donation would be anonymous, that is, your name would not be mentioned, and the donated money would not be subtracted from your payment.

Alternatively, you can give up a part of your endowment to decrease the donation to Zukunft CH. That is, you may decrease your payment by preventing donations from other participants from being implemented.

You have to choose one of the following seven options:

Options	In addition to the CHF 6.00 endowment, you receive	Donation to Zukunft CH
Option 1	+6.00	+9.00
Option 2	+4.00	+6.00
Option 3	+2.00	+3.00
Option 4	+0.00	+0.00
Option 5	-2.00	-3.00
Option 6	-4.00	-6.00
Option 7	-6.00	-9.00

Examples: If you chose option 1, you receive a payment of 12.00 CHF (= CHF 6.00 + CHF 6.00) in this choice situation, and you increase the donation to Zukunft CH by CHF 9.00. If you chose option 6 instead, you receive CHF 2.00 (= CHF 6.00 - CHF 4.00), and you reduce the donation to Zukunft CH by CHF 6.00.

Please choose an option:

Options	In addition to the CHF 6.00 endowment, you receive	Your donation to Zukunft CH
o	+6.00	+9.00
o	+4.00	+6.00
o	+2.00	+3.00
o	+0.00	+0.00
o	-2.00	-3.00
o	-4.00	-6.00
o	-6.00	-9.00

[OK]

D.1.3 Consumption choices, round 1 (on screen)

Part 2

You are finished with Part 1 of the experiment. You will now start with Part 2.

Part 2 consists of three stages:

Stage 1. The computer picks the participant that had *the lowest intelligence score* in today's session. This participant choses between two products. Let us call the two products *Product A* and *Product B*.
Then, you learn which product this participant with the lowest intelligence score chose.

Stage 2. You choose between Product A and Product B.

Stage 3. Other participants receive information about your choice, linked to your portrait picture. They are also informed which choice was made by the participant with the lowest intelligence score. Depending on your choice, they may or may not belief that this participant is you.

In the following, all three stages are explained in detail. You find a blank sheet and a pen on your table to make notes, if you wish to do so.

Stage 1: The choice of the participant with the lowest intelligence score

Remember that in Part 1, all participants did a test to measure their intelligence. The computer will select the participant that has the lowest intelligence score among all participants. (If two or more participants have the lowest intelligence score, one is randomly drawn.) This participant choses between Product A and Product B.

Then, you will learn which choice was made by this participant.

Stage 2: your choice

Please read the handout "Instructions: Stage 2, your choice" on your table.

If you have any questions about the instructions for Stage 1 and Stage 2, please raise your hand to get assistance. Otherwise, please click the [OK] button and proceed with the understanding questions about Stage 1 and Stage 2.

[OK]

[Next screen]

Understanding questions Stage 1 and Stage 2

Before you continue with the instructions for Stage 3, please answer the following understanding questions.

1) Before you choose between Product A and Product B, you will observe the choice of:
○ a randomly drawn participant
○ the participant with the lowest intelligence score

2) Consider the following example. *This example is purely hypothetical; it is not based on actual choices of participants.*

Stage 1: Suppose the participant with the lowest intelligence score chooses Product A.

Stage 2: You learn the choice of the participant with the lowest intelligence score. Suppose that you make the following choices:

Case	Which product do you choose for the respective case ?	
1	● Product A + 3.00 CHF	○ Product B
2	● Product A + 2.50 CHF	○ Product B
3	● Product A + 2.00 CHF	○ Product B
4	○ Product A + 1.50 CHF	● Product B
5	○ Product A + 1.00 CHF	● Product B
6	○ Product A + 0.50 CHF	● Product B
7	○ Product A	● Product B
8	○ Product A	● Product B + 0.50 CHF
9	○ Product A	● Product B + 1.00 CHF
10	○ Product A	● Product B + 1.50 CHF
11	○ Product A	● Product B + 2.00 CHF
12	○ Product A	● Product B + 2.50 CHF
13	○ Product A	● Product B + 3.00 CHF

2a) Suppose that case 3 is drawn to count (*drawn case*).

Which product does the participant with the lowest intelligence score receive?
○ Product A ○ Product B

Which product do you receive?
○ Product A ○ Product B

Which "linked additional monetary payment" do you receive?
____ 0.00 CHF ____ 0.50 CHF ____ 1.00 CHF ____ 1.50 CHF ____ 2.00 CHF ____ 2.50 CHF ____ 3.00 CHF

2b) Suppose that case 4 is drawn to count (*drawn case*).

Which product does the participant with the lowest intelligence score receive?
○ Product A ○ Product B

Which product do you receive?
○ Product A ○ Product B

Which "linked additional monetary payment" do you receive?
____ 0.00 CHF ____ 0.50 CHF ____ 1.00 CHF ____ 1.50 CHF ____ 2.00 CHF ____ 2.50 CHF ____ 3.00 CHF

[OK]

[Next screen]

Part 2 consists of three stages. So far, we explained Stage 1 and Stage 2 to you. Now, we explain Stage 3 to you.

Stage 3: Your choice is revealed to others

At the end of the experiment, 14 other participants, the *observers*, each see the *picture* and the *choice* of one participant in today's session.

For each observer, the computer flips a (virtual) coin:

- With a probability of 50% heads comes up, and the observer sees the picture and the choice of the participant with the lowest intelligence score.
- With a probability of 50% tails comes up, and the observer sees your picture and your choice *for one of the 13 cases that is randomly drawn,* the *drawn case*.

Note that the observers only learn your choice for the *randomly drawn case*. Also, they do not learn the monetary payment that (potentially) was linked with your choice.

Importantly, the computer will not tell the observers whether heads or tails came up. However, in addition to observing a choice linked to a picture, **all observers learn which product the person with the lowest intelligence score chose.** That is, observers always observe a picture and the choice (A or B) made by the person in the picture, and they also know the choice made by the person with the lowest intelligence score.

On the next screen, you will see the observers' instructions. Please click the [OK] button.

[OK]

[Next screen]

NOTE: These are the observers' instructions, NOT your instructions.

Remember that in Part 1, all participants did a test to measure their intelligence.

The participant with the lowest intelligence score and another, randomly drawn participant made a choice between two products, Product A and Product B. You will observe the product choice and portrait picture of one of these two participants. Which participant you observe is determined by a (virtual) coin flip:

- With a probability of 50% heads comes up, and you observe the choice and the picture of the participant with the lowest intelligence score,
- With a probability of 50% tails comes up, and you observe the choice and the picture of the other randomly selected participant.

The computer will *not* tell you whether heads or tails came up. *However, you will learn which product was chosen by the participant with the lowest intelligence score.*

Example: Suppose that the participant with the lowest intelligence score chose Product A, the other randomly selected participant chose Product B. If tails comes up, you would see the following screen:

The participant with the **lowest intelligence** score chose **Product A**.

The following participant is drawn:

The person on the picture choose **Product B**.

NOTE: End of observers' instructions

[OK]

[Next screen]

Example

The following example illustrates all three stages. *This example is purely hypothetical; it is not based on actual choices of participants.*

Stage 1: Suppose the participant with the lowest intelligence score chooses Product A.

Stage 2: You learn the choice of the participant with the lowest intelligence score. Suppose that you make the following choices:

Case	Which product do you choose for the respective case ?	
1	● Product A + 3.00 CHF	○ Product B
2	● Product A + 2.50 CHF	○ Product B
3	● Product A + 2.00 CHF	○ Product B
4	○ Product A + 1.50 CHF	● Product B
5	○ Product A + 1.00 CHF	● Product B
6	○ Product A + 0.50 CHF	● Product B
7	○ Product A	● Product B
8	○ Product A	● Product B + 0.50 CHF
9	○ Product A	● Product B + 1.00 CHF
10	○ Product A	● Product B + 1.50 CHF
11	○ Product A	● Product B + 2.00 CHF
12	○ Product A	● Product B + 2.50 CHF
13	○ Product A	● Product B + 3.00 CHF

Suppose that case 11 is the randomly drawn case; therefore, you receive Product B + 2.00 CHF.

***Stage 3*:** Suppose that heads comes up for an observer; that is, this observer sees the choice and picture of the participant with the lowest intelligence score. Specifically, this observer sees the following screen:

The participant with the **lowest intelligence** score chose **Product A**.

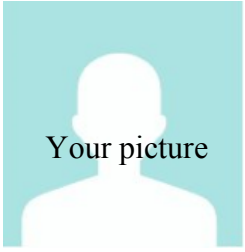
The following participant is drawn:

The person on the picture choose **Product A**.

Suppose that tails comes up for another observer; that is, this observer sees your choice and picture. For the randomly drawn case (case 11), you chose Product B. This observer sees the following screen:

The participant with the **lowest intelligence** score chose **Product A**.

The following participant is drawn:



The person on the picture choose **Product B**.

[OK]

[Next screen]

Summary Part 2

Here is a summary of Part 2:

Stage 1.	The computer picks the participant that has the lowest intelligence score among all participants. This participant choses between Product A and Product B. You learn which product he or she chose.
Stage 2.	You choose between Product A and Product B in all 13 cases. One cases is then randomly drawn to be implemented, the *drawn case*.
Stage 3.	14 observers learn the choice of the participant with the lowest intelligence score. Then, each observer either sees your choice for the drawn case and your picture, or the choice of the participant with the lowest intelligence score and his or her picture.

Final remark: Part 2 is only implemented with a probability of 1/7

With probability 1/7, Part 2 is implemented exactly as described; that is, you receive your chosen product (and the (potentially) linked monetary payment) for the drawn case, and your choice is revealed to the observers.
With probability 6/7, however, Part 2 is not implemented. You neither receive your chosen product, nor is your choice revealed to the observers.

If you have any questions about the instructions, please raise your hand to get assistance. Otherwise, please click the [OK] button to start with Part 2.

[OK]

D.1.4 Consumption choices (handout)

Instructions: Stage 2, your choice

In stage 2, you have to choose between the two products, Product A and Product B. You will see 13 cases in which you have to indicate your preferences between Product A and Product B.

In each case, one of the products might be linked with an additional monetary payment, between CHF 0.50 and CHF 3.00. If you choose this product, you will receive both the

product as well as the linked amount of money. Table 1 shows you all possible combinations of products and monetary payments. The cases differ only in the amount of money.

Case	Choice		
1	Product A + 3.00 CHF	*or*	Product B
2	Product A + 2.50 CHF	*or*	Product B
3	Product A + 2.00 CHF	*or*	Product B
4	Product A + 1.50 CHF	*or*	Product B
5	Product A + 1.00 CHF	*or*	Product B
6	Product A + 0.50 CHF	*or*	Product B
7	Product A	*or*	Product B
8	Product A	*or*	Product B + 0.50 CHF
9	Product A	*or*	Product B + 1.00 CHF
10	Product A	*or*	Product B + 1.50 CHF
11	Product A	*or*	Product B + 2.00 CHF
12	Product A	*or*	Product B + 2.50 CHF
13	Product A	*or*	Product B + 3.00 CHF

Table 1: Possible cases

For example, in case 1, you have to choose between product A plus 3.00 CHF and product B (without an additional amount of money), while case 10 you choose between product A (without an additional amount of money) and product B plus 1.50 CHF.

Look at Table 2. Table 2 illustrates how you will make your choice.

Case	Which product do you choose for the respective case ?	
1	○ Product A + 3.00 CHF	○ Product B
2	○ Product A + 2.50 CHF	○ Product B
3	○ Product A + 2.00 CHF	○ Product B
4	○ Product A + 1.50 CHF	○ Product B
5	○ Product A + 1.00 CHF	○ Product B
6	○ Product A + 0.50 CHF	○ Product B
7	○ Product A	○ Product B
8	○ Product A	○ Product B + 0.50 CHF
9	○ Product A	○ Product B + 1.00 CHF
10	○ Product A	○ Product B + 1.50 CHF
11	○ Product A	○ Product B + 2.00 CHF
12	○ Product A	○ Product B + 2.50 CHF
13	○ Product A	○ Product B + 3.00 CHF

Table 2: Your choice

Each row in the table is one case. You must specify for each of the cases which option you choose. For example, in the first case, you have to specify whether you prefer product A plus 3 CHF or product B (without an extra amount of money). If you prefer the former option, select “Product A + 3.00 CHF.” If you prefer the latter option, select “Product B.”

For each choice situation, one of the thirteen cases will be randomly drawn to be implemented, the *drawn case*. Every case is drawn with the same probability. At the time of

your decision, however, you do not know yet which of the thirteen cases will ultimately be drawn. Therefore, you must specify which option you choose for each case.

D.1.5 Consumption choices, round 2 (on screen)

Part 3

You are finished with Part 2 of the experiment. You will now start with Part 3.

Part 3 is similar to Part 2. However, there are two important differences:

- **You observe another participant**: In Part 1, all participants could increase or decrease a donation to Zukunft CH, a conservative Christian organization. You (and the observers) will learn the choice of the participant that made the *highest donation to Zukunft CH*.

- **Different products**: You, and the participant that made the highest donation to Zukunft CH, choose between two new, different, products. Let us call these two products *Product C* and *Product D.*

Otherwise, Part 3 is exactly the same as Part 2 and consists of the following stages:

Stage 1. The computer picks the participant that made the highest donation to Zukunft CH among all participants. (If two or more participants made the highest donation, one is randomly drawn.) This participant choses between Product C and Product D. You learn which product he or she chose.

Stage 2. You choose between Product C and Product D in all 13 cases (as described in the handout "Instructions: Stage 2, your choice"). One case is then randomly drawn to be implemented, the *drawn case*.

Stage 3. 14 observers learn the choice of the participant that made the highest donation to Zukunft CH. Then, each observer either sees your choice for the drawn case and your picture (with a probability of 50%), or the choice of the participant that made the highest donation to Zukunft CH and his or her picture (with a probability of 50%).

Again, Part 3 is only implemented with a probability of 1/7.

If you have any questions about the instructions, please raise your hand to get assistance. Otherwise, please click the [OK] button to start with Part 3.

[OK]

D.1.6 Choices are revealed to observers (on screen)

Remember that in Part 1, all participants did a test to measure their intelligence.

The participant with the highest intelligence score and another, randomly drawn participant made a choice between two products, Camille Bloch chocolate and Munz chocolate. You will observe the product choice and portrait picture of one of these two participants. Which participant you observe is determined by a (virtual) coin flip:

- With a probability of 50% heads comes up, and you observe the choice and the picture of the participant with the highest intelligence score,
- With a probability of 50% tails comes up, and you observe the choice and the picture of the other randomly selected participant.

The computer will *not* tell you whether heads or tails came up. *However, you will learn which product was chosen by the participant with the highest intelligence score.*

Example: Suppose that the participant with the highest intelligence score chose the Camille Bloch chocolate, the other randomly selected participant chose **Munz chocolate**. If tails comes up, you would see the following screen:

The participant with the **highest intelligence** score chose **the Camille Bloch chocolate**. The following participant is drawn: Picture of the other participant The person on the picture choose **the Munz chocolate**.

D.1.7 Questionnaire

Perception 1

	What do you think a package of Camille Bloch Torino chocolate bars typically costs? If you correctly estimate the price, plus/minus 50 Rappen, you will receive an additional 1 CHF.
	What do you think a package of Munz chocolate bars typically costs? If you correctly estimate the price, plus/minus 50 Rappen, you will receive an additional 1 CHF.

	What do you think the cup on the picture typically costs? If you correctly estimate the price, plus/minus 50 Rappen, you will receive an additional 1 CHF.
	What do you think the 4GB USB stick on the picture typically costs? If you correctly estimate the price, plus/minus 50 Rappen, you will receive an additional 1 CHF.

Perception 2

Evaluate the four products on the following dimensions:

	The cup on this picture 	The 4GB USB stick on this picture 	Package Camille Bloch Torino chocolate bars, 5x23g 	Package Munz chocolate bars, 5 x 23g 
How good is the quality of the raw materials used? (1 = "very low quality"; 5 = "very high quality")				
How well is the product processed? (1 = "very low quality"; 5 = "very high quality")				
When you think about using/eating the product, are you disgusted? (1 = "very disgusted"; 5 = "not disgusted at all")				
Does the producer of the good promote conservative Christian values (e.g, fighting abortions and marriage for same-sex couples)? (1 = "yes, strongly "; 5 = "no, not at all")				
How popular is the product among conservative Christians? (1 = "not popular at all"; 5 = "very popular")				
How popular is the product among Atheists? (1 = "not popular at all"; 5 = "very popular")				
How popular is the product among intelligent people? (1 = "not popular at all"; 5 = "very popular")				
How popular is the product among unintelligent people? (1 = "not popular at all"; 5 = "very popular")				

Willingness to pay to receive products in private

In the first part of the questionnaire, you can make offers to buy the products from Part 2 and Part 3. Your task is to specify the maximum price (*maximum price*) you are willing to pay for each of the following products:

The cup on this picture	The 4GB USB stick on this picture	Package Camille Bloch Torino chocolate bars, 5x23g	Package Munz chocolate bars, 5 x 23g
			

If you do not receive a product in Part 2 and in Part 3, one of your offers might be implemented: with a probability of 1/7, one of the four products is randomly drawn. In this case, the computer will randomly draw a price between 0 CHF and 10 CHF for this product (*drawn price*).

- If the drawn price is lower than the maximum price you have specified for this product (drawn price <= maximum price), you will receive the product at the end of the study and the **drawn price** will be deducted from your payout.
- If the drawn price is higher than the maximum price you have specified for this product (drawn price > maximum price), you do not buy the product, that is, you will not receive the product and no money will be deducted from your payout.

This procedure ensures that **it is in your best interest to specify exactly the price that you maximally want to pay for the product**.

When specifying the prices, keep in mind that:

- your earnings will be paid out anonymously at the end of the study. Therefore, no other participant will observe what product you bought in this part.
- your choice can only be implemented if you do not receive a product in Part 2 and in Part 3. Therefore, you should specify how much you are maximally willing to pay for getting a *first* product, not how much you are maximally willing to pay for getting a second product.

What is the maximum price (*maximum price*) that you are willing to pay for the products:
Cup _____
4GB USB stick _____
Package Camille Bloch Torino chocolate bars _____
Package Munz chocolate bars _____

Importance of intelligence and moral values

- How important is it for you that other people do *not* think that you are unintelligent?
- How important is it for you that other people think that you are intelligent?
- How important is it for your self-esteem to be intelligent?
- How important is it for you that other people do *not* think that you hold conservative Christian values?

- How important is it for you that other people think that you are tolerant towards homosexuality?
- How important is it for your self-esteem to be tolerant towards homosexuality?

Five-level Likert scale (1 = "not important at all"; 7 = "very important")

Demographics

- Gender (male, female)
- Age (input field)
- At which Institution do you study? (University of Zurich (UZH), ETH, Other University, University of Applied Science, No university)
- Field of study (input field)
- Nationality (or, nationalities) (input field)
- Religion (Christianity, Judaism, Islam, Hindu, Buddhism, Bahai, no religion, atheism, other)
- Political position (Left-wing, Centre-left, Center, Center-right, right-wing)

D.2 Instructions Study 2

All instructions from Study 2 are translated from German.

D.2.1 Instructions (Handout)

Welcome to today's study.

Scientific standards

According to the scientific standards of the Laboratory for Behavioral and Experimental Economics, we are not allowed to lie to you or mislead you at any time. All the information gathered in this experiment is kept strictly anonymous and will never be associated with your name.

In the study you have to choose between two products. Note that this study part of an independent research project; it is not conducted in collaboration with the manufacturers of the products

Rules

Please do not talk to other participants and do not use your mobile phone throughout the study. If you violate these rules, we have to exclude you from the study and cannot pay you.

Questions

If you have questions at any time during the study, please raise your hand. We will come to your place and answer your questions individually.

Payment

You will receive a fixed payment of CHF 15 for participation. You will earn additional money during the experiment, and you will receive a real product that you will select during the experiment. Your earnings will be paid out *anonymously* and in cash at the end of the study.

Anonymity: your ID number

At the end of the study, you will be paid out based on your ID number (in the envelope). During the study, you will be asked to open the envelope and enter the ID number in the computer terminal. At the end of the study, the experimenter will place each participant's payment (including the selected product) in an envelope labeled only with the participant's anonymous ID number and will close the envelope. The "monitor" (a randomly drawn participant) will then distribute the envelopes to the consumers based one their ID numbers. Since the experimenter does not know which participant has which ID number, he can not associate payments with specific participants. Since the monitor does not know the contents of the envelopes, he/she can not associate the participants with a specific payment.

The monitor was randomly drawn at the beginning of the experiment to ensure anonymity. He/she does not participate in the study. *Note that this procedure ensures that the experimenter can not link your choice to your identity*.

Overview

The study takes 60 minutes and consists of 4 parts:

Part 1.	You participate in a test that measures implicit associations (the implicit association test).
Part 2.	In a small, previous study, a total of 10 participants had to choose between two products, *product A and product B.* In Part 2, we will inform you about the demographics and choices of these participants.
Part 3.	You choose between *product A* and *product B.*
Part 4.	You answer a questionnaire.

In the following, Parts 1 and 3 are explained in detail.

Part 1 : The Implicit Association Test (IAT)

In the first part of this study, your implicit attitudes regarding racism are measured with the implicit association test (IAT).

The following description of the IAT is largely based on that of the "Project Implicit" of the Harvard University. Project Implicit is a non-profit organization that aims to educate the public about hidden, implicit prejudices.

What is the implicit association test?

The implicit association test (IAT) is a method of measuring implicit attitudes, such as implicit racism (against people with another skin color, as well as people with a migration background). Developed in 1998 by the social psychologists Greenwald, McGhee and Schwart[43], it is nowadays widely used in the social sciences (in psychology, economics, political science, and sociology). Gawronsky and Conrey (2004)[44] write: "In the history of psychology, probably no other procedure has received as much attention in such a short time as the implicit association test."

What are implicit attitudes regarding racism?

People often fail to correctly indicate their attitudes towards certain groups of people, such as people with a dark skin color, because they are unaware of their true attitudes. For example, individuals with racial prejudice tend to hide their true attitudes from themselves (self-deception) in order to maintain a good self-image.

These true, hidden attitudes are called "implicit associations." The IAT is a method for measuring these implicit attitudes.

How does the IAT measure implicit settings?

In the IAT that is used in today's study, participant have to repeatedly associate images of people with light or dark skin color with positive (e.g., happy, peace, love) or negative attributes (e.g., failure, evil, cruel). This task has to be done under time pressure.

For a person with negative implicit attitudes toward dark-skinned people it is difficult to associate a dark skin tone with positive attributes. This is reflected in response times: the person requires more time to connect a picture of a person with dark skin with positive attributes than with negative attributes. However, if a person does not associate the dark skin tone with negative attributes, there will be no difference in response times.

Thus, the IAT uses response time to measure implicit associations: the stronger the association, the shorter the response time.

[43] Greenwald, AG, McGhee, D., and Schwartz, J. (1998) "Measuring individual differences in implicit cognition: The implicit association test," Journal of Personality and Social Psychology, 74: 1464-1480.
[44] Gawronski , B. and Conrey , FR (2004) "The Implicit Association Test as a Measure of Automatically Activated Associations," Psychological Review, 55 (3): 118-126.

Significance of the IAT

Studies show that implicit associations (measured with the IAT) are associated with racist behavior. People who have negative implicit associations to a group avoid members of that group and treat them worse.[45] Managers with negative implicit associations discriminate people with migration background in hiring decisions[46] and promote them less often[47]. Such discriminatory behavior has also been found among doctors[48], teachers[49] and students[50] with negative implicit associations.

In the first part of today's study, you participate in such an implicit association test. You will see the result of your test. However, the result will not be saved. This means that you are the only person who will know about your result. Even the experimenter will not learn your result.

[45] McConnell, AR, and Leibold , JM (2001) "Relations among the implicit association test, discriminatory behavior, and explicit measures of racial attitudes," Journal of Experimental Social Psychology, 37: 435-442.
[46] Rooth , D. (2010). "Automatic associations and discrimination in hiring: Real-world evidence." Labor Economics, 17: 523-534.
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Part 3 : Product choice

Overview

In Part 3 you have to choose between two products, Product A and Product B.

Your decision

One of the products might be linked with an additional monetary payment, between CHF 0.50 and CHF 3.00. If you choose this product, you will receive both the product as well as the linked amount of money. Table 1 shows you all possible combinations of products and monetary payments. One of the thirteen cases will be randomly drawn to be implemented. Every case is drawn with the same probability.

Case	Choice situation		
1	Product A + 3.00 CHF	*or*	Product B
2	Product A + 2.50 CHF	*or*	Product B
3	Product A + 2.00 CHF	*or*	Product B
4	Product A + 1.50 CHF	*or*	Product B
5	Product A + 1.00 CHF	*or*	Product B
6	Product A + 0.50 CHF	*or*	Product B
7	Product A	*or*	Product B
8	Product A	*or*	Product B + 0.50 CHF
9	Product A	*or*	Product B + 1.00 CHF
10	Product A	*or*	Product B + 1.50 CHF
11	Product A	*or*	Product B + 2.00 CHF
12	Product A	*or*	Product B + 2.50 CHF
13	Product A	*or*	Product B + 3.00 CHF

Table 1: Possible cases

The cases differ only in the amount of money. For example, if case 1 is drawn, you have to choose between product A plus 3.00 CHF and product B (without an additional amount of money). If case 10 is drawn, you choose between product A (without an additional amount of money) and product B plus 1.50 CHF.

At the time of your decision, however, you do not know yet which of the thirteen cases will ultimately be drawn. Therefore, you must specify which option you choose for each case. At the end of the study, one case will be randomly drawn to be implemented, the *drawn case*. You will receive the option you selected in this case, that is, the corresponding product and the (possibly) associated amount of money.

Look at Table 2. Table 2 illustrates how you will make your choice.

Case	Which product do you choose for the respective case ?	
1	○ Product A + 3.00 CHF	○ Product B
2	○ Product A + 2.50 CHF	○ Product B
3	○ Product A + 2.00 CHF	○ Product B
4	○ Product A + 1.50 CHF	○ Product B
5	○ Product A + 1.00 CHF	○ Product B
6	○ Product A + 0.50 CHF	○ Product B
7	○ Product A	○ Product B
8	○ Product A	○ Product B + 0.50 CHF
9	○ Product A	○ Product B + 1.00 CHF
10	○ Product A	○ Product B + 1.50 CHF
11	○ Product A	○ Product B + 2.00 CHF
12	○ Product A	○ Product B + 2.50 CHF
13	○ Product A	○ Product B + 3.00 CHF

Table 2: Your choice

Each row in the table is one case. You must specify for each of the cases which option you choose. For example, in the first case, you have to specify whether you prefer product A plus 3 CHF or product B (without an extra amount of money). If you prefer the former option, select "Product A + 3.00 CHF." If you prefer the latter option, select "Product B."

Payment

At the end of the study, one of the thirteen cases will be randomly drawn (the drawn case) and you will receive the option you have chosen in this case.

If you have questions, please raise your hand. Otherwise, press the OK button on the screen and answer the comprehension questions on the computer. After you have answered the comprehension questions, you will be asked to enter your ID number.

D.2.2 Targets' choices are revealed (on screen)

As announced, 10 participants from a previous study chose between two products.

These participants are **neo-Nazis**. The neo-Nazis were recruited on the right-wing extremist websites [redacted] and [redacted]. The neo-Nazis chose between products A and B. The chosen product was delivered to the participants while maintaining their anonymity.

[Neutral treatment: These participants were recruited on the internet and chose between products A and B. The chosen product was delivered to the participants.]

- 70 percent of participants are men.
- The average age is 33 years.

- Eighty percent of participants have completed at most upper secondary education.

The 10 participants chose between the following products:

Pack Camille Bloch Torino
5 x 23g (Art. Nr. 3000652)

Pack Munz Praliné-Prügeli Milch
5 x 23g (Art. Nr. 3928213)

Result: **9 out of 10 neo-Nazis** [Neutral treatment: **participants**] chose **Munz Praliné-Prügeli Milch**.

D.2.3 Questionnaire (on screen)

Perception 1

- What do you think, how much does a pack of Camille Bloch Torino chocolate bars currently cost at Migros? If you correctly estimate the price, plus / minus 50 cents, you will receive an additional CHF 1.
- What do you think, how much does a pack of Munz Praliné-Prügeli chocolate bars currently cost at Coop? If you correctly estimate the price, plus / minus 50 cents, you will receive an additional CHF 1.

Perception 2

Evaluate the two products based on the following dimensions:

	Camille Bloch	Munz
"How healthy are the products?" (1 = "very unhealthy"; 5 = "very healthy")		
„How long can you store the products?" (1 = " spoils soon "; 5 = "long storage life")		
„ How good is the quality of the raw materials used?" (1 = "very low quality"; 5 = "very high quality")		
„How sustainable are the raw materials used?" (1 = "very sustainable"; 5 = "not sustainable at all")		
"What is the quality of the processing?" (1 = "very low quality"; 5 = "very high quality")		
„When you think about eating the Camille Bloch (Munz) chocolate, are you disgusted?" (1 = "very disgusted"; 5 = " not disgusted at all")		

“If you were to eat the chocolate in public, would people associate you with right-wing extremism?” (1 = "Yes, for sure"; 5 = "No, certainly not")		
“If you were to eat the chocolate in front of your family or friends, would you associate it with right-wing extremism?” (1 = "Yes, for sure"; 5 = "No, certainly not")		

Perception 3

- What do you think, does Camille Bloch in any way promote right-wing extremism (for example, through party donations, employment of right-wing extremists, public support for right-wing extremist ideals)?
- What do you think, does Munz in any way promote right-wing extremism (for example, through party donations, employment of right-wing extremists, public support for right-wing extremist ideals)?
- “What do you think, does Camille Bloch in any way discriminate against minorities (for example, in the recruitment, payment or promotion of employees)?”
- “What do you think, does Munz in any way discriminate against minorities (for example, in the recruitment, payment or promotion of employees)?”

Five-level Likert scale (1=”Yes, very strong”; 5=”No, not at all”)

Usage

	Camille Bloch	Munz
Do you know the chocolate well (for example, do you buy the chocolate regularly, or did you buy it regularly in the past)?	o yes o no	o yes o no
Can you eat the chocolate (or are you, for example, allergic to certain ingredients)?	o yes o no	o yes o no
If you would receive the chocolate at the end of the study, would you eat some of it yourself?	o yes o no	o yes o no
If you would receive the chocolate at the end of the study, would you give the entire pack to another person?	o yes o no	o yes o no
If you would receive the chocolate at the end of the study, would you throw it away?	o yes o no	o yes o no

Implicit association test

- Did your results in the implicit association test unsettle you in that you might be prejudiced? (“Yes, the results unsettled me very much,” “Yes, the results unsettled me,” “Yes, the results unsettled me a little bit,” “No, the results did not unsettled me”)
- Did you know the implicit association test before participating in this study? (“Yes” or “No”)
- Have you participated in an implicit association test before participating in this study? (“Yes” or “No”)
- Have you participated in an implicit association test on racism before participating in this study? (“Yes” or “No”)

Beliefs 1

What do you think, what proportion of other participants in today's study chose the Camille Bloch Torriono chocolate?

The other participants were in exactly the same choice situation as you. Please estimate the proportion for each of the 13 cases. At the end of the study, one of the 13 cases will be randomly drawn. If you have correctly estimated the share for the drawn case, you will receive an additional CHF 5.

Case	Choice situation			Share that chose Camille Bloch Torriono
1	Product A + 3.00 CHF			o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
2	Product A + 2.50 CHF	*or*	Product B	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
3	Product A + 2.00 CHF	*or*	Product B	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
4	Product A + 1.50 CHF	*or*	Product B	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
5	Product A + 1.00 CHF	*or*	Product B	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
6	Product A + 0.50 CHF	*or*	Product B	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
7	Product A	*or*	Product B	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
8	Product A	*or*	Product B + 0.50 CHF	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
9	Product A	*or*	Product B + 1.00 CHF	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
10	Product A	*or*	Product B + 1.50 CHF	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
11	Product A	*or*	Product B + 2.00 CHF	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
12	Product A	*or*	Product B + 2.50 CHF	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%
13	Product A	*or*	Product B + 3.00 CHF	o 0-10% o 11-20% o 21-30% o 31-40% o 41-50% o 51-60% o 61-70% o 71-80% o 81-90% o 91-100%

Beliefs 2

- What do you think, if 100 randomly selected students were asked if they prefer the Camille Bloch Torino chocolate bars or the Munz Praliné Prügeli, how many would choose the Camille Bloch Torino chocolate bars?
- What do you think, if 100 randomly selected managers were asked if they prefer the Camille Bloch Torino chocolate bars or the Munz Praliné Prügeli, how many would choose the Camille Bloch Torino chocolate bars?
- What do you think, if 100 randomly selected construction workers were asked if they prefer the Camille Bloch Torino chocolate bars or the Munz Praliné Prügeli, how many would choose the Camille Bloch Torino chocolate bars?
- What do you think, if 100 randomly selected left-wing extremist were asked if they prefer the Camille Bloch Torino chocolate bars or the Munz Praliné Prügeli, how many would choose the Camille Bloch Torino chocolate bars?
- What do you think, if 100 randomly selected neo-Nazis were asked if they prefer the Camille Bloch Torino chocolate bars or the Munz Praliné Prügeli, how many would choose the Camille Bloch Torino chocolate bars?

Instructions for chocolate preferences and experimenter demand

In the next two parts of the survey, you can buy products. Your task is to specify the *maximum price* you are willing to pay for the product.

After you have specified the price, the computer will randomly draw a price between CHF 0 and CHF 6 in CHF 0.05 increments (*drawn price*).

- If the drawn price is lower than the maximum price that you have specified (drawn price <= maximum price), you will receive the product at the end of the study and the **drawn price** will be deducted from your payout.
- If the drawn price is higher than the maximum price that you have specified (drawn price> maximum price), you do not buy the product. You will not receive the product and no amount will be deducted from your payout.

This procedure implies that it is in your best interest to specify the price that you want to pay for the product as the maximum price.

Chocolate preferences
The first product is a **package (5 x 27g) "Classic Branches" chocolate from Frey Chocolat**.

What is the maximum price (maximum price) you are willing to pay for this product?

(Input field, any number in [0, 6.00] CHF)

Experimenter demand
The second product is a **Kingston 16 GB USB flash drive (USB 3).**

[Experimenter demand treatment: We expect that participants who are shown these instructions will specify a lower maximum price than they normally would.]

What is the maximum price (maximum price) you are willing to pay for this product?
(Input field, any number in [0, 6.00] CHF)

Political position
Please indicate your political position (Seven-level Likert scale from 1 = "very left-wing" to 7 = "very righ-wing")

Please tick all parties whose party program appeals to you (you can choose several options): Alternative Linke (AL), Auto-Partei (AP), Bürgerlich-Demokratische Partei (BDP), Christlichdemokratische Volkspartei (CVP), Christlichsoziale Partei Obwalden (CSP), Eidgenössisch-Demokratische Union (EDU), Evangelische Volkspartei (EVP), FDP.Die Liberalen (FDP), Grüne Partei der Schweiz (GPS), Grünliberale Partei (GLP), Lega dei Ticinesi (Lega), Mouvement citoyens romands/genevois (MCR/MCG), Partei der Arbeit der Schweiz (PdA/POP), Partei National Orientierter Schweizer (PNOS), Schweizer Demokraten (SD), Schweizerische Volkspartei (SVP), Sozialdemokratische Partei der Schweiz (SP)

Racism
Please rate the following statements:

- I support the integration of immigrants
- If a black family with about the same income and education as I have moved next door, I would mind it a great deal.

- It is easy to understand the anger of Turks living in Germany due to racism.
- Refugees receive more than they deserve in Switzerland.
- The media put immigrants and refugees in too positive a light.
- Discrimination against people with a migrant background is a big problem in Europe.
- Immigration is a big problem in Europe.

Seven-level Likert scale (1 = "strongly agree"; 7 = "strongly disagree")

(Notes: Items based on the Old-Fashioned and Modern Racism Scale (McConahay, 1986)[51], adapted to the Swiss context)

Right-wing and left-wing extremism
Please rate the following statements:

- In the national interest, a dictatorship is the better form of government under certain circumstances.
- National states should be abolished.
- Capitalism ultimately leads to fascism.
- The crimes of National Socialism have been greatly exaggerated in historiography.
- A decent life is only possible in socialism/communism.
- Jews, more than other people, use evil tricks to achieve what they want.

Seven-level Likert scale (1 = "strongly agree"; 7 = "strongly disagree")

(Items taken from Decker, Kiess, Eggers and Brähler, 2016[52] and Deutz-Schroeder and Schroeder, 2016[53])

Disgust

- I might be willing to try eating monkey meat, under some circumstance. ("Yes" or "No")
- It bothers me to see someone in a restaurant eating messy food with his fingers. ("Yes" or "No")
- You see someone put ketchup on vanilla ice cream, and eat it. How do you feel? (Five-level Likert scale from 1 = "very disgusted" to 5 = " not disgusted at all")
- You are about to drink a glass of milk when you smell that it is spoiled. How do you feel? (Five-level Likert scale from 1 = "very disgusted" to 5 = " not disgusted at all")

(Note: taken from Haidt, McCauley and Rozin, 1994[54])

Image concerns
The following statements concern prejudices against persons with a migration background.

Please rate the following statements:

[51] McConahay, J. B. (1983) „Modern racism and modern discrimination: The effects of race, racial attitudes, and context on simulated hiring decisions," Personality and Social Psychology Bulletin, 9: 551-558.
[52] Decker, O., Kiess, J., Eggers, E. and Brähler, E. (2016) „Die »Mitte«-Studie 2016: Methode, Ergebnisse und Langzeitverlauf" in Die enthemmte Mitte, Gießen: Psychosozial-Verlag.
[53] Deutz-Schroeder, M. and Schroeder, K. (2016) „Linksextreme Einstellungen und Feindbilder. Befragungen, Statistiken und Analysen," Frankfurt am Main: Peter Lang.
[54] Haidt, J. McCauley, C. and Rozin, P. (1994) "Individual differences in sensitivity to disgust: A scale sampling seven domains of disgust elicitors," Personality and Individual Differences, 16(5): 701-713.

- In today's society it is important that one not be perceived as prejudiced in any manner.
- Being nonprejudiced is important to my self-concept
- It is important to me that other people not think I am prejudiced.
- I feel guilty when I have negative thoughts or feelings about a person with migration background
- I get angry with myself when I have thoughts that are prejudiced.
- If I have a prejudiced thought or feeling, I keep it to myself.
- When speaking to a person with a migration background, it's important to me that he/she does not think I am prejudiced.
- It is important to me to act in nonprejudiced ways

Seven-level Likert scale (1 = "strongly agree"; 7 = "strongly disagree")
(Note: items adapted from Dunton and Fazio, 1997[55] and Plant and Devine, 1998[56])

Products preferences for products related to right-wing extremism

- Do you own Lonsdale products? (“Yes” or “No”)
- Do you own Fred Perry products? (“Yes” or “No”)
- Do you own Dr. Martens products? (“Yes” or “No”)
- Do you think there are Lonsdale cloths that you might like? (Five-level Likert scale from 1 = " Yes, for sure" to 5 = " No, certainly not")
- If there was a fashion piece from Lonsdale that appeals to you, would you buy it? The brand is easily recognizable from the outside. (Five-level Likert scale from 1 = " Yes, for sure" to 5 = " No, certainly not")
- If there was a fashion piece from Lonsdale that appeals to you, would you buy it? The brand is not recognizable from the outside. (Five-level Likert scale from 1 = " Yes, for sure" to 5 = " No, certainly not")

Demographics

- What is your highest degree? (Secundary school, Bachelor, Master, PhD, Other)
- What is your field of study? (Input field)
- Citizenship(s) (Input field)
- Gender (male, female)
- Age (Input field)
- Which religion do you belong to? (Christianity, Judaism, Islam, Hindu, Buddhism, Bahai, no religion, atheism, other)

[55] Dunton, B. C. and Fazio, R. H. (1997) „An Individual Difference Measure of Motivation to Control Prejudiced Reactions,“ Personality and Social Psychology Bulletin, 23(3): 316–326.
[56] Plant, E. A. and Devine, P. G. (1998) „Internal and external motivation to respond without prejudice,“ Journal of Personality and Social Psychology, 75(3): 811-832.