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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 favor the consumption of fair-trade products? Social interactions can alter purchase behaviors by triggering either self-image concerns (when one observes others' decisions without being observed) or social-image concerns (when everybody observes everyone). A laboratory experiment is designed to identify separately the role of these motivators, using real auctions for a standard and a fair-trade chocolate, and controlling carefully for taste and package differences. The willingness-to-pay (WTP) for the chocolates and the premium that the subjects grant to the fair-trade variety are analyzed. The results reveal that both social and self-image matter: the subjects give a higher premium to the fair-trade chocolate when their decisions are made public; the premium is adjusted according to the information that is received about the premium granted by other subjects, even when decisions remain private. However, the higher premium in public auctions is obtained through a decrease in the WTP for the standard chocolate, rather than an increase in the WTP for the fair-trade chocolate. In addition, the subjects are much more sensitive to information about others' choices that relax the moral or social norm constraining their own choices. We thus conclude that social interactions cannot be used to nudge consumers into fair-trade consumption, at least for ordinary products such as chocolate.

JEL Codes : C91, D03, D12, Q01

Keywords : Fair-trade, Image motivation, 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 therefore securing and improving their living conditions over the long-term.[2] Fair-trade organizations are thus engaged actively in the conversion of economies to sustainable practices. However, their success crucially depends on people's willingness to change their consumption habits, especially for every day and quite ordinary products. This paper asks whether social interactions can boost such changes, by increasing the consumers' willingness-to-pay (WTP) for standard vs. fair-trade chocolates and, ultimately, the premium granted 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, FLO etc.). Hence, consuming a fair-trade product may be seen as an indirect donation to farmers in developing countries or as a commitment to pay the fair price for their labor. We here focus on chocolate, as fair-trade chocolates have appeared on the shelves since a long-time. Yet, their market share remains low (under 2% in France according to Kantar WorldPanel, 2009). However, some leading firms in this sector

[1] This issue is mentioned in the Maastricht and Amsterdam Treaties that marked important steps in the process 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 3 to 14 June 1992. A report of the World Commission on Environment and Development proposed a landmark definition of sustainable development as a *"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) recently suggest the development in agricultural economics of the consideration of non-monetary and psychological motives to analyze consumers' decisions regarding food purchases. In a different setting, Jacquemet et al. (2011) and Norwood and Lusk (2011) emphasize the role of the social context on consumers' purchases decisions.

have announced efforts to commit to fair trade.[4] Their chocolate products are present in bars, drinks and confectionaries sold in public sphere settings, such as cafeteria, vending machines or cinemas. In these contexts, consumers may care about others' perceptions when they make their own decisions.

This is the case when decisions are partly driven by a social image concern. The latter refers to the desire to signal to others that we are good people, or to conform to some standard of behavior defined as appropriate by society or by the community. If fair-trade consumption is seen as "good", then an increase in the WTP premium for the fair-trade chocolate is expected when consumption choices are public. The empirical literature on donations to NGOs has already found such pattern (Andreoni and Petrie 2004, Harbaugh 1998, Rege and Telle 2004, Reinstein and Riener 2012). Social interactions may also affect consumption choices through a self-image concern. This refers to the feeling of pride from seeing ourselves as doing "good" *by comparison with others*. It may also refer to a desire to avoid the guiltiness associated to "bad" actions, which is arguably attenuated if others also do the "bad". Self-image motivations imply that the WTP premium for fair-trade products are affected by private information about others' choices, even if the individual's own WTP premium remains unobserved by others. Several empirical studies have validated this prediction using donations to NGOs: individual donations increase with others' donations even when choices remain private decisions (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 coffees made from fair-trade beans when they are informed that the market share for these goods is large.[5] In the same vein, Allcott (2011) use data from a field experiment on energy

[4] Cadbury has been the first mover, announcing its plans to achieve Fair Trade in March 2009. More recently, Mars followed the lead by managing to get certification by the Fairtrade Foundation for some of its products. Of course, the leadership 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.

[5] Their study differs from the current one in several aspects. First, they use a choice experiment *without* monetary incentives to identify the effect of information. The attributes that vary between the hypothetical

conservation to show that providing households with the average electricity consumption in their neighborhood has a negative effect, which is significant only for households whose consumption was high before the treatment. This use of self-image motivations is sometimes coined as "nudge" in the literature, as public policies can use it to influence surreptitiously consumer choices.

We experimentally test the relevance of image concerns for food choices. This has never been done in the case of real and quite ordinary food products. We have designed a laboratory experiment to identify separately the impact of social and self-image. We use incentive compatible Becker-DeGroot-Marschak (BDM) auctions (Becker *et al.* 1964) to elicit consumers' WTPs for a standard and a fair-trade chocolate in a 2 x 2 design, with two treatments and two stages in 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 other participants at the end the session. In both treatments, however, the subjects made all their decisions in private. A comparison between the treatment outcomes thus identifies the impact of social image concern. In each treatment, and for each product, the consumers' WTP is elicited in a first stage without and then, in a second stage, after having been provided with an additional piece of information about others' WTPs. We test for self-image concern by identifying the effect of a change in subjects' beliefs about other participants' behavior, due to the informational shock they received, on their change in the WTPs for both chocolates, and their difference. The latter measures the WTP premium for the fair-trade chocolate. A comparison between the first stage and the second stage in the private treatment thus identifies the impact of self-image concerns.

The experiment reveals that social image and self-image concerns have both a significant impact on consumer choices. The participants give a higher WTP premium to the fair-trade

varieties were the shares of green and fair-trade beans, and the price. Second, the treatments were the information about the market share of the greener variety, not the choice of other participants.

chocolate in comparison to the degustation chocolate when their decisions are made public. This increase is mainly due to a decrease in their WTP for the degustation chocolate, which can be interpreted as a cheap way of signaling pro-social preferences or showing conformity. The participants also adjust their WTPs when their expectations about others' WTPs vary, as a consequence of the information shocks. Changes in expectations have an impact on the WTPs for both chocolates, and on the WTP premium, which shows that self-image motivations are of some importance. However, individual reactions to information are asymmetric, as the downward impact of a decrease in the expected average WTPs and WTP premium of others is much more important than the upward effect of an increase. Consumers are more reactive to a relaxation than to a strengthening of the expected standard of behavior. These results imply that, while image concerns are important motivators of consumer choices, the scope for using them to "nudge" people into fair-trade consumption is 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 as well as the experimental procedures. Section 3 describes and analyzes the experimental evidence. Section 4 discusses the interpretation of the results and 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 at altering choices is conditioned by the existence of pro-social values in society, that is: a 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 "improving the well-being of producers", "protecting children from exploitation", "promoting justice and human rights", etc. (Moore 2004). We can take the existence of positive market price premiums for and positive attitudes toward fair-trade products as evidence that these values are shared by fair-trade consumers (Ozcaglar-Toulouse *et al.* 2006). The term "image concerns" then captures the rule of these values in utility at the moment of choosing to purchase a fair-trade product or not.

Individuals may face a direct utility cost of taking decisions that are inconsistent with such values. The latter have then a normative power that creates behavioral norms. This normative effect is often modelled by assuming that an individual's preferences over one's 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 that share the same social identity (Akerlof and Kranton 2000, Akerlof and Kranton 2010). When individuals face a direct utility cost of deviating from mainstream decisions, there is a clear incentive to stick to 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 the feelings of shame and guilt at the prospect of doing the "bad" (Elster 1989). Shame is associated to a deterioration of one's social image, while guilt is associated to a deterioration of one's self image (Elster 2009). These norm-compliance motivations eventually generate conformity effects.

A recent strand of the literature has proposed an explicit psychological mechanism through which values affect choices, and others' choices produce conformity effects. The key assumption is that actions can be used to signal, at some cost, personal adhesion to values. In public sphere settings, consumers may then choose strategically costly actions to signal that they have pro-social and altruistic preferences signalling 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 self-image: this is not just cheap-talk about ourselves, but self-signalling (Akerlof and Dickens 1982, Bodner and Prelec 2003). Signalling motivations explain the emergence of behavioral norms by the costs of being perceived or perceiving oneself as a "bad type".

In the case of continuous action variables, such as donations or WTP, one imagines well that being below some norm (or below the average) can be associated to a cost. However, what does happen when one is over the norm? Some individuals need distinction and prestige to achieve good social and self-images. Quest for distinction is a motivation for giving more than is required for just not being stigmatised or finding oneself "bad". In Akerlof (1997) or Clark and Oswald (1998), this is modelled by assuming that the average behavior and the individual's own behavior are substitutes in the utility function when the latter is higher than the former. An increase in the average behavior (e.g. the average donation) may produce a loss of distinction for those individuals who do better than the average. This decrease in utility corresponds to an increase in marginal utility. It pushes status- or esteem-seeking individuals to do still better. In Benabou and Tirole (2010)'s signalling model, individuals are also motivated to do better than the average, if the latter is low. However, if many individuals enter this competitive race for social- and self-image, then the average increases. Individuals under the average must then follow in order to preserve their image. This may favour the emergence of pro-social behaviors and behavioral norms in the long-term.

2.2. Hypotheses

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

standard product.

Whether choices are driven by signalling or norm-based motivations, social image concerns add to self-image concerns when consumption decisions are made public. Individuals should be willing to pay a higher premium for a fair-trade product relatively to an otherwise similar standard product. This is the first hypothesis we want to test:

Social Image Concern Hypothesis. Ceteris paribus, making decisions public increase the premium that consumers are willing to pay for a fair-trade product

When consumption choices are private, only self-image is at stake. Learning that others are willing to pay a lower premium for the fair-trade product may attenuate the negative feelings of not doing the "good" through a high premium. It also increases the self-signaling marginal returns of a higher premium for fair-trade products. Both effects imply that this premium is likely to decrease. Learning that others are willing to pay a higher premium should have the opposite effect: the premium should increase. Hence, private information may generate following behaviors, even without public exposure.[6] This can be used to test for self-image concerns.

Self Image Concern Hypothesis. Ceteris paribus, private information about others' WTP for a fair-trade product vs. a standard product affects decision. Revising upward one's expectations about others' WTP premium should increase one's own WTP premium.

[6] The perception of others may not matter when values crucially define one's social identity. For instance, the pro-social behavior of a priest is unlikely to change if everyone in the community starts to behave selfish.

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

Conformity-seeking Hypothesis. Ceteris paribus, conformity-seeking individuals should never increase their WTP premium if the latter was initially higher than their expectations about others' WTP premium.

In the following sections, we test these hypotheses experimentally. One key aspect of the experimental design is that it controls carefully for motivations other than social or self-image. More specifically, to ensure that the *Ceteris paribus* holds, we have carefully selected chocolates with very similar tastes, and we let the subjects taste the products before the experiment. *Pure altruism* as a motivation for subjects' decisions is eliminated, because all chocolate tablets have already been bought by the experimentalist. The subject is certain that a donation has already been made through the market price premium paid by the experimentalist: her own choice cannot affect the welfare of producers. In addition, the decisions are taken simultaneously: unlike the experiments designed by Reinstein and Riener (2012), the individuals cannot choose their actions in order to influence strategically the other participants.

3. The experiment

3.1. Design

The experimental design is constructed so as to test separately the Social and Self Image Motivation Hypotheses: it identifies the impact of social and self-image motivations on the consumers' WTP premium for a fair-trade chocolate relatively to a standard chocolate, carefully controlling for differences in taste and package. This is a 2 x 2 design where two treatments and two stages in each treatment are organized. We make a between comparison of subjects randomized in two treatments, and a within comparison of subjects between the two stages of each treatment.

Elicitation of the WTPs via a Becker-DeGroot-Marshack auction mechanism

We use Becker-DeGroot-Marschak (BDM) auctions to elicit subjects' WTP for fair-trade and degustation chocolates (Becker et al. 1964). This incentive-compatible method has already been used in previous empirical studies to elicit the 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 gives her reservation price, which is the maximum price she is ready to pay for the product. Then, the subject randomly draws a selling price in a price distribution that has been chosen by the experimentalist.[8] The subjects do not observe the price distribution but they know that it covers a certain range around the market prices. If the selling price that the subject has drawn is higher than her reservation price, then the subject

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

[8] The distribution has been chosen so as to be uniform on a segment that includes the market price of the product. The average price of three tablets of fair-trade chocolate in shops is respectively 4.20 Euro and 2.70 Euro for fair-trade and degustation chocolate. The random selling price is uniformly distributed, by discrete increments of 10 cents, between 2.70 Euro and 5.20 Euro for the fair-trade chocolate, and between 1.20 Euros and 3.70 Euros for the degustation chocolate, (the minimal bound is 1.50 Euro less than the market price and the maximal bound is 1 Euro more).

cannot buy the product. She pays nothing and gets nothing. If the selling price is lower than or equal to her reservation price, then the subject has to buy the product at the selling price that was drawn. This auction mechanism is incentive compatible, because: (i) it is common knowledge that decisions are going to have consequences for a real sale at the end of the experiment; (ii) each subject maximizes her expected utility only if she gives her true reservation price. If the subject indicates a price higher than her true reservation price, then she is at risk of paying more than she wishes, and her chances to buy the product at a price lower than her reservation price does not change. If she indicates a price lower than her reservation price, then she decreases her chances of buying the product at a price lower than her reservation price. It is thus in the subject's own interest to give her real reservation price.

The reservation prices are our measures of the subject's WTP for each product at each stage of each treatment. The subjects' WTP premium for the fair-trade chocolate is the difference between their WTPs for the fair-trade and the degustation chocolates. We do not directly ask subjects for their premium for the fair-trade chocolate in order to avoid desirability biases.

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

A preliminary tasting task

In a preliminary task, the subjects' hedonic preferences (taste) for the chocolates are elicited through blind tasting. The instructions (computerized and written) regarding this task were given to subjects as well as a sample of each chocolate. There is no packaging, but one chocolate is labeled as n°1 and the other is labeled as n°2. In half of the sessions, the

chocolate n°1 is the fair-trade chocolate and the chocolate n°2 is the degustation chocolate. This order is reversed for the other half of the sessions. The subjects have to indicate a hedonic score for each chocolate on an unstructured continuous scale, bounded between 0 and 10. In the subsequent two stages of the research treatments, the subjects cannot taste the chocolates and cannot know which chocolate was the n°1 or the n°2 during the preliminary tasting task. The latter is conducted to eliminate any uncertainty about the quality of the chocolates. 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 a between identification of social image concern

We use two experimental treatments to identify the specific impact of social image concern as compared to self-image concern. This is a between design: each subject has been (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 have been chosen to give a private or public atmosphere to the experiment.

In the *Private Treatment*, once subjects are in their cubicle, they never interact again until the end of the session. They read the instructions on their own. Then, the experimentalist checks whether all subjects have understood the BDM auction mechanism. Every subject writes down a fictitious reservation price for 5 kg apples and the experimentalist simulates the payment mechanism of the BDM auction. Each subject draws a selling price among a specific distribution for these apples, and the experimentalist checks that the subject understands correctly the outcome (paying the selling price or rejecting the bid). Once the experimentalist is sure that all subjects well understand the instructions, the experiment starts. There is first 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 100 g chocolate

tablets on their table. They cannot taste them.[9] The packaging of the tablets shows only the chocolate composition (the ingredients), the “best before” date, and the type of chocolate, i.e., degustation or fair-trade. Brands are hidden. The two tablets have the same packaging with the same colors. The only difference stems from the presence of a symbol indicating the type of chocolate, "Fair trade" or "Degustation", as in Tagbata and Siriex (2008). Appendix A provides pictures of the packages. Then, come the two stages of the experiments (to be defined below). Once all subjects have made their decisions in both stages, including the choice of their reservation prices (their WTPs), the experimentalist randomly chooses two subjects to make the die throws in order to select the relevant stage and chocolate for the realization of the auction. Finally, the subjects leave alternately the experimental room. Outside the room, each subject draws a selling price and then the sale of three chocolate tablets is realized or not, depending on the selling price that has just been drawn and the subject’s WTP for the relevant chocolate and stage. The subjects then leave the site. In the private treatment, the subjects do not communicate during the whole experimental session.

The *Public Treatment* is organized as the private treatment, except that there are additional social interactions beyond the information shock between the two stages, taking the form of public exposure. Once all subjects have read the BDM instructions, they are all seated around a table in the middle of the experimental room and make their fictitious decision about the price for 5 kg apples. The experimentalist simulates the payment mechanism of the BDM auction for each subject in front of all others. Once the experimentalist is sure that all subjects well understand the instructions, the subjects return to their cubicle and the experiment starts. The other difference with the private treatment is found at the end of the experiment. Once all subjects have completed the second stage, they are again seated around the table in the middle

[9] Subjects cannot taste the chocolates because we want to disentangle the effect of the "fair-trade attribute" (the label) on the subjects’ WTP premium from any other effect, mainly hedonic and sensory effects. The specific taste of each chocolate thus should not enter into account when subjects choose their WTP. Nevertheless, subjects may remember the hedonic scores they indicated for the two chocolates, which may affect the results. This is why we use these scores for robustness checks in the empirical analysis.

of the experimental room. One subject is then randomly chosen by the experimentalist to throw the die to select the relevant stage for the real sale. Whereas transactions are made in private in the private treatment, the experimentalist now writes on a white board each subject's WTP for each chocolate in the randomly selected stage of this public treatment. Each subject has to confirm her WTP, which renders her decisions clearly visible by other participants. Then, the experimentalist randomly chooses a subject to throw the die that selects the relevant chocolate for the realization of the auction. Each subject draws a selling price in front of all other subjects, for the selected chocolate. The purchase is then realized or not. When all transactions have been made, the subjects leave the site. The key point is that public exposure at the sale is common knowledge at the beginning of the experiment. The organization of the real sale at the end of the experiment has been explained in details at the beginning of the experiment, and the experimentalist has made sure that all subjects understand this point.

The comparison of subjects' decisions in the first stage between the Private and Public Treatments identifies the effect of social image concern on subjects' WTP premium for the fair-trade chocolate. This is our test of the *Social Image Concern Hypothesis*.

Two stages for a within identification of self-image concern

Each treatment has two stages, in which the WTP of each product is elicited. Between the two stages, each subject receives private information about other participants' WTP for both chocolates. Subjects know that there is going to be two stages, but they have no information about the second stage while completing the first stage.

In the first stage, *Stage A*, the subjects start by indicating their respective reservation prices for the degustation and the fair-trade chocolates. Once they have validated their decisions, they cannot change them anymore. After these decisions, which measure their WTP, they have to reveal their expectations about the average market prices of each chocolate ("prices in

shops"), and their expectations about the average reservation prices (WTP) of the other participants for each chocolate. The subjects can earn additional money if these expectations are close to the actual market prices and the actual average reservation prices.[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 in the set of the WTPs indicated by the other participants in Stage A, without further details. The information is strictly private: the participants cannot communicate and they cannot identify whose WTP it was.

In order to ensure that the difference between the subject's own WTP and the WTP she learns is large enough to generate a salient information shock, we separate the subjects into two groups after Stage A, according to whether they have provided a WTP higher or lower than the median WTP observed in this first stage. The participants, whose WTP is below or equal to the median, learn the second highest WTP in the session, while participants over the median learn the second 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 the degustation and the fair-trade chocolates. As in Stage A, subjects have then to indicate their expectations about the average market prices and the average reservation prices of the other participants at the end of Stage B.

In each stage we measure the subjects' expectations about the average WTP premium for the fair-trade chocolate of other participants by the difference between beliefs about the average

[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 rare. Nevertheless, Gächter and Renner (2010) show that belief accuracy is significantly higher when beliefs are incentivized .

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

of others' WTP for the fair-trade chocolate and the average of others' WTP for the degustation chocolate. This measures the 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. Hence, the information shocks can affect the subjects' WTP premium through their impact on beliefs about others' WTP premium, even when the 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 WTP premium between Stage A and B *in the Private Treatment*.

A self-image concern may also drive decisions in Stage A based on subjects' expectations about others' WTP premium. Nevertheless, these priors may be shaped by unobservable preferences that directly affect the WTP premium. For instance, a subject who is generous may exhibit 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 the expectations about others' premium: this will produce a negative bias on the estimated correlation between expectations and premiums, which invalidates our test of concern for self-image. Comparing subjects' WTP premium between Stage A and B, when decisions respond to an exogenous information shock, is a way to eliminate these biases.

We also elicit subjects' expectations of the market prices for the purpose of robustness checks. Indeed, market prices depend on (aggregate) consumers' preferences. This implies that the market premium for fair-trade chocolates is also likely to reflect the importance that consumers grant to fairness issues. Some subjects may thus consider the market premium as a piece of information for evaluating the premium that they ought to pay for the fair-trade chocolate. As the information shocks may also affect beliefs about the norm through changes in expectations about the market price, we will present results that control for the latter.

Last the *Conformity-seeking Hypothesis* is tested by examining the changes in WTP premium between the two stages, whatever the treatment, as a function of the initial expectations about others' premium and the changes in expectations. More specifically, distinction-seeking individuals who initially offered a premium higher than what they expect from the others must increase their WTP premium if they revise upward their expectations. This is not the case for conformity-seeking subjects.

3.2. Implementation: products, subjects and procedure

The products used in the experiment were assortments of three 100 g tablets of dark chocolate (72% of cocoa).[12] One product was a *fair-trade chocolate* labeled by Max Havelaar, while the other was a *degustation chocolate* with no label. The two chocolates have similar compositions (see Appendix A for the composition of each chocolate displayed on the packages). They were selected to be as similar as possible in taste.[13]

Hundred ten consumers of dark chocolate were recruited for the experiment. The recruitment questionnaire also provides information on their age, gender and level of education. The participants were aged from 23 to 70 years old, 56 were women, 62 obtained their high school diploma and 43 subjects never participated in any experiment, 42 participated in sensory experiments on food products and only 25 participated in economic experiments.

Twelve experimental sessions with between 7 and 11 subjects each have been conducted at the CSGA (Center for Taste and Food Consumption Sciences, INRA) laboratory in Dijon (France). Six sessions have been organized for each treatment: 57 persons participated in the

[12] We use an assortment instead of a single tablet to avoid having a low variance because of a small price per tablet.

[13] Before the experiment, five degustation and five fair-trade chocolates were blindly tasted by forty-five colleagues at INRA, including 31 trained specialists in the identification of food flavors. They had to indicate a couple of degustation and fair-trade chocolates for which they perceived the strongest taste similarity. We selected the two chocolates that received the highest similarity score in these evaluation tasks.

private treatment and 53 in the public treatment. Each session lasted approximately 90 minutes including transactions. Before the experiment, all participants received a mail 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 equal to 15 Euros. Then, the participants entered the experimental room and were randomly assigned a cubicle. The instructions regarding the BDM auction were displayed on the computer screen of each cubicle. They also had a paper version of these instructions.[14] The experiment started once all the participants correctly understood the incentive mechanism. They started with a preliminary tasting task, consecutively 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

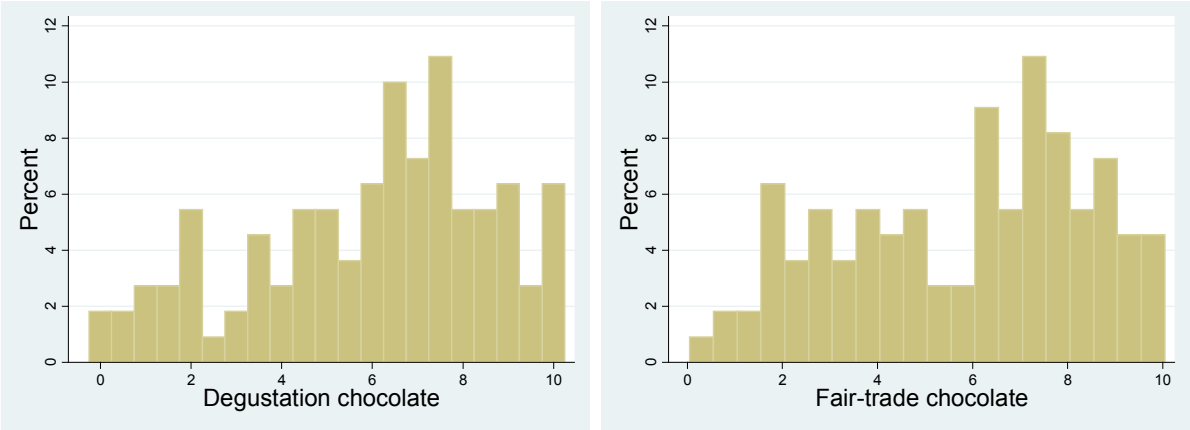
4.1. The preliminary tasting task: hedonic scores

The average hedonic score are respectively 5.985 for the degustation chocolate and 5.824 for the fair-trade chocolate. Figure 1 below presents the distribution of hedonic scores for the degustation and the fair-trade chocolates in both treatments. The distribution of hedonic scores is not significantly different between the chocolates (Wilcoxon signed-rank test: *p-value=0.463*). In the private treatment, the average hedonic score for the degustation (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 is still not rejected (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

[14] Written instructions are distributed as well to allow subjects to have a look at them while making their decisions in the BDM auctions.

between the products.

FIGURE 1 – ABSENCE OF TASTE DIFFERENCE



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

Further, the hedonic scores are not significantly different between the participants in the private treatment and the participants in the public treatment, whatever the type of chocolate we consider (Wilcoxon rank-sum test: *p-value=0.506* when the chocolates are pooled, *p-value=0.230* for the degustation chocolate, *p-value=0.804* for the fair-trade chocolate). Hence, for each product, there are no significant hedonic differences between the treatments. As the two chocolates attract similar hedonic judgments, differences in taste are unlikely to explain any potential differences in WTPs that would be observed between the chocolates in a given treatment and stage, or between the treatments for a given chocolate and a given stage. The two chocolates only differ by the fair-trade attribute, which is signaled by the Max Havelaar fair-trade label.

4.2. Social Image Concern

The effect of concern for social image is identified by comparing the subjects' WTP premium for the fair-trade chocolate relatively to the degustation chocolate, in Stage A, between the

private and the public treatments. Table 2 below presents 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 the subjects attribute to the fair-trade chocolate is the average of the individual differences between the WTP for the fair-trade chocolate and the WTP for the degustation chocolate. The variable $WTP_{A,D}$ indicates the average WTP in Stage A for the degustation chocolate while $WTP_{A,FT}$ stands for the fair-trade chocolate. The last line reports the p-value of a Wilcoxon rank-sum test of the absence of differences between the treatments.

TABLE 1 – SOCIAL IMAGE CONCERN

	$Premium_A$	$WTP_{A,D}$	$WTP_{A,FT}$
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 premium and WTPs by treatment and the Wilcoxon rank-sum tests of equality between treatments.

In both treatments, the subjects grant a significantly positive premium to the fair-trade chocolate relatively to the degustation chocolate in both treatments (Wilcoxon signed-rank test: *p-value* < 0.001 in both treatments).[15] This confirms previous results from experimental studies on the WTP for fair-trade and standard chocolates (Tagbata and Siriex 2008).[16] However, the WTP premium granted to the fair-trade chocolate is significantly higher in the

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

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

public treatment than in the private treatment (*p-value = 0.040*): social image concerns have an impact on subjects' WTP for ordinary consumption goods such as chocolate. This validates the *Social Image Concern Hypothesis*.

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

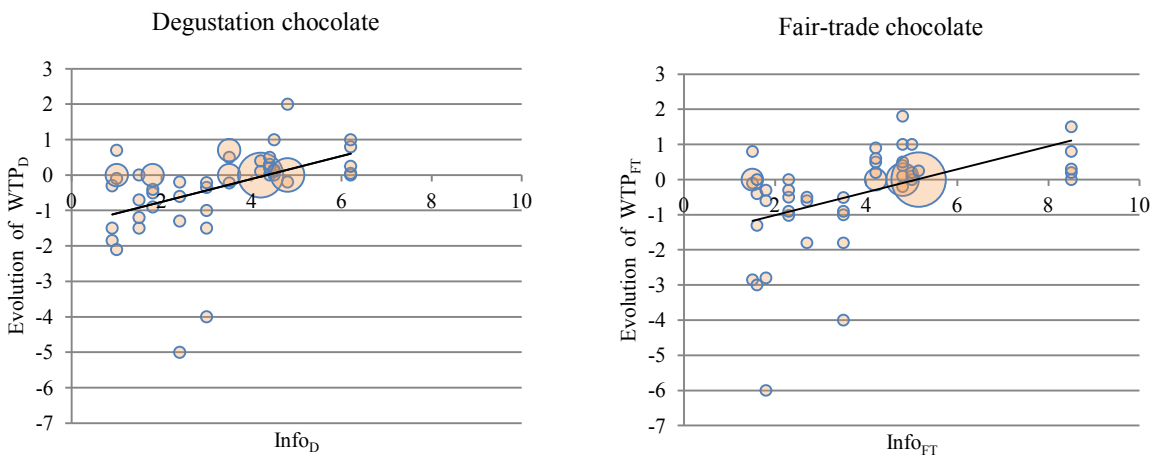
4.3. Self-image concern

The specific role of a concern for self-image is identified by examining changes in subjects' WTP premium for the fair-trade chocolate between Stage A and B, in the Private Treatment, as a function of the information shock subjects received. At the beginning of Stage B, the participants learned the WTP of another subject in the session in stage A for the degustation chocolate, $Info_D$, and for the fair-trade chocolate, $Info_{FT}$. Figure 2 presents the changes in individual WTP between stage A and stage B for each chocolate as a function of these information shocks. For the degustation chocolate, this change is noted $\Delta WTP_D = WTP_{B,D} - WTP_{A,D}$; for the fair-trade chocolate: $\Delta WTP_{FT} = WTPB_{B,FT} - WTP_{A,FT}$.

[17] A small theoretical model (available upon request) shows indeed that, if the price distributions of the BDM auctions are uniform and known by the subjects, it is optimal for the subjects to decrease their WTP for the degustation chocolate and increase their WTP for the fair trade chocolate by the same magnitude. Here, the price distributions are not known, and loss aversion may explain that the public treatment has more impact on the WTP for the degustation chocolate.

Figure 2 clearly reveals that the subjects' change in WTP is positively correlated with the information shock, for both chocolates. Spearman correlation tests show that these correlations are strongly significant (Spearman correlation test for the degustation chocolate, *r=0.614*, *p-value<0.001*; for the fair-trade chocolate, *r=0.577*, *p-value<0.001*). Hence, the subjects take into account the behavior of others when determining the product value, even when they know that their decisions are private.[18]

FIGURE 2 - EFFECT OF INFORMATION SHOCKS



Notes: This figure shows the evolution of individuals WTPs as a function of information shocks. The size of bullets represents the number of observations, with the biggest bullet representing 4 subjects for the degustation chocolate and 5 subjects for the fair-trade chocolate. On each graph, the dark line represents the linear trend in the data. Its equation is $\Delta WTP_D=0.3242\times Info_D-1.4026$ for the degustation chocolate and $\Delta WTP_{FT}=0.3268\times Info_{FT}-1.6649$ for the fair-trade chocolate.

As outlined in Section 3, the role of self-image concern is identified by examining the impact of changes in expectations about others' WTP premium on the individual's own WTP premium. We suppose that the participants first use the information shocks to update their expectations about the average WTP of other participants for each chocolate, and then use

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

these updated beliefs to form new expectations of the average WTP premium. Three cases are then identified: (1) expectations about others' WTP premium decrease between Stage A and B; (2) expectations are stable between Stage A and B; (3) expectations increase between Stage A and B. Self-image concerns should generate a decrease in subjects' WTP premium for the fair-trade product in case (1), a stagnation in case (2) and an increase in case (3).

Table 2 reports the average changes in WTP premium ($\Delta Premium = \Delta WTP_{FT} - \Delta WTP_{D}$) for each case, with the number of subjects given in the first column of results and the average variation in premium in the second column of results. The subjects' expectations about the average of other participants' WTP premium for the fair-trade chocolate is noted by E_A in stage A and by E_B in stage B.[19] A Wilcoxon signed-rank test is used to test whether the average variation in the WTP premium is significantly different from 0. The p-value is reported in the third column. A p-value higher than 0.05 indicates that the variation is not significantly different from 0 at the 95% level of confidence.

TABLE 2 – EFFECT OF SELF-IMAGE CONCERN

	# 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 premium between stages A and B, in the private treatment, as a function of the direction of the change in expectations about others' premium.

[19] More formally, let E_s be the individual expectation about others' WTP premium 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 In this equation, the first term on the righ-hand side is the individual expectation about others' WTP for the fair-trade chocolate, while the second term is the expectation regarding others' WTP for the degustation chocolate. Both expectations are measured at each stage just after the BDM auction (see Section 3.2).

The subjects modify significantly their WTP premium for the fair-trade chocolate only when their expectations about others' WTP premium decrease between Stage A and Stage B (Wilcoxon signed-rank tests: when $E_B < E_A$, *p-value =0.020*). Additional statistics reveal that, for these subjects, ΔPremium is negative because they lowered more their WTP for the fair-trade chocolate than their WTP for the degustation chocolate. On average, in Case 1, ΔWTP_D equals -0.422, whilst ΔWTP_{FT} equals -0.639. An increase in expectations of others' WTP premium has much less effect than a decrease in expectations, with the magnitude of variations being statistically different (Wilcoxon rank-sum tests: *p=0.015*).

The subjects modify significantly their decisions only when the information shocks relax the constraint on preferences and choices generated by the expectations about the average behaviors in the group, i.e. when the monetary costs of "being good" decrease. Hence, self-image concerns may be of some importance for the consumption of fair-trade products, but only because they refrain subjects from being less generous, not because they push them to be more generous. They act as behavioral inhibitor rather than devices that may nudge people into generosity.

4.4. Conformity vs. distinction

The *Self-Image Concern Hypothesis* is partially validated because the individuals tend not to increase their WTP premium when they revise upward their expectations. This may be due to the simultaneous presence of conformity-seeking and distinction-seeking individuals in this subgroup of subjects. To examine this issue, Table 3 computes the mean change in the WTP premium according to whether or not: (i) expectations about others' premium have increased; (ii) the premium was higher than expectations in Stage A. The treatments were pooled to increase the number of observations for each situation. The *Conformity Seeking Hypothesis*

implies that the mean change in the last line must be null or negative: the conformists who are already above what they consider as the normal behavior (their expectations about other's premium) have little reason to increase their WTP premium when they revise upward their expectations.[20] Table 3 shows that the data do not reject this hypothesis. The individuals who initially offered a WTP premium higher than their expectations about others, lower significantly the premium only when they revise downward their expectations (Case 1, second line: -0.678 euro, significant at level of 1%). When they revise upward their expectations, they do not alter significantly their premium (Cases 2 and 3, last line: -0.148 euro, not significant at level of 10%). The experimental results thus suggest that the quest for distinction is not an important driver of choices.[21]

TABLE 3 – DISTINCTION- VS. CONFORMITY-SEEKING

	# 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 WTP premium between stages A and B, as a function of the direction of the change in expectations about others' WTP premium, 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 under the norm. We cannot enter in such details here due to a lack of observations: all statistics are insignificant.

[21] The conformists who initially offered a WTP premium lower than their expectations about others are unlikely to decrease their WTP premium in the case of downward revisions of expectations, if their initial choice gets closer to their expectations, which increases the utility of social interactions (remember that all purely private sources of utility are controlled). This is what we find if we focus on the individuals who are initially under their expectations about others and for whom the downward revision is not so large that they remain below the norm: the mean change in WTP premium between stage A and B = 0.021, not significant at the level of 10%. However, when the downward revision of expectations is so large that these expectations fall under their initial premium choice, the participants choose a significantly lower WTP premium in Stage B (with a decrease of -0.397 euro). This reaction is compatible with both the Distinction- and Conformity-seeking hypotheses.

5. Robustness analysis

The previous section has uncovered evidence that self- and social image concerns play a role in consumer choices. Table 4 below presents additional robustness checks, using regressions that control for several individual characteristics: gender, age, education (whether subjects have a baccalaureate), and their hedonic scores. In all specifications, except (3'), the dependent variable is the premium granted by the individual to the fair-trade chocolate. Tables C1 and C2 in Appendix C propose similar regressions, but use respectively the WTP for the degustation chocolate and the WTP for the fair-trade chocolate as dependent variables.

Specification (1) essentially replicates the main result in Table 1. The public treatment increases the premium by 0.623 Euro, after controlling for the stage effect and the cross-effect of public treatment and stage. Specification (1) of Table C1 confirms that this is due to a lower WTP for the degustation chocolate in the public treatment (-0.482 Euro).

Specification (2) of Table 4 replaces the controls for the stage effect and the cross-effect of treatment and stage, which were not significant in specification (1), by four expectation variables: the expectation about others' WTP premium (*Expected premium*), constructed as in Section 3.3; the expectation about others' WTP for the degustation chocolate (*Expected* WTP_D); and their interactions with the public treatment dummy. The expectations about others' WTP premium have a positive and significant impact, which is larger in public treatment: a variation of one euro in expectations results in a change of 0.763 Euro in the public treatment as against 0.398 in the private treatment (0.365+0.398=0.763 Euro vs. 0.398 Euro). The latter is significant at the level of 1%, which proves the role of self-image concerns. However, the expectations of others' behavior may be determined by unobserved preferences that also affect one's own choice. Generous people may be over-optimistic, and believe that the others are as generous as they themselves are: this will produce a positive bias on the estimated effect of expectations. As a consequence, specification (3) controls for fixed

unobserved heterogeneity by analyzing the impact of changes in expectations on changes in premium.[22] In these fixed-effect estimations (OLS-FE), the impact of expectations is attenuated, but it remains significant. A one euro variation in expectations about others' WTP premium increases individual premium by 0.264 Euro in the private treatment, and 0.248+0.264=0.512 Euro in the public treatment. With these estimates in hand, one can then compute the part of the premium that is not explained by individual variations in expectations, i.e. the residuals. These are regressed in specification (3') against the treatment dummy and the other control variables. The impact of the public treatment is insignificant (as in specification (2)), which shows that visibility impact decisions through expectations only. In a rational choice framework, this can be interpreted as evidence that expectations of 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 higher than those obtained through first-differences.

TABLE 4 – 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_D		0.135*	0.071*		0.025
		(0.073)	(0.041)		(0.059)
Expected WTP_D × 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 *Degustation* chocolate					0.106
					(0.098)
Expected market price for the *Degustation* chocolate × Public Treatment					-0.015
					(0.171)
Control variables: hedonic scores, sex, age, education					
N	220	220	220	220	220
R^2	0.089	0.286	0.432	0.025	0.443

Notes: Dependent variable: premium; except in (3') where the dependent variable is equal to 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.

The subjects' changes in WTP premium between the two stages may depend on the evolution of their beliefs about the average market premium in two cases: when the subjects perceive the market prices as providing clear indications about the premium one *ought* to give to fair-trade products; when there is loss aversion generating a fear of offering a price for the fair-trade chocolate much higher than the usual market price. The market premium would indicate the maximum premium it is worth giving to such products. Specification (4) tests for such effect, by adding to specification (3) the evolution of expectations about the market premium (and its interaction with the treatment dummy). This does not change our main results. The coefficients on the expected WTP of others for the degustation chocolate become insignificant, but they were significant at the level of 10% only in the previous regressions.

Tables C.1 and C.2 in Appendix C apply the same specifications to the WTPs for the degustation and the fair-trade chocolates. The estimates confirm that the subjects adapt to the public treatment by lowering the WTP for the degustation chocolate, instead of offering a higher price for the fair-trade chocolate. The estimations of specification (3) reveal that they react significantly to changes in expectations of the WTP of the products. Expectations of the premium seem to have no direct impact. However, one can note that, for the degustation 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%, Table C.1).

[23] In addition, these effects become significant when the fixed effect model is estimated in first-difference instead by applying a within transformation of the data. We have chosen to keep the more conservative estimates here.

TABLE 5 – ASYMMETRIC EFFECTS 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_D ↑	0.045	-0.013	0.048	0.088
	(0.084)	(0.096)	(0.083)	(0.172)
(Expected WTP_D ↑)× Public Treatment	0.119	0.124	0.023	-0.075
	(0.142)	(0.155)	(0.145)	(0.331)
Expected WTP_D ↓	0.067	0.017	0.015	0.291**
	(0.049)	(0.062)	(0.045)	(0.112)
(Expected WTP_D ↓)× Public Treatment	0.081	0.076	0.009	-0.062
	(0.084)	(0.107)	(0.123)	(0.143)
Control for expectations of the market prices	No	Yes	No	No
N	110	110	70	40
R^2	0.534	0.549	0.446	0.780

Notes: Dependent variable: Premium; all equations estimated in OLS FE; Expected premium ↑(↓) = the expectations about others' premium increase (decrease); Standard errors in parentheses; *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level

Section 4.3 has outlined the asymmetry of responses to changes in expectations. In Table 2, only downward revisions of expectations (Case 1) were associated to a premium variation in the private treatment. The variation was not significant in the case of upward revisions (Case 3). This asymmetry may be produced by differences in the magnitude of changes in expectations between Case 1 and Case 3, i.e. negative information shocks might have been systematically larger than positive information shocks. Table 5 estimates additional specifications: they are similar to specification (3) in Table 4, except that the changes in expectations are separated according to whether expectations increase (↑) or decrease (↓). In the first column of results, the expectations about the market price of the degustation chocolate and the market premium are not controlled, while we do so to produce the second column of results. The results clearly show that the effect of a downward revision of expectations is much stronger in magnitude than the effect of an upward change. The latter is not significantly different from 0. The elasticity of the premium to a downward change in expectations almost doubles in the public treatment (0.352 in the private treatment vs. 0.352+0.447=0.799 in the public treatment). To confirm the validity of the *Conformity-seeking Hypothesis*, the last two columns of results split the sample according to whether the individual offered a premium lower than her expectations at stage A (Column 3, N=70 individuals) or higher (Column 4, N=40 individuals). In Column 4 ($Premium_A > E_A$), an increase in expectations of other's premium is not associated to an increase in own premium, which shows that individuals tend to seek conformity rather than distinction.

6. Conclusion

A number of experiments have revealed that social image concerns are an important motivation for engaging in pro-social behavior. Individuals are more likely to engage in activities or decisions such as voting, fire-volunteering activities, blood giving, 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 work contributes to this literature, by revealing the role of social image concerns. However, this is obtained by a fall in the WTP for the standard product, rather than by an increase in the WTP for the fair-trade one: people want to achieve social acceptance and avoid the shame at the lowest cost. In addition, social interactions affect individual choices through self-image concerns. Getting information about what *ought* to be paid alter the premium paid for a fair-trade product when one is not observed. Last, the effect of image concerns is asymmetric, as subjects react much more strongly to information leading to a downward revision of the perceived standard of behavior. It seems easier to weaken a norm, than to strengthen it.

It has been suggested that fair-trade consumptions could be encouraged by proposing fair-trade products in public consumption contexts (cafeterias, vending machines at workplaces, local food markets) where people know each other, observe and are observed. We would expect strong effects of social pressure in these contexts. These findings cast some doubts on the relevance of norm-based nudges to favor fair-trade consumption in markets for ordinary products. Reducing the price gap between standard and fair-trade products remains the best means of favoring fair-trade consumption.

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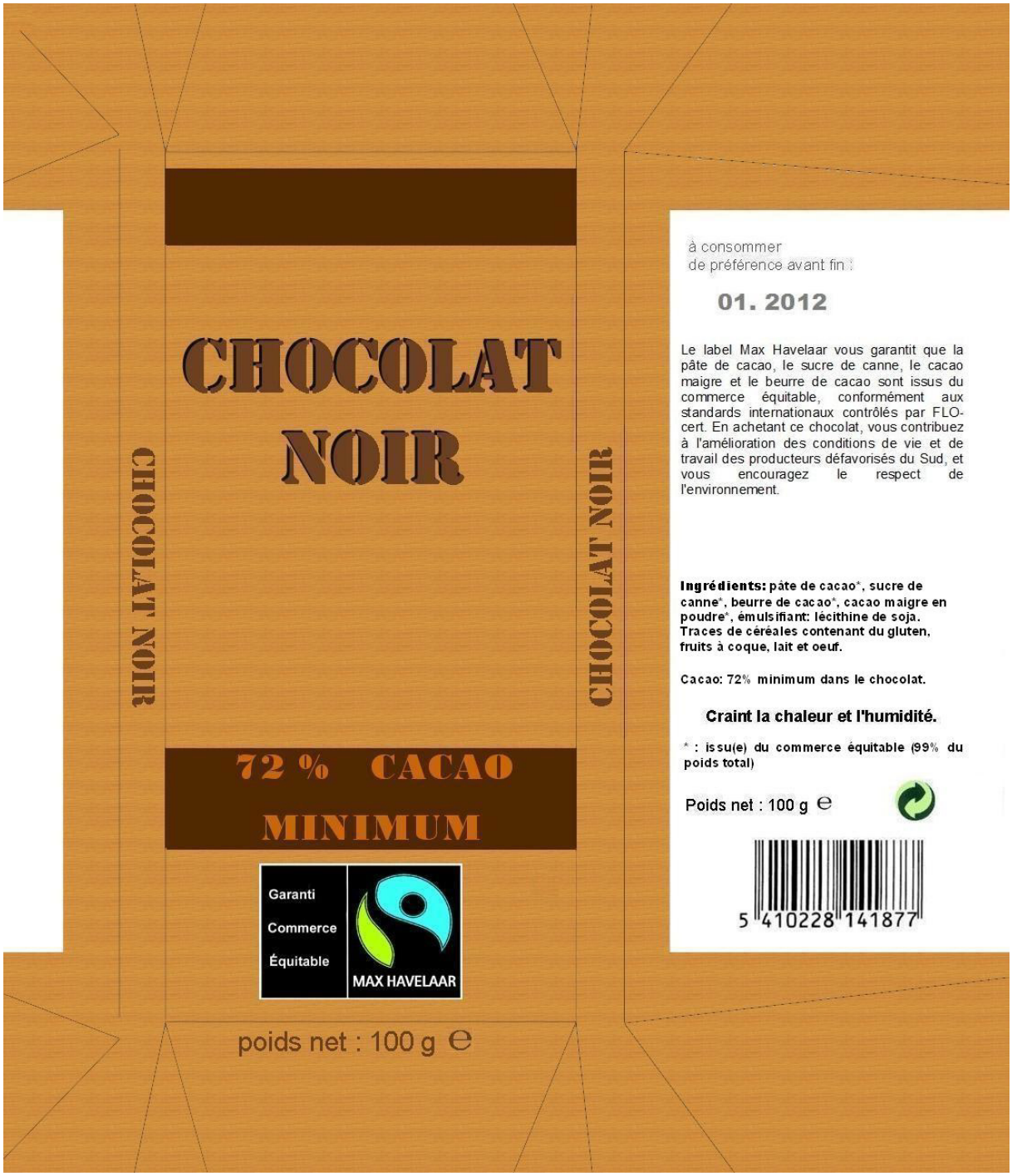
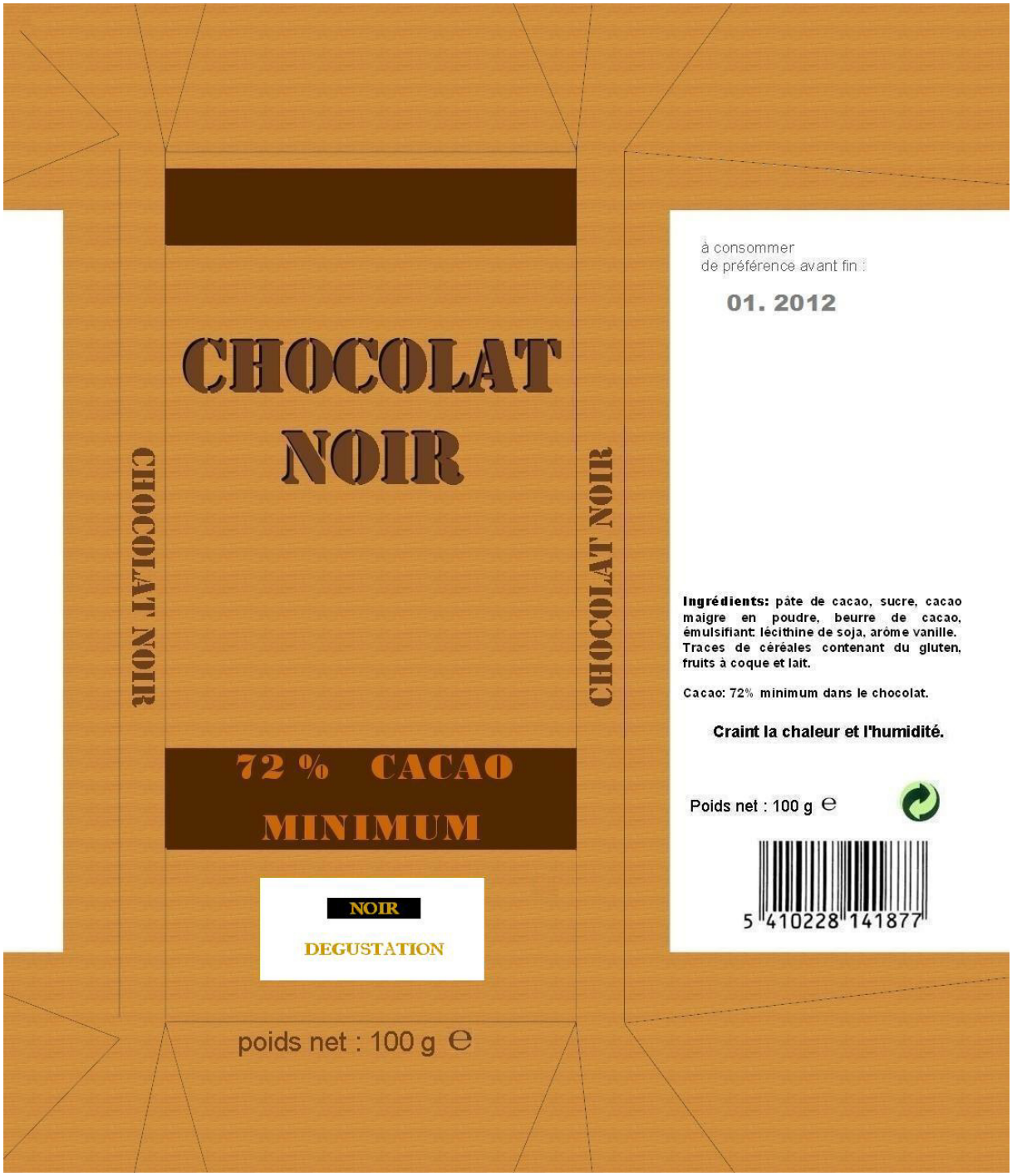
Appendix A. Chocolate ingredients and packaging

Fair-trade chocolate



Degustation chocolate



Appendix B. Pictures of 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 – IMPACT OF EXPECTATIONS AND TREATMENTS, WTP FOR THE *DEGUSTATION* 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_D		0.907***	0.582***		0.456***
		(0.076)	(0.051)		(0.068)
Expected WTP_D × 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 the *Degustation* chocolate					0.282**
					(0.112)
Expected market price for the *Degustation* chocolate × Public Treatment					0.224
					(0.195)
Control variables: hedonic scores, sex, age, education					
N	220	220	110	220	110
R^2	0.100	0.511	0.647	0.083	0.704

Notes: Dependent variable: WTP_D; except in (3') where the dependent variable is equal to 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.

TABLE C2 – IMPACT OF EXPECTATIONS AND TREATMENTS, WTP FOR THE *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 the *Fair Trade* chocolate					0.388**
					(0.155)
Expected market price for the *Fair Trade* chocolate × Public Treatment					0.210
					(0.272)
Control variables in OLS regressions: hedonic scores, sex, age, education					
N	220	220	110	220	110
R^2	0.100	0.511	0.647	0.083	0.704

Notes: Dependent variable: WTP_{FT}; except in (3') where the dependent variable is equal to 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.

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