

# Sustainable Food Consumption and the Regret of Consumers

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## Abstract

The purpose of this study was to explore feelings of regret and guilt felt by individuals whose actual food purchase was not as sustainable as they wished. For consumers with a positive attitude towards sustainable food products, a lower purchase frequency was associated with higher levels of regret. For both the issues of organic and Fair Trade consumers report modest feelings of regret and guilt. Concerning regret, no differences were found between organic or Fair Trade foodstuff. In contrast, feelings of guilt were more associated with not buying enough Fair Trade than not buying enough organic. The moment consumers started to imagine how their purchase decisions would feel when looking back in the future, both feelings of regret and guilt increased. Finally, participants were, to a certain extent, open to outside help to increase their sustainable food consumption. However, conclusions about sustainable consumption were mainly based on the Fair Trade data, rather than organic consumption. Implications of the results for further research and policy makers are discussed.

# 1. Introduction

Sustainable consumption, in line with the broader concept of sustainable development, is consumption that 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (UN, 1987). Especially in the last decade the Dutch government has increasingly paid attention to the sustainability of food consumption in the Netherlands. Currently it is, alongside food healthiness, the main topic of the department of Agriculture, Nature and Food Quality (LEI, 2009). This department tries to find ways to stimulate the consumption of sustainable products. A recently published strategic document makes clear that the government wants to guide consumers into sustainable food choices through intensive education (LNV, 2009a). Together with measures to enlarge the supply of sustainable foodstuff this should suffice to reach national sustainability targets.

The strategy document was the reason the Consumer Panel of the Department discussed the possible efforts of the government (LNV, 2009b). One of the conclusions was that the government should not restrict itself to just promoting sustainability. It is the task of the government to go beyond that and make policy choices, facilitate sustainable consumption and set borderlines for conventional products (2009b, p. 10). Apart from the relative vagueness of this conclusion, this whole issue raises the question to what degree a government is allowed to interrupt in an individual's own choice, even if the intervention is well meant. So here is the core dilemma for governments on sustainability: on the one hand setting policy targets to increase sustainable food consumption, on the other hand lacking legitimacy to intervene in actual consumption behavior (CBS, 2009).

At the same time a frequently discussed topic associated with sustainable food consumption is the gap between the positive attitude of consumers towards sustainability and the actual sustainable consumption behavior. Considerable numbers of consumers state that they appreciate sustainable products, but these preferences are only weakly mirrored in the actual

purchase behavior (Shepherd et al., 2005; De Pelsmacker et al., 2005; Vermeir & Verbeke, 2008; D'Astous & Legendre, 2009). One would expect consumers to regret this inconsistency. Their attitude towards sustainability is positive, they even may intent to buy sustainable products, but yet they don't translate attitudes and intentions into real behavior (Young et al, 2010).

Combining these two major issues brings a new idea to mind: would consumers who regret the fact that they do not consume as much sustainable food products as they wish, want the government to help them solve this discrepancy? A recent considerate suggestion for this help, called *libertarian paternalism*, comes from the discipline of behavioral economics. In a nutshell it argues that governments should leave consumers a free choice, but nudge them into the desired direction by deliberately designing the choice context and situation (Thaler & Sunstein, 2009). In the long run people will be thankful for the help, because they achieved goals they would not have been able to reach without the proposed change of choice architecture.

Although many nudging opportunities employ heuristics and biases in consumer judgment, here we focus on the emotion of *regret*. Do individuals experience post-decisional dissonance because of the discrepancy in desired and actual consumption behavior, due to 'less ethical' choices (cf. Chatzidakis et al., 2007)? Regret has a unique influence on decision making, and has been put forward as a possible explanation of why consumers may deviate from earlier made predictions of behavior (Zeelenberg & Pieters, 2007). Regret has been said to be the second most frequently mentioned emotion in research, love being the first (Saffrey et al., 2008).

The present research aims to explore feelings of regret and guilt felt by individuals whose actual food purchase is not as sustainable as they wish. The research is limited to Fair Trade and organic food products, being the most commonly known categories of sustainable food, which makes it both easy to question consumers about it and to compare with other research.

## 2. Theory

### 2.1 Modeling regret

Read (2006) gives a useful framework concerning the intrapersonal conflict between attitudes and behavior with respect to the different stages of the decision process (see Table 1).

	C <sub>pre</sub>	C <sub>act</sub>	C <sub>post</sub>	Judgment
<i>Consistent</i>	O	O	O	'I did the right thing'
<i>Local-conflict</i>	O	X	O	'I wish I had not done that'
<i>Melancholy</i>	O	O	X	'I wish I had'
<i>Liberation</i>	O	X	X	'I am glad I took the wrong turn'

Table 1. A model of intrapersonal conflict. Adapted from Read (2006), p. 683

Read distinguishes three 'agents' (represented by the letter C, indicating the *consumer*) in a person making a choice. The first agent is the *pre-agent* (C<sub>pre</sub>), who makes up his mind about the decision to be made. This stage involves the formation process of a purchase intention. The *acting agent* (C<sub>act</sub>) makes the actual choice, and either performs or abstains from the intended behavior. Thirdly, the *post-agent* (C<sub>post</sub>) reflects on what has taken place, and may suffer or enjoy the consequences.

Table 1 shows four patterns or situations which can be produced by different combinations of choices by the three agents. If all three agents agree that the best choice is O, the situation will be *consistent* and the post-decisional judgment will be something like 'I did the right thing.' Note that the letter O represents the option preferred by the pre-agent, and does not necessarily mean the ethical or socially 'right' option.

If the acting agent or the post-agent disagrees with the option preferred by the other agents and chooses X as the favorite option, one arrives in the *local-conflict* or the *melancholy* situation, respectively. The *liberation* mode means that both the acting and the post-agent agree that the preferred option before making the decision was not the best one, and they enjoy the fact they did not act according to the pre-agent's preference.

The attitude – behavior gap existing on the market of sustainable food products is

basically displayed by the *local-conflict* situation: the pre-agent wanted to buy a sustainable product (O), the acting-agent did choose a non-sustainable product (X), but the post-agent still prefers the sustainable product (O). The main assumption to be checked by this research is that this discrepancy causes feelings of regret.

*H1: The attitude – behavior gap is a source of feelings of regret about not consuming more sustainable food products than indicated beforehand.*

The definition of regret generally used in the scientific literature is 'a negative, cognitive-based emotion that is experienced when we realize or imagine that our present situation would have been better had we acted differently' (Zeelenberg, 1999; Arkes et al., 2002; Mannetti et al., 2007; Sandberg & Conner, 2008).

Research reveals two preconditions for experiencing regret about one's actions. Firstly, regret depends on somebody's control over the decision or action to be taken (Cooke et al., 2001). It is most likely to occur when a person is a causal agent, meaning that without responsibility for a bad decision it is hard to regret it (Zeelenberg, Van Dijk & Manstead, 2000; Shani & Zeelenberg, 2007). The outcome should not be caused by situational circumstances or some other person (Soscia, 2007).

Secondly, realizing that another — non-chosen — option would have been better, generates feelings of regret (Tsiros & Mittal, 2000; Pierro et al., 2008; Su et al., 2009). This makes some researchers call regret a 'counterfactual emotion,' because it is an emotional consequence of counterfactual thinking (Mandel, 2003; Mannetti et al., 2007). In addition, people do not necessarily need information about the forgone alternatives to experience regret; they still will think that there could have been a better option (Tsiros & Mittal, 2000).

Several factors influencing counterfactual thinking have been identified. There appear to be individual differences in both the type and the amount of counterfactual thinking experienced (Pierro et al., 2008). In addition, thinking about how an outcome could have been prevented tends to generate more counterfactual reasoning than thinking about the cause of an outcome (Cooke et al., 2001). Results also show that

counterfactuals are most likely to be generated when the chosen outcome is negative and deviating from the status quo (Tsiros & Mittal, 2000).

Interestingly there seems to be a relationship between type of *agency* and *counterfactual thinking*: people tend to generate counterfactuals especially about the choices in which they were bearing responsibility (Markman et al., 1995; Cooke et al., 2001). This underlines the importance of personal agency in the experience of regret.

## 2.2 Regret and other emotions

When talking about regret, the question arises in what respect it differs from other aversive emotions. It differs from *disappointment* because for regret personal agency is needed (Zeelenberg & Pieters, 2007; Su et al., 2009), and also regret focuses on the non-chosen option, whereas disappointment is about a chosen option (Pieters & Zeelenberg, 2005; Pierro et al., 2008). Next, the interaction between regret and *dissatisfaction* is well-documented: when regret about a decision increases, satisfaction with that decision decreases (Cooke et al., 2001). However, dissatisfaction leads to complaint intentions, whereas regret does not (Tsiros & Mittal, 2000).

Probably, the emotion most closely related to regret is *guilt*. Berndsen et al. (2004) argued that the main distinction between regret and guilt is that guilt is emotional distress caused by interpersonal harm (when other persons are hurt by the negative consequences of your choice), whereas regret is caused by intrapersonal harm (the individual himself suffers the consequences). Negative feedback from other actors is thus a necessary condition for experiencing guilt, but not for experiencing regret.

Zeelenberg and Breugelmans (2008) oppose this vision of Berndsen and colleagues. They do agree on the fact that personal agency is a precondition for both regret and guilt, something other researchers also do (e.g., Soscia, 2007). However, their objection is that — along with some methodological remarks — it is incorrect to exclusively bind regret to intrapersonal harm and guilt to interpersonal harm. Regret is a broader emotion than guilt and is reported for both inter- and intrapersonal harm, whereas guilt is only reported in interpersonal harm.

Guilt thus is associated with interpersonal harm, whereas regret is reported irrespective of who suffers from the action. In addition, guilt is expected to be more related to the transgression of moral or social norms, whereas interpersonal regret still focuses on the forgone alternatives (Chun et al., 2007; Zeelenberg & Breugelmans, 2008).

If this distinction is true, it is of major importance in the field of sustainable foodstuff. Since Fair Trade products are related to good working and trading conditions for farmers in developing countries (cf. de Pelsmacker et al., 2005), it concerns the negative consequences of our consumption pattern for other human beings. In contrast, organic production is about the natural cultivation of animals, plants and the environment, and not about disadvantages for human beings involved in food production.

Following this reasoning, one should expect regret to be reported following less than desired Fair Trade and organic food consumption, but guilt only following less than desired consumption of Fair Trade products.

*H2: There is no difference in the amount of experienced regret between not consuming more Fair Trade products and not consuming more organic food products*

*H3: Consumers do experience more guilt for not consuming more Fair Trade products than for not consuming more organic food products*

## 2.3 Time perspective

Another determinant of regret experience is time. Keinan and Kivetz (2008) consistently find that vices are regretted in the short run, but virtues in the long run. They argue that the misinterpretation that vices generate more regret than virtues is due to a narrow default mind-set of consumers not spontaneously incorporating long-term regret.

As far as known, no research has yet picked up this interesting topic and related influences of time distance on regret. Both *delay discounting* (present rewards are generally preferred over later rewards) and *time perspective* (the cognitive processes which filter temporal information and influence behavior) look

promising for an improved explanation of intertemporal choices and thus regret (cf. Daugherty & Brase, 2010).

Applied to sustainable food consumption, consumers may not regret consuming non-sustainably in the short run: they can legitimize their choice, e.g. by convincing themselves that a product was too expensive or that they did not like the taste of organic tomatoes. In the long run however they still can regret the pattern of not having consumed as sustainably as they wished when looking back.

*H4: Consumers will experience regret about not consuming enough sustainable*

*food products in the long run more than in the short run.*

#### **2.4 Regret and external help**

Finally, to complete this research it is necessary to check the proposed assumption that regret causes consumers to call in external parties or institutions for help.

*H5: The more consumers regret consuming not enough sustainable food products, the more they appreciate the help of others to increase their consumption frequency.*

All hypotheses will be tested in a consumer sample to be described next.

### 3. Methods

#### 3.1 Participants and questionnaire design

To create a diverse sample, adult participants have been approached randomly — in person — at a Dutch railway station, a primary school (while waiting for their children to come out) and a big city centre. During June and July 2010 101 respondents were asked to complete a two-page questionnaire on the spot. If necessary, to convince consumers to participate, they were told that it would only take five minutes to complete the questionnaire. No debriefing was necessary.

A 2x2 questionnaire design was employed, in which ‘type of sustainability’ (Fair Trade or Organic food) was varied within subjects and ‘time perspective’ (regret on the short term or long term) was varied between subjects. In addition, the order of the sections about Fair Trade and Organic food were reversed for half of the questionnaire, to eliminate any influence of order on the answers. This procedure resulted in four different versions of the questionnaire (see Figure 1). Each respondent randomly received one of the four versions.

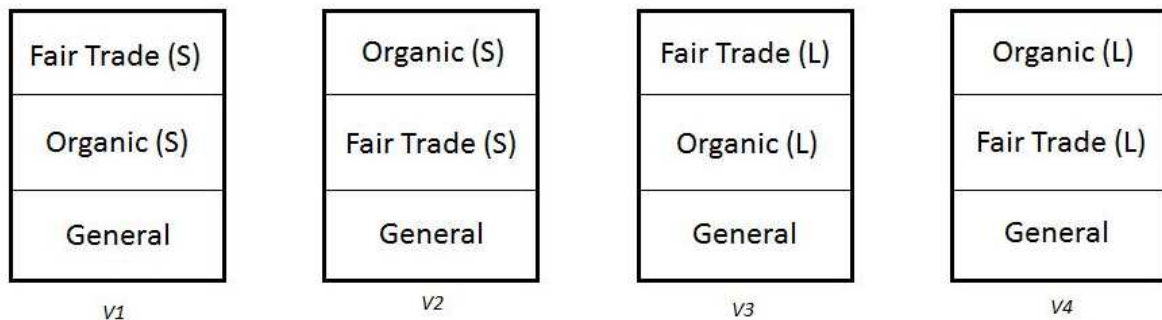


Figure 1. The four versions of the questionnaire; (S) and (L) refer, respectively, to short-term and long-term regret

#### 3.2 Materials and procedures

The questionnaire consisted of fourteen questions, and took five minutes to complete. The questions on Fair Trade were the same as for Organic food. First of all participants were asked to indicate their attitude towards Fair Trade food on a 7-point scale, ranging from 1 (*very negative*) to 7 (*very positive*) (cf. Vermeir & Verbeke, 2008).

Secondly, they were asked whether they had ever bought Fair Trade food products (Yes/No). If they answered ‘yes’, respondents

were asked to indicate how many times they had bought Fair Trade food products in the past month. Although Bartels and Reinders (2010) asked for expenditures on food products, to make the question more easy to complete, the question from Robinson and Smith (2002) is adopted who asked consumers to indicate the amount of products bought.

Future purchase intention was measured by the fourth question, which asked for the expected amount of Fair Trade products bought in the next month. The question was phrased in the same way as the previous one to facilitate both the answering and the comparison with past purchases in the analysis.

The fifth question was either ‘To what degree do you experience regret at the moment because you did not buy more Fair Trade products last month?’ (the short term condition) or ‘If you would not change your purchase behavior for Fair Trade food products, to what degree do you expect to experience regret due to this behavior in twenty years?’ (the long-term condition). Both questions were adapted from Keinan and Kivetz (2008). Respondents indicated their answer on a 7-point scale ranging from 1 (*no regret at all*) to 7 (*very much regret*). These questions have been

used commonly to investigate feelings of regret, originally introduced by Tsiros & Mittal (2000). The sixth question asked in a similar way about the emotion of guilt.

Next the same six questions were asked, but now concerning Organic food products. After that the thirteenth question described the possibility to participate in a self-commitment project to buy more sustainable food products (via the website [www.stickk.com](http://www.stickk.com)). Consumers were asked to indicate to what degree they seriously

consider participation if they would want to make their food consumption more sustainable, on a 7-point scale ranging from 1 (*absolutely not*) to 7 (*absolutely*). Question fourteen asked respondents to judge the sustainability of their food consumption taking everything into account, also on a 7-point scale from 1 (*very bad*) to 7 (*very good*). The questionnaire finished with some socio-demographic issues including age, highest completed education and gender.

Because respondents were Dutch, the questionnaire was phrased in the same language. It was titled 'Questionnaire on Food Purchase Behavior,' accompanied by the statement 'This questionnaire is part of graduate research without any commercial interest.' This statement was included to avoid any possible influence of

consumers' suspicion of commercial use of the questionnaire. In addition, both the section on Fair Trade and on Organic products were introduced by a two-sentence definition of the relevant kind of sustainability, to ensure a common minimum amount of knowledge about the topic of research.

### **3.3 Pilot test**

A pilot test was conducted with an earlier version of the questionnaire to check for comprehensibility of the questionnaire and feasibility of the questions for statistical analysis. Seventeen students from Wageningen University completed the questionnaire during a lecture. As a result some minor adaptations were made to the final questionnaire.

## 4. Results

### 4.1 Sample description

The sample was aged between 17 and 83 years, with an average age of 41 years. Figure 2 shows the age distribution.

questionnaires were collected at the railway station (52), 39 respondents were asked on the street in a big city centre, whereas ten other participants filled out the questionnaire while waiting outside a primary school.

### 4.2 Description of data

50 of the respondents were asked to evaluate *current* regret and guilt about their food

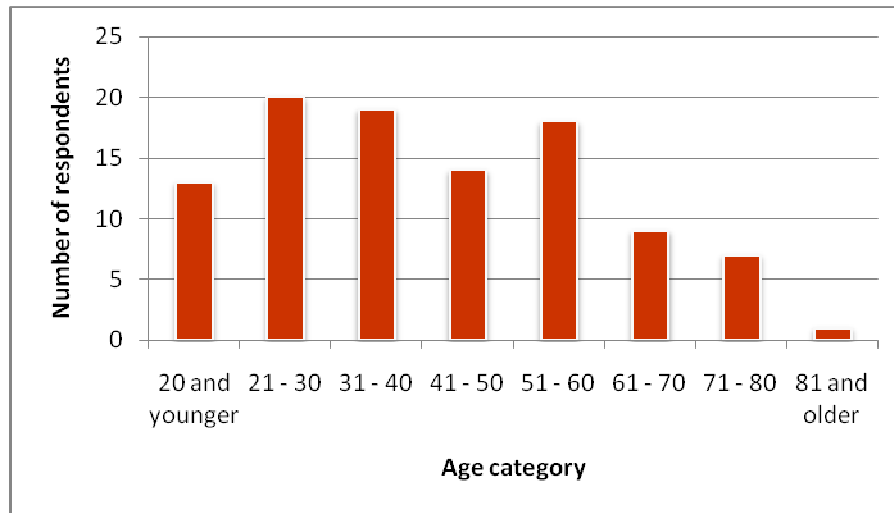


Figure 2. Number of respondents by age category

The gender ratio was almost equal: 51 men and 50 women. 18 respondents finished a study at the university. 30 had higher professional education, whereas 25 had intermediate professional education. Nine persons had lower professional education. 19 finished secondary school or lower. The latter category included participants who were currently enrolled in a study, but did not have a diploma yet. Half of the

consumption behavior. 51 participants were assigned to the long-term regret condition and indicated their expected feelings of regret and guilt when looking back *in 20 years*.

The order of the sections on organic and Fair Trade were reversed for half of the sample, to eliminate the influence of it on the answering. All answers turned out to be insensitive to questionnaire order according to a Mann-Whitney

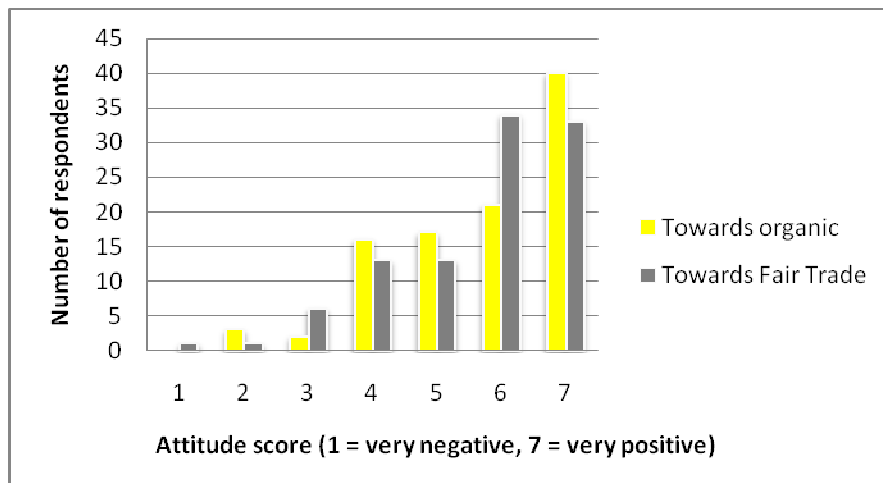


Figure 3. Sample distribution of attitude scores



test. To correctly execute the statistical analyses needed to test the hypotheses, the data was checked for normality. The scores on attitude, regret, guilt, willingness to participate in the self-

ranging between 0 and 50 products ( $N = 93^1$ ,  $SD = 10.40$ ). Excluding the 'never-buyers' raised the average to 8.7 purchases ( $N = 85$ ,  $SD = 10.59$ ). In the same month respondents bought 4.5 Fair

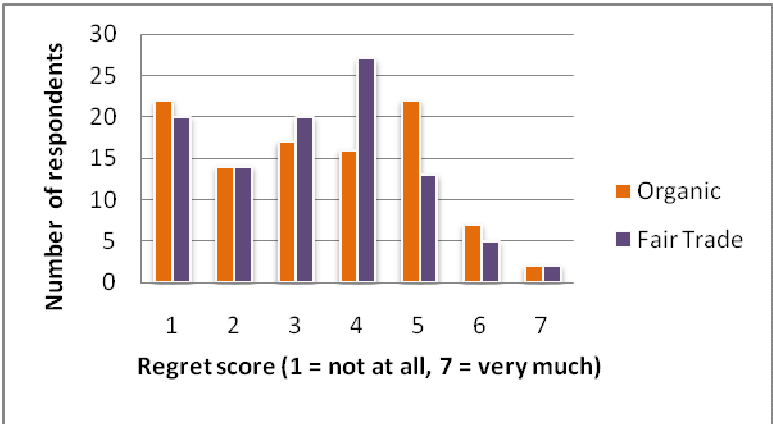


Figure 4. Sample distribution of experienced regret

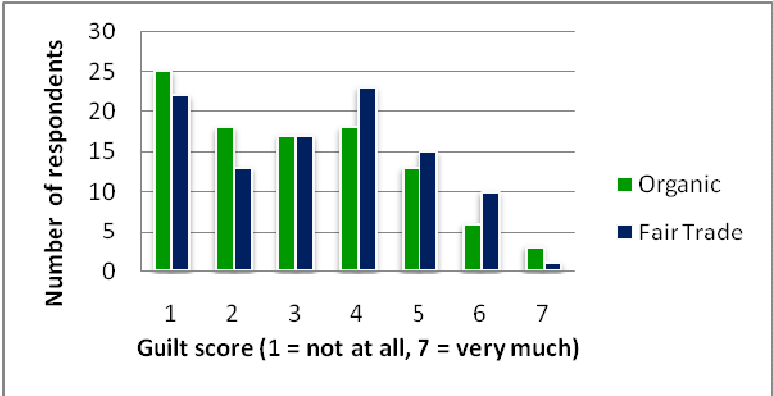


Figure 5. Sample distribution of experienced guilt

commitment project and the judgment of overall sustainability were analyzed with the Kolomogorov-Smirnov test of normality. All test statistics were highly significant ( $p < .001$ ), meaning all data was not distributed normally. Therefore non-parametric tests were used in all analyses. Figures 3, 4 and 5 visualize this non-normal distribution for attitude, feelings of regret and feelings of guilt.

**4.3 Buying behavior**

7.9 % of the respondents never bought any organic food product. For Fair Trade this percentage is slightly higher: 10.9 %. The participants bought 8.0 organic food products on average in the month preceding the survey,

Trade products on average, ranging between 0 and 30 products ( $N = 95$ ,  $SD = 5.68$ ). If the never-buyers were excluded, the average increased to 5.2 products ( $N = 84$ ,  $SD = 5.79$ ). A Wilcoxon-signed rank test showed that the higher purchase frequency of organic food was significant ( $T = 34.57$ ,  $p$  (1-tailed)  $< .001$ ).

Participants were also asked how many products they intended to buy in the next month. The range for organic was again between 0 and 50, with an average of 8.9 purchases ( $N = 86$ ,  $SD = 10.93$ ). Among the respondents reporting buying organic food, the average was 9.8 ( $N = 85$ ,  $SD = 11.11$ ). For Fair Trade the numbers were between 0 and 30, with 5.1 products on average ( $N = 90$ ,  $SD$

<sup>1</sup> The number of respondents were clearly lower in this section on buying behavior compared to the other sections. This is due to non-response: most of them didn't know the numbers themselves.

= 5.72). If non-buyers were excluded, the average was 5.8 products ( $N = 79$ ,  $SD = 5.75$ ). These intended purchase frequencies were higher than the amount of products bought in the previous month, both for organic ( $T = 13.64$ ,  $p$  (1-tailed) < .05) and Fair Trade ( $T = 12.89$ ,  $p$  (1-tailed) < .01).

#### 4.4 Test of hypotheses

The first hypothesis of this research was about the attitude – behavior gap and its relationship with feelings of regret. It states that the amount of experienced regret increases when persons with a positive attitude towards sustainability do not buy as much sustainable food products as they wish. To test this hypothesis, the scores for the attitudes towards both organic and Fair Trade were averaged. The same was done for the scores on regret. This resulted in two new variables: a score indicating the attitude towards sustainable food products, and a score of experienced regret for not buying more sustainable food products.

Next, all respondents with a clearly positive attitude (6 or higher on the 7-point scale) towards sustainability were selected ( $N = 48$ ). If the hypothesis is true, for these persons a negative correlation should be found between the amount of bought products and the amount of experienced regret: the less they bought, the larger the attitude-behavior gap, the more regret is felt. Spearman’s Rho shows a negative relationship between a person’s amount of

bought sustainable food products and the amount of experienced regret for not buy more ( $\rho_s = -.244$ ,  $p$  (1-tailed) < .05). This result confirms the hypothesis that a difference between attitude and purchase behavior leads to feelings of regret.

To know more about this correlation one should zoom in on these numbers for organic and Fair Trade separately. Again respondents with score of 6 or higher for the attitude towards Organic ( $N = 54$ ) and towards Fair Trade ( $N = 63$ ) were selected. The negative correlation was found for Fair Trade ( $\rho_s = -.255$ ,  $p$  (1-tailed) < .05), but for organic foodstuff it was not significant ( $\rho_s = -.219$ ). Interestingly enough — although this was not included in the hypothesis — a similar negative correlation between the amount of bought products and the experienced feelings of guilt was found for Fair Trade ( $\rho_s = -.252$ ,  $p$  (1-tailed) < .05), and not for organic ( $\rho_s = -.190$ ). However, the correlation between the aggregated variable of guilt and purchases was not significance anymore ( $\rho_s = -.201$ ).

Hypothesis 2 states that the reported experienced regret for not buying more organic equals the experienced amount of regret for not buying Fair Trade. Figure 4 already shows that both regret scores show a similar pattern. A Wilcoxon signed-rank test showed that the difference in reported regret on organic and Fair Trade foodstuff was not significant ( $T = 29.11$ ,  $p = .707$ ), thus confirming the hypothesis.

The third hypothesis is that consumers

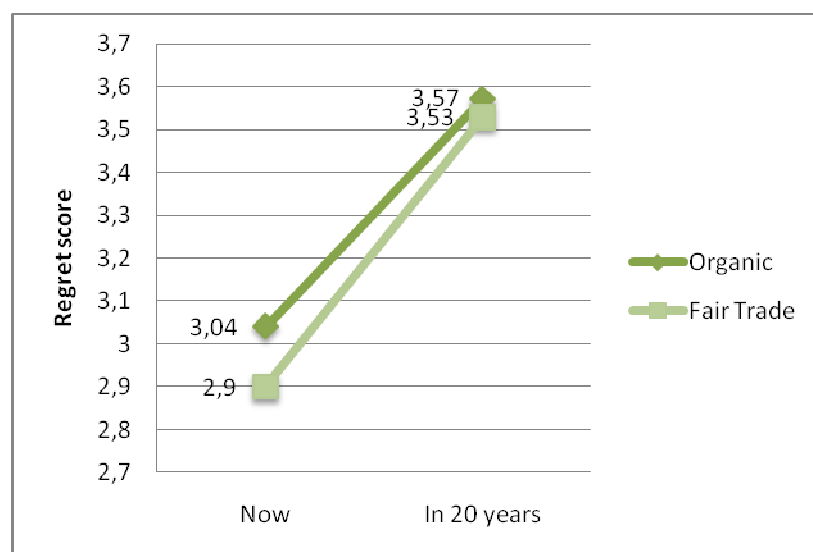


Figure 6. Average indicated amount of regret by condition

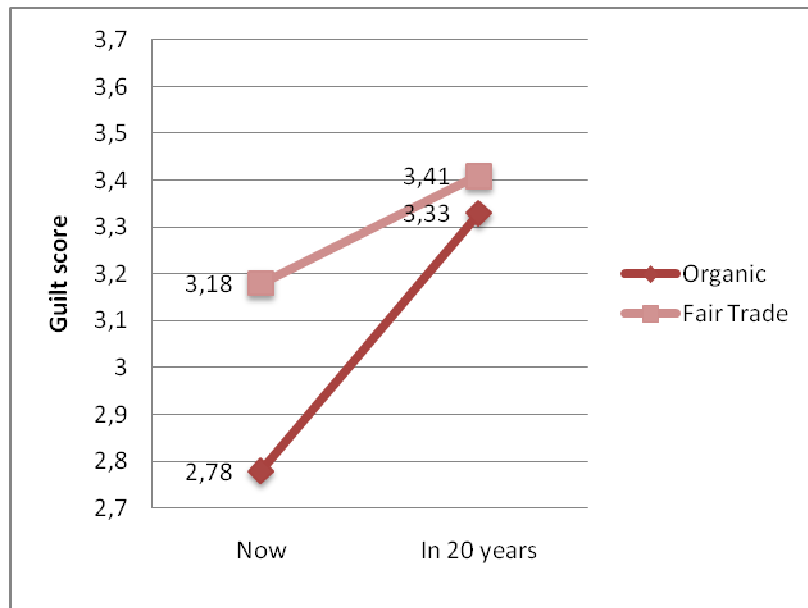


Figure 7. Average indicated amount of guilt by condition

experience more guilt for not consuming more Fair Trade products than for not buying more organic foodstuff. A Wilcoxon signed-rank test confirmed this hypothesis. The reported levels of experienced guilt for not buying more Fair Trade products were higher than those for organic food ( $T = 25.77, p$  (1-tailed)  $< .05$ ). This pattern is shown in figure 5.

Hypothesis 4 concerns the influence of time perspective on the experienced regret. Figure 6 shows the amount of regret, with currently experienced regret and regret expected to be felt when looking back after 20 years grouped separately<sup>2</sup>. Remember that regret is measure on a scale ranging from 1 (*no regret at all*) to 7 (*very much regret*). According to the hypothesis the respondents in the long-term condition should report more regret than those in the short-term condition. A Mann-Whitney test on the aggregated regret showed that consumers in the long-term condition ( $Mdn = 4.00$ ) reported higher levels of regret than consumers in the short-term condition ( $Mdn = 3.00$ ) ( $U = 980.00, p$  (1-tailed)  $< .05$ ). Therefore also the fourth hypothesis is confirmed.

<sup>2</sup> Because the data on regret has no normal distribution, using the median in the graph would be more statistically correct to use. However, because all medians turn out to be either 3.00 or 4.00, the graph using the averages shows more useful insight into the data.

The main effect for sustainable food can be separately into one for organic and one for Fair Trade. When talking about organic, the higher levels of regret in the long run are just not significant ( $U = 1038.50$ ). But consumers do expect to experience more regret for the low purchase frequency of Fair Trade when looking back after 20 years than they feel currently ( $U = 965.50, p$  (1-tailed)  $< .05$ ).

As with the first hypothesis, the data on guilt revealed remarkable additional results, although not asked for by the hypothesis. Figure 7 shows the same averages as Figure 6, but now for feelings of guilt.

The first thing to notice is the reversed order of organic and Fair Trade: were the scores for organic higher for regret, now Fair Trade has higher values. This finding corresponds with the confirmed third hypothesis, which states that levels of guilt for not buying as much Fair Trade as wished are higher than for not buying as much organic. The aggregated guilt score is calculated, and a Mann-Whitney test reveals that the amounts of currently felt guilt ( $Mdn = 3.00$ ) and guilt expected to be felt after 20 years ( $Mdn = 3.00$ ) do not differ significantly ( $U = 1117.00, r = .092$ ). For Fair Trade this is also true ( $U = 1186.00, r = -.061$ ). Instead, consumers do expect to experience more guilt for the low purchase frequency of organic in the future than they have at the moment ( $U = 997.50, p$  (1-tailed)  $< .05$ ).

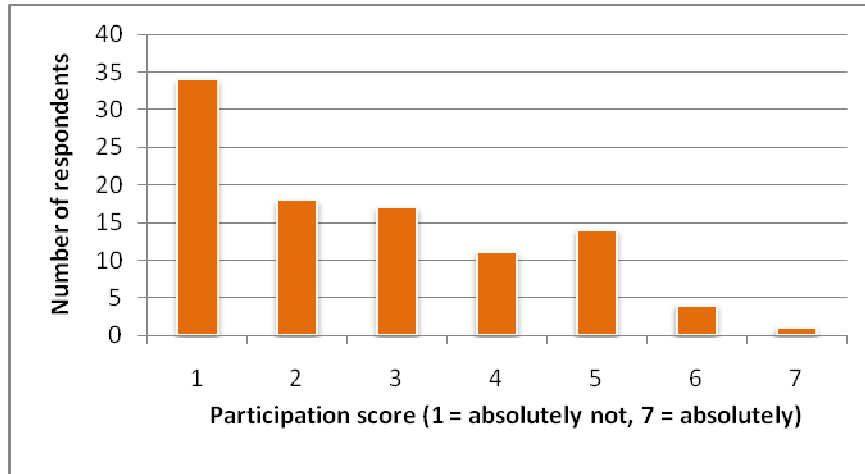


Figure 8. Sample distribution of Willingness to Participate scores

The fifth and final hypothesis states that the more consumers regret not consuming more sustainable food products, the more they appreciate the help of others to increase this purchase frequency. The latter is measured by describing a self-commitment project on the internet (question thirteen in the questionnaire), and asking the participants to what degree they seriously would consider participation. Figure 8 shows the sample distribution for this question. Spearman's rho showed a positive correlation between willingness to participate and regret ( $\rho_s = .217, p$  (1-tailed)  $< .01$ ). Therefore the hypothesis is confirmed. As with other hypothesis, after splitting the main effect, the correlation was true for Fair Trade ( $\rho_s = .327, p$  (1-tailed)  $< .001$ ) but not for organic ( $\rho_s = .132$ ). In addition, the correlation is not found for the aggregated

feelings of guilt, although Fair Trade was significant again ( $\rho_s = .268, p$  (1-tailed)  $< .01$ ).

#### 4.5 Self-judgment of overall sustainability

The questionnaire contained an additional question, which asked consumers to judge their overall consumption sustainability. Figure 9 shows the sample distribution.

This data provided additional insight into the value of other measures. Firstly, there was a negative relationship between the positivity of the self-judgment and the amount of experienced regret ( $\rho_s = -.204, p$  (1-tailed)  $< .05$ ). The more consumers regretted their purchase frequencies of sustainable food products, the less positive they were about their own consumption sustainability. However, this effect existed only thanks to data on regret about Fair Trade



Figure 9. Sample distribution of self-judged sustainability scores

purchases ( $\rho_s = -.329, p$  (1-tailed)  $< .001$ ), whereas organic did not show a significant correlation ( $\rho_s = -.052$ ). Secondly, there is a negative correlation between the size of the attitude-behavior gap and the positivity of the self judgment ( $\rho_s = -.258, p$  (1-tailed)  $< .05$ ). Both correlations have the expected

direction one would expect, hence they confirm the reliability of the measures taken to prove the first hypothesis on the positive correlation between the size of the attitude-behavior gap and the amount of experienced regret.

## 5. Discussion

The purpose of this study was to explore feelings of regret and guilt felt by individuals whose actual food purchase is not as sustainable as they wished. All measures are taken for organic products and Fair Trade products separately. These are not the only product attributes within the field of sustainability, but the most commonly known and therefore a good indicator of the overall sustainable food segment. Indeed, this segment also includes ecological products, sustainable fish and food with little packaging. The whole picture of sustainability is even more complicated because definitions are not clear, sustainability aspects can be present in one product at the same time (Zander & Hamm, 2010), or may even contradict. For example, Fair Trade may ensure good working conditions in Third World countries, but conflicts with local purchasing principles attempting to prevent high pollution from transportation. All these different 'ethical' considerations can be confusing for consumers and thus troubling the present conclusions (Bezençon & Blili, 2010).

This research is the first which is fully dedicated to counterfactual emotions in sustainable food consumption. Consumers with a clearly positive attitude towards sustainability are able to combine this attitude with a low purchase frequency of sustainable food products (cf. de Pelsmacker et al, 2005). The present results show that, compared to those who bought more consistent with their positive attitude, they experience more regret and guilt about their Fair Trade purchase behavior. For organic food this result was not obtained. The conclusion that the attitude-behavior gap in sustainable food purchasing leads to feelings of regret and guilt may be true, but the evidence was found only in the Fair Trade segment. Because there are many more ethical product categories and attributes available in contemporary food shops, future research is recommended on this issue.

In this research more differences were found between consumption of organic and Fair Trade. Consumers do purchase more organic food products, and intend to keep it like that in the future. But another, more striking difference is

that the data on regret and guilt about not buying enough organic hardly gives any statistical relevant outcomes. There is only evidence for an increase in guilt over time. In contrast, all predictions for Fair Trade with respect to regret and guilt are true. It is difficult to find a good explanation for this phenomenon. Maybe consumers are more emotionally involved in Fair Trade, express their regret and guilt more explicit and therefore differences are easier to find. However, such a difference in emotional intensity is neither reflected in the present data nor in literature.

Another possible interpretation lies in the customer base which is significantly larger for organic products. Research showed that a substantial group of consumers do not necessarily buy organic foodstuff because of its ethical dimension, but because it would be healthier (Verhoef, 2005; Mondelaers et al, 2009)<sup>3</sup>. This appears to be especially true for consumers who incidentally buy organic (Shepherd et al, 2005). Hence the subject of consumer regret and guilt can be diverse, which has a much more ambiguous effect on counterfactual thinking and the corresponding emotions, making it difficult to find differences. Although compelling and important, this remains speculative and future investigations should be able to tell more about it.

Interestingly, taking all participants into account, the reported amount of regret and guilt is not too high. Respondents score on average 3.3 for regret and 3.2 for guilt on a 7-point scale. One must be careful in interpreting these numbers, but in words they mean something like 'modest feelings of regret'. Apparently an inconsistency in food purchase behavior is not enough to really influence people's regret about their choices. This finding can be explained by the fact that food is a typical low-involvement good (Verbeke, 2005). The sample distribution of self-judged sustainability scores confirms this conclusion: most people are neither clearly positive nor negative about themselves. Probably this means consumers are just not interested enough in food choices to have an explicit opinion.

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<sup>3</sup> Interestingly these alleged health benefits of consuming organic compared to conventional foods lack sufficient evidence (e.g. Williams, 2002; Hoefkens et al, 2010). However, for now it is not necessary to continue on this issue.

Concerning regret, no differences were found between organic or Fair Trade foodstuff. Also for both product categories the reported amount of regret is time sensitive, although the evidence for organic products is just too weak to be significant. In contrast, consumers clearly feel more guilty about not buying Fair Trade than not buying organic, mainly in the short run. When they start to imagine how it feels when looking back in the future, the feelings of guilt level up almost completely towards the same height. Thus the moment of evaluating matters for organic products, and for Fair Trade in case of regret (but not in case of guilt). Guilt about Fair Trade purchases is high anyway. These findings are the first empirical confirmation for the distinction between regret and guilt as proposed by Zeelenberg and Breugelmans (2008). They found that guilt is predominantly felt in situations of interpersonal harm (Fair Trade), whereas regret is felt in both situations of interpersonal (Fair Trade) and intrapersonal harm (organic).

Time perspective influences both regret and guilt evaluations. Keinan and Kivetz were the first to pay serious attention to this in the context of consumer choices (2006, 2008). They showed that time has a stimulating impact on the evoked feelings of regret because of farsighted (hyperopic) choices of virtue over vice. Making the distinction between regret in the short term and in the long term is uncommon in contemporary research, but is a valuable addition. Note that these two kinds of regret concerns slightly different things, although closely related. In the present research, evaluation after 20 years not only reflected a series of single purchase decisions in the past month, but included also the broader consumption pattern.

Concerning the used research methods, it should be noted that the attitude explains an important part of the purchase intention (e.g. Robinson & Smith, 2002; Vermeir & Verbeke, 2008), but there are more explanatory factors. The pre-agent from Table 1 is not a simple unit, but a complex system of considerations (Moisander, 2007). The used consumer attitude measurement is a very broad, single question and thus not a very good predictor of one's choice on a specific day in a certain shop for a certain product (Antonides, 1996). However, to keep the questionnaire useful and not too complex, this issue was excluded. Instead a relatively simple

design was used (attitude only), but in follow-up research it is necessary to extend the factors. One of the most widely applied models to do so in food choice studies is the Theory of Planned Behavior, also in the context of sustainable food consumption. Aertsens and colleagues recently produced a nice overview of all these studies, and discussed all additional factors mentioned in literature explaining intentions (2009). This includes also anticipation of consumers on the experience of regret (Kaiser, 2006; Zeelenberg & Pieters, 2007; Sandberg & Connor, 2008), guilt (Steenhaut & Kenhoven, 2006) and moral beliefs (Dean et al, 2006).

Two other suggestions for future research can be given. First of all they should incorporate the reasons why consumers do not buy more sustainable food. From literature there are many factors that can be tested for their relevance. Think about the influence of the availability of the products (Vermeir & Verbeke, 2006), the price (De Pelsmacker et al, 2005; Vermeir & Verbeke, 2008; Young et al, 2010), the size of the choice set (Su et al, 2009), purchase habits (Biel et al, 2005), interaction with other product attributes (Shepherd et al, 2005; D'Astous & Legendre, 2009), social identification and norms (Bartels & Reinders, 2010; LeBoeuf et al, 2010), goal relevance of the product (Patrick et al, 2009) and the perceived quality and reliability of information (Robinson & Smith, 2002; De Pelsmacker & Janssens, 2007).

A second suggestion is about the buyers themselves: are there socio-demographic factors which co-determine the purchasing behavior? Which consumers do buy? And do they differ from the never-buyers?

Finally, at the end of this report it is time to return the practice which gave rise to the research. Governments would want to stimulate people to buy more sustainable food products, but lack a good guideline on how far they can go with that. This research offers a new perspective. Consumers regret that they are unable to buy more sustainably, and are to some extent open to outside help offering a solution. This applies not only to governments, but to every *choice architect*: someone who is responsible for organizing the context in which people take decisions (Thaler & Sunstein, 2009). The present research is explorative, and there is much more to find out before specific measures can be

discussed. As said in the introduction, the policy of *libertarian paternalism* argues that consumers should be nudged into the desired direction by consciously designing the choice context and situation, while leaving them a free choice (Thaler

& Sunstein, 2003). At least it can be said that an interesting direction for solutions is found, which offers opportunities to increase sustainable food consumption by taking the consumer and his emotions as a starting point.



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