# Intersubjectivity and Food Purchasing: Modeling the Intent to Buy

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*Authors' contributions*

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

**Aims:** A previous study showed that Intersubjectivity Theory could explain how consumers could appreciate a food product when looking at the packaging and reading the brand. Two samples of subjects, English and French consumers, were individually presented first with a foreign language food product and then with a native language food product. Their reaction and perception were analyzed in the light of Intersubjectivity theory.
However, the main limitation of the previous study addressed the psychosocial value carried by the foreign products: the product presented to French subjects had a sexual connotation and not this for the English. The present study intended to analyze this potential bias.
**Study Design:** For the present study, a new sample of English subjects were individually presented with a foreign language food product having a sexual connotation. Reactions and perceptions were analyzed applying the protocol of the previous study and results were compared in order to analyze the aforementioned potential bias.

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**Place and Duration of Study:** Subjects were individually met in London in 2019 for the experiment.
**Methodology:** Subjects were selected as in the previous study: volunteer, healthy adults, native English language (N=20, 60% male, average age: 35 years old, middle class). Their spontaneous reaction was observed and they had to fill in the questionnaire addressing intersubjective perspectives regarding the product. Answers were ticked on a Likert scale and data were compared with that of the previous study.
**Results:** The results confirmed the previous study: the comparison of the percentage of responses per questions and of the mean scores showed no significant difference between previous and current studies. This showed that no bias was induced by the psychosocial value carried by the foreign product.
**Conclusion:** The model developed on the basis of Intersubjectivity Theory explains the process of intent to buy in terms of positive coherence between the intersubjective dimensions. It also shows that analyzing the consumers' direct perception of the product does not predict their intent to buy. These findings are of great importance for food producers and marketers.

## ABBREVIATIONS

| Symbol | Definition |
|---|---|
| DP | Direct Perspective |
| FLP | Foreign Language Product |
| FP | Food Product |
| MP | Meta Perspective |
| MMP | Meta Meta Perspective |
| NLP | Native Language Product |
| Sjs | Subjects |

## SYMBOLS AND UNITS

| Symbol | Quantity | Units |
|---|---|---|
| $\alpha$ | Cronbach alpha | None |
| df | Degree of freedom | None |
| r | Correlation coefficient | None |
| p | Significance | None |
| t | t-test coefficient | None |
| s | Questionnaire score | None; ranging from – 2 to +2 |

## SUBSCRIPTS

| Symbol | Relates to: |
|---|---|
| Mean | Mean value of a quantity |

## 1. INTRODUCTION

In a previous study [1], we applied Intersubjectivity Theory to explain how consumers could appreciate a food product when looking at the packaging and reading the brand. This study was triggered by another study [2] showing that brands could lead to misunderstanding the product especially when using words that had another meaning from one country to another; this was called the foreign migration of brands. For example, S. Roy [3] reported: "The name Coca-Cola in China was first rendered as Ke-kou-ke-la. Unfortunately, the Coke company did not discover until after thousands of signs had been printed that the phrase means 'bite the wax tadpole' or 'female horse stuffed with wax' depending on the dialect".

Intersubjectivity Theory was introduced by Mead [4,5], developed into a three interactional-level approach by Ichheiser [6], and used by Gillespie [7] to explain the process of trustworthiness. This application was derived later to explain how the consumers could trust a food product [1] or how coworkers could trust each other and work efficiently together during collaborative activities [8].

To make it short, Intersubjectivity Theory aims at analyzing what a subject A thinks about a subject B (the direct perspective DP), what subject A thinks that subject B thinks of subject A (the meta perspective MP), and what subject A thinks that subject B thinks what subject A thinks of subject B (the meta meta perspective MMP). A complete description of the theory can be found in the previous study [1]. When applied to food products, the intersubjectivity of DP is replaced by interobjectivity as the consumers' feelings are oriented towards a product, not a person, and the Intersubjectivity Theory comes as follows: what the consumer thinks of the product (DP), what the consumer thinks that the producer thinks of the product (MP) and what the consumer thinks

that the producer thinks that the consumer thinks of the product.

The aim of the previous study was to explain how consumers could appreciate a food product when looking at the packaging and reading the brand within the paradigm of foreign migration of brands. Two samples of subjects, English and French consumers, were individually presented first with a foreign language food product ("foreign" in the sense the brand was from the other sample's country) and then with a native language food product. None of them knew the product prior to the experiment. For each product, their spontaneous reaction was observed (chocked, remain serious, smile, laugh) and they had to fill in a questionnaire addressing DP, MP and MMP regarding the product (see appendix).

English subjects were thus presented with the French product and then with the English product. French subjects were thus presented with the English product and then with the French product.

The English product was a pack of sweets for children, purchased in a food-store in London (UK). The brand was "organix goodies" and the food label was "mini oaty bites" (Fig. 1). The particularity of such a product for French subjects was assumed to be in the food label involving the word "bites" which could be read and related to the French slang word "bite" /bit/ meaning "dick".



**Fig. 1. English product purchased in London (UK)**

The French product was a pack of traditional orange chocolate purchased in a food-store in Paris (France). The brand was "Roland Réauté" and the food label was "Les Fagots", a plural noun usually designating a pile of wooden branches in French (Fig. 2). The particularity of such a product for English subjects was assumed to be in the food label involving the word "Fagots" which could be read and related to the English slang word "faggot" /fagət/ meaning "homosexual".



**Fig. 2. French product purchased in Paris (France)**

The results of the study [1] showed that Intersubjectivity Theory was able to explain the process of appreciation of the food product by the consumers:

- The Intersubjectivity Theory was fulfilled for the context of trust of a food product,
- A positive DP did not systematically lead to positive MP and MMP,
- The consumers' intent to buy is explained in terms of coherence between DP and MP.

However, the main limitation of the previous study concerned the psychosocial value carried by the foreign products, i.e. the foreign language products chosen for the samples: the English product, when misunderstand by French subjects, concerned the body (with a sexual connotation) while the French product, when misunderstand by English subjects, concerned the social sexual orientation of a person. It was assume that, perhaps, this asymmetry might have generated a potential bias in the results.

The aim if the present study was thus to analyze the potential bias induced by the psychosocial value carried by the foreign products. It was decided to undertake additional experiment in order to remove uncertainty on this point. The hypothesis we chose was based on the limitations identified in the previous study and described the factor inducing the aforementioned potential bias: H1-if the foreign language product for English subjects has a sexual connotation addressing the body, the results are different than that of the previous study for which the product does not present such a connotation.

## 2. MATERIALS AND METHODS

### 2.1 Design

Investigations were first carried out in order to find a foreign food product for English subjects presenting the same characteristics than that of the foreign food product for French subjects used in the previous study (Fig. 3). The product had to:

- Relate to sweets
- Have a colored packaging
- Have a brand with sexual connotation oriented to the body

We selected a Danish product (Fig. 3) called "Spunk", a slang word in English designating the sperm of a man.



**Fig. 3. The Danish product, a box of sweets called "Spunk"**

As for the previous study [1], English subjects were individually presented first with the foreign language food product. Their spontaneous reaction was observed (chocked, remain serious, smile, laugh) and they had to fill in the questionnaire developed in the previous study in order to address the different intersubjective dimensions DP, MP and MMP regarding the product (see appendix). Answers were ticked on a 5-level Likert scale and data were compared with that of the previous study related to English subjects in the previous study when presented with the Native Language Product (NLP, Fig. 1) and the Foreign Language Product (FLP, Fig. 2). The product used in the present study is called "special Foreign Language Product" (sFLP) hereinafter (Fig. 3).

### 2.2 Subjects

Subjects were selected as in the previous study: all subjects were volunteer healthy adults, all native English language speakers and constituted a similar social profile sample (N=20, 60% male, average age: 35 years old, middle class (see [9]). The number of subjects was low and this was made possible because the characteristics of the brands were exacerbated (for the research purpose), thus favoring significant difference in scores or percentages.

In order to access an authentic spontaneous reaction, subjects were chosen among relatives so that researchers could attest that they would not contain their smile or their laugh in front of them when confronted with the foreign product; in other words, subjects were not inhibited.

### 2.3 Statistical Analysis

Answers on the Likert scale were scored from -2 to +2. For each question, a mean score was calculated by averaging answers of the subjects to the question. Similarity of distributions of answers between the previous sample (previous study) and the new sample (present study) were assessed using a $\chi^2$ test. Significance of differences between scores was assessed using t-test. Robustness of the Intersubjectivity model was assessed using Pearson correlation coefficients. Consistency of data were assessed through Cronbach coefficient.

## 3. RESULTS

Subjects' spontaneous reaction was assessed only for the foreign products. Fig. 4 shows a similarity between the percentage of subjects per reaction: $\chi^2(2,N=36)=1.87$, p>0.34, lower than the critical value $\chi^2_{crit}(2)=5.9$.
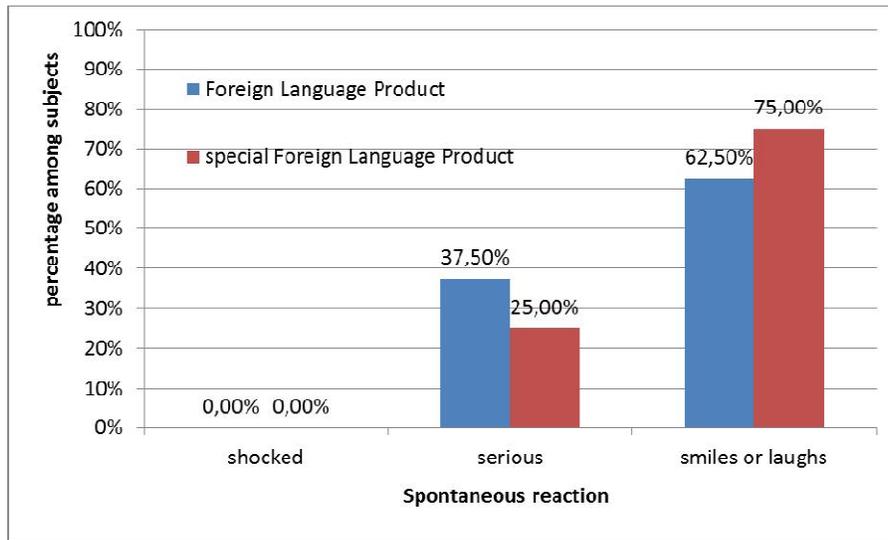
**Fig. 4. Distribution of subjects' spontaneous reaction when presented with the foreign products**

The distribution of subjects regarding their feeling towards the products, Fig. 5, shows a similarity for foreign products: $\chi^2(4,N=36)=8.01$, p>0.26, lower than the critical value $\chi^2_{crit}(4)=9.49$. The difference with the NLP is clear.

The scores regarding subjects' feeling towards the products (Fig. 6) were obtained as follows: answers to questions were given numeric values ranging from –2 to +2 where –2 (resp. +2) denoting a negative (resp. positive) answer on the Likert scale and 0 related to "neither agree nor disagree".

The scores related to foreign products present a similarity: r=0.86 (p<0.003). The difference with the NLP is clear.

The subjects intent to purchase the foreign products (Fig. 7) are similar: t(df=34)= 0.52 (p=0.60). The difference with the NLP is clear.
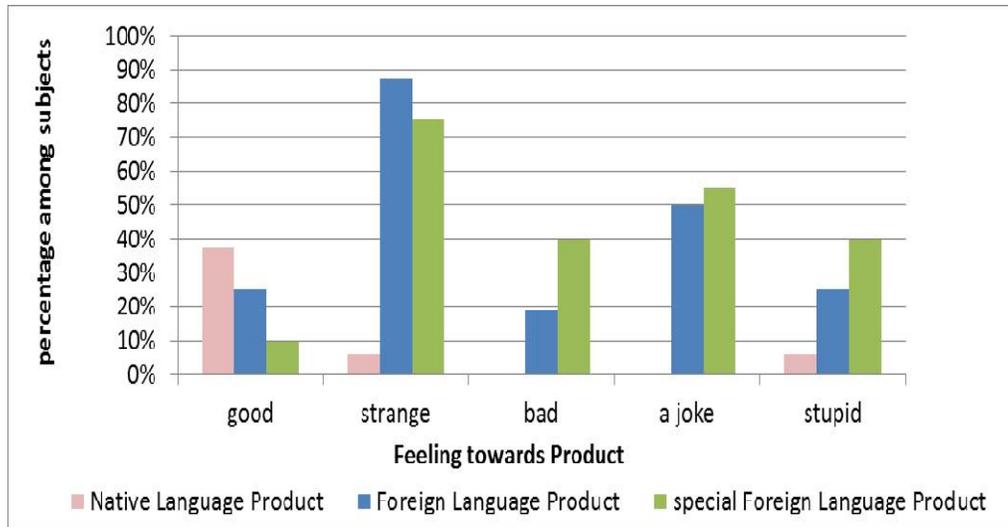


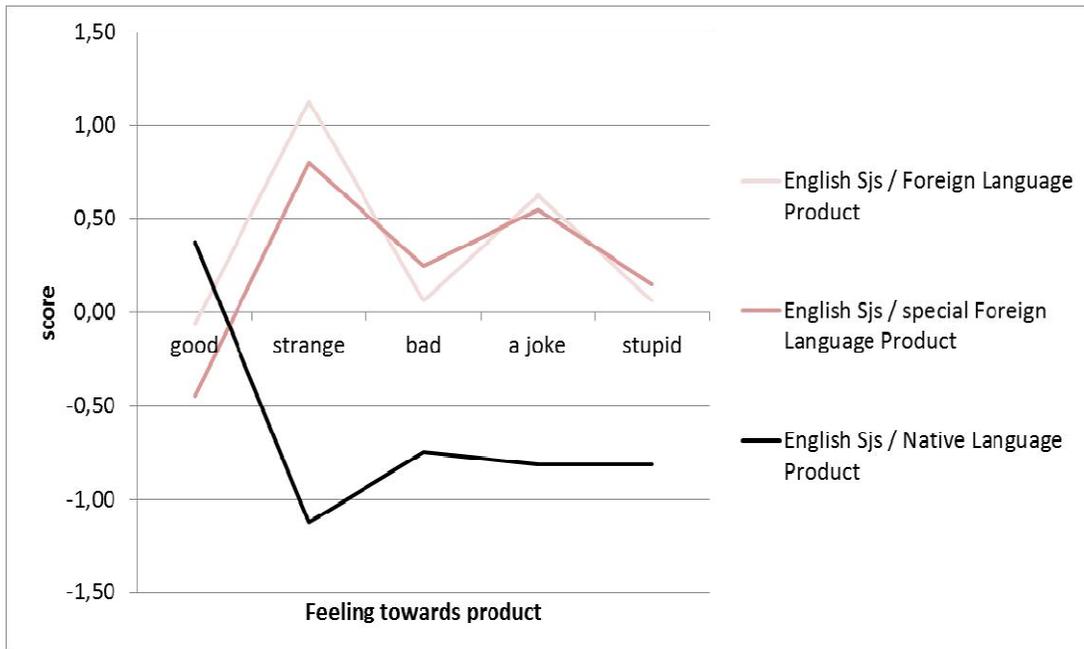**Fig. 5. Distribution of English subjects' feelings when presented with the products**

**Fig. 6. Scores of subjects' feeling when presented with the products**
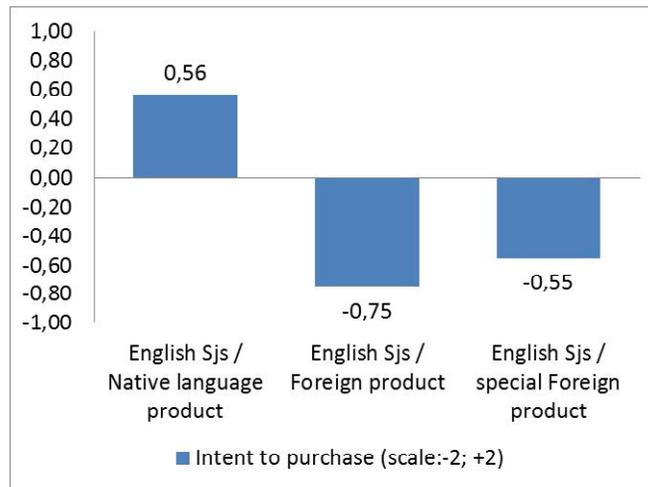


**Fig. 7. Subjects' intent to purchase the products**

The scores regarding subjects' DP, MP and MMP were obtained as follows: answers to questions were given numeric values ranging from –2 to +2 where –2 (resp. +2) denoting a negative (resp. positive) answer on the Likert scale and 0 related to "neither agree nor disagree". For each product, a mean score $s_{mean}$ was calculated for DP (resp. MP, MMP) by averaging the subjects' answer per question. Data are plotted Fig. 8 on a (MP, MMP) graph with DP $s_{mean}$ given in a box for each point.

Points follow the same linear relationship than this found in the previous study, with r=0.93 (p<0.001). The DP mean score $s_{mean}$ were compared using a t-test, the significance of them given on Fig. 8 on the right hand side of the DP boxes: it shows no significant difference between the $s_{mean}$ located at the extremities of the diagonal, i.e. the DP for English subjects' FLP and sFLP are not different and the same for the English subjects' NLP and French subjects' NLP.
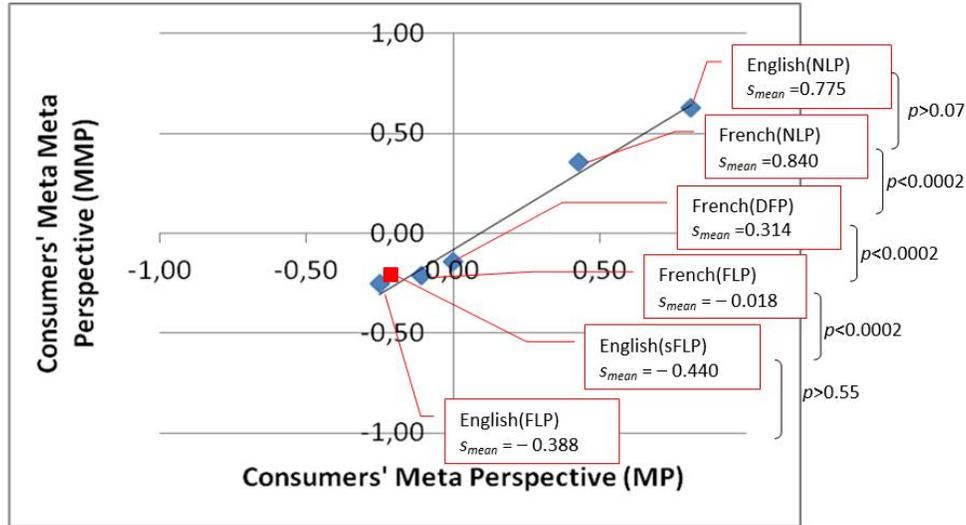
**Fig. 8. The three levels of perspective for each experimental case (current and previous study [1]) with the MP and MMP relating to the X-axis and Y-axis respectively and where the DP mean score s$_{mean}$ is given in the tags. Previous study points are blue diamonds and current study is the red square. The p-values relate to a comparison of the mean scores using a t-test**

The Cronbach alpha gave good consistency of data: $\alpha$(DP)=0.87 and $\alpha$(MP,MMP)=0.53.

## 4. DISCUSSION

### 4.1 Intersubjectivity Analysis

The aim of the present study was to test the hypothesis "H1-if the foreign language product for English subjects has a sexual connotation addressing the body, the results are different than those of the previous study for which the product does not present such a connotation". Concretely, it is assumed that if English subjects are presented with the sFLP (Fig. 3) instead of with the FLP (Fig. 2), the DP, MP and MMP are different.

The results show that H1 can be rejected: the comparison of the percentage of responses per question and of the mean scores shows no significant difference between FLP and sFLP and they confirm the relationships found in the previous study between DP, MP and MMP. Therefore, the model that was suggested remains valid: the process of Intersubjectivity linking the consumer, the product and the producer is explained in the 3D space defined by the two dimensions MP and MMP complemented by the diagonal dimension DP (Fig. 9):

- The first zone is the positive data space in terms of MP and MMP. In this space, intersubjective structure of trust is effective and DP is positive; DP, MP and MMP being all positive, they are said to be in congruence. These characteristics are associated with a high probability for consumers to buy the product.
- The second zone is the negative data space in terms of MP and MMP. In this space, there is an incoherence of the intersubjective structure of trust as there may be a negative or positive DP. These characteristics are associated with a high probability for the consumers not to buy the product.

The notion of "high probability" is crucial. It means that exceptions are possible. This was the case when French subjects were presented with FLP: the previous study showed that despite the point being located in the quarter with high probability not to buy the product, French subjects were statistically ready to buy it with a significant score. Among the data collected in the studies, nothing permits to explain this particularity. An assumption was made that the difference of culture between French and English could provide elements of explanation. This requires further studies.
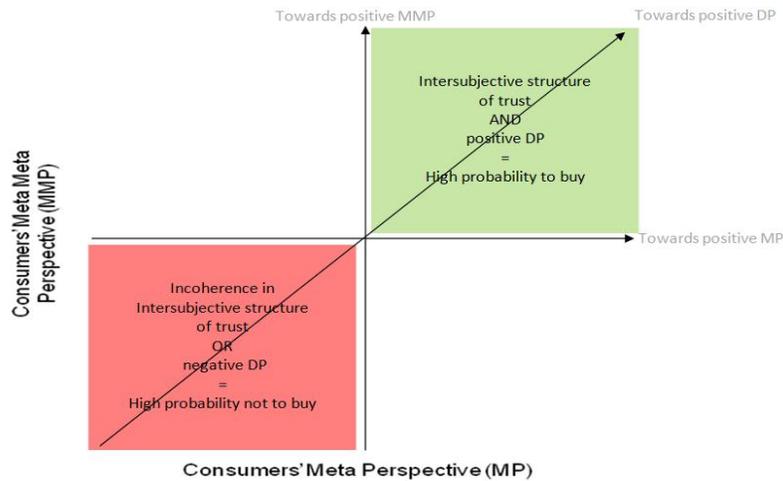
**Fig. 9. Food consumers' intent to buy in the 3D space of intersubjective structure defined by the two dimensions MP and MMP complemented by the diagonal dimension DP**

This leads to the finding that the intent to buy the product is obtained when the writings on the product generates positive coherent DP, MP and MMP, otherwise the probability not to buy the product is high. Indeed, the results of the two studies show that a positive DP is not predictive of the intent to buy as one case was found with positive DP and no intent to buy and one case was found with negative DP and an intent to buy.

## 5. LIMITATIONS

The experimental cases were carried out with few subjects in each sample. A low number per sample was here possible because the particularities of the products to be taken into consideration by the subjects were exacerbated for the research purpose. This led to significant differences when comparing percentages or average scores. The reproducibility of the experiment between the previous and the current studies confirms that the sample sizes were sufficient. The replication of the experiments is thus possible provided that the characteristics of the products compared are exacerbated like in the present study.

However, if the particularities had been more subtle, it is obvious that several tens of subjects would have been necessary for significant results: the minimum size of the samples needed depends on the product characteristics.

## 6. CONCLUSION

The model suggested in the previous study to predict the consumer's intent to buy a product was confirmed: while a positive (resp. negative)

DP does not lead systematically to an intent to buy (resp. an intent not to buy), only a positive coherent DP, MP and MMP gives a high probability for the consumers to buy the product. This also confirms the studies undertaken in other domains (see section "Introduction") concluding that a context of trust could be only found with positive coherence between DP, MP and MMP.

As it has been shown that "trust in a brand contributes to behavioral intention of brand loyalty" [10: 359], with an important influence of communication [11], possible if a positive emotional and normative attachment is elaborated between the consumers and the brand [12: 300], generating a positive coherent DP, MP and MMP by the writings on the product is of particular importance: it is the very early consumers perception of the product, before touching or tasting.

The results presented here were obtained when comparing foreign and native language products in the paradigm of foreign migration of brands. Further experiments should be undertaken with only native language products in order to confirm a wide applicability of the model. Furthermore, these sorts of experiments might profitably enrich food consumption studies by complementing other theories used such as the Symbolic Perception Theory [13] or the bottom-up effects on attention [14].

## DISCLAIMER

The products used for this research are commonly used products in food market. There

is absolutely no conflict of interest between the authors and producers of the products because authors do not intend to use these products for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing companies.

## ETHICAL APPROVAL

This study received ethical approval of the Ethics Committee of the Dept. of Social Psychology (LSE, London, UK), Code of Approval: DSP/RS/PFA-3, and has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

## ACKNOWLEDGEMENTS

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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# APPENDIX

**Questionnaire:**

1. According to you, is it a good writing for sweets? / a good name for chocolates? Explain why.
2. According to you, this product is: good, strange, bad, a joke, stupid.
3. You think that the producer of this product agrees with the evaluation of the product you did in 2.
4. You think that the producer of this product knows that consumers of your country evaluate the product as you did in 2.
5. You would buy this product.

Items 3 to 5 were assessed on a Likert scale.

The Likert scale was: Strongly disagree / disagree / neither agree nor disagree / agree / strongly agree.