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Social- and Self-Image Concerns in Fair-Trade Consumption: Evidence from Experimental Auctions for Chocolate

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Abstract

Can social interactions be used to encourage the consumption of fair-trade products? Social interactions may alter purchase behavior by triggering either self-image concerns (when one sees others' decisions without being seen) or social-image concerns (when everybody sees everyone else). A laboratory experiment is designed to identify separately these concerns, using real auctions for normal and fair-trade chocolate, controlling for taste and packaging differences. The analysis of the willingness-to-pay (WTP) for both types of chocolate reveals that both social- and self-image matter: subjects pay a higher premium for fair-trade chocolate when their decisions are made public. This premium is sensitive to information received about the premia paid by other subjects, even when decisions are private. The higher premium in public auctions results from a lower WTP for normal chocolate, rather than a higher WTP for fair-trade chocolate. Subjects are also much more sensitive to information about others' choices that relaxes the moral or social norm constraining their own choice. We thus conclude that social interactions cannot be used to nudge consumers into fair-trade consumption, at least for ordinary products such as chocolate.

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Keywords: Fair-trade, Image motivations, Willingness-to-pay, Experiment, Chocolate.

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1. Introduction

Sustainable development has become an important and international policy issue.[1] Fair trade is often seen as a means of promoting sustainability, by offering better trading conditions to producers, and thereby securing and improving their long-run living conditions.[2] Fair-trade organizations are actively engaged in the conversion of economies to sustainable practices. However, their success will depend crucially on individuals' willingnesses to change their consumption habits, especially for everyday products. The current paper asks whether social interactions may encourage such changes, by increasing consumer willingness-to-pay (WTP) for both standard and fair-trade chocolate, and the WTP premium assigned to the latter.[3]

Fair-trade products are certified according to specific standards regarding the trading conditions offered to farmers. They have a "sustainable development" attribute, which is guaranteed by a label (e.g. Max Haavelar and FLO). The consumption of a fair-trade product may be seen as an indirect donation to farmers in developing countries, or a commitment to pay the fair price for their labor. We here focus on chocolate, as fair-trade chocolate has been on store shelves for some time. Even so, their market share remains low (under 2% in France according to data from the 2009 Kantar World Panel). However, a number of leading firms in this sector have announced their commitment to fair trade.[4] These chocolate products are

[1] This issue is mentioned in the Maastricht and Amsterdam Treaties which marked important steps in the development of the European Union. These treaties propose general clauses about sustainable development, which are supposed to be translated into specific national laws and codes. The concept of sustainable development also appears in the Rio Declaration and Agenda 21, adopted by the United Nations Conference on Environment and Development (UNCED), meeting in Rio de Janeiro on the 3rd to the 14th of June 1992. A report of the World Commission on Environment and Development proposed a landmark definition of sustainable development as *"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (World Commission on Environment and Development, 1983).

[2] See the definition of Fair Trade adopted by the international Fair Trade movement in 2001. http://www.european-fair-trade-association.org/efta/Doc/What.pdf [Accessed 26/06/2012]

[3] Hartman (2011) and Unnevehr et al. (2010) have recently suggested the development in agricultural economics of non-monetary and psychological motives to analyze consumers' food purchases. In a different setting, Jacquemet et al. (2011) and Norwood and Lusk (2011) emphasize the role of the social context on consumer purchases.

[4] Cadbury was the first, announcing its plans to achieve Fair Trade in March 2009. More recently, Mars followed the lead by managing to obtain certification by the Fairtrade Foundation for some of its products. Leadership in

available in bars, drinks and confectionery sold in public settings, such as cafeterias, vending machines and cinemas. In these contexts, consumers may care about others' perceptions of them when they make their own decisions.

This will be the case if decisions are sensitive to social-image concerns, whereby individuals wish to signal to others that they are good people, or conform to some standard of behavior defined as appropriate by society or the community. If fair-trade consumption is seen as "good" in this way, then we should see a higher WTP premium for fair-trade chocolate when consumption choices are public. The empirical literature on donations to NGOs has already uncovered this kind of pattern (Andreoni and Petrie 2004, Harbaugh 1998, Rege and Telle 2004, and Reinstein and Riener 2012). Social interactions may also affect consumption via self-image, reflecting the feeling of pride from seeing ourselves as doing "good" *compared to others*. This may also refer to the desire to avoid the guilt associated with "bad" actions (which is arguably attenuated if others are also "bad"). The self-image motivation implies that the WTP premium for fair-trade products will be affected by private information about others' choices, even if the individual's own WTP premium remains unobserved by others. A number of empirical contributions have confirmed this prediction using data on donations to NGOs: individual donations increase with others' donations even when choices are private (Cason and Mui 1998, Frey and Meier 2004, Shang and Croson 2009). Carlsson et al. (2010) also find that women (but not men) are more likely to choose coffee made from fair-trade beans when informed that the products have a larger market share.[5] In the same vein, Allcott (2011) uses data from a field experiment on energy conservation to show that informing households about average electricity consumption in their neighborhood reduced the household's own

this respect has been historically held by 100% Fair Trade companies, such as Equal Exchange or Alter Eco. More information can be found on the website of the Fairtrade Foundation (http://www.fairtrade.org.uk/).

[5] Their work differs from ours in a number of aspects. First, they use a choice experiment *without* monetary incentives to identify the effect of information. The attributes that vary between the hypothetical varieties were the shares of green and fair-trade beans, and the price. Second, the treatment was the information on the market share of the greener variety, not the choice of other participants.

consumption, but only significantly so for households whose pre-treatment consumption was higher. This use of self-image motivations is sometimes coined as a "nudge" in the literature, as public policies can use surreptitiously use them to affect consumer choice.

We here test experimentally the effect of image concerns on food choices, something which has not to date been attempted for real ordinary food products. We design a laboratory experiment to identify separately the impact of the social- and self-image. We use incentive-compatible Becker-DeGroot-Marschak (BDM) auctions (Becker *et al.* 1964) to elicit consumer WTPs for packs of three bars of standard and fair-trade chocolate in a 2 x 2 design, with two treatments and two stages within each treatment. In the *Public Treatment*, as opposed to the *Private Treatment*, each subject knows at the beginning of the session that her decisions will be observed by all of the other participants at the end the session. In both treatments, however, subjects make all of their decisions in private. Comparing the treatment outcomes thus identifies the impact of the social image. In each treatment, and for each product, consumer WTP is elicited in a first stage without information about others, and then in a second stage with information on others' WTPs. The self-image concern is identified by the effect of the change in the subject's beliefs about other participants' behavior, from the information they received, on their WTPs for both types of chocolate. The difference between these two WTPs is the premium for fair-trade chocolate. Comparing the first and second stages in the private treatment thus identifies the effect of self-image.

Both social- and self-image concerns are found to have a significant effect on consumer choice. Participants assign a higher WTP premium to fair-trade over normal chocolate when their decisions are made public. This mainly results from a lower WTP for normal chocolate, which can be interpreted as a cheap way of signaling pro-social preferences or showing conformity. Participants' WTPs are also sensitive to their expectations about others' WTPs, as shown by the information shock. Changing expectations affect the WTPs for both chocolates,

and the WTP premium, showing that self-image motivations matter. However, the reaction to information is asymmetric, with the negative effect of a lower expected average WTP and WTP premium amongst others being much larger in absolute terms than the upward effect of higher expectations. Consumers are thus more sensitive to a relaxation than to a tightening of the expected standard of behavior. While image concerns are important determinants of consumer choice, the scope for using them to "nudge" people into fair-trade consumption may therefore be limited for ordinary consumption goods.

The remainder of the paper is organized as follows. Section 2 develops the behavioral hypotheses, and presents the experimental design and procedures. Section 3 describes and analyzes the experimental evidence, and Section 4 interprets the results. Last, Section 5 concludes.

2. Behavioral hypotheses

2.1. Theoretical background

As outlined in the introduction, fair-trade consumption choices may be motivated by image concerns. Their effectiveness in altering choices depends on the strength of pro-social values in society, i.e. the shared tendency to prefer fairness, caring and altruism over inequity, greediness and selfishness. The fair-trade movement explicitly refers to such values in its goals of "improving the well-being of producers", "protecting children from exploitation", "promoting justice and human rights" and so on (Moore 2004). We can take the existence of market price premia for, and positive attitudes towards, fair-trade products as evidence that these values are shared by fair-trade consumers (Ozcaglar-Toulouse *et al.* 2006). The term "image concerns" captures the weight of such values in the utility function when choosing to purchase fair-trade products.

Individuals suffer a direct utility loss from taking decisions that are inconsistent with any image concerns. The latter then possess normative power which creates behavioral norms. This normative effect is often modeled by assuming that individual preferences over their own decisions depend on the decisions of some relevant others (Akerlof 1997, Clark and Oswald 1998, Manski 2000). These relevant others can be the members of a peer group or a community or, at a more global level, all individuals who share the same social identity (Akerlof and Kranton 2000, Akerlof and Kranton 2010). When individuals face a direct utility cost of deviating from others' decisions, there are clear incentives to follow the behavioral norm. When actions are public, the costs of deviance can result from formal or informal sanctions by others. The normative power of values may also be sustained by feelings of shame and guilt at the prospect of choosing the "bad" option (Elster 1989). Shame is associated with a worse social image, while guilt leads to a deterioration in one's own self image (Elster 2009). These norm-compliance motivations may well generate conformity.

A recent strand of the literature has proposed an explicit psychological mechanism through which values affect choices, and others' choices yield conformity. The key assumption is that actions can be used to signal, at some cost, personal adhesion to values. In the public sphere, consumers may then choose strategically-costly actions to signal that they have pro-social and altruistic preferences of the "good type", in the perspective of 'buying' a good social image (Bénabou and Tirole 2006, Bénabou and Tirole 2010, Bernheim 1994). When decisions are private, costly but generous actions reinforce the self-image: this is not just cheap talk about ourselves, but rather self-signaling (Akerlof and Dickens 1982, Bodner and Prelec 2003). Signaling explains the emergence of behavioral norms via the costs of being perceived or perceiving oneself as a "bad type".

In the case of continuous action variables, such as donations or WTP, it can easily be imagined that being below some norm (or below the average) induces a cost. However, what

happens when the individual is above the norm? Some individuals require distinction and prestige to obtain good social- and self-images. The quest for distinction is a motivation for giving more than the level required just not to be stigmatized or perceive oneself as "bad". In Akerlof (1997) and Clark and Oswald (1998), this is modeled by assuming that average behavior and the individual's own behavior are substitutes in the utility function. An increase in average behavior (e.g. the average donation) yields less distinction for those who do better than average. This lower utility corresponds to higher marginal utility, which encourages status- or esteem-seekers to do still better. In Benabou and Tirole's (2010) signaling model, individuals are also motivated to do better than the average when the latter is low. However, if many individuals enter this competitive race for social- and self-image, the average will rise, and those under the average then have to follow in order to preserve their image. This may favor the emergence of pro-social behavior and behavioral norms in the long-run.

2.2. Hypotheses

To develop an experimental test of social- and self-image concerns, we now state several behavioral hypotheses based on the literature presented above. We assume that, in the context of fair-trade consumption, personal adhesion to fair-trade values is measured by the premium that, *ceteris paribus*, the individual is willing to pay for a fair-trade relative to a standard product.

Whether choices are driven by signaling or norm-based motivations, both the social- and the self-image matter when consumption decisions are public, increasing the premium for fair-trade products. This is the first hypothesis we would like to test:

Social-Image Concerns. *Ceteris paribus*, making decisions public increases the premium that

consumers are willing to pay for fair-trade products.

When consumption choices are private, only self-image is at stake. Learning that others' premia for fair-trade products are lower may attenuate any negative feelings of not doing the "good" thing via one's own premium; it also reduces the self-signaling marginal return to a higher premium for fair-trade products. Both effects imply that the premium will fall. Learning that others' premia are higher should have the opposite effect: one's own premium will rise. Private information may hence generate the following behaviors, even without public exposure,[6] which form the basis of our test for self-image concerns.

Self-Image Concerns. *Ceteris paribus*, private information about others' WTP for fair-trade products vs. standard products affects decisions. The upward revision of expectations about others' WTP premia should increase one's own WTP premium.

The *Social-* and *Self-Image* hypotheses can be refined by considering distinction- vs. conformity-seeking behavior. This can be tested by looking at those individuals who initially think that their WTP premium is better than the average, and then learn that the latter is higher than expected. In their quest for distinction, they should then increase their own WTP premium. Conformity-seeking individuals in the same situation do not have the same incentives: their choice should not change.

[6] The perception of others may not matter when values are key to one's social identity. For instance, the pro-social behavior of priests is unlikely to change if everyone else in the community starts to behave selfishly.

Conformity-seeking. Ceteris paribus, conformity-seeking individuals should not increase their WTP premium if this was initially higher than their expectations about others' WTP premium.

We test these hypotheses experimentally in the following sections. One key aspect of our experimental design is that it controls carefully for motivations other than social- or self-image. To ensure that *ceteris paribus* holds, we carefully select chocolates which taste very similar, and allow the subjects to taste the products before the experiment. *Pure altruism* as a motivation for decisions is eliminated as all the chocolate bars have already been purchased by the experimenter. Subjects thus know that the donation has already been made through the market-price premium paid by the experimenter: her own choice thus does not affect producer welfare. In addition, decisions are taken simultaneously: contrary to the experiments in Reinstein and Riener (2012), individuals cannot choose their actions strategically to influence other participants.

3. The experiment

3.1. Design

The experiment is designed to identify separately the impact of social- and self-image motivations on consumers' WTP premia for fair-trade relative to normal chocolate, controlling for any differences in tastes or packaging. We have a 2 x 2 design with two treatments and two stages within each treatment. We carry out between comparisons of subjects randomized in two treatments, and within comparisons of subjects in the two stages of each treatment.

Elicitation of WTP via a Becker-DeGroot-Marschak auction mechanism

We use Becker-DeGroot-Marschak (BDM) auctions to elicit subjects' WTP for fair-trade and normal chocolate (Becker et al. 1964). This incentive-compatible method has previously been used in empirical work to elicit consumer WTP for products with organic or fair-trade labels, in the absence of social interactions (Bougherara and Combris 2009, McCluskey and Loureiro 2003, Tagbata and Siriex 2008).[7]

In a BDM auction, the subject first states her reservation price, which is the maximum price she is willing to pay for the product. The subjects then randomly draw a selling price from a distribution chosen by the experimenter.[8] The subjects do not observe the price distribution, but know that it covers a certain range around the current market price. If the selling price that the subject draws is greater than her reservation price, the subject cannot buy the product: she both pays and receives nothing. However, if the selling price is less than or equal to her reservation price, the subject has to buy the product at the drawn selling price. This auction mechanism is incentive compatible, as: *(i)* it is common knowledge that decisions will have consequences on real sales at the end of the experiment; and *(ii)* each subject maximizes expected utility only by stating their true reservation price. If the subject indicates a price over her true reservation price, she is at risk of paying more than she wishes, and her chances of buying the product at a price under her reservation price do not change. If she indicates a price under her reservation price, then her chances of buying the product at a price under her reservation price fall. It is thus in the subject's own interest to reveal her true reservation price.

These reservation prices are our measures of subjects' WTP for each product at each stage of each treatment. The WTP premium for fair-trade chocolate is the difference between their

[7] See also Shogren et al. (2001), Lusk (2003), Lusk et al. (2004) and Lusk and Shogren (2008) for detailed descriptions of the use of the BDM auction mechanism in experiments, and for comparisons with other auction mechanisms.

[8] The distribution is chosen so as to be uniform over a range that includes the market price of the product. The average price of three bars of chocolate in the shops is respectively 4.20 Euros and 2.70 Euros for fair-trade and normal chocolate. The random selling price is uniformly distributed, by discrete increments of 10 cents, between 2.70 Euros and 5.20 Euros for fair-trade chocolate, and between 1.20 Euros and 3.70 Euros for normal chocolate (the minimum price is 1.50 Euros less than the market price and the maximum is 1 Euro more).

WTPs for fair-trade and normal chocolate. We do not directly ask subjects for their fair-trade chocolate premium in order to avoid desirability bias.

One stage and one chocolate are randomly selected at the end of the session for the real sale: one subject first throws a die to select the stage (odd numbers for Stage A and even numbers for Stage B) and then another subject throws the die to select the chocolate (odd numbers for normal chocolate and even numbers for fair-trade chocolate). Subjects then draw their selling prices from the distribution associated with the selected chocolate. Whatever the treatment, this drawing procedure is common knowledge.

A preliminary tasting task

In a preliminary task, subjects' hedonic preferences (tastes) for the chocolates are elicited via blind tasting. The instructions (both computerized and written) for this task were provided to subjects along with a sample of each chocolate. There was no packaging, but one chocolate was labeled as No.1 and the other as No.2. In half of the sessions, chocolate No.1 is the fair-trade chocolate and chocolate No.2 is the normal chocolate; this order is reversed in the other half of the sessions. Subjects indicate a hedonic score for each chocolate on an unstructured continuous scale, bounded between 0 and 10. In the ensuing two stages of the experiment, subjects cannot taste the chocolate and do not know which chocolate was No.1 or No.2 during the preliminary tasting task. This latter was carried out to eliminate any uncertainty about chocolate quality. The hedonic scores are also used to control for the potential impact of hedonic preferences in the empirical analysis of the results.

Two treatments for the between identification of social-image concerns

We use two experimental treatments to identify social- as opposed to self-image concerns. This is a between design: each subject is (randomly) assigned to only one treatment. The treatments take place in two different experimental rooms (see Appendix B for a picture of

experimental rooms). These rooms were chosen to provide a private or public atmosphere for the experiment.

In the *Private Treatment*, once subjects are in their cubicle they do not interact again until the end of the session. They read the instructions on their own and then the experimenter checks whether all of the subjects have understood the BDM auction mechanism. Every subject writes down a fictitious reservation price for 5kg of apples and the experimenter then simulates the BDM auction payment mechanism. Each subject draws a selling price from a particular distribution for these apples, and the experimenter checks that the subject correctly understands the outcome (paying the selling price or rejecting the bid). Once the experimenter is sure that all subjects have understood the instructions, the experiment starts. This starts with the tasting task, and then the subjects are given new instructions with, in particular, a description of the Max Havelaar fair-trade label. They also receive two packs of three 100g chocolate bars on their table. They cannot taste these.[9] The bar wrappers only show the composition of the chocolate ingredients, the "best before" date, and the type of chocolate, i.e., normal or fair-trade. The brand names are hidden. The two packs have the same type of wrapper with the same colors. The only difference stems from the presence of a symbol indicating the type of chocolate, "Fair trade" or "Normal", as in Tagbata and Siriex (2008). Appendix A shows pictures of the two wrappers. The two stages of the experiment (to be defined below) follow. Once subjects have made their decisions in both stages, including that of their reservation prices (their WTPs), the experimenter randomly chooses two subjects to throw the die to select the relevant stage and chocolate for the auction outcome. Finally, the subjects leave the experimental room in turn. Once outside the room, each subject draws a selling price and the sale of the packs of chocolate potentially occurs, depending on the drawn

[9] Subjects cannot taste the chocolates at this point as we want to disentangle the effect of the "fair-trade attribute" (the label) on the subjects' WTP premium from any other effect, such as hedonic or sensory effects. The specific taste of each chocolate should thus not enter into account when subjects state their WTP. Nevertheless, subjects may well remember the hedonic scores they previously assigned to the two types of chocolate, which may affect the results. We will introduce these scores as a robustness check in the empirical analysis.

selling price and the subject's WTP for the chocolate and stage. The subjects then leave. In the private treatment, subjects do not communicate over the entire experimental session.

The *Public Treatment* is organized in the same way as the private treatment, except that there are social interactions in addition to the information revelation between the two stages, taking the form of public exposure. Once all subjects have read the BDM instructions, they are seated around a table in the middle of the experimental room and make their fictitious decision about the price for 5kg of apples. The experimenter simulates the BDM auction payment mechanism for each subject in front of all of the others. Once the experimenter is sure that all subjects have understood the instructions, the subjects return to their cubicles and the experiment starts. The other difference with the private treatment occurs at the end of the experiment. Once all subjects have completed the second stage, they are again seated around the table in the middle of the experimental room. One subject is then randomly chosen by the experimenter to throw the die to select the stage for the real auction. While the transactions are made in private in the private treatment, here the experimenter writes each subject's WTP for each chocolate in the randomly-selected stage on a white board. Each subject confirms their WTP, rendering their decisions clearly visible to the other participants. The experimenter then randomly chooses a subject to throw the die that selects the chocolate for the auction outcome. Each subject draws a selling price for the selected chocolate in front of all of the other subjects. The potential sale then occurs. When all transactions have been made, the subjects leave. The key point here is that public exposure at the time of the sale is common knowledge from the beginning of the experiment. The organization of the real sale at the end of the experiment is explained in detail at the beginning of the experiment, and the experimenter makes sure that all subjects understand this point.

The comparison of subjects' decisions in the first stage of the Private and Public Treatments identifies the social-image effect on the WTP premium for fair-trade chocolate. This is our

test of *Social-Image Concerns*.

Two stages for the within identification of self-image concerns

Both the public and private treatments have two stages, in which the WTP for each product is elicited. Between the two stages, each subject receives private information about other participants' WTP for both types of chocolate. Subjects know that there will be two stages, but they have no information about the second stage while completing the first stage.

In the first stage, *Stage A*, subjects start by indicating their respective reservation prices for normal and fair-trade chocolate. Once they have made their decisions, they cannot change them. After these WTP decisions, they reveal their expectation of the average market price for each chocolate ("prices in shops") and the average reservation price (WTP) of the other participants for each chocolate. Subjects earn additional money if these expectations are close to their actual values.[10]

In the second stage, *Stage B*, prior to the WTP decision, and for each chocolate, each subject is provided with the WTP of another participant. They are told that this WTP has been chosen from the set of the WTPs of the other Stage A participants, without further details. This information is strictly private: participants cannot communicate with each other and do not know whose WTP it is.

In order to ensure that the difference between the subject's own WTP and the WTP that she learns is large enough to represent a salient information shock, we separate the subjects into two groups after Stage A, according to whether their WTP is higher or lower than the median WTP from the first stage. Participants whose WTP is less than or equal to the median learn the second highest WTP in the session, while participants over the median learn the second

[10] At the end of the session, given the stage and the chocolate that have been selected, the subject receives 50 additional cents for each belief that falls in an interval of plus or minus 30 cents around the correct value. The literature on the analysis of experimental methods to elicit subjects' beliefs is rather scarce. Nevertheless, Gächter and Renner (2010) show that belief accuracy is significantly higher when beliefs are incentivized .

lowest WTP in the session.[11] The participants are not aware of this manipulation. With this new information, the subjects have again to indicate their WTP for both normal and fair-trade chocolate As in Stage A, subjects then provide their expectations about the average market and reservation prices of the other participants at the end of Stage B.

At each stage we measure subjects' expectations about the average WTP premium for fair-trade chocolate amongst the other participants as the gap between their expectations regarding the average WTPs for fair-trade and normal chocolate amongst others. This measures individual perceptions of the norm, or merely the distribution of behaviors (in a signaling perspective). These perceptions determine the extent to which the individual believes that she is more or less generous than the others. The information shock can thus affect subjects' WTP premia via its impact on beliefs about others' WTP premia, even when decisions are private. The *Self-Image Concern Hypothesis* is tested by looking at the effect of changes in subjects' expectations about others' behavior on changes in the WTP premium between Stages A and B *in the Private Treatment*.

Self-image may also drive decisions in Stage A based on subjects' expectations of others' WTP premia. Nevertheless, these priors may be shaped by unobservable preferences that directly affect the WTP premium. For instance, a subject who is generous may have a higher WTP premium. At the same time, she is likely to believe that she is much more generous than the average. The unobserved "generosity trait" will then be positively correlated with the premium, and negatively correlated with expectations about others: this will produce a negative bias on the estimated correlation between expectations and premia, which invalidates our self-image test. Comparing subjects' WTP premia between Stages A and B, when

[11] Note that the subjects remain ignorant of these procedural choices, in order to avoid any concerns about the potential strategic manipulation of the distribution of WTPs at stage A: they were only told that the WTP of one other subject in the session was randomly drawn to inform them. We choose to give the second-highest and second-lowest WTPs instead of the highest and the lowest avoid potential extreme values which might be inconsistent.

decisions reflect an exogenous information shock, is one way of eliminating this bias.

We also elicit subjects' expectations regarding market prices for the robustness checks. Market prices will depend on (aggregate) consumer preferences. The market premium for fair-trade chocolates thus also likely reflects the importance that consumers grant to fairness. Some subjects may consider the market premium as information regarding the premium that they ought to pay for fair-trade chocolate. As the information shocks may also affect beliefs about the norm via changes in market-price expectations, we will present results which control for these latter.

Last the *Conformity-seeking Hypothesis* is tested by examining the movement in the WTP premium between the two stages, whatever the treatment, as a function of initial expectations about others' premia and the changes in expectations. Distinction-seekers whose initial offered premium was higher than that which they expected from others will increase their WTP premium if they revise their expectations upward. This will not be the case for conformity-seekers.

3.2. Implementation: products, subjects and procedure

The products used in the experiment were packs of three 100g bars of dark chocolate (72% cocoa).[12] One was a *fair-trade chocolate* labeled by Max Havelaar, while the other was a *normal chocolate* with no label. The two types of chocolate have similar ingredients (see Appendix A for the information displayed on the wrappers). They were selected to be as similar as possible in taste.[13]

[12] We use packs of chocolate bars instead of one single bar to avoid low variance in the per-bar price. Bidding for a pack instead of a single bar gives subjects a greater incentive to reveal their true preferences, as any deviation from these is now more costly.

[13] Before the experiment, five normal and five fair-trade chocolates were blindly tasted by forty-five colleagues at INRA, including 31 specialists trained in the identification of food flavors. They were asked to indicate the

One hundred and ten consumers of dark chocolate were recruited for the experiment. The recruitment questionnaire provides information on their age, gender and level of education. The participants were aged from 23 to 70, 56 were women, 62 had earned their high school diploma, 43 subjects had never participated in an experiment, 42 had participated in a sensory experiment regarding food products, and only 25 had participated in an economic experiment.

Twelve experimental sessions with between 7 and 11 subjects each were conducted at the CSGA (Center for Taste and Food Consumption Sciences, INRA) laboratory in Dijon (France). Six sessions were organized for each treatment: 57 individuals participated in the private treatment and 53 in the public treatment. Each session lasted approximately 90 minutes, including the transactions. Prior to the experiment, all participants received a letter explaining the BDM auction procedure. The decisions in the experiment had real monetary consequences. No communication was allowed.

Upon arrival, each participant received a participation fee of 15 Euros. The participants then entered the experimental room and were randomly assigned a cubicle. The instructions regarding the BDM auction were displayed on the computer screen in each cubicle; they were also given a paper version of these instructions.[14] The experiment started once all the participants had correctly understood the incentive mechanism. Participants started with a preliminary tasting task, then participated in the two stages, and finally took part in the real sale of the selected chocolate at the end of the experiment.

4. Results

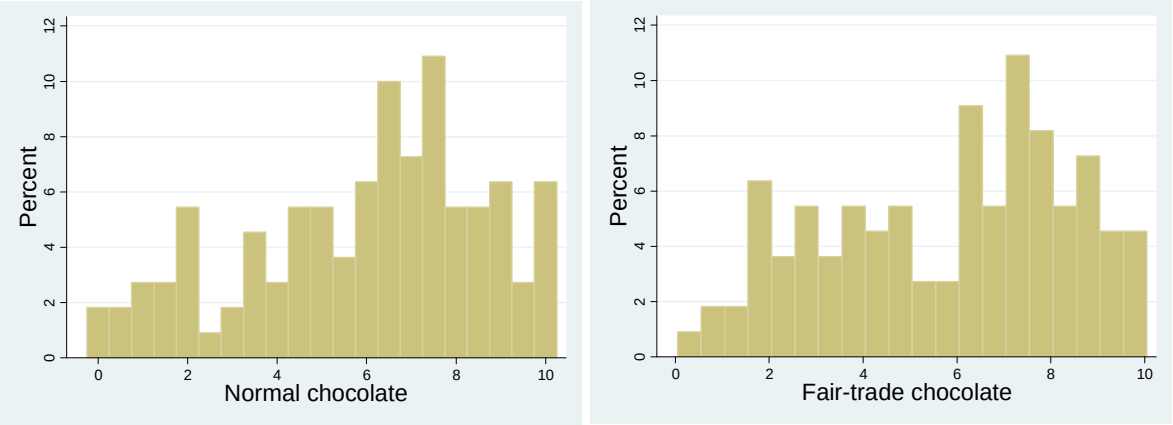
4.1. The preliminary tasting task: hedonic scores

pair of normal and fair-trade chocolates which were most similar in taste. We chose the two chocolates which received the highest similarity score in these evaluations.

[14] Written instructions were distributed as well in order to allow subjects to consult them while making their decisions in the BDM auctions.

The average hedonic scores were respectively 5.985 for and 5.824 for normal and fair-trade chocolate. Figure 1 below presents the distribution of the hedonic scores for both types of chocolate in the two treatments. The distribution of hedonic scores is the same for the chocolate types (Wilcoxon signed-rank test: *p-value=0.463*). In the private treatment, the average hedonic score for the normal (fair-trade) chocolate is 5.682 (5.881), as against 6.309 (5.762) in the public treatment. When we separate the treatments, the hypothesis of equality of the distributions continues to hold (Wilcoxon signed-rank test: *p-value=0.883* for the private treatment, and *p-value=0.207* for the public treatment). Within each treatment, there are no significant hedonic differences between the products.

FIGURE 1 – THE ABSENCE OF TASTE DIFFERENCES



Notes: These figures show the distribution of hedonic scores (measured on a 0-10 scale) for both chocolate types and treatments.

The hedonic scores are also not significantly different between the participants in the private and public treatments, whatever chocolate type considered (Wilcoxon rank-sum test: *p-value=0.506* when the chocolates are pooled, *p-value=0.230* for the normal chocolate, *p-value=0.804* for the fair-trade chocolate). Hence, for each product there are no significant hedonic differences between the two treatments. As the two types of chocolate are similarly hedonically-evaluated, taste differences are unlikely to explain any WTP patterns between the

chocolate types in a given treatment and stage, or between the treatments for a given chocolate and a given stage. The two chocolates only differ in the fair-trade attribute, which is signaled by the Max Havelaar fair-trade label.

4.2. Social-Image Concerns

Social-image concerns are identified by comparing the WTP premium for the fair-trade and normal chocolates, in Stage A, between the private and public treatments. Table 1 below shows the average WTP premium for the fair-trade chocolate and the average WTP for each chocolate observed in Stage A in each treatment. The average premium ($Premium_A$) that subjects attribute to fair-trade chocolate is the average of the individual gaps between the WTPs for fair-trade and normal chocolate. In Stage A these are represented by $WTP_{A,N}$ and $WTP_{A,FT}$ respectively. The last line shows the p-value from the Wilcoxon rank-sum test of no difference between the treatments.

TABLE 1 – SOCIAL-IMAGE CONCERNS

	$Premium_A$	$WTP_{A,N}$	$WTP_{A,FT}$
Private treatment	0.458	3.395	3.853
Public treatment	1.044	2.953	3.997
H0: No difference between treatments	*p-value* = 0.040	*p-value* = 0.134	*p-value* = 0.751

Notes: This table shows the average premia and WTPs by treatment and the Wilcoxon rank-sum tests of equality between treatments.

In both treatments there is a WTP premium for the fair-trade over the normal chocolate

(Wilcoxon signed-rank test: *p-value* < *0.001* in both treatments).[15] This confirms previous experimental results on the WTP for fair-trade and standard chocolates (Tagbata and Siriex 2008).[16] However, the fair-trade WTP premium is significantly higher in the public treatment (*p-value = 0.040*): social-image concerns affect the WTP for ordinary consumption goods such as chocolate. This confirms the *Social Image Concern Hypothesis*.

Subjects' WTPs for chocolate are not significantly different in the private and public treatments (with p-values over 0.100 for both products). Nevertheless, the higher fair-trade premium in the public treatment is mostly driven by a lower WTP for normal chocolate rather than a higher WTP for fair-trade chocolate. A cheap way of exhibiting a higher WTP premium without increasing the average expected auction price is indeed to reduce the WTP for normal chocolate.[17] Subjects thus adjust their choice strategically, using the two decision variables simultaneously. This also suggests that they try to do well, by preserving their social image at the lowest cost, rather than to do good.

4.3. Self-image concerns

The specific role of self-image is identified by examining changes in subjects' WTP premia for fair-trade chocolate between Stages A and B, in the Private Treatment, as a function of the new information received. At the beginning of Stage B, participants are informed of the WTP of another subject in the session in stage A for the normal ($Info_N$) and fair-trade chocolate

[15] The average WTP over both chocolates is 3.624 in the private treatment and 3.475 in the public treatment. This difference is not significant (Wilcoxon rank-sum test: *p=0.713*) which suggests that there is no particular wealth effect produced by the public treatment: subjects do not try to signal their income through higher WTPs, whatever the product, in the public treatment.

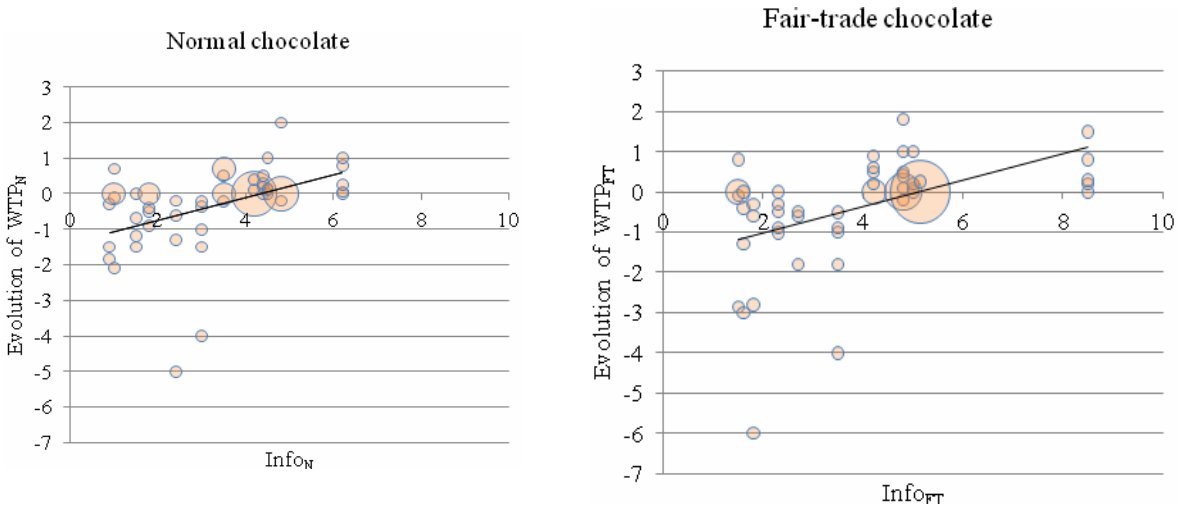
[16] It is generally found that consumers assign a positive premium to fair trade products: see De Pelsmacker *et al.* (2005) and Loureiro and Lotade (2005) for fair-trade coffee, and Onozaka and McFadden (2011) for fresh produce.

[17] A small theoretical model (available upon request) does indeed show that, if the price distributions of the BDM auctions are uniform and known by the subjects, it is optimal for them to reduce their WTP for normal chocolate and increase their WTP for fair-trade chocolate by the same amount. Here, price distributions are not known, and loss aversion may explain why the public treatment has a larger impact on WTP for normal chocolate.

($Info_{FT}$). Figure 2 depicts the changes in individual WTP between stages A and B for each chocolate as a function of these information shocks. For normal chocolate, this change is denoted by $\Delta WTP_N = WTP_{B,N} - WTP_{A,N}$, and for fair-trade chocolate $\Delta WTP_{FT} = WTPB_{B,FT} - WTP_{A,FT}$.

Figure 2 clearly shows for both chocolates that subjects' WTP changes are positively correlated with this information shock, and very significantly so (Spearman correlation test for the normal chocolate, *r=0.614*, *p-value<0.001*; for fair-trade chocolate, *r=0.577*, *p-value<0.001*). Subjects do thus take into account others' behavior when determining the product's value, even when they know that their decisions are private.[18]

FIGURE 2 - THE EFFECT OF INFORMATION SHOCKS



Notes: The figure shows the change in individual WTP as a function of the information shock. The size of the bullets reflects the number of observations, with the largest bullet representing four subjects for normal chocolate and five subjects for fair-trade chocolate. In each graph, the bold line represents the linear trend in the data: $\Delta WTP_N=0.3242\times Info_N-1.4026$ for normal chocolate and $\Delta WTP_{FT}=0.3268\times Info_{FT}-1.6649$ for fair-trade chocolate.

As outlined in Section 3, self-image concerns are identified by looking at the effect of

[18] Significant positive correlations are also found in the public treatment (Spearman correlation test for normal chocolate, *r=0.665*, *p-value<0.001*; for fair-trade chocolate, *r=0.683*, *p-value<0.001*). However, as emphasized in Section 3, the private treatment provides a cleaner test of the self-image hypothesis. Section 5 explores in more depth the information shocks in the public treatment.

changed expectations about others' WTP premia on the individual's own WTP premium. We suppose that the participants first use this information to update their expectations about others' average WTP for each chocolate, and then use these updated beliefs to form new expectations of the average WTP premium. Three cases can then be identified: *(1)* expectations about others' WTP premia fall between Stages A and B; *(2)* expectations are stable between Stages A and B; and *(3)* expectations rise between Stages A and B. Self-image concerns should generate a fall in own WTP premium for the fair-trade product in case (1), no change in case (2), and a rise in case (3).

Table 2 shows the average change in the WTP premium ($\Delta Premium = \Delta WTP_{FT} - \Delta WTP_N$) in each case, with the number of subjects in the first column and the average change in the premium in the second. Subjects' expectations about others' average WTP premia for fair-trade chocolate are denoted by E_A in stage A and E_B in stage B.[19] A Wilcoxon signed-rank test is used to test whether the average change in the WTP premium is significantly different from zero: the p-value from this test appears in the third column.

TABLE 2 – THE EFFECT OF SELF-IMAGE CONCERNS

	No. of subjects (N = 57)	ΔPremium Mean	H0: ΔPremium = 0 Wilcoxon signed-rank test
Private treatment			
Case 1: $E_B < E_A$	26	-0.217	*p-value*: 0.020
Case 2: $E_B = E_A$	12	0.046	*p-value*: 0.302
Case 3: $E_B > E_A$	19	0.061	*p-value*: 0.259

Notes: This table shows the average change in the premium between stages A and B, in the private

[19] More formally, let E_s be the individual expectation of others' WTP premia in stage *s* (=A or B). Let $\Omega_{i,s}$ be the individual information set in stage *s*, including the information shocks in stage B. We assume that $E_s = \mathbb{E}(WTP_{s,FT}|\Omega_{i,s}) - \mathbb{E}(WTP_{s,N}|\Omega_{i,s})$. In this equation, the first term on the right-hand side is the individual expectation of others' WTP for fair-trade chocolate, while the second term is the expectation of others' WTP for normal chocolate. Both expectations are measured at each stage just after the BDM auction (see Section 3.2).

treatment, as a function of the direction of the change in expectations about others' premia.

Subjects significantly change their WTP premium for fair-trade chocolate only when their expectations of others' WTP premia fall between Stages A and B (Wilcoxon signed-rank tests: when $E_B < E_A$, *p-value =0.020*). Additional statistics reveal that, for these subjects, the ΔPremium is negative because they lower their WTP more for fair-trade than for normal chocolate. On average, in Case 1, ΔWTP_N is -0.422, whilst ΔWTP_{FT} is -0.639. Rising expectations of others' WTP premium has much less effect than falling expectations, with the size of the changes being statistically different (Wilcoxon rank-sum tests: *p=0.015*).

Subjects significantly modify their decisions only when the new information relaxes the constraint on preferences and choices generated by expected average behavior in the group, i.e. as the monetary costs of "being good" fall. Self-image concerns may thus play a role in the consumption of fair-trade products, but only because they deter subjects from being less generous, not because they push them to be more generous. They act as a behavioral inhibitor rather than motivations that may nudge individuals towards generosity.

4.4. Conformity vs. Distinction

The *Self-Image Concern Hypothesis* holds partially, as individuals tend not to increase their WTP premium when they revise their expectations upwards. This may be due to the joint presence of conformity- and distinction-seekers amongst the subjects. To investigate, Table 3 calculates the mean change in the WTP premium according to whether: *(i)* expectations about others' premia increased; and *(ii)* the premium exceeded Stage-A expectations. The treatments were pooled to increase the number of observations in each situation. Under *Conformity Seeking*, the mean change in the last line is zero or negative: the conformists who are already

above what they consider as normal behavior (their expectations about other's premia) have little reason to increase their WTP premium as they revise their expectations upwards.[20] Table 3 shows that the data do not reject this hypothesis. Individuals who initially offered a WTP premium above their expectations for others significantly lower the premium only when they revise their expectations downwards (Case 1, second line: -0.678 Euros, significant at the 1% level). When they revise their expectations upwards, they do not significantly change their premium (Cases 2 and 3, last line: -0.148 Euros, insignificant at the 10% level). The experimental results thus suggest that the quest for distinction is not an important driver of choice.[21]

TABLE 3 – DISTINCTION- VS. CONFORMITY-SEEKING

	No. of subjects (N = 110)	ΔPremium Mean	H0: ΔPremium = 0 Wilcoxon signed-rank test
Case 1: $E_B < E_A$			
$\text{Premium}_A \leq E_A$	34	-0.163	*p-value*: 0.069
$\text{Premium}_A > E_A$	15	-0.678	*p-value*: 0.002
Cases 2 & 3: $E_B \geq E_A$			
$\text{Premium}_A \leq E_A$	36	0.266	*p-value*: 0.001
$\text{Premium}_A > E_A$	25	-0.148	*p-value*: 0.738

Notes: This table shows the mean change in the WTP premium between stages A and B, as a function of the direction of the change in expectations about others' WTP premia, and the initial position of the individual with respect to her expectations. All observations are pooled.

[20] Of course, this prediction may not hold if the upward revision is so large that the conformist falls below the norm. We cannot enter into details here due to a lack of observations: all of the statistics are insignificant.

[21] The conformists who initially offered a WTP premium lower than their expectations about others are unlikely to reduce their WTP premium in the case of the downward revision of expectations, if their initial choice becomes closer to their expectations, which increases the utility of social interactions (remember that all purely private sources of utility are controlled for here). This is what we find if we focus on the individuals who are initially below their expectations about others and for whom the downward revision is sufficiently small that they remain below the norm: the mean change in WTP premium between stages A and B = 0.021, insignificant at the 10% level. However, when the downward revision of expectations is large enough that expectations are below the initial premium, participants choose a significantly lower WTP premium in Stage B (lower by -0.397 Euros). This reaction is compatible with both Distinction- and Conformity-seeking.

5. Robustness analysis

Section 4 uncovered evidence consistent with both self- and social-image concerns in consumer choice. Table 4 below presents some additional robustness checks, using regressions that control for a number of individual characteristics: gender, age, education (whether subjects have the baccalaureate), and their hedonic scores. In all specifications, except for (3'), the dependent variable is the individual premium for fair-trade chocolate. Tables C1 and C2 in Appendix C propose similar regressions, but use respectively the WTPs for normal and fair-trade chocolate as the dependent variable.

Specification (1) essentially replicates the main result in Table 1. The public treatment increases the premium by 0.623 Euros, after controlling for stage effects and the interaction between public treatment and stage. Specification (1) in Table C1 confirms that this reflects a lower WTP for normal chocolate in the public treatment (-0.482 Euros).

Specification (2) in Table 4 replaces the controls for the stage effect and the interaction of treatment and stage, which were insignificant in specification (1), by four expectations variables: that of others' WTP premium (*Expected premium*), constructed as in Section 3.3; that of others' WTP for normal chocolate (*Expected* WTP_N); and their interactions with the public-treatment dummy. Expectations of others' WTP premia attract a positive significant coefficient, which is larger in the public treatment: a one Euro change in expectations yields a change of 0.763 Euros in the public treatment as against 0.398 Euros in the private treatment (0.365+0.398=0.763 Euros vs. 0.398 Euros). The latter is significant at the 1% level, confirming the role of self-image. However, expectations of others' behavior may be determined by unobserved preferences that also affect the individual's own choice. Generous individuals may be over-optimistic, and believe that others are as generous as they themselves are: this generates a positive bias on the estimated coefficient on expectations. Specification (3) thus controls for fixed unobserved heterogeneity by analyzing the impact of changes in

expectations on changes in this premium.[22] In these fixed-effect estimations (OLS-FE), the impact of expectations is attenuated, but remains significant. A one Euro change in expectations of others' WTP premia increases the individual premium by 0.264 Euros in the private treatment, and 0.248+0.264=0.512 Euros in the public treatment. With these estimates in hand, we can then calculate how much of the premium is not explained by the individual change in expectations, i.e. the residuals. These are regressed in specification (3') on the treatment dummy and the other control variables. The public-treatment coefficient is insignificant (as in specification (2)), showing that visibility affects decisions via expectations only. In a rational-choice framework, this can be interpreted as evidence that expectations regarding others' behavior affect the marginal utility of one's own decision, and making the latter public shifts this marginal utility away from zero.

[22] We here use a within estimator, which is less efficient than a first-difference estimator at finite distance. The standard errors are slightly larger than those from first-differences.

TABLE 4 – THE IMPACT OF EXPECTATIONS AND TREATMENT

Technique	(1) OLS	(2) OLS	(3) OLS-FE	(3') OLS	(4) OLS-FE
Public Treatment	0.623***	-0.017		-0.058	
	(0.205)	(0.442)		(0.184)	
Stage	-0.069			-0.029	
	(0.200)			(0.180)	
Public Treatment × Stage	-0.042			-0.064	
	(0.288)			(0.259)	
Expected premium		0.398***	0.264***		0.263**
		(0.137)	(0.098)		(0.106)
Expected premium × Public Treatment		0.365**	0.248**		0.216*
		(0.183)	(0.116)		(0.129)
Expected WTP_N		0.135*	0.071*		0.025
		(0.073)	(0.041)		(0.059)
Expected WTP_N × Public Treatment		0.076	0.131*		0.131
		(0.114)	(0.070)		(0.097)
Expected market premium					0.010
					(0.111)
Expected market premium × Public Treatment					0.110
					(0.187)
Expected market price for the *Normal* chocolate					0.106
					(0.098)
Expected market price for the *Normal* chocolate × Public Treatment					-0.015
					(0.171)
Other control variables: hedonic scores, sex, age, and education					
N	220	220	220	220	220
R^2	0.089	0.286	0.432	0.025	0.443

Notes: The dependent variable is the premium, except in (3') where it is the residuals (including the fixed effects) of regression (3); standard errors in parentheses; *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Individual changes in the WTP premium between the two stages may depend on the evolution of their beliefs over the average market premium in two cases: when individuals perceive the market price as providing a clear signal of the premium one *ought* to give to fair-trade products, and when loss aversion generates a fear of offering a fair-trade chocolate price higher than the usual market price. The market premium indicates the maximum premium it is worth giving to these products. Specification (4) tests for this effect, by adding the change in expectations about the market premium (and its interaction with the treatment dummy) to specification (3). This does not change our main results. The coefficients on the expected WTP of others for normal chocolate become insignificant, but they were only significant at the 10% level beforehand.

Tables C.1 and C.2 in Appendix C apply analogous specifications to the WTPs for normal and fair-trade chocolate. These estimates confirm that subjects adapt to the public treatment by lowering their WTP for normal chocolate, rather than by proposing a higher price for fair-trade chocolate. Specification (3)'s results reveal that they react significantly to changes in expectations of the WTP for the products. Expectations of the premium seem to have no direct impact. However, we can note that, for normal chocolate, their effect falls from 0.180 in the private treatment to (0.180-0.215=-0.025) in the public treatment.[23] This may explain the treatment effect in Specification (1) (-0.482, significant at the level of 10%, in Table C.1).

[23] In addition, these effects become significant when a fixed-effects model is estimated in first-differences instead of applying the within transformation to the data. We choose to retain the more conservative estimates here.

TABLE 5 – THE ASYMMETRIC EFFECT OF CHANGING EXPECTATIONS

Specification	(3)	(4)	(3)	(3)
Technique	OLS-FE			
Sample	All observations		$Premium_A \leq E_A$	$Premium_A > E_A$
Expected premium ↑	0.179	0.167	0.204*	0.039
	(0.133)	(0.141)	(0.115)	(0.384)
(Expected premium ↑)× Public Treatment	0.085	0.053	0.221	-0.041
	(0.160)	(0.170)	(0.150)	(0.415)
Expected premium ↓	0.353**	0.358**	0.391**	0.381
	(0.145)	(0.148)	(0.147)	(0.239)
(Expected premium ↓)× Public Treatment	0.447**	0.405**	-0.127	0.476*
	(0.172)	(0.178)	(0.312)	(0.261)
Expected WTP_N ↑	0.045	-0.013	0.048	0.088
	(0.084)	(0.096)	(0.083)	(0.172)
(Expected WTP_N ↑)× Public Treatment	0.119	0.124	0.023	-0.075
	(0.142)	(0.155)	(0.145)	(0.331)
Expected WTP_N ↓	0.067	0.017	0.015	0.291**
	(0.049)	(0.062)	(0.045)	(0.112)
(Expected WTP_N ↓)× Public Treatment	0.081	0.076	0.009	-0.062
	(0.084)	(0.107)	(0.123)	(0.143)
Controls for market-price expectations	No	Yes	No	No
N	110	110	70	40
R^2	0.534	0.549	0.446	0.780

Notes: The dependent variable is the WTP premium; All of the equations are estimated by OLS FE; Expected premium ↑(↓) = expectations about others' premia rise (fall); standard errors in parentheses; *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Section 4.3 outlined the asymmetry of responses to changes in expectations. In Table 2, only a fall in expectations (Case 1) changes the premium in the private treatment; higher expectations have no significant effect (Case 3). This asymmetry may reflect different-sized changes in expectations between Cases 1 and 3, i.e. the negative information shocks may have been systematically larger than the positive ones. Table 5 estimates some additional specifications: these are similar to specification (3) in Table 4, except that we distinguish rising (↑) from falling (↓) expectations. In the first column of results, expectations about the market price of normal chocolate and its market premium are not controlled for, while we do so in the second column. The results clearly show that the effect of a downward revision in expectations is much larger in size than that of an upward change. The latter is not significantly different from zero. The elasticity of the premium to a downward change in expectations is over twice the level in the public treatment (0.352 in the private treatment vs. 0.352+0.447=0.799 in the public treatment). To confirm *Conformity-seeking*, the last two columns of results split the sample according to whether the individual offered a premium below her expectations in stage A (Column 3, N=70 individuals) or above (Column 4, N=40 individuals). In Column 4 ($Premium_A > E_A$), an increase in expectations regarding others' premia does not raise one's own premium, so that individuals seem to seek conformity rather than distinction.

6. Conclusion

A number of experiments have revealed that social-image concerns are important motivations for pro-social behavior. Individuals are more likely to engage in activities such as voting, fire-volunteering activities, giving blood, giving to charities or sharing with others when their actions are rendered public (Andreoni and Bernheim 2009, Ariely *et al.* 2009, Carpenter and Myers 2010, Funk 2010, Lacetera and Macis 2010). The current paper contributes to this literature by revealing the role of social-image concerns. Here these result in a fall in the WTP for the standard product, rather than an increase in the WTP for the fair-trade product: individuals want to attain social acceptance and avoid shame at the lowest cost. In addition, social interactions affect individual choices through self-image concerns. Obtaining information about what *ought* to be paid affects the premium paid for fair-trade products when the individual is not observed. Last, the effect of image concerns is asymmetric, as subjects react much more strongly to information which revises downwards the perceived norm of behavior: it seems easier to weaken a norm, than to strengthen it.

It has been suggested that fair-trade consumption could be encouraged by proposing fair-trade products in public-consumption contexts (cafeterias, vending machines at workplaces, and local food markets) where people know each other, and observe and are observed. We would expect social pressure to pertain in these contexts. However, our findings cast some doubt on the usefulness of norm-based nudges to encourage fair-trade consumption in the market for ordinary products. Reducing the price gap between standard and fair-trade products likely remains the best way of promoting fair-trade consumption.

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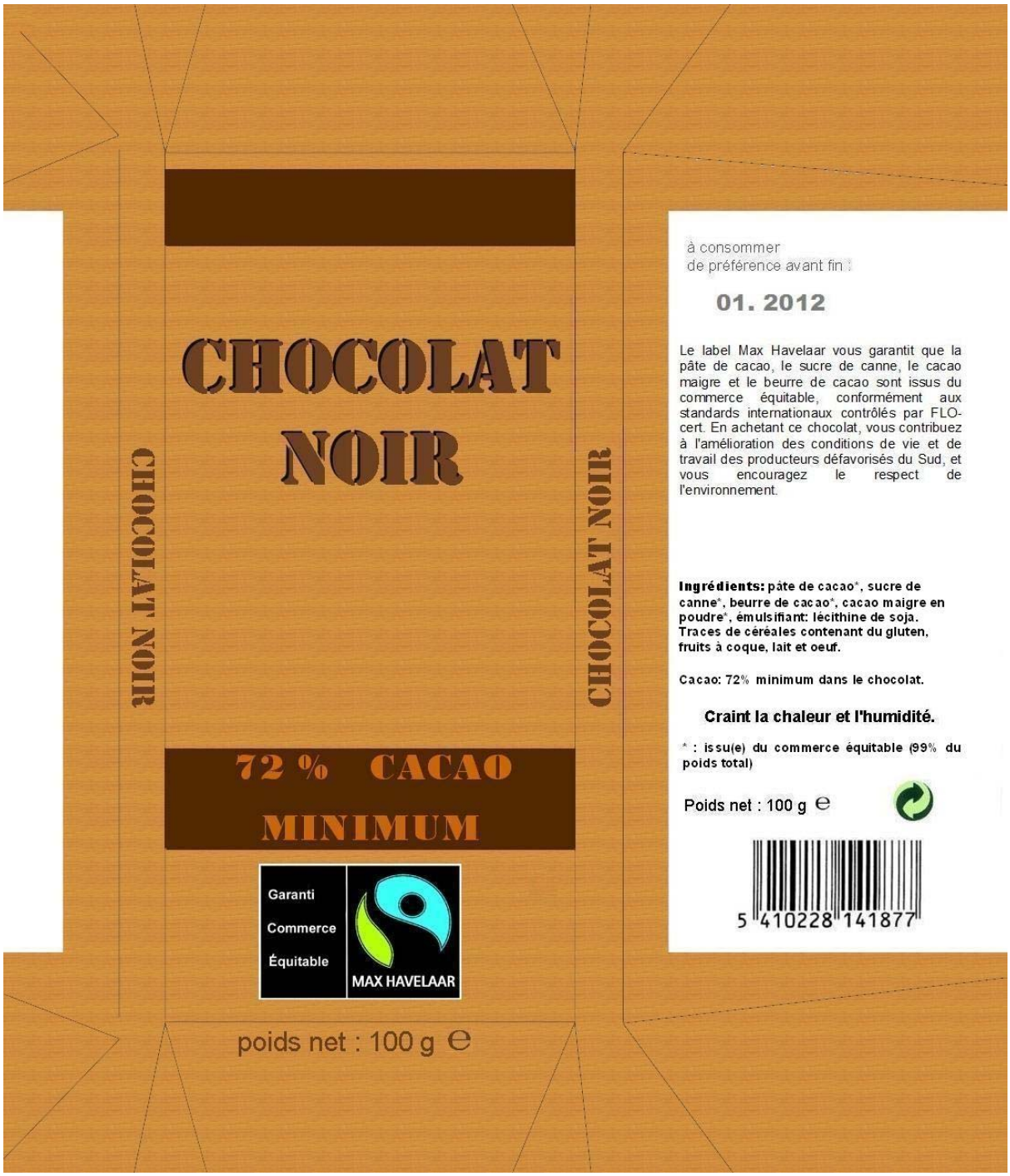
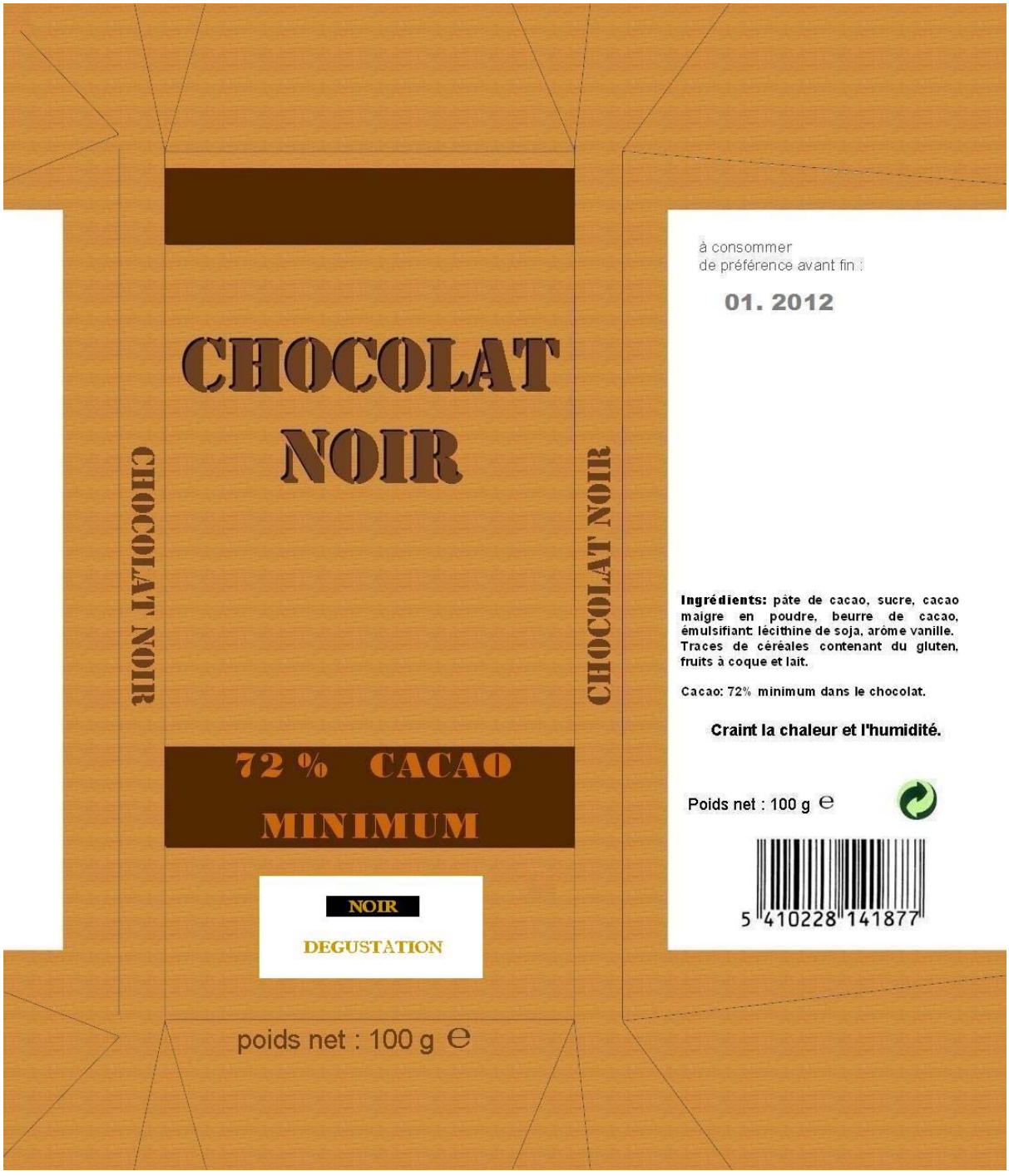
Appendix A. Chocolate ingredients and wrapper

Fair-trade chocolate



Normal chocolate



Appendix B. Pictures of the experimental rooms

Pictures of the experimental room for the private treatment

Pictures of the experimental room for the public treatment

Appendix C. Additional Tables of Results

TABLE C1 – THE IMPACT OF EXPECTATIONS AND TREATMENTS: WTP FOR *NORMAL* CHOCOLATE

Technique	(1) OLS	(2) OLS	(3) OLS-FE	(3') OLS	(4) OLS-FE
Public Treatment	-0.482*	1.065**		0.224	
	(0.259)	(0.465)		(0.201)	
Stage	-0.279			-0.051	
	(0.253)			(0.196)	
Public Treatment × Stage	0.126			0.025	
	(0.365)			(0.282)	
Expected premium		-0.181	0.180		0.094
		(0.144)	(0.120)		(0.122)
Expected premium × Public Treatment		0.070	-0.215		-0.147
		(0.192)	(0.143)		(0.148)
Expected WTP_N		0.907***	0.582***		0.456***
		(0.076)	(0.051)		(0.068)
Expected WTP_N × Public Treatment		-0.367***	-0.094		-0.110
		(0.120)	(0.086)		(0.111)
Expected market premium					0.256**
					(0.127)
Expected market premium × Public Treatment					-0.288
					(0.214)
Expected market price for *Normal* chocolate					0.282**
					(0.112)
Expected market price for *Normal* chocolate × Public Treatment					0.224
					(0.195)
Other control variables: hedonic scores, sex, age and education					
N	220	220	110	220	110
R^2	0.100	0.511	0.647	0.083	0.704

Notes: The dependent variable is WTP_D except in (3') where it is the residuals (including the fixed effects) from regression (3); standard errors in parentheses; *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

TABLE C2 – THE IMPACT OF EXPECTATIONS AND TREATMENTS: WTP FOR *FAIR TRADE* CHOCOLATE

Technique	(1) OLS	(2) OLS	(3) OLS-FE	(3') OLS	(4) OLS-FE
Public Treatment	0.142	1.048*		0.166	
	(0.334)	(0.614)		(0.261)	
Stage	-0.348			-0.080	
	(0.327)			(0.256)	
Public Treatment × Stage	0.084			-0.039	
	(0.470)			(0.368)	
Expected premium		-0.824***	-0.209		-0.125
		(0.232)	(0.187)		(0.197)
Expected premium × Public Treatment		0.727**	-0.004		0.048
		(0.300)	(0.223)		(0.235)
Expected WTP_{FT}		1.042***	0.652***		0.481***
		(0.101)	(0.069)		(0.094)
Expected WTP_{FT} × Public Treatment		-0.292*	0.037		0.021
		(0.158)	(0.118)		(0.154)
Expected market premium					-0.122
					(0.213)
Expected market premium × Public Treatment					-0.388
					(0.359)
Expected market price for *Fair Trade* chocolate					0.388**
					(0.155)
Expected market price for *Fair Trade* chocolate × Public Treatment					0.210
					(0.272)
Other control variables in OLS regressions: hedonic scores, sex, age and education					
N	220	220	110	220	110
R^2	0.100	0.511	0.647	0.083	0.704

Notes: The dependent variable is WTP_{FT} except in (3') where it is the residuals (including the fixed effects) from regression (3); standard errors in parentheses; *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.