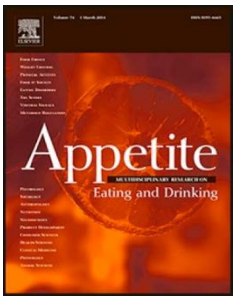
Accepted Manuscript



Title: Savouring morality: moral satisfaction renders food of ethical origin subjectively tastier

Author: Boyka Bratanova, Christin-Melanie Vauclair, Nicolas Kervyn, Sandy Schuman, Robert Wood, Olivier Klein

PII: S0195-6663(15)00145-2
DOI: http://dx.doi.org/doi:10.1016/j.appet.2015.04.006
Reference: APPET 2512

To appear in: *Appetite*

Received date: 3-2-2014
Revised date: 21-11-2014
Accepted date: 1-4-2015

Please cite this article as: Boyka Bratanova, Christin-Melanie Vauclair, Nicolas Kervyn, Sandy Schuman, Robert Wood, Olivier Klein, Savouring morality: moral satisfaction renders food of ethical origin subjectively tastier, *Appetite* (2015), http://dx.doi.org/doi:10.1016/j.appet.2015.04.006.

Savouring morality:

Moral satisfaction renders food of ethical origin subjectively tastier

Boyka Bratanova[1,2*], Christin-Melanie Vauclair[3], Nicolas Kervyn[4,5], Sandy Schuman[6], Robert Wood[7], and Olivier Klein[1]

[1]Research Centre for Social and Intercultural Psychology, Université Libré de Bruxelles, Bruxelles, Belgium

[2]Dundee Business School, Abertay University, Dundee, UK

[3] Instituto Universitário de Lisboa (ISCTE-IUL), Cis-IUL, Lisboa, Portugal

[4]Center Emile Bernheim, Solvay Brussels School of Economy and Management, Université Libré de Bruxelles, Bruxelles, Belgium

[5]Louvain School of Management, Catholic University of Louvain, Louvain-la-Neuve, Belgium

[6]Centre for the Study of Intergroup Conflict, University of Oxford, UK

[7]Centre for Ethical Leadership, Ormond College, University of Melbourne, Australia

*Correspondence to be addressed to Boyka Bratanova, Dundee Business School, Abertay University, Bell Street, Dundee, Scotland, DD1 1HG. Email: b.bratanova@abertay.ac.uk, Phone: + 44 1382 308 670

Highlights

- Buying and consuming food of ethical origin brings about moral satisfaction
- Moral satisfaction renders the taste of ethical food subjectively superior
- This superior taste positively predicts intentions to buy ethical food
- The enhanced tastiness may act as a reward mechanism for buying ethical food

Abstract

Past research has shown that the experience of taste can be influenced by a range of external cues, especially when they concern food's quality. The present research examined whether food's ethicality – a cue typically unrelated to quality – can also influence taste. We hypothesised that moral satisfaction with the consumption of ethical food would positively influence taste expectations, which in turn will enhance the actual taste experience. This enhanced taste experience was further hypothesised to act as a possible reward mechanism reinforcing the purchase of ethical food. The resulting *ethical food-> moral satisfaction-> enhanced taste expectations and experience-> stronger intentions to buy/willingness to pay* model was validated across four studies: one large scale international survey (Study 1) and three experimental studies involving actual food consumption of different type of ethical origin - organic (Study 2), fair trade (Study 3a) and locally produced (Study 3b). Furthermore, endorsement of values relevant to the food's ethical origin moderated the effect of food's origin on moral satisfaction, suggesting that the model is primarily supported for people who endorse these values. [174 words]

Key words: Ethics, Taste, Morality, Buying intentions, Fair trade, Organic food

The past two decades have witnessed a dramatic and global increase in consumers' demand for food of ethical origin. Since the establishment of the Fairtrade Labelling Organisation in 1997, the

market of fair trade products has spanned over 125 countries, reaching a value of 4.8 billion US dollars in 2012 (FairtradeInternational, 2013). Similarly, organic food is produced in almost all countries in the world (162 countries in 2011, cf. Willer & Lernoud, 2013), with the agricultural land dedicated to organic produce expanding threefold since the late 90s; in 2011 the value of the organic food market amounted to the remarkable 62.8 billion US dollars (Willer & Lernoud, 2013). In the same vain, consumers are showing increasing preference for locally produced food, largely due to its sustainability-related attributes (ATKearny, 2013; Day-Farnsworth, McCown, Miller, & Pfeiffer, 2009). While these statistics are a reason for celebration, they pose an intriguing question: What led to this incredible increase in people's appetite for food of ethical origin, despite its typically higher price? One obvious answer is a desire to contribute to good, moral causes, such as preserving the environment and helping producers from developing countries. Indeed, research has shown that moral considerations positively predict intentions to buy organic (Arvola et al., 2008) and fair trade (Shaw & Shiu, 2002) food.

If the morally motivated pursuit of pro-environmental and altruistic causes is a leading factor underpinning the increase in demand of food of ethical origin, then we should expect similar increase in other activities reaching the same ends. To put this proposition to test, we compared statistics from relevant sectors in the UK for the past ten years .In relation to ethical food consumption, the UK market share for organic food has shown a threefold growth (SoilAssociation, 2010); even more astonishingly, the consumption of fair trade food has increased more than 26 times (FairTradeFoundation, 2011). However, the uptake of other forms of pro-environmental behaviour has been rather modest in comparison (Defra, 2008); even engagement in recycling – one of the least costly and most heavily campaigned forms of pro-environmental behaviour in the UK – has increased at lower rates (235% vs. 300+% for organic food; Defra, 2011). Examinations of the trends in charity donations for overseas causes – a behaviour also supporting people in developing countries as the purchase of fair trade food – reveals that the levels remained largely unchanged over the past decade, both in percentage of donors and of the sums donated (UK Giving, 2011).

Thus, it appears that moral motivations alone are insufficient to explain the growth in sales of food of ethical origin.

What is it then that contributed to the unparalleled increase in demand for food of ethical origin? We propose that the operation of a possible reward mechanism – the subjective experience of this food's taste as superior – may complement the role of morality in sustaining and increasing people's appetite for it. To test this proposition, we designed the present research with a two-fold aim. Firstly, we examined whether food of ethical origin is experienced as subjectively tastier compared to food of conventional or unethical origin. If that was the case, we further sought to examine whether its subjectively superior taste may act as a reward mechanism, reinforcing subsequent buying intentions and willingness to pay a higher price.

Studying buying intentions is an efficient and frequently used way to gain an understanding about actual purchase behaviour, often with a fairly good degree of accuracy; for instance, in a meta-analysis of 87 behaviours, Sheppard, Hartwick, and Warshaw (1988) found a frequency-weighted average correlation between intentions and behaviour of .53. However, researchers have warned that behaviour may often diverge from stated intentions, especially with regard to ethical consumption where social desirability and contextual factors play a significant role (for a review, see Carrington, Neville, & Whitwell, 2010). Therefore, any findings obtained in research reliant on intentions as a proxy measure of behaviour should be interpreted with caution (cf. Ajzen, Brown, & Carvajal, 2004). Likewise, self-reported willingness to pay is an efficient and frequently used proxy measure of actual purchase behaviour (for a review, see McCluskey & Loureiro, 2003), which warrants caution in inferring real-world behaviour .

Taste as influential yet malleable embodied experience

Taste is one of the most important factors influencing consumers' food choice and purchase, often outweighing other important factors such as food's healthiness and price (Glanz, Basil, Maibach, Goldberg, & Snyder, 1998; Magnusson, Arvola, Koivisto, Hursti, Aberg, & Sjoden, 2001). And rather than being invariably determined by the food's chemosensory properties, the experience

of taste can be affected by a range of external cues (for a review, see Coppin & Sander, 2011). For example, customers evaluated the taste of restaurant food more favourably when it was described with appealing and evocative names than when it was described with standard names (e.g., Succulent Italian Seafood Filet vs. Seafood Filet; Satin Chocolate Pudding vs. Chocolate Pudding; Wansink, van Ittersum, & Painter, 2005). Furthermore, consumers reported experiencing the taste of food or beverage as superior when it was served in popular brand packages than when it was served unbranded or in less popular brand packages (McClure et al., 2004; Robinson, Borzekowski, Matheson, & Kraemer, 2007). Brand's familiarity has been also found to influence taste experience; consumers reported enjoying the taste of food or beverage more when it was served in packages of familiar (vs. unfamiliar) brands (Cova & Pace, 2006; Paasovaara, Luomala, Pohjanheimo, & Sandell, 2012).

In addition to documenting the influence of externally provided information (vs. observable food properties, such as colour, smell, or texture) on the subjective experience of taste, researchers have sought to examine how and why this influence occurs. Converging evidence from behavioural and neuro-imaging research points to the role of expectations as a mechanism through which external information influences gustatory experience (Chib, Rangel, Shimojo, & O'Doherty, 2009; Lee, Frederick, & Ariely, 2006; Plassmann, O'Doherty, Shiv, & Rangel, 2008; Siegrist & Cousin, 2009). Chib and colleagues (2009) and Plassman and colleagues (2008) have shown that the expectations created by external information are accompanied by activation in reward-related neural substrates, and is followed by higher self-reported ratings of subjective taste experience.

The external information provided in Chib et al.'s and Plassman et al.'s studies, as well as in most other studies demonstrating its effect on taste, seem to concern the product's quality; whether the food/beverage was described as succulent, its brand name was popular, its price was high, or experts evaluated it favourably, consumers were likely to infer the food or beverage was of high quality. Expecting to consume food or beverage of high quality in turn influenced the subjective taste experience.

How could information about the food's ethicality influence taste?

Information about the food's ethicality often bears little or no implications for its nutritional and gustatory quality (for example, in fair trade, locally produced, or rainforest-friendly food). Furthermore, although there are studies indicating that labelling food as of ethical origin may positively influence taste, the evidence remains inconclusive. For instance, in a study on consumers' evaluation of tomatoes the participants rated the taste of four sorts of tomatoes when each sort was presented as either conventionally or organically grown, or with no information (Johansson, Haglund, Berglund, Lea, & Risvik, 1999). The ratings tended to be higher when the consumers believed the tomatoes were organically grown, however, this finding was not consistent across the four sorts of tomatoes. In another study on taste evaluation participants in three conditions consumed the same kind of juice which was presented as either organic, fair trade, or conventional (Grankvist, Lekedal, & Marmendal, 2007). These authors did not detect a statistically reliable taste enhancement by the ethical label of the juice, either. Obtaining trends, but failing to detect a solid and reliable effect of food's ethicality on taste may be due to the operation of undetected intervening processes that link the food's origin to its (subjectively experienced) taste.

We propose that labelling food as of ethical origin can result in subjectively enhanced taste experience to the extent that consumers feel a sense of moral satisfaction from buying or consuming the food. The experience of moral satisfaction may further lead consumers to attribute more positive characteristics onto the food, including forming expectations for its superior taste. As outlined above, expecting to consume tastier food is likely to enhance the gustatory experience when the food is actually consumed. In short, we hypothesise that ethical origin and enhanced taste experience are linked by two sequential intervening processes: moral satisfaction and greater taste expectations.

Moral satisfaction as a link between food's ethicality and enhanced taste expectations and experience

Much evidence suggests that people are not only concerned about the outcomes of causes they care about, but also derive personal benefit in the form of moral satisfaction when contributing to such causes (e.g., Andreoni, 1989; 1990; 1993; Kahneman & Knetsch, 1992). Buying or consuming food of ethical origin presents a readily available opportunity for people to attain moral satisfaction by supporting a cause they consider important. The food then becomes not only a source of nutrition and gustatory enjoyment but also a physical artefact symbolising the contribution. Experiencing moral satisfaction derived from the contribution at the same time as sampling the food may bring about a subjectively enhanced taste experience. This may be due to a halo effect whereby moral satisfaction brings about a more positive perception of the food's properties, including expectations for its superior taste.

Such halo effect may even have a neurological basis: neuro-imaging research suggests that the reward-related neural network involved in the processing of primary rewards, such as the anticipation and consumption of palatable food (Kim, Shimojo, & O'Doherty, 2011; Plassmann, et al., 2008), is also involved in the processing of abstract rewards, such as the experience of moral satisfaction when performing altruistic acts (e.g., donation to charity; Harbaugh, Mayr, & Burghart, 2007). It is conceivable that activation in this brain region arising from the experience of moral satisfaction enhances the expectations about the food's taste as well as the subjective taste experience when the food is consumed. This exciting possibility remains to be examined with neuroimaging techniques. In the current research we examine the psychological aspects of the link between moral satisfaction and taste expectations and experience via self-report measures.

Values as a base for deriving moral satisfaction from ethical food consumption

Purchase and consumption of food of ethical origin may not uniformly bring about a feeling of moral satisfaction, however. Ethical origin may stem from the upholding of diverse moral values in the course of food production: pro-environmentalism in the case of organic and locally produced food, equality and altruism in the case of fair trade food. The extent to which consuming food of a

given ethical origin results in moral satisfaction may depend on individuals' endorsement of the corresponding values. In line with this argument, Harbaugh and his colleagues (2007) found that observing monetary gain for charity triggered greater activation in reward-related brain regions for people who endorsed altruistic values, and these people were also more likely to give to charity. Similarly, in behavioural research de Groot and Steg (2008) showed that altruistic values predicted donations to humanitarian charities, while biospheric values predicted donations to pro-environmental charities. Therefore, it may be expected that endorsement of values relevant to the principle upheld in the food production may moderate the effect of food's ethical origin on the experience of moral satisfaction and its effect on taste expectations and experience, as well as on buying intentions and willingness to pay.

The present research

The present research was designed to test two main hypotheses. The first hypothesis concerned the subjective taste experience of ethical food. Based on the preceding review we hypothesise that consuming food of ethical (vs. conventional or unethical) origin would evoke moral satisfaction and greater taste expectations, which in turn would generate enhanced taste experience. The second hypothesis concerned intentions to buy or willingness to pay for ethical food. If the taste of ethical food is indeed experienced as superior, it is expected to have a positive effect on intentions to buy and willingness to pay for that type of food in the future. The two hypotheses can be expressed with the following path model: *ethical food-> moral satisfaction-> enhanced taste expectations and experience-> stronger intentions to buy/willingness to pay.* When we test hypothesis 1, taste experience is treated as the dependent variable, food's ethicality as the independent variable, and moral satisfaction and taste expectations as the proposed mediators. When hypothesis 2 is tested, buying intentions or willingness to pay are treated as the dependent variable, food's ethicality as the independent variable, and moral satisfaction, taste expectations and taste experience as the proposed mediators. The data from an 8-nation large scale survey[1] were analysed and three experimental studies were conducted to test this model. The analysis of the

large scale survey (Study 1) was carried out to test the model's generalizability to different populations. In this survey food's ethicality (i.e. environmental benefit) and taste were assessed as beliefs. Study 2 sought to provide an experimental test of the model by manipulating food's ethicality (i.e. environmentally beneficial organic food vs. conventional and environmentally harmful food) and having people to assess its taste after an actual consumption. These first two studies examined buying intention as an outcome variable. Studies 3a and 3b provided a further experimental test of the model with two different types of ethical food – fair trade and locally produced. In these studies we additionally sought to examine whether endorsement of values congruent with the ethical principle upheld in the course of these foods production would qualify the link between the food's origin and the moral satisfaction derived from its consumption, as well as the effect of moral satisfaction on the subsequent variables in the model. In these studies willingness to pay was examined as the outcome variable.

Study 1

As a first step of testing our model, we utilised items administered as a part of a large scale survey examining beliefs and attitudes towards a commonly consumed type of organic food - tomato sauce (TS)[1]. The survey was conducted in the year of 2005 in eight European Union (EU) countries: Denmark, Finland, Germany, Greece, Italy, Spain, Sweden, and the United Kingdom. According to a European Commission report on organic farming from 2005, compared to 1999 all countries members of the EU at the time increased the proportion of their land used for organic production; in fact, all countries participating in the current survey except Spain had above the EU-25 average proportion of area used for organic produce (EuropeanCommision, 2005). These country-level statistics ensure that the national market trends for organic consumption at the time of conducting the survey are appropriate for testing the psychological mechanisms underpinning a growing demand for organic food.

Method

Respondents. Respondents were 4, 161 members of the public from the eight European countries. Respondents were randomly selected from households in major cities on the condition that they are above 18 years of age, are at least partly responsible for grocery shopping in their household, and purchase tomato sauce. The percentage of female respondents ranged between 50.9% and 87.5% across the eight countries. Roughly the same number of respondents was recruited in three age groups: 18–30, 31–45 and 46–65 years.

Measures. All measures were administered in the official native language for each country. To asses respondents' belief that organic TS is environmentally beneficial (i.e. has an ethical origin), they were asked to rate on a 7-point scale (1=*Extremely unlikely*; 7=*Extremely likely*) how likely it is that compared to conventional TS, organic TS is produced in a way that is better for the environment. To assess moral satisfaction as a function of buying organic TS, respondents were asked to indicate the extent to which they agreed (1=*Strongly disagree*; 7=*Strongly agree*) with the following statements: "Buying organic TS instead of conventional one would feel like doing the morally right thing", "Buying organic TS instead of conventional one would make me feel like a better person", and "Buying organic TS instead of conventional one would feel like making a personal contribution to something better ". The three items formed a reliable scale across all national samples (Cronbach's α ranging from .74, in Spain, to .86, in Denmark) and were averaged to form a measure of moral satisfaction. Beliefs about the organic TS taste were assessed by a single item asking respondents to indicate how likely it is that organic TS tastes better than conventional TS (1=*Extremely unlikely*; 7=*Extremely likely*). Using the same scale, respondents also indicated the likelihood of buying organic TS instead of conventional one in the near future, as well as the firmness of their intentions to do so (1=*Definitely will not buy organic instead of conventional TS*; 7=*Definitely will buy organic instead of conventional TS*). The two items measuring intentions to buy organic TS were highly correlated across national samples, ranging from .60 (in Spain) to .82 (in Germany) and so they were averaged.

Results

Descriptives. The means and standard deviations of the measures included in the model are summarised in Table 1.

[Table 1 around here]

Path model. The main aims of this analysis were to test whether 1) environmental benefit beliefs are positively linked to expectations about organic TS' superior taste and whether this effect was mediated by moral satisfaction; and 2) beliefs about the environmental benefit of organic TS are positively linked with buying intentions, and whether this effect is mediated by both moral satisfaction and taste expectations. We tested this path model using AMOS 18.0.0. and employing Maximum Likelihood estimation. The analyses were conducted with missing values deleted listwise (*N* = 4,061). The indirect effects of the mediators were assessed by a point estimate and a bias corrected and bootstrapped percentile confidence interval (BCa 95% CI for 1000 bootstrap iterations, s.a. MacKinnon, 2008). The indirect effect is significant if zero is not included in the confidence interval. We first tested the model using the total sample. We then conducted a multi-group analysis to test whether the model holds in each national sample.

The results for the total sample indicated that both hypotheses were supported: 1) beliefs about the environmental benefit of organic TS were positively associated with expectations about its superior taste (β= .48, *SE* = .02, *p* < .001) and this relationship was significantly mediated by moral satisfaction (*standardized point estimate* = .177, *BCa 95% CIs* = 0.14, 0.18); 2) beliefs about the environmental benefit of organic TS predicted intentions to buy (β = .41, *SE* = .01, *p* < .01) and was mediated by moral satisfaction and expectations about the superior taste of organic TS (standardized point estimate = .35, BCa 95% CIs = 0.35, 0.40). The direct effect of environmental benefit beliefs on intention to buy was still significant, but after the inclusion of the mediators its magnitude was substantially reduced (β= .04, *SE* = .02, *p*< .01). Forty-six per cent of the variance associated with intention to buy were accounted for by the model. Since the model was just-identified (with 0 df), we were unable to evaluate the model fit. The findings are summarised in Figure 1.

[Figure 1 around here]

Next, we tested whether the model was cross-nationally equivalent by fixing all parameters to be invariant across samples. Although there was a significant chi-square [χ^2 (42, 4061) = 148.16, p < .001], which is common with large sample sizes (Bentler, 1990), other fit indices indicated that the model fitted the data very well, RMSEA = .025, recommended level < .10; CFI = .981, recommended level >.95; NFI = .973, recommended level > .90 (see Hu & Bentler, 1999 for reccommendations). The fit indices suggested that the structural relations of the model were invariant across groups. We then compared this constrained model to an unconstrained model which had the same specified structural relations, but in which all parameters were allowed to vary freely across national samples (Byrne, 2004). We found a significant chi-square difference between the two models, [$\Delta\chi^2$ (34) = 119.864, p < .001], indicating that some of the regression weights were not invariant across groups. Inspecting the results for each national samples we found that the regression weights were all significant and of the same sign, but varied somewhat in size. All total, indirect, and direct effects were significant across groups. The variance explained in intention to buy varied from 37.9% (in Finland) to 49.7% (in the UK). We concluded that the model fitted each national sample well, but the strength of the predictive relationships varied somewhat across samples (see Table 2). Thus, the models with taste expectations and with intentions to buy as dependent variables were supported in all eight countries, indicating their generalizability.

[Table 2 around here]

Discussion

Using a non-convenience sample, the study provided initial support for the *ethical food–> moral satisfaction–> superior taste–> stronger intentions to buy* model. It demonstrated that beliefs about the food's ethical origin (i.e., environmental beneficial) positively predicted beliefs about its superior taste and that this link was partly explained by moral satisfaction derived from the food purchase. Furthermore, the study confirmed a longstanding finding that beliefs about superior taste positively predicts intentions to buy. Given that the expectations about taste in the present model

were predicted by the food's origin and moral satisfaction, it provides initial evidence that beliefs about taste may indeed act as a reinforcing mechanism for the purchase of ethical food. The proposed model was obtained in all eight countries, indicating its generalizability for developed countries across different cultural and socio-economic contexts.

Although this study helped demonstrate the feasibility and generalizability of the proposed model, it had several limitations. Firstly, it was correlational in nature and despite the use of the structural equation modelling technique, it did not provide a solid basis for inferences about causality. Secondly, it relied on measures of beliefs about the environmental benefit of organic food and expectations about the taste of organic TS compared to conventional TS. As such, it did not allow us to fully test our hypothesis that food's ethical origin leads to enhanced taste experience and that this enhanced taste experience acts as a reinforcing mechanisms for future ethical food consumption. Finally, moral satisfaction was measured within a hypothetical scenario of respondents buying the organic TS. The hypothetical nature of these measures limits the ecological validity of the findings. To address these limitations we designed a series of 3 follow-up experimental studies to test the causal effect of ethical food origin, to measure taste expectations, and to examine the experience of taste after actual consumption.

Study 2

The aim of this study was to follow up the findings obtained with the large scale survey by adopting an experiment-based approach. As in Study 1, we tested the two main hypotheses comprising our model. However, in this study we measured taste expectations prior to food consumption and taste experience following consumption. The first hypothesis therefore tested whether the effect of food's origin on taste experience is mediated by moral satisfaction and taste expectations, while the second hypothesis tested whether the effect of food's origin on intentions to buy is mediated by moral satisfaction, taste expectations, and taste experience.

In addition, we sought to establish with greater precision the role of moral satisfaction in triggering greater taste expectations and enhanced taste experience by disentangling it from positive mood and controlling for expectations about the food's quality.

Method

Participants. Participants were 112 (84 female) undergraduate students from a Belgian university, with a mean age of 20.57 years (*SD* = 4.97). They participated in exchange for course credit.

Design and Procedure. Upon arrival, participants were seated in separate cubicles. They were informed that the study involved impression formation of a company called 'Duskin' and evaluation of the taste of a product manufactured by this company – biscuits. Participants were randomly allocated to one of two conditions whereby the 'Duskin' company was described as either engaging in environmentally friendly or environmentally harmful production and distribution practices (see also Appendix A).[2]

To check whether the experimental manipulation elicited impressions of the company as environmentally friendly or harmful, participants were asked to indicate the extent to which they agreed (1 = *Strongly disagree*; 7 = *Strongly agree*) that 'Duskin' cares about the environment, takes the environment into account in its actions, and has the intentions to preserve the environment. Next, participants rated on the same scale the extent to which the following adjectives reflect their current mood: I feel content; joyful; happy; energetic; in a good mood. They also rated the extent they agree that 'Duskin' produces high quality biscuits (1 = *Strongly disagree*; 7 = *Strongly agree*). To measure moral satisfaction, participants were asked to indicate on the same scale the extent they agreed that consuming the 'Duskin' biscuits would make them feel like a better person; a more environmentally friendly person; and like contributing to a good cause. Afterwards participants rated on a 7-point scale how tasty, flavoursome, and enjoyable they expected the 'Duskin' biscuits to be (*1 = Not at all tasty/flavoursome/enjoyable; 7 = Very tasty/ flavoursome/ enjoyable*). The items

measuring the manipulation check, participants' mood, moral satisfaction, and taste expectations showed high internal consistency ($\alpha \geq .92$) and so they were averaged to form the respective scales.

Then all participants were served a plate with the same type of biscuits. After eating at least one biscuit, participants were asked to continue working on the questionnaire. They were asked to rate how tasty, flavoursome, and enjoyable they found the 'Duskin' biscuits on a 7-point scale (1 = *Not at all tasty/flavoursome/enjoyable*; 7 = *Very tasty/flavoursome/enjoyable*). The items measuring taste were averaged as they formed a highly reliable scale ($\alpha = .96$). Finally, participants were asked to indicate how likely it is that they would buy the 'Duskin' biscuits (1 = *Not at all likely*; 7 = *Very likely*).

Results

Manipulation check. An independent sample *t*-test revealed that participants rated the company as more environmentally friendly ($M = 5.86$, $SD = .77$) after reading the pro-environmental company description than after reading the description in which the company was portrayed as environmentally harmful ($M = 1.88$, $SD = .76$). This difference was significant, $t(110) = 27.54$, $p < .001$, Cohen's d = 5.20, indicating that the experimental manipulation exerted the intended effect on impressions of the company.

Descriptives. The means and standard deviations of mood, biscuits quality, moral satisfaction, taste expectations and experience, and intentions to buy are presented in Table 3, along with a significance test of the differences between conditions. Participants reported being in more positive mood after reading the environmental friendly (vs. harmful) description of the 'Duskin' company, although this effect was not statistically significant. They believed that 'Duskin' produces higher quality biscuits when the company was said to engage in environmentally friendly (vs. harmful) practices. This effect was expected as food's ethicality was closely related to the process of its production (e.g., involving chemicals or not). All of the effects of condition on the

remaining variables were in the predicted direction, although the effect of condition on taste experience did not reach standard levels of significance.

[Table 3 around here]

To test our first hypothesis, namely whether the effect of condition on taste experience was mediated by moral satisfaction and taste expectations, we used a multiple mediation model with serial mediators (Hayes, 2012; model 6). In this model mediators are assumed to operate in a serial order and form a causal chain whereby the independent variable affects the first mediator, the first mediator affects the second, and the second mediator affects the third, which in turn affects the dependent variable. This model is appropriate for testing our hypotheses as it specifies a carryover effect from the food's (ethical) origin to moral satisfaction, from moral satisfaction to taste expectations, and from taste expectations to taste experience. When testing our second hypothesis, intention to buy the product is added to the serial mediation model as the dependent variable, while taste experience is treated as the third mediator in the causal chain. The model also allows controlling for the effect of possible confounding variables by treating them as additional independent variables and testing their effect on each of the proposed mediators and on the dependent variable. We included participants' self-rated mood and their expectations for the biscuits' quality as variables to be controlled for in the model.

It should be noted that contemporary approaches to mediation analysis do not require a significant effect of the independent on the dependent variable, and instead focus on assessing the significance of the indirect path specified by the model (Hayes, 2009; Rucker, Preacher, Tormala, & Petty, 2011). To conduct a formal significance test on the specified indirect paths we relied on the default bootstrapping procedure implemented in the corresponding macro for testing serial mediation (Hayes, 2012; model 6), whereby a path is deemed significant if the 95% bias corrected bootstrap confidence intervals (CIs; based on 10 000 samples) do not include zero.

The results from the two models are summarized in Figure 2. As in the previous research reviewed in the introduction, expectations about the food's quality positively predicted taste

expectations. However, consistent with our hypothesis, taste expectations were also predicted by moral satisfaction. From the six variables included as predictors of the subjective taste experience, only taste expectations had a significant effect. When taste experience was the dependent variable, the overall model was significant, F (6,101) = 7.15, $p < .001$, and explained 30% of the variance associated with taste. Critically for our hypothesis, the indirect path between condition and taste experience through moral satisfaction and taste expectations was significant, 95% *CIs* (0.10; 0.76). The direct effect of condition and the indirect effect through moral satisfaction only were non-significant.

When intentions to buy was included as the dependent variable, the overall model was significant, F(7,100) = 23.18, $p < .001$, and explained 62% of the variance associated with intentions to buy the biscuits. The only significant path through which the experimental condition influenced buying intentions was through moral satisfaction, taste expectations, and taste experience was significant, 95% CIs (0.11; 0.92; see Figure 2). These findings indicate that the feeling of moral satisfaction when consuming food of ethical origin elicits a subjectively superior taste experience, which in turn positively predict, and possibly reinforce, intentions to buy that food.

[Figure 2 around here]

Discussion

The current study replicated and extended the main findings obtained with the large scale survey in Study 1. The experimentally manipulated impressions of a company's environmental practices influenced the experience of taste when consuming biscuits ostensibly produced by that company. Providing support for our first hypothesis, this effect was mediated by moral satisfaction derived from the biscuits consumption and by taste expectations. Our second hypothesis was also supported: along with moral satisfaction and taste expectations, the experience of taste was a significant mediator of the effect of condition on intentions to buy the biscuits. Importantly, this study also demonstrated that the effect of moral satisfaction is distinct from that of positive mood, and explains unique variance in taste expectations, over and above the variance explained by

perceptions of the food's quality. These results provide additional support for our model, and show that the food's ethical origin plays a causal role in inducing moral satisfaction, and through moral satisfaction influences the expectation and experience of taste, as well as intentions to buy the food in the future.

In this study the company was portrayed as either environmentally friendly or environmentally harmful. However, more often than not consumers lack knowledge about companies' unethical practices. While companies that engage in ethical practices are likely to advertise these aspects of their operation, those who engage in unethical practices are likely to try to conceal it. An additional limitation of the Study 2 design was that it remained unclear whether the obtained effects of condition on the mediators and the dependent variables were due to a positive influence of the food's ethical origin, a negative influence of the food's unethical origin, or both. Moreover, although we controlled for the perceived food's quality, the Duskin biscuits in the environmentally friendly condition may have been regarded as organic and healthier (e.g., free of pesticides), which may have influenced participants' taste expectations and experience. The next studies were designed to address these limitations.

Studies 3a & 3b

Studies 3a and 3b were designed to extend our findings in several important ways. Firstly, we aimed to test whether our two main hypotheses are supported when a company committed to ethical practices is contrasted with a company portrayed as engaged in conventional rather than unethical practices. In addition to being more realistic, using conventionally produced food as a comparison condition can help delineate the positive effect of ethical from a possible negative effect of unethical food origin. In testing the second main hypothesis, we measured willingness to pay in order to extend our model to another essential aspect of consumers' approach behaviour towards food of ethical origin.

We also aimed to test whether the model applies to other types of ethical food origin. Studies 1 and 2 used organic products, which in addition of being grown in environmentally friendly

way, are often perceived as healthier and of higher quality (Padel & Foster, 2005). In Studies 3a and 3b we attempted to rule out the possibility that the findings from Studies 1 and 2 are limited to organic food rather than food of ethical origin more generally. To do that, we presented the food (chocolate) and beverage (apple juice) as fair trade and locally produced, respectively - external characteristics that denote an ethical production but have little or no bearing for the product quality and its taste per se.

Finally, in studies 3a and 3b we explored the reasons why people derive moral satisfaction when consuming food of ethical origin. We propose that endorsing values relevant to the specific ethical principle upheld in the course of the food production should qualify the experience of a sense of moral satisfaction when consuming the food (cf. de Groot & Steg, 2008; Harbaugh, et al., 2007). More specifically, we hypothesise that moral satisfaction derived from consumption of food with ethical origin will be higher for people who endorse the values relevant to the manner in which the food was produced. We expect that participants who endorse altruistic values would derive greater moral satisfaction when consuming fair trade chocolate than those who do not endorse altruistic values, and participants who endorse pro-environmental values would derive greater moral satisfaction when consuming locally produced apple juice than those who do not endorse pro-environmental values. As a result, we expect the mediation by moral satisfaction of the effect of food's origin on taste expectations (as well as on the subsequent variables in the model) to be moderated by value endorsement.

Method

Participants were 50 (40 female) undergraduate students from a British university with a mean age of 19.32 (*SD* = 1.56). They participated in the study in exchange of course credit.

Upon signing up for the study, participants were emailed a link to a brief online questionnaire and asked to complete it before coming to the lab to take part in the main study. The questionnaire consisted of eight items measuring altruistic (e.g., equality, peace) and pro-

environmental values (also referred to as biospheric values; e.g., unity with nature, protecting the environment; de Groot & Steg, 2008).[4]

Upon arrival to the main study, participants were seated in separate cubicles and informed that they will participate in impression formation and taste evaluation tasks. All participants took part in both studies, first completing Study 3a and then Study 3b. Both studies consisted of two conditions, to which participants were randomly allocated, and allocations to the conditions in Study 3b were independent of those in Study 3a. The design and procedure of each study were patterned after those in Study 2. However, instead of biscuits, participants were served chocolate in Study 3a, and apple juice in Study 3b. The same type of chocolate and apple juice was served to all participants. To manipulate ethical origin of chocolate, participants were presented with either a description of a fair trade or conventional chocolate producing company (see Appendix B). To manipulate ethical origin of apple juice, participants were presented with a description of a company that produces apple juice from either local or imported ingredients (see Appendix C).

The same items were used to measure taste expectations and taste experience as in Study 2. Moral satisfaction was measured with two of the items used in Study 2: "Consuming 'Morena' chocolate/'Duskin'[4] apple juice would make me feel a better person" and "Consuming 'Morena' chocolate/'Duskin' apple juice would feel like making a personal contribution to a good cause". All scales showed good reliability ($\alpha_s \geq .79$) and the respective items were averaged to form composite measures of altruistic and biospheric values, moral satisfaction, expectations of taste, and taste experience. In these studies instead of intentions to buy the product we measured willingness to pay (WTP) as another variable of high importance for the market success of companies producing food of ethical origin. Participants were asked to indicate how much (in £) they were prepared to pay for a 100gr bar of 'Morena' chocolate and 1L of 'Duskin' apple juice respectively.

Results

Descriptives and analyses of variance. The means and standard deviations of the variables from studies 3a and 3b are shown in Table 4 and Table 5, respectively, along with a significance test

of the differences between conditions. For chocolate 'Morena' all differences were in the predicted direction, although the results for taste expectations and taste experience did not reach standard levels of significance. For apple juice 'Duskin' although the mean differences in taste expectations are in the predicted direction, the mean differences in taste experience and WTP are in the reversed direction. An exploration of the scores distributions in each condition revealed that the reversal was due to 3 outliers (i.e., scores lower that M - 2SD) in the locally produced condition. In any case, these reversed differences were far from significant and do not interfere with the main hypotheses to be tested, namely for 1) an indirect effect of food's ethical origin on taste experience through moral satisfaction and taste expectations, and 2) an indirect effect of food's ethical origin on WTP through moral satisfaction, taste expectations, and taste experience.

[Table 4 around here]

[Table 5 around here]

Moderation by value endorsement of the effect of food's origin on moral satisfaction. We examined whether deriving moral satisfaction from ethical food consumption was affected by participants' endorsement of the values relevant to the ethical principle upheld in the course of food production. More specifically, we hypothesised that altruism as a value dimension encompassing equality, helpfulness, and concerns about others, will moderate the effect of fair trade (vs. conventional) status on moral satisfaction with the chocolate consumption (Study 3a). Endorsement of biospheric values was expected to moderate the effect of locally produced (vs. imported) status on moral satisfaction with the apple juice consumption. We used the macro for simple moderation developed by Hayes (2012; model 1) to test these hypotheses.

Indeed, in Study 3a the simple moderation analysis revealed a significant interaction between condition and altruistic values score, $B = .89$, $t(40) = 2.65$, $p = .011$, along with a significant main effect of condition, $B = 2.02$, $t(40) = 5.58$, $p < .001$, and marginally significant main effect of altruism, $B = .27$, $t(40) = 1.61$, $p = .115$. These predictors explained 55% of the variance associated with moral satisfaction derived from consuming fair trade chocolate. The simple slope effects

revealed that condition significantly predicted moral satisfaction for people with medium (50th percentile), $B = 2.25$, $p < .001$, and high (90th percentile) in altruism, $B = 2.91$, $p < .001$, but not for those low (10th percentile) in altruism, $B = .69$, $p = .28$. The simple slope effects are illustrated on Figure 3.

[Figure 3 around here]

In Study 3b, the simple moderation analysis revealed a marginally significant interaction effect, $B = .52$, $t(40)=1.98$, $p = .055$, as well as significant main effects of condition, $B = .74$, $p = .043$, and biospheric values, $B = .43$, $t(40) = 3.29$, $p = .002$. These variables explained 37 % of the variance associated with moral satisfaction derived from the apple juice consumption. Replicating the findings from Study 3a, the simple slope analyses revealed that condition significantly predicted moral satisfaction for participants with moderate (50th percentile), $B = .83$, $p = .025$, and strong (90th percentile) endorsement of biospheric values, $B = 1.61$, $p = .006$, but not for those with weak (10th percentile) endorsement of biospheric values, $B = .66$, $p = .62$.The simple slope effects are illustrated on Figure 4.

[Figure 4 around here]

Moderated mediation: Does value endorsement moderate the mediation effect of moral satisfaction? Since value endorsement indeed affects moral satisfaction derived from ethical food consumption, a further question is whether the mediation effect of moral satisfaction obtains only for those who endorse the values relevant to the ethical origin of food. To answer this question, we tested for moderated mediation by using a macro developed by Hayes (2012; model 7). Condition was treated as the independent variable, altruistic/bisospheric value endorsement as a moderator, moral satisfaction as a mediator and taste expectations as the dependent variable. Because the macro allows for the inclusion of only one mediator, we included taste expectations as the dependent variable as it is the variable hypothesised to be affected by moral satisfaction.

As shown in Table 6, the effect of condition on taste expectations was significantly mediated by moral satisfaction for participants who scored on and above the mean on the altruistic/

biospheric value scale, but not for participants who scored one standard deviation below the mean. This finding suggests that value endorsement constitutes a boundary condition for our proposed model. Although the available macro did not allow us to examine whether the moderated mediation effect carries over to the subsequent variables in the model (i.e., taste experience and WTP), the effect on taste expectations suggests that the model is likely to obtain for consumers who endorse (whether moderately or strongly) the values relevant to the food's ethical origin, but not for those who do not endorse these values.

[Table 6 around here]

Serial mediation: Does our model replicate? Finally, to assess whether the obtained models in Studies 1 and 2 *ethical origin–> moral satisfaction–> enhanced taste expectations–> enhanced taste experience–> WTP* replicates in the current studies, we conducted the serial mediation analyses (Hayes, 2012; model 6). It should be noted that due to constraints in the available macro the moderating role of values is ignored in these analyses.

Replicating the findings from the previous studies, the chocolate's fair trade (vs. conventional) status positively predicted taste experience through the moral satisfaction and taste expectations path, 95% CIs (0.05, 0.70). The indirect effect through moral satisfaction only was non-significant. The overall model was significant, $F(3, 46) = 5.78$, $p = .002$, and explained 27% of the variance associated with the taste experience of 'Morena' chocolate.

To explore the indirect effect of the food's fair trade status on WTP via moral satisfaction, taste expectations, and taste experience, WTP was included as the outcome variable. This analysis revealed a significant overall model, $F(4, 45) = 3.34$, $p = .018$, explaining 23% of the variance associated with WTP. The only significant indirect effect of the experimentally manipulated fair trade (vs. conventional) status of 'Morena' on WTP was through the three proposed mediators, 95%CIs (0.01, 0.18).The findings from both of the analyses with taste experience and with WTP as the outcome variable are summarized on Figure 5.

[Figure 5 around here]

The same pattern of results was obtained in Study 3b (see Figure 6). The locally produced status of the apple juice positively predicted the experience of its taste through moral satisfaction and taste expectations path, 95% CIs (0.02; 0.39). No other indirect path was significant. The overall model was significant, $F(3,46) = 5.38$, $p = .003$, and explained 27% of the variance associated with apple juice taste experience.

When WTP was the outcome variable, the overall model was also significant, $F(4,45) = 5.36$, $p = .001$, explaining 32% of the variance associated with WTP for 'Duskin' apple juice. The only significant indirect effect of the locally produced (vs. imported) status was through the three proposed mediators, 95% CIs (0.001, 0.11). Figure 6 summarises the findings from the serial mediation analyses with both taste experience and WTP as outcome variables. The correlation matrix of the variables included in the serial mediation model is presented in Table 7.

[Figure 6 around here]

[Table 7 around here]

Discussion

The proposed *ethical origin–> moral satisfaction–> enhanced taste expectations–> enhanced taste experience –> higher willingness to pay* model was successfully replicated in Studies 3a and 3b. This finding further suggests that taste may act as a reinforcer for consumers' behavioural tendencies related to the market success of food of ethical origin. These studies also revealed an important boundary condition for the model – consumers' endorsement of values relevant to the ethical food origin: Only people who endorsed altruistic values derived moral satisfaction from consuming fair trade (vs. conventional) food, and only people who endorsed biospheric values derived moral satisfaction from consuming locally produced (vs. imported) beverage. Furthermore, moral satisfaction mediated the effect of the food's origin on taste expectations (and possibly taste experience and WTP) only for people who endorsed the respective values. These findings demonstrate that the experience of moral satisfaction from ethical food consumption, and its positive effect on taste, has its grounds in individuals' value system.

In addition, the present studies used types of ethical food unlikely to imply higher food quality or health benefits: fair trade and locally produced. Replicating the effects obtained with organic food (Studies 1 and 2) with fair trade and locally produced food further suggests that moral satisfaction plays a unique role in evoking expectations for superior taste and in this turn leads to enhanced taste enjoyment. Finally, using conventional food as a comparison condition helped establishing the positive effect of ethical origin on moral satisfaction (as well as taste expectations and possibly taste experience), and isolating it from a possible negative effect triggered by unethical food origin.

General Discussion

The present research examined the possibility that experiencing food of ethical origin as tastier may act as a reward mechanism reinforcing the purchase and consumption of this food. In examining this possibility, two main hypotheses were formulated and tested. The first one concerned the link between the food's ethical origin and its subjectively superior taste. We postulated that by casting a halo effect on the food's properties, the experience of moral satisfaction results in higher expectations about the food's tastiness which in turn enhances the experience of taste when the food is consumed. The second hypothesis tested whether the subjectively superior taste experience further predicts consumers' tendencies to approach food of ethical origin; in testing the second hypothesis we used measures of buying intentions and willingness to pay. The resulting *ethical food–> moral satisfaction–> enhanced taste expectations and experience–> stronger intentions to buy/willingness to pay* model was supported in four studies. Using non-student samples in a large-scale multinational survey on attitudes and beliefs about organic food, Study 1 showed that the effects specified in the model are generalizable to the adult population in developed countries. Study 2 demonstrated the causal effect of food's ethical origin (i.e. organic and environmentally friendly) by adopting an experiment-based approach. This study also allowed establishing the unique role of moral satisfaction for the generation of superior taste expectations, ruling out the possibly confounding effects of positive mood and perceptions of product quality.

Studies 3a and 3b extended the context of food's origin and demonstrated that the model held also for fair trade and locally produced food. Together, the four studies provided substantial evidence that a) food of ethical origin is experienced as tastier by people who experience moral satisfaction and formulate enhanced taste expectations; and b) the morality-enhanced tastiness of ethical food appears to act as a reinforcing mechanism that sustains consumers' buying intentions and willingness to pay for ethical food – two measures likely to reflect consumers' actual purchasing behaviour (cf. Ajzen, 1991; McCluskey & Loureiro, 2003).

It is conceivable that the experience of moral satisfaction during the initial morally-motivated purchases facilitates the establishment of ethical food – superior taste link. Once this link is established, consumers may adopt the belief that ethical food is tastier than conventional alternatives (as it was the case in Study 1), and taste may take precedence over moral considerations in predicting its further purchase. Findings from a longitudinal consumer survey lend support to this possibility, showing that the initial purchase of organic food tends to be motivated by environmental concerns, however, repeated purchase is best predicted by taste and price (Grankvist & Biel, 2007).

We assumed two possible bases for a link between moral satisfaction and taste expectations and experience: psychological, in the form of a halo effect, and neurological, in the form of activation of common reward-related neural system (Chib, et al., 2009; Harbaugh, et al., 2007; Plassmann, et al., 2008). Because of the self-report method used in our studies, the findings can provide a direct support only for the psychological link. The exciting possibility that moral satisfaction and taste are related at the level of neural activation remains to be confirmed with neuro-imaging techniques.

Previous research failed to provide clear evidence for the hypothesis that people find ethical food subjectively tastier (Grankvist, et al., 2007; Johansson, et al., 1999). Even though in the present research the direct effect of food's origin on taste experience was not always significant, the indirect paths through moral satisfaction and enhanced taste expectations were reliably obtained across all four studies, indicating the robustness of the finding. A growing number of social scientists

emphasise the importance of examining indirect effects, arguing that an excessive focus on the effect of the independent variable on the dependent variable may hinder the discovery of intervening psychological processes (Hayes, 2009; Rucker, et al., 2011).The present research is one such example – had moral satisfaction and taste expectations been ignored, the effect of ethical food origin on taste and buying intentions would not have been identified.

It is important to note that food's ethical origin does not always translate into enhanced taste experience. As demonstrated by Studies 3a and 3b, individual differences in values endorsement also play a role. Consumers' values moderated the link between food's ethical origin and its subjectively superior taste: the link occurs only for consumers who endorsed the values relevant to the food's ethical origin. This finding is consistent with a large literature documenting the role of values as a common motivational basis for diverse forms of pro-environmental and pro-social behaviour (de Groot & Steg, 2008; Schultz & Zelezny, 1999; Stern, Kalof, Dietz, & Guagnano, 1995). Adding to this body of research, Studies 3a and 3b demonstrated that taste could act as a reward mechanism sustaining the consumption of food of ethical origin only for consumers who endorse values relevant to the principle upheld in the course of the food's production. Values are usually regarded as a stable individual-difference variable by definition (for e.g., see Schwartz, 1992 who defines values as trans-situationsl guides in life). Yet, some researchers also suggested that values can be changed, for instance after confronting people with inconsistencies in their value hierarchy (Rokeach, 1973) or after analysing reasons for the importance of particular values if individuals lack cognitive support for them (Maio & Olson, 1998). Future research could examine whether a value change intervention for individuals who score low on altruism and environmental values can increase their moral satisfaction after consuming ethical food. Since moral satisfaction predicted intentions to buy in our study, results from such an intervention would bear important implications for the ethical food market in terms of how the market share could be further increased.

Limitations and future research

In this research, we used self-report rather than behavioural measures of consumers' tendency to purchase food of ethical origin. While intentions to buy and willingness to pay are widely used measures and generally valid predictors of actual purchase behaviour (Ajzen, 1991; Wertenbroch & Skiera, 2002), external factors, such as difficulty finding the preferred ethical food or having limited budget, may influence the link between buying intention or willingness to pay and actual purchase behaviour (Kaiser & Wilson, 2004), but becomes more apparent when an actual purchase is undertaken.

Further, the current research relied on snapshots rather than longitudinal studies, thus leaving the proposed function of taste as a reward mechanism reinforcing purchase behaviour insufficiently examined. Although some convergent support for our proposition is offered by previous research (Grankvist & Biel, 2007), further research is needed to clearly establish the effect. Nevertheless, the present research illuminated the previously unidentified role of psychological processes, such as moral satisfaction and enhanced taste expectations and experience, in explaining the extraordinary large increase in demand for ethically produced food witnessed over the past two decades.

Acknowledgement

The present research was supported by a grant from the BRIC (Bureau des Relations Internationales) of the Université Libre de Bruxelles, Belgium, awarded to the first author.

Footnotes

[1]These data were collected as part of the project 'Consumer Decision Making on Organic Products (CONDOR)' (QLK1—2002—02446) funded by the Commission of the European Communities and coordinated by Richard Shepherd. The current analyses test hypotheses different to the hypotheses originally set out to be tested by the data collected in the survey.

[2] The study originally involved 4 conditions resulting from the crossing of environmentally friendly vs. environmentally harmful production and distribution practices and competent vs. incompetent company. To vary competence, the company was either described as making consistent profits or as failing to earn sufficient profit for its shareholders. In the present analyses we focus on the environmentally friendly (vs. harmful) manipulation. However, in all analyses the competence factor was included as a covariate to control for its effect. The effect of competence on all of the variables included in the model (Figure 2) was non-significant (p_s>.16).

[3] Six participants failed to complete this questionnaire, leading to missing data in the moderation analyses.

[4]The same fictive name 'Duskin' was used for the juice in Study 3b, as the name for the biscuits in Study 2.

Appendix A: Company description used in Study 2

Environmentally harmful condition. Duskin is a producer of breakfast cereals, muesli bars, and other grain based snacks. The company imports the grains necessary for the manufacturing of its products from various countries. Because of this practice the company has been frequently criticized for causing severe environmental pollution. The company has never made any attempts to offset its carbon footprint and refused to donate to charitable projects aimed at environmental preservation. The Duskin products are being sold in many countries in the world, including Belgium and the UK, as well as Australia, and New Zeeland.

Environmentally friendly condition. Duskin is a producer of breakfast cereals, muesli bars, and other grain based snacks. To limit its negative impact on the environment as much as possible, the company only uses chemical-free and locally grown grains for the manufacturing of its products. It also frequently donates to charitable projects aimed at environmental preservation. The company preferentially distributes its products for sale in the local markets, supermarket chains, and individual shops.

Appendix B: Company descriptions used in Study 3a

Conventional condition. 'Morena' is a brand of chocolate produced by a large foreign company with a long tradition within the food industry. The company is looking to enter the British market with its cocoa based products; most notably, the company aims to introduce its chocolate range.

The company sources the cocoa for its products from developing countries. As many other companies, this company engages in trading practices with producers from developing countries that allow it to pay as low price as possible. This enables the company to earn a maximum profit for its shareholders.

Fair trade condition. 'Morena' is a brand of chocolate produced by a large foreign company with a long tradition within the food industry. The company is looking to enter the British market with its cocoa based products; most notably, the company aims to introduce its chocolate range.

The company sources the cocoa for its products from developing countries. All products with the brand 'Morena' are certified as Fair Trade. The company is a committed partner in equitable trading, ensuring that farmers in developing countries receive a better deal for their cocoa, and additional income to invest in their communities.

Appendix C: Company descriptions used in Study 3b

Conventional condition. 'Duskin' is a British company, which produces a range of fruit juices. To compete on the market, the company imports the fruit necessary for the juice production from various countries, looking at the best price possible. It also sells the ready juice across the UK and Europe, and is currently looking to expand its markets to Australia and New Zeeland.

Locally produced condition. 'Duskin' is a British company, which produces a range of fruit juices. To limit its carbon footprint as much as possible, the company only uses locally produced fruit in its production and sells the ready juice only to local shop owners and farmers' markets.

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Figure 1. Path model predicting expected taste and intention to buy organic tomato sauce in the total sample (N = 4061). *Note.* Coefficients are standardized β-coefficients. $^{**}p < .01$; $^{***}p < .001$.

Figure 2. A diagram summarizing the results from a serial mediation model testing the effect of condition on taste experience as an outcome variable through moral satisfaction and taste expectations, and a serial mediation model testing the effect of condition on intentions to buy as an outcome variable, through moral gain, taste expectations and experience. The effects of perceived biscuits quality and participants mood were also included in both models, and the reported B-coefficients are the estimated path coefficients while accounting for these effects. The numbers in the brackets are the B-coefficients of the effect of condition on the outcome variables before the inclusion of the mediators. *Note.* $^{***}p < .001$. $^{**}p < .01$. $^{*}p < .05$.

Figure 3. Simple slopes for the effect of fair trade (vs. conventional) condition on moral satisfaction for the 10th, 50th, and 90th percentiles on altruism (Study 3a).

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972 *Figure 4.* Simple slopes for the effect of locally produced (vs. imported) apple juice condition on
973 moral satisfaction for the 10th, 50th, and 90th percentiles on biospheric values (Study 3b).

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978 *Figure 5.* A diagram summarizing the findings from a serial mediation model testing for the indirect
979 effect of condition (Fair trade vs. conventional) on evaluation of the chocolate taste through moral
980 satisfaction and expectations of taste, and the indirect effect of condition on willingness to pay
981 (WTP) through moral satisfaction, expectations of taste, and taste path (Study 3a). The path
982 coefficients are the unstandardized Bs. The numbers in the brackets are the B-coefficients of the
983 effect of condition on the outcome variables before the inclusion of the mediators. *Note.* ***p<.001;
984 **p<.01; *p<.05; ^{i}p<.10

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989 *Figure 6.* A diagram summarizing the findings from a serial mediation model testing for the indirect
990 effect of condition (locally produced vs. imported apple juice) on the experience of apple juice taste
991 through moral satisfaction and taste expectations, and a model testing for an indirect effect of
992 condition on willingness to pay (WTP) through moral satisfaction, taste expectations, and taste

993 experience path (Study 3b). The path coefficients are the unstandardized Bs. The numbers in the
994 brackets are the B-coefficients of the effect of condition on the outcome variables before the
995 inclusion of the mediators. *Note.* ***p<.001; **p<.01; *p<.05. ^{t}p<.10.

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998 Table 1

1000 *Descriptive statistics of the variables included in the path model.*

Measures for TS	Denmark n=550	Finland n=508	Germany n=503	Greece n=521	Italy n=500	Spain n=503	Sweden n=576	UK n=500
TS better for environment[1]	5.38 (1.49)	5.66 (1.34)	5.19 (1.48)	5.56 (1.50)	5.27 (1.47)	5.60 (1.39)	5.39 (1.48)	5.35 (1.44)
TS tastes better[2]	4.32 (1.54)	4.77 (1.53)	4.60 (1.63)	5.39 (1.66)	4.72 (1.57)	5.23 (1.56)	4.10 (1.62)	4.81 (1.56)
Moral satisfaction[3]	4.47 (1.79)	4.78 (1.33)	3.98 (1.49)	4.72 (1.53)	4.60 (1.48)	4.79 (1.37)	4.86 (1.52)	4.58 (1.33)
Intentions to buy TS[4]	3.39 (1.80)	4.00 (1.65)	3.68 (1.77)	4.80 (1.60)	4.45 (1.79)	4.54 (1.49)	3.93 (1.79)	4.23 (1.57)

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1002 *Note.* The values represent the mean scores and standard deviations (in brackets) of each measure
1003 used in the analyses. Scale anchors: [1,2]1=*Extremely unlikely*; 7=*Extremely likely;* [3]*1=Strongly*
1004 *disagree*; 7=*Strongly agree*; [4]1=*Definitely will not buy organic instead of conventional TS*;
1005 7=*Definitely will buy organic instead of conventional TS*.
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Table 2.

Standardized regression weights in the path-model by country.

Path	Italy	Denmark	Finland	UK	Greece	Spain	Germany	Sweden
Organic TS better for environment -> Moral satisfaction	.54***	.48***	.56***	.56***	.58***	.41***	.44***	.51***
Organic TS better for environment -> Taste expectation	.24***	.29***	.31***	.38***	.51***	.42***	.35***	.23***
Moral satisfaction -> Taste expectation	.44***	.37***	.40***	.33***	.24***	.26***	.29***	.39***
Moral satisfaction -> Intentions to buy organic TS	.63***	.50***	.40***	.61***	.57***	.53***	.50***	.44***
Taste expectations -> Intentions to buy organic TS	.14***	.22***	.34***	.21***	.10*	.08†	.24***	.26***
Organic TS better for environment -> Intentions to buy organic TS	.06	.05	-.03	-.001	.07	.15***	.08*	.08*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$. † $p < .10$

Table 3

Organic biscuits: descriptive statistics and analysis of variance test

Measure	Environmentally harmful company n = 59	Environmentally friendly company n = 53	*df*	*t*	*p*	*Cohen's d*
Mood	4.24 (1.11)	4.55 (1.32)	109	1.34	.183	0.25
Chocolate quality	3.54 (1.05)	4.16 (1.16)	106	2.88	.005	0.56
Moral satisfaction	2.09 (0.88)	4.49 (1.31)	109	11.44	.000	2.15
Expectations of taste	4.04 (0.86)	4.55 (0.88)	108	3.09	.003	0.59
Taste	4.81 (1.24)	5.20 (1.24)	110	1.65	.102	0.31
Intentions to buy	3.39 (1.65)	4.38 (1.76)	110	2.12	.037	0.58

Note. The values represent the means and standard deviations (in brackets) of the variables included in the analyses. Independent sample *t*-test was used to test for statistical significance of the differences in each measure obtained as a function of condition. The degrees of freedom vary due to missing data.

Table 4

Chocolate 'Morena': descriptive statistics and analysis of variance

Measure	Conventional (n=25)	Fair Trade (n=25)	*df*	*t*	*p*	*Cohen's d*
Moral satisfaction	2.56 (1.15)	4.72 (1.36)	48	6.06	.000	1.72
Expectations of taste	4.64 (1.26)	5.20 (1.28)	48	1.56	.126	0.44
Taste	5.74 (1.21)	6.22 (0.74)	48	1.70	.096	0.48
WTP (in £)	1.28 (0.93)	1.52 (0.71)	48	1.05	.301	0.29
WTP (in £)*	1.04 (0.47)	1.52 (0.71)	46	2.75	.008	0.80

Note: The values represent the means and standard deviations (in brackets) of the variables included in the analyses. Independent sample t-test was used to test for statistical significance of the differences in each measure obtained as a function of condition.

*After removing two extreme outliers (values exceeding 3SD above the mean) in the conventional condition, the difference in WTP between conditions became highly significant.

Table 5

Apple juice 'Duskin': descriptive statistics and analysis of variance

Measure	Conventional (n=25)	Local (n=25)	*df*	*t*	*p*	*Cohen's d*
Moral satisfaction	3.62 (1.21)	4.48 (1.46)	48	2.27	.028	0.64
Expectations of taste	5.00 (0.88)	5.44 (1.06)	48	1.60	.117	0.45
Taste	5.50 (1.48)	5.02 (1.72)	48	1.06	.276	0.30
WTP (in £)	1.86 (0.87)	1.60 (0.68)	48	1.19	.240	0.33

Note: The values represent the means and standard deviations (in brackets) of the variables included in the analyses. Independent sample t-test was used to test for statistical significance of the differences in each measure obtained as a function of condition.

Table 6

Results from moderated mediation analysis in Study 3a and 3b examining the mediation effect of moral satisfaction on taste expectations for low, moderate, and high level of altruistic/biospheric value endorsement as the moderator.

Level of the moderator	Study 3a			Study 3b		
	Altruistic values	*B*	95% CIs	Biospheric values	*B*	95% CIs
M-1SD	4.66	.40	-0.07; 1.42	3.45	.01	-0.25; 0.29
M	5.74	.76*	0.31; 1.67	4.83	.20*	0.03; 0.57
M+1SD	6.82	1.12*	0.35; 1.87	6.21	.39*	0.05; 1.08

Note. The simple slopes we report hinge on estimations based on the whole sample, as calculated by the PROCESS model, rather than on actually dividing the sample and computing slopes in each subsample. *B* is the unstandardized coefficient from a moderated mediation analysis, depicting the effect of moral satisfaction on taste expectations for each of level of the moderator. The 95% CIs are the bias corrected and accelerated confidence intervals obtained with 1000 re-samplings. *$p < .05$.

Table 7

Correlation matrix of the variables included in the mediation analyses conducted in Study 3a and Study 3b.

	Study 3a				*Study 3b*			
	1	2	*3*	*4*	*1*	*2*	*3*	*4*
Condition								
Moral satisfaction	.69**				.31*			
Expectations of taste	.22	.35*			.22	.32*		
Taste experince	.24†	.27†	.51**		-.15	.08	.45**	
WTP (in £)	.15	.23	.41**	.42**	-.17	.15	.37**	.51**

Note. **$p < .01$. *$p < .05$. †$p < .10$. $N = 50$.

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