Cogito Ergo Gusto: Explicit and Implicit Determinants of the First Tasting Behaviour

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Abstract. In this study, we investigated how a new food label forms explicit and implicit attitudes toward a product, and through which processes, these attitudes influence consumer behaviours. To this aim, 215 adults (85% female) implicitly and explicitly evaluated labels representing two products: water and chocolate. The labels were presented either in basic form or as having one of four additional symbols representing, respectively, the origin of the product, the respect of the environment, the wellness information, and the shelf life. Results showed that the additional symbolic information creates more of a negative implicit impression but more of a positive explicit attitude toward the products than the basic label does. Moreover, the analysis showed that for the chocolate only were both implicit and explicit reactions critical in driving the approach behaviour toward that food. The theoretical implications of these results are discussed.

Keywords: Consumer psychology, Implicit evaluations, First impression, SC-IAT, Approach behaviours.

1 Introduction

One of the most relevant problems for food makers is to create a label that immediately and efficiently communicates their products' specific features, driving users to positive approach behaviours and ultimately to purchasing decisions. The choice of the label is even more crucial if the product and brand are new for consumers. Indeed, in this case, the consumer behaviour cannot be driven by previous knowledge or experiences of the product or the brand [1], and so it is mainly determined by the individuals' attitudes toward information presented on the label [2].

The relationship between attitudes and behaviours has been widely investigated. According to the Theory of Planned Behaviour [3], attitudes, subjective norms, and perceived behavioural control influence individuals' intentions and behaviours. A more recent dual process model, the Motivation and Opportunity as DEterminants (MODE) [4], specifies that attitudes can also guide behaviours in a spontaneous and automatic manner, out of individual awareness. Indeed, the MODE model [4] assumes that the brain processes information through two operating systems: the spontaneous and the deliberative. The former is a top-down cognitive process, automatically activated by the memory upon the individual's encountering the attitude

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object; the latter is a bottom-up process, based on a cognitive effort to evaluate the target object in order to compare and to adopt different behavioural alternatives. A better understanding of how people implicitly and explicitly evaluate a target would explicate the subsequent decision-making process and help in predicting individuals' behaviours toward an evaluated target [3,4]; see also [5,6,7,8,9]. Several studies have been conducted in different research fields, such as political psychology [10,11], economy, and consumer psychology [1,2],[12,13,14,15]. These studies all show that implicit reactions influence behaviours over and above the explicit attitude.

For example, a study on drinking behaviours showed that implicit attitudes toward some traditional brands (such as Coca Cola or Pepsi) can be used to predict consumers' choices and consequent uses [1]. The brands in the study were well-known and thus the automatic evaluations were probably shaped by the consumers' past experiences. In addition, an investigation into the role of both impulsive and reflective evaluations toward a new clothing brand [2] showed that emotional, implicit, and explicit evaluations (whose effects are mediated by intentions) affect approach behaviours. In the latter case, the automatic evaluation was not a consequence of the experience with the product or brand, but it was tied to graphical and perceptual cues owned by the label. The automatic evaluation was, in fact, a first impression [2],[12].

Given the scarce research on the influence of implicit reactions toward a new label on individual approach behaviours, we conducted an experimental study in which we presented to participants some never-before-seen labels of foods (in our case water and chocolate) and then observed their reactions in terms of implicit and explicit attitudes, intentions to buy the product, interest in it, and tasting behaviours. We chose water and chocolate since they represent two different categories of food: the first is regarded as essential and vital (a primary need), the second as a desire or pleasure (almost secondary). In fact, being thirsty means essentially wanting to satisfy the need of drinking water, while being hungry does not have to do with the will to eat chocolate. The food labels were presented to participants either basic or paired with one of four different symbols representing the geographical origins of the product, the respect for the environment and workers in manufacturing it, wellness, and shelf life.

The first scope of the study was to compare the participants' implicit and explicit reactions to the basic labels with their reactions to the labels presented with one of the four abovementioned additional symbols. We expected differences between the implicit and explicit reactions given that automatic mechanisms work better with few visual cues and less semantic information [1,2,3,4,5,6,7]. The second scope of the present study was to evaluate the role of explicit and implicit attitudes, the intention to buy the food, and the interest in the products in predicting the participants' tasting behaviours. We introduced the interest in the product, since we hypothesized that never-before-seen brands' labels might raise curiosity and interest rather than a firm intention to buy the food. In line with other studies [1,2],[12,13,14,15], we expected a strong and positive effect of the implicit reaction on the tasting behaviour, over and above the explicit reactions. That is, we expected that irrespective of the explicit evaluations, the immediate implicit reaction toward the label would work in a strong and independent way in predicting the tasting behaviour.

2 Method

2.1 Sample

A total of 215 first year undergraduate university students (183 females, 32 males) participated in a within-subject design experiment. Their ages ranged from 18 to 43 years (M=19.87, SD=3.05). All the participants were tested individually in sessions lasting about 45 minutes each.

2.2 Procedure

At their arrival, each participant was welcomed and given instructions about the experiment, and then we trained them on the meanings of the new labels and the symbolic information. The real experiment consisted of two phases. In the first phase, participants were submitted to a computerized task, implemented with the Inquisit 3.0 software [16].

The computerized task was divided into three trials. The implicit reaction to the label, the explicit attitude toward the label, and the intention to buy the products were collected in the first, second, and third trials, respectively. For each trial, participants were presented six targets: two labels presented alone, one relative to water and one to chocolate, and four labels paired with one symbol each. Both the basic labels and the labels with symbols were new and unknown to each participant. Symbols represented a feature of the manufacturing of the food: the geographical origins (O), the respect of the environment and the workers (R), the wellness information (W), and the shelf life (S) (see Fig. 1). Each participant evaluated two labels with symbolic information for the water and two for the chocolate, for a total of four labels with symbols. Labels and symbols were randomly paired for each participant.

The stimuli (first the basic labels and then the labels with symbols) and the trials (first the implicit measure, then two measures of the explicit attitude, and the intention; see below) were presented in a blocked order to investigate how the basic labels or the labels with symbolic information influenced subjective reactions and/or intentions toward the products, and to avoid any influence of the explicit task on the implicit measures.

In the second phase of the experiment, participants were presented some fliers and samples of the products (water and chocolate) and were invited to pick up fliers and to taste the products. After the second phase, participants were debriefed and thanked.

2.3 Measures

Implicit Reaction toward Labels and Symbols. To evaluate the implicit reactions toward each basic label and each label with a symbol, the Single Category Implicit Association Test (SC-IAT) [2],[17] was administered. Participants completed six different SC-IATs, each one with a different target: the new labels of water and chocolate, two labels with symbols for the water, and two labels with symbols for the chocolate. To administer the SC-IATs, we defined ten different attribute categories

each for the positive (positive, joy, beauty, happy, heaven, present, pleasant, friend, laughing, loving) and the negative (negative, pain, ugly, sad, hell, disaster, unpleasant, enemy, crying, hating) dimensions (Cronbach's αs > .71). For each SC-IAT, we computed a single score that expressed the implicit evaluation of the target: negative values indicated a negative implicit attitude, values around 0 indicated a neutral reaction, and positive values indicated a positive implicit attitude.

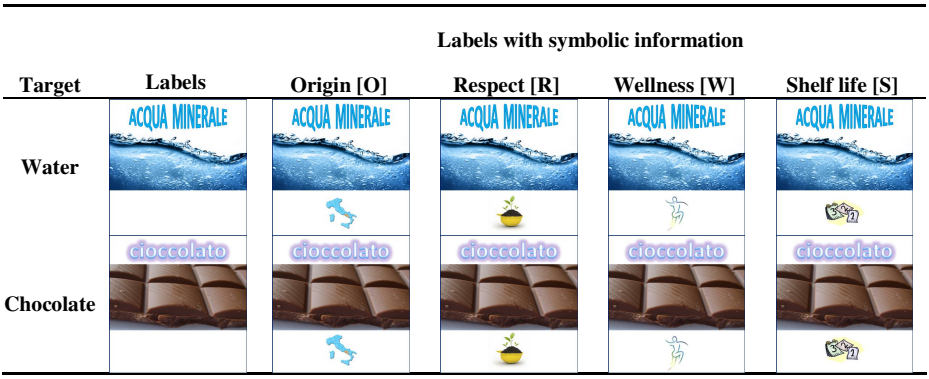

Fig. 1. Labels according to "basic" and "with symbolic information" as a function of the target

Explicit Attitude toward Basic Labels and Labels with Symbols. To evaluate the explicit attitudes toward the basic labels and the labels with symbols, a Semantic Differential scale [18] and the Warmth and Competence Rating Scale (WCS; from the Stereotype Content Model [19]) were administered.

For the semantic differential, respondents evaluated each stimulus using fifteen bipolar couples of adjectives on a seven-point scale, from 0 = completely negative to 6 = completely positive (Cronbach's αs > .85). As regards the WCS, participants evaluated the targets using fourteen adjectives on an eleven-point scale, from 0 = "not at all" to 10 = "completely" (Cronbach's αs > .90).

Each participant completed six semantic differentials and six WCSs, with the same stimuli used for the implicit measures (see above for the procedures).

Intention to Buy the Product. At the end of the computerized task, we evaluated the participants' intention to buy the product by an ad hoc five-item scale. The items asked participants if they were interested in knowing which shops sell the product, if they had the intention to buy the product, etc., on an eleven-point rating scale, from 0 = "not at all" to 10 = "completely" (Cronbach's αs > .90). Participants completed this scale six times, each time evaluating a different stimulus.

Interest in the Product and Tasting Behaviour. In the second phase of the experimental procedure, two different participant behaviours were observed: interest and taste.

Given that participants were presented with fliers about the product and invited to pick them up, the interest in the product was measured by their behaviour of taking or not taking the fliers. For tasting behaviour, participants were invited to taste some samples of the products, and their behaviour (tasting or not) was coded by two independent observers (Cohen's *k*s > .90).

2.4 Data Analysis

Principal-component factor analyses were preliminarily executed on the two explicit attitude scales (Semantic Differential and WCS). In both cases the single factor solution was preferred because it explained more than 50% of the variance; therefore, a single factor score was computed for each dimension and used in the analysis.

To compare reactions toward to the basic labels with reactions to the labels with one of the four symbols, paired sample t-tests (α=.05) were conducted on implicit and explicit attitudes, and the intention to buy the product.

To investigate if the water- or chocolate-tasting behaviours (a dichotomous dependent variable) were predicted by the implicit or explicit reactions toward new food labels, and/or by intention and interest, we executed two four-step hierarchical logistic regressions, one for the water and one for the chocolate. In the first step, the implicit reaction was examined, and then the two explicit evaluations (step 2), the intention (step 3), and the interest (step 4) were added to the model separately. Finally, blocks with two-way, three-way, four-way, and five-way effects were used in testing interactions.

3 Results

3.1 Comparison between Labels According to "Basic Labels" and "Labels with Symbols"

The water t-tests showed that the labels with the symbols elicited different evaluations from the basic labels: a) for the implicit measure, participants evaluated more negatively the labels with symbols "O", "R", and "W" than they did the basic labels; b) for the semantic differential scale, participants evaluated more positively the labels with symbols "O", "R", and "W" than they did the basic labels; c) for the WCS, participants evaluated more positively all the labels with symbols than they did the basic labels; d) for the intention, participants showed a stronger intention to buy the product when the labels were presented with symbols than when the labels were basic (see Table 1).

Table 1. Mean values (SD) and paired t-tests (α = .05) for the water labels, as a function of labels and measures. °"Origin" [O]; "Respect" [R]; "Wellness" [W]; "Shelf life" [S]; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

	Stimulus			
	Basic Label	**Label with [symbol]°**		
Measures	***M* (*SD*)**	***M* (*SD*)**	***df***	***t***
Implicit	0.25 (0.40)	[O] 0.15 (0.35)	108	2.21*
	0.22 (0.40)	[R] 0.10 (0.35)	104	2.65**
	0.27 (0.37)	[W] 0.17 (0.33)	94	2.01*
	0.21 (0.36)	[S] 0.15 (0.31)	98	1.22
Explicit (Differential)	46.71 (13.47)	[O] 49.04 (13.10)	113	-3.62***
	46.56 (14.14)	[R] 48.80 (13.14)	106	-2.26*
	47.59 (13.25)	[W] 51.63 (11.51)	96	-4.95***
	45.01 (13.42)	[S] 42.54 (14.01)	103	1.97
Explicit (WCS)	60.28 (35.00)	[O] 73.44 (33.41)	113	-6.23***
	62.05 (40.31)	[R] 80.62 (38.56)	106	-6.91***
	64.43 (36.39)	[W] 76.96 (35.54)	100	-5.25***
	60.62 (38.10)	[S] 68.85 (35.68)	103	-3.13**
Intention	21.51 (12.34)	[O] 26.63 (12.30)	111	-6.44***
	22.10 (13.74)	[R] 32.63 (12.91)	108	-9.12***
	21.33 (12.92)	[W] 30.72 (13.14)	100	-7.61***
	21.27 (12.83)	[S] 23.80 (13.31)	103	-2.59*

The chocolate t-tests also showed that the labels with symbols elicited different evaluations than did the basic labels: a) for the implicit measure, participants evaluated more negatively the label with the symbol "W" than they did the basic label; b) for the semantic differential scale, participants evaluated more positively the labels with symbols "R" and "W", but more negatively the label with the symbol "S", than they did the basic labels; c) for the WCS, participants evaluated more positively all the labels with symbols than they did the basic labels; d) for the intention, participants showed a stronger intention to buy the product when the symbols "O", "R", and "W" were present on the label than they did for the basic label (see Table 2).

3.2 Relation between Implicit and Explicit Attitudes, Purchasing Intention/Interest, and Taste

Regarding the water, no model showed significant effects or interactions. However, the logistic regression on the chocolate showed significant effects among the predictors, with a final Nagelkerke index of R^2=.16 (see Table 3). Results showed that implicit reaction, semantic differential scale, and interest predicted, in an additive and independent way, the chocolate-tasting behaviour. The final model predicted correctly 84.9% of the non-tasting behaviour and 33.3% of the tasting behaviour. Data showed that positive explicit or implicit attitudes were associated with a higher percentage of tasting behaviours, and showed that the higher the interest, the higher the percentage in the tasting behaviour.

Table 2. Mean values (*SD*) and paired *t-tests* (α = .05) for the chocolate labels, as a function of labels and measures. °"Origin" [O]; "Respect" [R]; "Wellness" [W]; "Shelf life" [S]; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

	Stimulus			
Measures	**Label by basic** ***M*(*SD*)**	**Label with [symbol]°** ***M*(*SD*)**	***df***	***t***
Implicit	0.19 (0.37)	[O] 0.11 (0.35)	97	1.41
	0.10 (0.38)	[R] 0.07 (0.37)	104	0.80
	0.16 (0.39)	[W] 0.07 (0.34)	111	2.02*
	0.11 (0.39)	[S] 0.13 (0.37)	108	-0.29
Explicit (Differential)	46.60 (11.71)	[O] 47.65 (11.37)	98	-0.94
	47.66 (10.96)	[R] 50.32 (10.04)	105	-3.22**
	47.03 (11.27)	[W] 49.04 (11.26)	111	-2.49*
	47.93 (10.81)	[S] 45.89 (12.00)	106	3.41**
Explicit (WCS)	61.33 (38.48)	[O] 71.81 (39.12)	98	-4.88***
	64.50 (36.24)	[R] 80.65 (33.26)	104	-6.31***
	59.07 (35.06)	[W] 72.70 (34.35)	111	-4.84***
	65.14 (35.09)	[S] 70.28 (34.74)	108	-2.59*
Intention	27.61 (13.92)	[O] 34.84 (11.09)	98	-6.49***
	26.22 (12.65)	[R] 33.74 (11.00)	105	-7.26***
	26.78 (13.72)	[W] 35.88 (12.15)	111	-8.21***
	27.68 (13.41)	[S] 28.37 (13.17)	108	-0.75

Table 3. Hierarchical logistic regression for the chocolate, with tasting behaviour as dependent variable, and implicit evaluation (step 1), explicit evaluations (step 2), intention (step 3), and interest (step 4) as predictor variables. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Steps	**Measures**	***B***	***SE***	**Exp(*B*)**	X^2_{Block}	***df***	X^2_{Model}	***df***	R^2
1	Implicit	0.32	0.15	1.38*	4.52*	1	4.52*	1	.03
2	Implicit	0.34	0.16	1.41*	9.96**	2	14.48**	3	.10
	Explicit (Differential)	0.42	0.17	1.52*					
	Explicit (WCS)	0.19	0.16	1.21					
3	Implicit	0.34	0.16	1.40*	0.53	1	15.01**	4	.10
	Explicit (Differential)	0.39	0.18	1.48*					
	Explicit (WCS)	0.17	0.17	1.18					
	Intention	0.12	0.17	1.13					
4	Implicit	0.32	0.16	1.38*	9.39**	1	24.40***	5	.16
	Explicit (Differential)	0.43	0.18	1.54*					
	Explicit (WCS)	0.13	0.17	1.14					
	Intention	0.11	0.17	1.12					
	Interest	0.48	0.16	1.61**					

Regarding the interaction effects, only the block of four-way effects was significant, $X^2(5) = 11.75$, $p < .05$. In particular, the "Implicit × Differential × WCS × Interest" interaction effect was significant, Exp(*B*) = 2.63, $p < .05$. The four-way effect confirmed that predictors interact in driving tasting decisions, and it showed that the positive effect of the implicit attitude is stronger when there is a negative explicit attitude but a positive interest in the product.

4 Discussion and Conclusions

The aims of the present paper were twofold: to investigate the effect of symbolic information on new food labels on explicit and implicit reactions toward the product, and to examine through which cognitive processes these attitudes influence consumer behaviours.

Results showed that additional symbolic information on labels related to the manufacturing of the product influences both emotional and cognitive reactions toward water and toward chocolate but in opposite ways. The symbols "origin" (only for the water), "respect" (only for the water) and "wellness" (for both the products) were implicitly evaluated in a negative way. However, all of the labels with the considered symbols were more positively evaluated than were the basic labels in an explicit way, and the symbolic information strengthened the consumers' intention to buy the product. A possible interpretation of the contrasting effect of the informative labels on the implicit and explicit reactions is that symbolic information needs a deep semantic processing behind the one devoted to processing the basic label; therefore, they have a positive effect when there is enough time to elaborate on their meaning (i.e., in the explicit evaluations), while they have a negative effect when a rapid evaluation is requested. In sum, informative symbols can be an obstacle when a first, immediate impression of a food is at stake, but they can contribute to a positive evaluation of a food when a more reflexive and prolonged judgment is requested.

Regarding the second aim, the hierarchical logistic regressions confirmed that both first, emotion-based reactions to the labels and the cognition-based attitudes toward these labels are critical in driving the immediate desire to taste [3,4,5,6,7,8,9]; however, this is true for the chocolate and not for the water. That is, the type of product moderates this effect.

In this study we tested the first consuming behaviour toward new water and toward chocolate products. Consuming water is a vital need, so people might not be influenced by label information to decide whether to taste it. People simply taste water when they are thirsty. Indeed, in our study only a small percentage of participants tasted the water (19%). This small variance can also explain why the model was not verified for this product. On the other hand, chocolate is not a vital product. Its use more probably reflects a desire or a pleasure, so the label and its effects on participants (first impression, explicit attitude, and interest) become a critical element in positively or negatively orienting the consumers' approaching behaviour of tasting. Indeed, in our data, a larger portion of participants (36%) tasted the product.

Regarding the processes that drive the first tasting behaviour, the results on the chocolate tests showed that when people see a new product label, the likelihood that they will taste the product is a function of both conscious and unconscious processes. Indeed, if the label is associated with a positive implicit or explicit reaction or with a higher interest in the product, then the percentage of tasting behaviours increases. Moreover, if there is a negative explicit attitude but a positive interest in the product, the implicit attitude becomes even more critical in driving the tasting behaviour.

From a theoretical perspective, our results are in line with the MODE model [4] and confirmed that attitudes also guide behaviours in a spontaneous and automatic manner. Moreover, the results of this study showed that when consumer behaviour is not based on previous knowledge or experience with the product or the brand, the influence of the immediate impulsive or reflective reactions depends on the characteristics of the food, or rather its being a primary or a secondary food. When consuming food corresponds with fulfilling a pleasure, the simple exposure to the product label can influence the implicit and explicit evaluations and the interest in the product. Then, in turn, the subjective reactions can directly influence the tasting behaviour. Interestingly, different from what expected according to the Theory of Planned Behaviour [3,4], the interest in the food, not the intention, was the proximal predictor of the tasting behaviour. A possible explanation of this effect could be that the intention has to be based on some experience with the brand or the product to be a proximal predictor of the tasting behaviour [1]. In our study, participants observed new labels, so they did not have enough time or experience with the brand or the product to consolidate a clear intention toward it. Therefore, we suggest that a new label of an unknown brand might act on the curiosity and the interest more than the intention.

In sum, this experimental study confirms the role of explicit and implicit reactions in orienting short-term tasting behaviours (i.e., when the consumer choice immediately follows the presentation of targets). Further studies with more participants and balanced by sex should replicate our results and investigate explicit and implicit immediate reactions in predicting long-term consumer behaviours.

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