

The Role of the Type of Experience in Inhibiting Gender Stereotypes of Vegetarian Products.

Abstract

Recommendations to reduce meat consumption are increasing and more meat substitutes are proposed in supermarkets. However, the adoption of these products appears to be highly dependent on the gender of consumers (more women than men buy these products). Our results show that the vegetarian character of a product negatively influences the attractiveness of this product to men. On the other hand, the vegetarian product is not perceived as more attractive to women. Interestingly, the unattractiveness of the product to men disappears with a shorter psychological distance with the product through a direct experience. We discuss the gender asymmetry and the role of the type of experience and propose recommendations for brands and retailers.

Key words: Vegetarian; Gender; Food; Experience

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Introduction

Since the beginning of the 21st century, the consumption of meat has been increasingly questioned, particularly for products coming from intensive livestock farming, which is presented as harmful to the environment and to health. At the same time, vegetarian food has gained in popularity and is increasingly presented as an interesting alternative for the environment and health (Beverland, 2014; Stuart, 2009; Thøgersen, 2010). According to Allied Market Research, the global market for meat substitutes (tofu, tempeh, seitan, textured soy protein, patés, sausages, plant-based steaks, etc.) is expected to double between 2017 and 2026 to reach \$8.1 billion¹. In 2017, Europe was the leading continent for this market, accounting for 38.5% of the global household income. However, the adoption of these products is marked by strong gender differences (Ruby, 2012; Stevens et al., 2014). Two interrelated aspects seem to underlie this difference: on the one hand, meat is associated with masculinity (Stevens et al., 2014), while, on the other hand, vegetarian products are perceived as healthier and better for the environment. These two last characteristics make vegetarian products more attractive to women (Brough et al., 2016). In a first place, our research therefore aims to explain the greater attractiveness of meat substitutes for women, by considering these factors. In a second and main place, our research aims at identifying how experience can inhibit this stereotype. This purpose is the main contribution of this paper as previous studies conducted on vegetarian products and gender issues do not take into consideration the type of experience with the products and are based on mental associations. We will begin by analysing the literature to understand the stereotypes of these products and the role of the type of experience in creating shorter or greater psychological distance to the product. Then we present the methodology used and the results of our studies. Finally, we will discuss these results.

Theoretical background

We start this literature review by defining sex and gender stereotypes. Then, we show the connections between gender stereotypes and products and brands. Then, we focus on gender stereotypes of meat and vegetarian products. Finally, we discuss the effects of direct and indirect experience on the perception of the products to highlight the crucial role of the type of experience and the need of new investigations.

Sex and gender stereotypes

Sex is defined as the biological sex that a person has (masculine or feminine). Gender identity is the extent to which an individual identifies themselves as masculine or feminine (Deaux, 1985). Gender is used by individuals as a principle to organize life and to process information about themselves and the world (Bem, 1981). This principle is based on stereotypes and leads to stereotyped behaviours which means that stereotypes are both descriptive and prescriptive. They express what people are and what people should be (if they deviate from the norm). So, stereotype is a "widely shared and simplified evaluative image of a social group and its members" (Vaughan and Hogg, 2011, p.51).

Gender stereotypes indicate how men and women are, should be and how they should behave, according to their gender (Heilman, 2001). Gender stereotypes are particularly resistant to change (Haines et al., 2016). Nevertheless, few studies have explored how to change these stereotypes, particularly in the field of consumption.

Gender stereotype of products and brands

there is even a form of anthropomorphism which consists of spontaneously attributing a gender to a brand or a product based on its attributes. Thus, certain brands will be perceived as more feminine or more masculine (Neale et al., 2016). Similarly, certain products will be perceived as more feminine or masculine (Bellizzi and Milner, 1991; Fugate and Phillips, 2010; Milner and Fodness, 1996).

Consumption behaviour is also affected by gender stereotypes and, particularly, food consumption behaviour (Cavazza et al., 2020). Differentiated behaviour are observed or expected for men and women. Vegetarian products and meat crystallise these differences.

Femininity of Vegetarian Products and Masculinity of Meat

A specific feature of vegetarian products is that they are associated with femininity (and weakness), whereas meat products are associated with masculinity (and power) (Rosenfeld et al., 2020; Rothgerber, 2013; Ruby, 2012; Stevens et al., 2014). The stereotype of masculinity of meat has long been demonstrated. This stereotype is based on the idea that

¹ <https://www.alliedmarketresearch.com/press-release/global-meat-substitute-market.html>

meat, as a product of hunting, is a male domain (Rozin et al., 2012), although recent studies have shown that, in many prehistoric societies, hunting (of large or small animals) was as much a male as a female activity (Cohen, 2017). Another idea underlying the stereotype of meat and masculinity is that it is physiological through the need for muscle. Men are considered to be those who go out and engage in physical activity, so they must have a powerful constitution with strong muscles (Fiddes, 1991). They should therefore eat more meat, a source of protein and therefore of strength. But Rozin et al. (2012) point out that the link between meat and sex is not based on biological similarities. Indeed, products of female origin such as dairy products and eggs are not perceived as being more feminine or less masculine. Thus, the association between men and meat is more socially constructed than historically or biologically based. However, it is still deeply rooted and continues to determine the eating behaviour of men and women, as each tends to act as expected for his or her own sex (Rozin et al., 2012; Sobal, 2005). The gender of food, in general, is based on culture rather than biology (Zellner et al., 1999) and the goal for each sex is to maintain its gender identity (Sobal, 2005). Meals therefore contain less meat for women and more meat for men, and men tend to prefer meals with meat (Sobal, 2005). For their part, vegetarian products are associated with femininity, and more women than men are vegetarian. Men will often prefer a flexitarian diet to a vegetarian diet (Rosenfeld et al., 2020) because it avoids making them feel less masculine (Rothgerber, 2013).

Vegetarian products are also identified as healthy and environmentally friendly (Beverland, 2014). Thus, they have been identified as beneficial to health, weight loss, animal welfare, food safety, fair and ethical trade, as well as having a positive impact on the environment and more women are concerned with the healthy and green aspects of their food consumption (Apostolidis and McLeay, 2016). The same associations are identified for ethical and green products (Brough et al., 2016; Shang and Pelozo, 2016). Green products are perceived more as feminine and therefore tend to be avoided by men. One explanation is that even though each sex tries to maintain its gender identity, men are more concerned about maintaining their gender identity. Consequently, they will be more concerned about consuming products that correspond to their gender stereotypes and will avoid those that stereotype them as feminine. It is worth noting that both women and men are aware of this stronger need for men to maintain their gender identity (Brough et al., 2016).

Finally, even if meat is closely associated with masculinity, an intriguing aspect has been uncovered regarding vegetarian foods: are vegetarian products more associated with femininity because of their absence of meat or because of their mental associations with health and greenness? Thus, products seem to be defined as feminine or masculine directly or indirectly because of their associated representations. This issue is critical for a better understanding of the representation of vegetarian products and, broadly, the construction of gender stereotypes in consumption. So, vegetarian products are stereotyped as feminine in two ways: firstly, because they do not contain meat and secondly because they are perceived as good for health and the environment. Based on studies showing that (1) vegetarian products are identified as healthy and good for the environment (Beverland, 2014; Van Loo et al., 2017); (2) vegetarian products are associated with femininity (Ruby, 2012; Stevens et al., 2014); (3) healthy and green products are associated with femininity (Brough et al., 2016; Shang and Pelozo, 2016), we propose the following hypotheses:

- H1: The labelling of a product as “**plant-based**” positively influences the perception of the product as attractive **for women**.
 - o H1a: This relation is positively mediated by the perception of the product as **healthy**.
 - o H1b: This relation is positively mediated by the perception of the product as “**green**”.
- H2: The labelling of a product as “**plant-based**” negatively influences the perception of the product as attractive **for men**.
 - o H2a: This relation is negatively mediated by the perception of the product as **healthy**.
 - o H2b: This relation is negatively mediated by the perception of the product as “**green**”.

Since representations of food and products in general are based on experience, we would like to know if the type of experience has any influence on these associations.

Effect of Direct/ Indirect Experience on the Perception of the Product

In their seminal paper, Holbrook and Hirschmann define the experience as “*those facets of consumer behaviour that relate to the multi-sensory, fantasy, and emotive aspects of product use*” (Holbrook and Hirschman, 1982, p.99). From this experiential perspective, we could argue that information processing is not enough to understand and explain consumers’ behaviour. Therefore, stereotypes on their own are insufficient to understand consumers, since other information will guide their perceptions, decisions, and behaviour. Experience may even supersede the stereotypes. Thus, the consumer experience varies on a continuum from direct to indirect, depending on the level of interaction (i.e. the senses involved) between the product and the consumer (Hamilton and Thompson, 2007).

The direct experience of a given product engages all the senses and could involve the taste of a food product.

For instance, an indirect experience might be reading a review or description, seeing a product on a shelf, media reports or listening to hearsay (Hamilton and Thompson, 2007; Johnstone and Tan, 2015). Hamilton and Thompson (2007) stress that direct experience leads to concrete mental representations because of the shorter psychological distance with the product, whereas indirect experience leads to abstract mental representations of the product because of the greater psychological distance. Thus, previous beliefs and stereotypes will be stronger when arising from indirect experience.

Previous studies conducted on meat and vegetarian products (meat substitutes) and masculinity/femininity do not make a distinction between direct or indirect experience or absence of experience. They only consider mental associations without any experience of the products. Nevertheless, a review of the literature in this field suggests that experience of the product is crucial and can change its perception (Krishna and Schwarz, 2014; Lee et al., 2006). More specifically, the type of experience (direct or indirect) influences the perception of the food product itself, and this influences other aspects such as taste (Trelohan and Stefan, 2018). So, we suggest that experience could also influence the perception of the product as feminine or masculine. Consequently, we aim to test the perception of meat-based products and vegetarian products (meat substitutes) by taking into consideration the type of experience. On the one hand, this approach will help us understand the associations of masculinity / femininity with meat and vegetarian products. On the other hand, it will help us understand the role of experience in the construction of gender stereotypes in consumption.

Previous studies have shown that the effects of the type of experience differ depending on positive (halo effect) or negative (horn effect) impressions of the product (Trelohan and Stefan, 2018). Thus, the “horn effect” can be inhibited by a direct experience, whereas the perception of products with a “halo effect” will vary according to the type of experience (direct or indirect). Because negative impressions and stereotypes are more resistant to change than positive impressions and stereotypes (Baumeister et al., 2001), the former can only be changed or inhibited by a direct experience. Hence, whether without any experience or with only an indirect experience, we expect vegetarian products to be considered as unattractive for men and attractive for women. Conversely, we assume that the perception of unattractiveness of vegetarian products for men will be inhibited by direct experience, whereas their attractiveness for women will still be present.

Based on the literature cited above, we assume that all the previous hypotheses (H1, H1a, H1b, H2, H2a, and H2b) can be negatively moderated by the type of experience (H1_m, H1a_m, H1b_m, H2_m, H2a_m, and H2b_m). We consider that the more direct experience is the direct experience as all senses are engaged. The less direct experience is the absence of experience, and the indirect experience is in the middle of both (direct experience and absence of experience). Consequently, a negative moderation means that the more direct the experience is, the lower the influence of the main effect will be. So, the main effect will be inhibited by a more direct type of experience. Our hypotheses are the following:

- H1_m: The positive influence of labelling of a product as “**plant-based**” on the perception of the product as attractive **for women is likely to be lower when the experience is more direct.**
 - H1a_m: The positive mediation on this relation by the perception of the product as **healthy is likely to be lower when the experience is more direct.**
 - H1b_m: The positive mediation on this relation by the perception of the product as “**green**” is likely to **be lower when the experience is more direct.**
- H2_m: The negative influence of labelling of a product as “**plant-based**” on the perception of the product as attractive **for men is likely to be lower when the experience is more direct.**
 - H2a_m: The negative mediation on this relation by the perception of the product as **healthy is likely to be lower when the experience is more direct.**
 - H2b_m: The negative mediation on this relation by the perception of the product as “**green**” is likely to **be lower when the experience is more direct.**

The attractiveness of vegetarian products for women can be moderated negatively by indirect and direct experience (H1_m). The unattractiveness of the vegetarian products for men can be moderated negatively by direct experience (H2_m). The difference between the moderated hypothesis for men and women (in the first case, only direct experience, in the second case, both indirect and direct experience) is based on the higher need of maintenance of gender identity for men.

Methodology

Experimental protocol

We conducted a between-subjects 3X2 design study with three conditions for the experience: absence vs. indirect experience (viewing an image – Appendix 1) vs. direct experience (tasting) and two conditions for the labels: meat-based paté and plant-based paté.

The choice of the paté used for the experiment is based on several criteria. First, we needed a product that was

exactly the same for the two conditions, apart from the presence or absence of meat. Second, for practical reasons, it was better to have a product that could be consumed without cooking (cooking and more specifically heating could create differences). Third, we needed a product that looked the same in the case of plant-based and meat-based conditions. Finally, we needed a product associated with perceptions of healthy and green that could vary under the three different “experience” conditions.

Participants were randomly assigned to each condition. Under the condition of absence of experience (n=81), only the label was presented (paté, plant-based paté). Under the condition of indirect experience (n=68), a photo (the same for all conditions) was presented in addition. Under the condition of direct experience (n=92), a paté was offered for tasting. To control for the taste of the paté, the participants tasted two different patés: one was a meat substitute and the other a traditional paté (meat-based). Each participant tasted a single paté. The purpose was to ensure that effects due to experience were not induced by the taste of the paté itself, as some consumers claim that the taste of meat substitutes is different from that of meat. For ethical reasons, people were asked beforehand whether they followed a specific diet, and no one did. The two patés were similar in appearance (colour, texture). No significant difference was observed between the perceived tastes of the two patés.

Measures

For each condition, respondents were asked to evaluate the healthiness, environmental friendliness and attractiveness for men and women.

The “green” and “healthy” measures were based on items from Trelohan and Stefan (2018). The items for “green” are natural and organic. The items for “healthy” are dietetic, balanced, diet, healthy, and good for health. To ensure the validity and reliability of the measurements, we conducted a principal component factor analysis and a reliability test based on Cronbach’s alpha. The KMO index is good (0.84). The communalities of each item range from 0.68 to 0.80. They are divided into two factors which explain a total of 73% of the variance, indicating the good quality of the scales. Participants were asked if they believed that [label] [product] could be qualified as [natural, good for health, organic, etc.]. The participants evaluated their perceptions using a 10-point scale. The scales of healthy (α=0.86) and green (α=0.75) are reliable.

For both men and for women, the gender stereotype is measured through the attractiveness of the product assessed as a single item, i.e. “Do you consider this product as attractive for men / women?” This measure enables us to identify the gender stereotype of the product.

Depending on the condition, the label was “paté” or “plant-based paté”, and the conditions were stated explicitly (“You are going to taste a paté / plant-based paté” or “You are going to see a picture of a paté / plant-based paté). Each survey question also repeated the terms, such as “This paté / plant-based paté is (...)”. The participants then evaluated their perceptions using a 10-point scale.

Sample description

The final sample was made up of 241 respondents (M_{age} = 19; 49.8% female), all students from a university or business school. The table below shows the distribution of respondents according to each condition.

Table 1

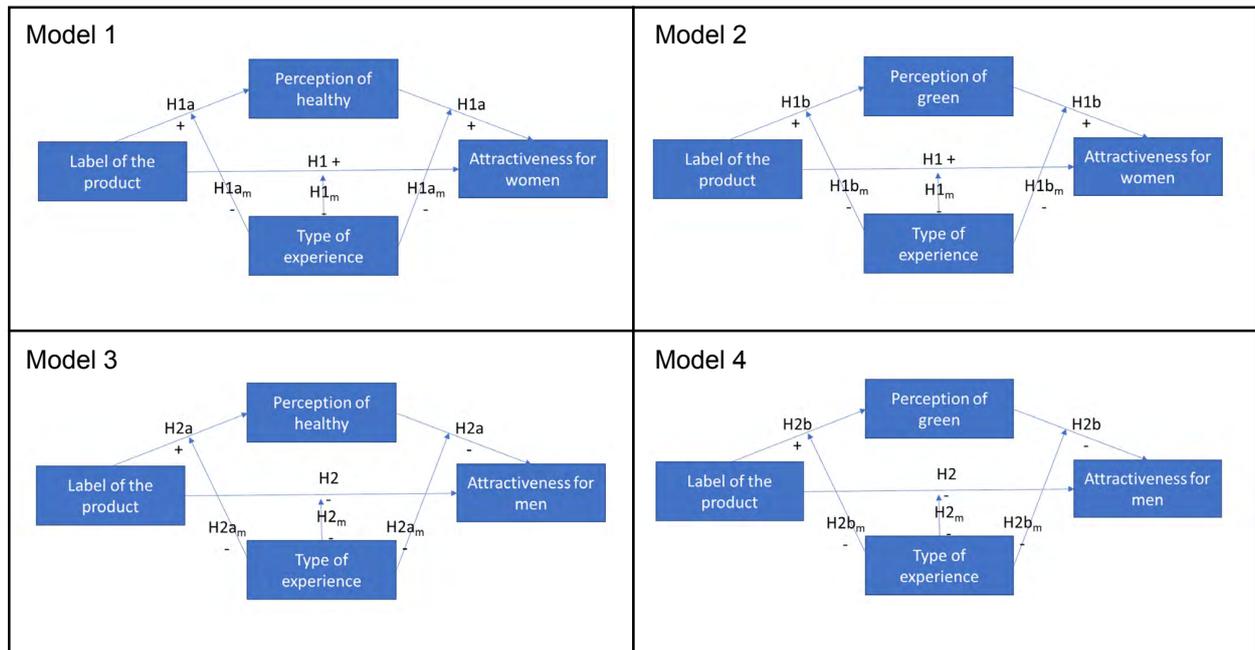
Description of the sample

n	Absence of experience	Indirect experience	Direct experience	Total
Paté	41	33	47	121
Plant-based paté	40	35	45	120
Total	81	68	92	241

Statistical analysis

Following Duman and Ozkara (2021), we tested four models based on our hypothesis:

Figure 1 : Models used for hypotheses testing



The Hayes PROCESS macro (model 4 and model 59 – see Appendix 2) was used to perform the moderated mediation analysis (Hayes, 2018). More precisely, to test the significance of the mediation effect (H1, H2, H3, H4), we used Model 4 and calculated 5000 bootstrapped samples to estimate the 95% bias- corrected and accelerated confidence intervals of the indirect effect. A mediation test is significant when the lower and the upper bounds of the bootstrap confidence intervals of the indirect effect between the predictor and the outcome do not include zero (Hayes, 2018).

Then, to test the moderated mediation effects (H1_m, H2_m, H3_m, H4_m), we used Model 59 with bias-corrected bootstrap confidence intervals (BC; 95% CI) based on 5000 bootstrap resamples. Model 59 allows us to combine parameter estimates from a mediation analysis with parameter estimates from a moderation analysis. The two estimates are combined to quantify the conditionality of the impact of the plant-based product label on the perception of attractiveness for men and women (Hayes, 2018).

Results

Descriptive analytics

In the plant-based label condition, the attractiveness of the product for men (M=5.94; SD=2.52) is lower than the attractiveness of the product for women (M=6.64; SD=2.17). In the meat-based condition, the attractiveness of the product for men (M=7.30; SD=2.29) is higher than the attractiveness of the product for women (M=6.88; SD=2.38).

Theoretical model 1 (hypothesis 1, 1a, 1_m and 1a_m): Influence of the plant-based label on attractiveness for women, mediated by perception of healthy and moderated by the type of experience

We used PROCESS model 4 to address Hypothesis 1 and 1a, which states that labelling a product as “plant-based” has an effect on the perception of the product as attractive for women and this is mediated by the perception of the product as healthy. Our results are presented in Table 2.

Table 2

Hypothesis Results

Model	Independent variable	Dependent variable	B	S.E.	t	p	95% interval LLCI	Confidence ULCI	Hypothesis
Model 1 and 3	Plant-based	Healthy R ² = 0.124	1.249	0.215	5.810	0.000	0.826	1.673	H1a (s) H2a (s)
	Plant-based x experience	Healthy R ² = 0.272	W1: -2.222 W2: -2.270	0.505 0.467	-4,402 -4,856	0.000	-3.217 -3.192	-1.228 -1.349	H1a _m (s) H2a _m (s) H1a _m (s) H2a _m (s)
Model 1	Plant-based	Attractive for women R ² = 0.029	-0.512 0.222	0.310 0.087	-1,650 2,543	0.100 0.012	-1.123 0.050	0.099 0.394	H1 (n.s.) H1a (s.)
	Plant-based x experience	Attractive for women R ² = 0.115	W1: -4.03 W2:0.547 W1:0.643	0.842 0.798 0.222	-0,478 0,686 2,910	0.633 0.493 0.004	-2.063 -1.025 0.206	1.257 2.119 1.079	H1 _m (n.s.) H1 _m (n.s.) H1a _m (s.)
	Healthy x experience		W2:0.479	0.231	2,074	0.039	0.024	0.934	H1a _m (s.)
Model 3	Plant-based	Attractive for men R ² = 0.166	-1.254 -0.081	0.332 0.093	-3,779 -0,874	0.000 0.383	-1.907 -0.266	-0.600 0.102	H2 (s.) H2a (n.s.)
	Plant-based x experience	Attractive for men R ² = 0.166	W1:1.307 W2:2.889 W1:0.211	0.897 0.849 0.236	1.457 3.401 0.895	0.146 0.001 0.371	-0.460 1.216 -0.254	3.075 4.563 0.676	H2 _m (s.) H2 _m (s.) H2a _m (n.s.)
	Healthy x experience		W2:0.220	0.246	0.893	0.373	-0.265	0.704	H2a _m (n.s.)
Model 2 and 4	Plant-based	Green R ² = 0.039	0.884	0.283	3.124	0.002	0.327	1.442	H1b (s.) H2b (s.)
	Plant-based x experience	Green R ² = 0.230	W1: -2.241 W2: -1.886	0.653 0.604	-3,435 -3,121	0.001	-3.527 -3.077	-0.956 -0.695	H1b _m (s.) H2b _m (s.) H1b _m (s.) H2b _m (s.)
Model 2	Plant-based	Attractive for women R ² = 0.042	-0.417 0.207	0.294 0.066	-1,419 3,145	0.157 0.002	-0.997 0,0774	0.162 0.337	H1 (n.s.) H1b (s.)
	Plant-based x experience	Attractive for women R ² = 0.145	W1: -0.219 W2:0.511 W1:0.653	0.761 0.715 0.182	-0,287 0,715 3,595	0.774 0.475 0.004	-1.719 -0.897 0.295	1.281 1.919 1.011	H1 _m (n.s.) H1 _m (n.s.) H1b _m (s.)
	Green x experience		W2:0.548	0.169	3,249	0.001	0.216	0.881	H1b _m (s.)
Model 4	Plant-based	Attractive for men R ² = 0.074	-1.378 -0.025	0.317 0.071	-4,342 0,349	0.000 0.728	-2.003 -0.115	-0.753 0.165	H2 (s.) H2b (n.s.)
	Plant-based x experience	Attractive for men R ² = 0.178	W1:1.362 W2:2.888 W1:0.338	0.818 0.768 0.195	1.665 3.761 1.731	0.097 0.000 0.085	-0.250 1.375 -0.047	2.974 4.402 0.722	H2 _m (s.) H2 _m (s.) H2b _m (n.s.)
	Green x experience		W2:0.317	0.181	1.746	0.082	-0.041	0.674	H2b _m (n.s.)

n.s. = not supported; s.=supported

The labelling of the product as “plant-based” is not a direct predictor of the perception of the product as attractive for women (95% CI: [-1.123, 0.099]). Results reveal that labelling a product as “plant-based” has an indirect effect on the perception of the product as attractive for women; this is qualified by significant mediation through the perception of the product as healthy (95% CI: [0.062, 0.534]). Thus, hypothesis H1 is not supported and hypothesis H1a is supported.

We used PROCESS Model 59 to address hypothesis H1_m and H1a_m (moderation of hypothesis H1 and H1a by the type of experience). The “type of experience” is a multi-categorical variable. In the model tested, W1 is a comparison between the condition “absence of experience” and “indirect experience”, while W2 is a comparison between “absence of experience” and “direct experience”.

Regarding both W1 and W2, results indicate that the “label x type of experience” interaction has no statistically significant effect on the perceived attractiveness of the product for women. However, regarding W1, we observe a moderating effect of the type of experience on the relationship between “health” and “attractiveness for women” (95% CI: [0.206, 1.079]). Regarding W2, results also indicate a moderating effect of the type of experience on the relationship between “health” and “attractiveness for women” (95% CI: [0.239, 0.934]). For both W1 and W2, the relationship is positive, meaning that experience - both indirect (W1) and direct (W2) - enhances the influence of perceiving the product as healthy on the attractiveness of the product for women. Thus, hypothesis H1_m is not supported and hypothesis H1a_m is supported. Finally, regarding W1, we observe a moderating effect of the type of experience on the relationship between “labelling of the product” and “health” (95% CI: [-3.217, -1.228]). The same result is observed for W2 (95% CI: [-3.192, -1.349]). For both W1 and W2, the relationship is negative, meaning that experience (both indirect (W1) and direct (W2)) decreases the influence of product labelling on the perceived healthiness. The conditional effect of the focal predictor at values of the moderator confirms this result by showing a significant effect of the relationship only in the “absence of experience” condition (95% CI: [2.090, 3.433]).

Thus, hypothesis H1 and H1_m are not supported and hypothesis H1a and H1a_m are supported.

Theoretical model 2 (hypothesis 1, 1b, 1_m and 1b_m): Influence of the plant-based label on attractiveness for women, mediated by perception of green and moderated by the type of experience

PROCESS model 4 was conducted to address Hypothesis 1 and 1b, which states that labelling a product as “plant-based” has a positive effect on the perception of the product as attractive for women; this is mediated by the perception of the product as green. Results are presented in Table 2.

The label of the product as “plant-based” is not a direct predictor of the perception of the product as attractive for women (95% CI: [-0.997, 0.162]). Results reveal that labelling a product as “plant-based” has an indirect effect on the perception of the product as attractive for women; this can be qualified by significant mediation through the perception of the product as “green” (95% CI: [0.039, 0.387]). Thus, hypothesis H1 is not supported and hypothesis H1b is supported. PROCESS Model 59 was conducted to address hypothesis H1_m and H1a_m (moderation of hypothesis H1 and H1a by the type of experience). The “type of experience” is a multi-categorical variable. In the model tested, W1 is a comparison between the condition “absence of experience” and “indirect experience” and W2 is a comparison between “absence of experience” and “direct experience”.

Regarding both W1 and W2, results indicate that the “label x type of experience” interaction has no statistically significant effect on the perceived attractiveness of the product for women. However, regarding W1, we observe a moderating effect of the type of experience on the relationship between “green” and “attractiveness for women” (95% CI: [0.295, 1.011]). Regarding W2, results also indicate a moderating effect of the type of experience on the relationship between “green” and “attractiveness for women” (95% CI: [0.216, 0.881]). For both W1 and W2, the relationship is positive, meaning that experience - both indirect (W1) and direct (W2) - enhances the influence of the perception of the product as green on the perceived attractiveness of the product for women. Thus, hypothesis H1_m is not supported and hypothesis H1b_m is supported.

Finally, regarding W1, we observe a moderating effect of the type of experience on the relationship between “label of the product” and “green” (95% CI: [-3.527, -0.956]). Regarding W2, results indicate a moderating effect of the type of experience on the relationship between “label of the product” and “green” (95% CI: [-3.077, -0.695]). For both W1 and W2, the relationship is negative, meaning that experience - both indirect (W1) and direct (W2) - decreases the influence of the label of the product on the perceived healthiness. Thus, hypothesis 3m is supported.

Thus, hypothesis H1 and H1_m are not supported and hypothesis H1b and H1b_m are supported.

Theoretical model 3 (hypothesis 2, 2a, 2_m and 2a_m): Influence of the plant-based label on attractiveness for men, mediated by perception of healthy and moderated by the type of experience

PROCESS model 4 was conducted to address Hypothesis H2 and H2a, which states that labelling a product as “plant-based” has a positive effect on the perception of the product as unattractive for men; this is mediated by the perception of the product as healthy. Results are presented in Table 2.

The labelling of the product as “plant-based” is a direct predictor of the perception of the product as unattractive for men (95% CI: [-1.907, -0.600]). Results reveal that this relation is not mediated through the perception of the product as healthy (95% CI: [-0.348, 0.112]). Thus, hypothesis H2 is supported and hypothesis H2a is not supported.

PROCESS Model 59 was conducted to address hypothesis H2_m and H2a_m (moderation of hypothesis H2 and H2a by type of experience). The “type of experience” is a multi-categorical variable. In the model tested, W1 is a comparison between the condition “absence of experience” and “indirect experience” and W2 is a comparison between “absence of experience” and “direct experience”.

Regarding W1, results indicate that the “label x type of experience” interaction has no statistically significant effect on the perceived unattractiveness of the product for men. Regarding W2, results indicate that the “label x type of experience” interaction has a statistically significant effect on the perceived unattractiveness of the product for men (95% CI: [1.216, 4.563]). As the effect of the label as plant-based decreases the perceived attractiveness of the product for men, this positive moderating effect shows that direct experience (but not indirect experience) inhibits the influence of labelling the product as plant-based on the perceived unattractiveness for men. Thus, hypothesis H2_m is supported and hypothesis H2a_m is not supported.

Finally, we observe a moderating effect of the relationship “label x type of experience” on health for both W1 (95% CI: [-3.217, -1.228]) and W2 (95% CI: [-3.192, -1.349]). This effect is negative. These results show that both direct and indirect experience decreases the influence of labelling the product as plant-based on the perception of the product as “healthy”.

Thus, hypothesis H2 and H2_m are supported and hypothesis H2a and H2a_m are not supported.

Theoretical model 4 (hypothesis 2, 2b, 2_m and 2b_m): Influence of the plant-based label on attractiveness for men, mediated by perception of green and moderated by the type of experience

PROCESS model 4 was conducted to address Hypothesis H2 and H2b, which states that the labelling of a product as “plant-based” has a positive effect on the perception of the product as unattractive for men; this is mediated by the perception of the product as green. Results are presented in Table 2.

The labelling of the product as “plant-based” is a direct predictor of the perception of the product as unattractive for men (95% CI: [-2.003, -0.753]). Results reveal that labelling a product as “plant-based” has an indirect effect on the perception of the product as unattractive for men, but this is not qualified by significant mediation through the perception of the product as “green” (95% CI: [-0.119, 0.182]). Thus, hypothesis H2 is supported and hypothesis H2a is not supported. PROCESS Model 59 was conducted to address hypothesis H2_m and H2b_m (moderation of hypothesis H2 and H2b by type of experience). The “type of experience” is a multi-categorical variable. In the model tested, W1 is a comparison between the condition “absence of experience” and “indirect experience” and W2 is a comparison between “absence of experience” and “direct experience”.

Regarding W1, results indicate that the “label x type of experience” interaction has no statistically significant effect on the perceived unattractiveness of the product for men. Regarding W2, results indicate that the “label x type of experience” interaction has a statistically significant effect on the perceived unattractiveness of the product for men (95% CI: [1.375, 4.402]). As the effect of labelling a product as plant-based decreases the perceived attractiveness of the product for men. This positive moderating effect implies that direct experience (but not indirect experience) inhibits the influence of labelling and can thus decrease the perceived unattractiveness of the product for men. Thus, hypothesis H2_m is supported and hypothesis H2b_m is not supported.

Finally, we observe a moderating effect due to the interaction of “label x type of experience” with “green” for both W1 (95% CI: [-3.527, -0.956]) and W2 (95% CI: [-3.077, -0.695]). This effect is negative. These results show that both direct and indirect experience can decrease the influence of labelling the product as plant-based, enhancing the perception of the product as “green”.

Thus, hypothesis H2 and H2_m are supported and hypothesis H2b and H2b_m are not supported.

Discussion

Theoretical contributions

The results of this study deepen our knowledge on the perception of vegetarian products and thus respond to a gap identified in the literature (Hartmann and Siegrist, 2017). More specifically, the results better explain the effect of vegetarian

product labelling on the attractiveness of a product for men and women. This research also contributes to our knowledge about the gender-related perception of products by revealing that mental representations such as unattractiveness for men can be inhibited through direct experience.

First of all, our results are consistent with previous studies regarding the perception of attractiveness of vegetarian products for women and their unattractiveness for men (Ruby, 2012; Stevens et al., 2014). We propose some explanations for these perceptions, showing that the effect of attractiveness of vegetarian products for women is due solely to the perception as being healthy or green. Thus, the labelling of a product as vegetarian does not directly imply that the product is perceived as attractive for women. Our results suggest that products are perceived as attractive for women when they are healthy (dietetic) and green. This is because these attributes are given to vegetarian products and they are therefore perceived as more attractive for women. It is noteworthy that products labelled as vegetarian are not always dietetic. The most remarkable result is that there is no symmetry regarding the perception of unattractiveness of the product for men. In this case, the labelling of the product as vegetarian implies a direct effect that is not mediated by the perception of the product as healthy or green. So, vegetarian products are perceived as attractive for women because they are perceived as healthy and green; and they are not perceived as attractive to men because of the absence of meat. This clarification represents our first theoretical contribution to studies in this field.

Then, regarding the moderating effect, experience has a negative effect on the relationship between the labelling of the product as vegetarian and its perception as being healthy and green. This means that, without any prior experience, vegetarian products are perceived as being healthy and green, but this perception is negatively affected in the case of indirect or direct experience. Therefore, when people taste a product, they base their perception on their concrete mental representations (experience). In this case, their direct experience is different from their abstract mental representations of the product. This could be explained by the choice of product, in this case a paté, which is neither healthy nor green. Moreover, the paté chosen for the picture and the tasting is a very common product. Hence, the participants analyse the paté they see or taste and put aside their abstract mental representations. This explanation is supported by the literature on direct and indirect experience (Hamilton and Thompson, 2007; Johnstone and Tan, 2015). Our study also stresses the need to test the perceptions of meat substitutes in consumption contexts (Elzerman et al., 2011, 2013) and shows that a concrete mental process occurs which annihilates the abstract representations. However, our results also highlight that an abstract mental representation of a product as green and healthy may disappear during consumption and therefore raises questions about potential re-purchasing after consumption. Broadly, our results show that gender stereotypes in consumption are linked to the psychological distance with the products.

We also observe that the asymmetry between attractiveness of products for women and unattractiveness for men persists with the moderation of the type of experience. Thus, experience will change the relation between the perception as healthy or green and the perception of attractiveness for women. Both indirect and direct experience can enhance this relation. This result confirms our expectations since we assume that the previous positive representations of a product (halo effect) can be changed by indirect and direct experience. In this case, concrete mental representations (based on experience) overlap abstract mental representations (Hamilton and Thompson, 2007; Johnstone and Tan, 2015, Trelohan and Stefan, 2018). Meanwhile, direct experience (and not indirect) inhibits the perception of the product as unattractive for men. The phenomena of concrete mental representations taking over from abstract mental representations is observed to the point that they cancel out any effects of the labelling of vegetarian products on the perception of attractiveness for men. This should be because the product chosen in our study looks and tastes like a meat-based paté. Consequently, the paté is perceived as not being a threat for masculinity. It is explained by the strong need for men to maintain their gender identity and the fact that, in this regard, vegetarian products can be a threat (Brough et al., 2016; Rothgerber, 2013). Our second contribution to studies in this field is that gender stereotypes regarding products and their threat to masculinity can be inhibited by direct experience.

Finally, our research highlights above all a gender asymmetry in the perception of the products. Indeed, the perception of a product as being less attractive to men is not linked to its perception as being more attractive to women. This result is evidently explained by the greater need for men to maintain their gender identity and by the awareness of this need shared between men and women (Brough et al., 2016). Moreover, girls may integrate very early on (from the age of 3) that the gender valued in society is the male gender, so they are more likely to adopt male gender behaviours than boys adopting female gender behaviour (Bauer, 1993; Le Maner-Idrissi and Renault, 2006; O'Brien et al., 2000; Signorella et al., 1993). Our results therefore show the extension of these gender patterns into adulthood and food consumption.

Managerial implications

Our results on experience have implications for brands that have to make their products look as well as tasty, healthy and green to avoid losing consumers whose motivations to buy are based on these characteristics. This point is our first main managerial implication.

The second managerial implication of our study is that creating indirect and direct experiences will change

consumers' negative representations of a product and it will be crucial in changing gendered perceptions. By choosing to use paté in our study, we are able to reveal changes in the perceptions of the product depending on the level of experience (absence, indirect or direct). In this perspective, brands should increase their efforts on the first purchase because it will be a direct experience that could change perceptions of the product. Promotions could be a strategy to facilitate this first purchase. They should also propose tasting in the shops as this is another way to create a direct experience. Finally, they could also increase indirect experiences; even if the effects are smaller, it could be a less expensive way to attract new consumers. In this perspective, they could focus on the size and quality of the product image in their advertisements.

Finally, these results also shed light on the reasons for the greater adoption of the vegetarian products by women. As substitutes (like a plant-based paté) are perceived as unattractive for men (regardless of the gender of the respondent), men might consider that a vegetarian diet could reduce the diversity of their food choice. This also provides interesting insights for brands and retailers who wish to democratize their vegetarian products and extend them to male consumers: the product will be more accepted as attractive for men if it looks and tastes like meat-based products, like in our experiment. Thus, the new developments of vegetarian products trying to mimic meat could be successful for this market segment (men).

Limitations and future research

The first limitation of this research is the choice of product. Each product or category of product has its own representation. In this study, "paté" was chosen for the four reasons evoked in the methodology section. Future research could test other products or categories of products. Especially, it could be interesting to test products perceived as more or less feminine and masculine. The present research was conducted with students. It would be interesting to test the effects with other generations and social classes. Finally, further studies could test the moderating effect of the masculine/feminine gender of respondents or their adherence to sex stereotypes.

Work on other vegetarian products needs to be carried out to confirm these results. To verify the presence of this asymmetry, it will also be necessary to conduct research on products perceived as more attractive to men. Last but not least, this field of research will also have to look beyond the gender-binary world to include everyone (transgender and non-binary people, for example) (McKeage et al., 2017).

Finally, our results create new avenues of research showing that gender stereotypes, but probably also other stereotypes, could be modified by lessening the psychological distance through direct experience, or even indirect experience. This would be possible when the need to maintain gender identity is not too strong. New studies could be conducted to test and deepen our understanding of this contribution to research on gender stereotypes.

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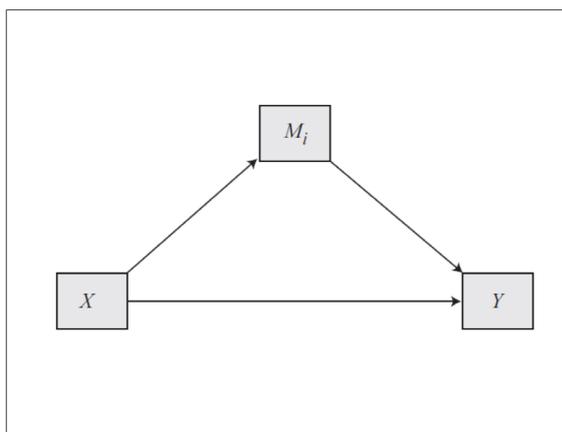
Appendix

Appendix 1. Picture of the pâté



Appendix 2. PROCESS Models used in the research

PROCESS Model 4 (Hayes, 2018, p.585)



PROCESS Model 59 (Hayes, 2018, p.598)

