



# Meat alternative consumers still frowned upon in Europe: Analysis of stereotypical, emotional and behavioral responses of observing others

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## ABSTRACT

As a part of the battle against climate change, many plant-based meat alternative products have been launched in recent years—without notable success. One explanation could be that consumers of meat alternatives are seen as socially deviant from those consuming animal-based protein products. This study adopts the BIAS Map framework, which has been underutilized in the food consumption research, in order to reveal the stereotypical beliefs, emotional responses, and behavioral tendencies that consumers of meat alternatives evoke in observers. An online experiment is conducted, participants ( $N = 3600$ ) from four European countries evaluate fictitious consumers using three shopping lists that include meat products and their alternatives in varying combinations. The results reveal a conflicting picture of those who are believed to favor meat alternatives. They are seen as environmentally friendly, health-conscious people who adhere to high moral standards, and are worthy of admiration. But on the contrary, they also elicit fear, contempt, and anger in observers, who as a result socially exclude and even show aggression toward them. Second, the findings produce a novel insight regarding moderation effects related to observers' need for affiliation and status. Those high in need of affiliation demonstrate the strongest positive change in their relation to consumers who appear to favor both traditional meat products and their more modern alternatives. Additionally, those high in need of status tend to evaluate consumers favoring the modern alternatives as evoking more anger and envy, compared with consumers favoring traditional meat products. This study has several theoretical, managerial, and societal implications.

## 1. Introduction

As a society, we are in a hurry to decelerate climate warming and biodiversity loss (Intergovernmental Panel on Climate Change, 2023; World Wide Fund for Nature, 2020). The livestock sector significantly contributes to these problems (Springmann et al., 2016; Springmann et al., 2018) by producing around 14.5 % of global greenhouse gas emissions (Gerber et al., 2013). Further, in industrialized countries, the recommended red and processed meat consumption is exceeded, resulting in adverse effects on health (World Cancer Research Fund International, 2018), the environment (Poore & Nemecek, 2018), and animal welfare (Bonnet et al., 2020). Thus, meat consumption should urgently be reduced, and plant-based meat alternatives represent one solution (Michel et al., 2021). The products do not contain meat but serve a similar purpose in consumers' diet (Sadler, 2004). While interest in the development, production, and supply of meat alternatives has risen significantly during the last decade, their consumption remains

low (Aschemann-Witzel & Janssen, 2022), accounting for only 0.7 % of the total EU meat market (Snoeck & Van Rompaey, 2022).

Consumers' perceptions of meat alternatives and reasons for their consumption have been studied from different viewpoints. For example, unappealing sensory qualities, unfamiliarity, and inconvenience of use are commonly associated with meat alternatives (Collier et al., 2021; Rööös et al., 2022). In addition, many consumers believe that, compared with meat products, meat alternatives are costly (Nezlek & Forestell, 2022), as well as lacking in protein (Circus & Robison, 2019), essential nutrients, and vitamins (Weinrich, 2018). Also, consumer factors such as cooking skills (Varela et al., 2022), demographics (Hartmann & Siegrist, 2017; Verain et al., 2012), socioeconomic factors (Siegrist & Hartmann, 2019), and psychographics (Hoek et al., 2011) can shape views on meat alternatives.

The effect of the social environment, comprising, for example, other people's opinions and normative valuations (Trudel, 2019), on the adoption of alternative proteins has been documented (Onwezen et al.,

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2021). Social influences have been found important in fostering pro-environmental consumption (Abrahamse & Steg, 2013; Eker et al., 2019) and behaviors (Farrow et al., 2017). The dynamics of social influence are partly determined by who consumers identify with. For example, peer group members exert a strong social impact to conform, while distant outgroup members do not; in the case of avoidance groups, the impact can even be opposite to peer group members (Tajfel & Turner, 2004). The same applies to pro-environmental consumption. Individuals are more likely to practice green consumption, if their ingroup members do (Gupta & Ogden, 2009; Van der Werff et al., 2013). Similarly, individuals who observe an outgroup member engaging in green consumption practices are less likely to support pro-environmental behaviors (White et al., 2019).

An individual's social identity is shaped by their observations of other people's behaviors. The observer's intention to pursue sustainable consumption might increase or decrease depending on how socially (un)desirable they interpret other consumers' behaviors to be (Brough et al., 2016; Minson & Monin, 2012; Olson et al., 2016). Consequently, the observer may form different positive or negative stereotypical views, and emotional and behavioral responses, toward the individual exhibiting the evaluated behavior (Cuddy et al., 2007), contributing to the (non)adoption of the same sustainable consumption action. Finally, the observer's own characteristics, such as personal values (Luomala et al., 2020), may color their perception of other consumers and their behaviors—affecting, for instance, the likelihood of imitation.

This article harnesses one of the prominent approaches in studying social evaluations, the BIAS (Behaviors from Intergroup Affect and Stereotypes) Map framework (Cuddy et al., 2007), to advance understanding of how meat alternative consumers are perceived, and what kinds of emotional and behavioral treatment tendencies they prompt in others. The BIAS Map has been successfully employed to examine issues such as racial prejudices (Fiske et al., 2002), and perceptions of consumers of responsible brands (Antonetti & Maklan, 2016). The present research has two objectives. First, to apply BIAS Map to study the stereotypes, and emotional and behavioral tendencies attached to meat alternative consumers. Second, to discover if observers' socially-based traits, their needs for status and affiliation, moderate perceptions of consumers favoring meat products and their alternatives, and the consequent stereotypical views, and emotional and behavioral responses.

Next, based on the integration of ideas from BIAS Map and the literature concerning fundamental social motivations, we develop a conceptual framework and define empirical research questions. The article then describes the methodological details of a large experiment conducted in four European countries. Attention then shifts to the study results showing that assumed meat alternative favorers create an ambiguous picture in the minds of other consumers – whose status and affiliation needs play a role in this. As regards the latter, an observer's high need for status elicits stronger negative emotions toward those who appear to favor meat alternative products. Additionally, an observer's high need for affiliation elevates the perception of those who seem to use both meat products and their alternatives—coupled with more positive emotional and behavioral responses to them. The article concludes with a discussion on the theoretical and societal implications of the findings. We also address the study's limitations and outline future research suggestions.

## 2. Conceptual development

### 2.1. BIAS map: Behaviors from intergroup affect and stereotypes

The key theoretical ideas for this study stem from the BIAS (Behaviors from Intergroup Affect and Stereotypes) Map (Cuddy et al., 2007; Cuddy et al., 2008; Fiske et al., 2002). It is a framework designed primarily to understand what kind of prejudice and perceptual bias a specific group experiences in the social reality. The framework applies a

shared cultural perspective, since it focuses on observers' perceptions in terms of what most people in their society think of the target group. Previously, it has been used to tackle social perceptions attached to different categories of people, such as societal subgroups, based on their sexual orientation, gender, or ethnicity (Cuddy et al., 2009; Fiske, 2018). The framework approaches prejudices and perceptual biases evoked by a group using three main concepts: stereotypes, emotions, and behavioral tendencies. The premise is that stereotypes (e.g., stigmatizing beliefs) and emotions (e.g., contempt) are connected to behavioral tendencies toward the observed group—culminating in either harmful or supportive social treatment.

Allport (1954) and Tajfel (1969) defined the construct of stereotypes as social categories that have a variety of features presupposed by other people to describe the members of a specific group. In other words, stereotypes can be defined as generalized positive and negative characteristics shared by others about a group of people (Brigham, 1971; McCauley et al., 1980). The BIAS Map presents two universal stereotypes, warmth and competence, which stem from a number of basic ideas (Fiske, 1992, 1993). First, people inherently seek to understand the intentions of others. To this end, an individual evaluates the warmth, that is (un)friendliness, but also the morality of the person or group in question. In social interactions, people seen as low in warmth reflect negative characteristics such as dishonesty (Wojciszke et al., 1993). Second, we want to gauge the capability of the person or group to realize their intentions, triggering the evaluation of competence of the targeted person or group. Evaluations of warmth are more important than appraisals of competence, incompetence, or incapability, since observers are predisposed to uncover traits related to warmth much more quickly than to competence (Willis & Todorov, 2006). Moreover, the warmth-related characteristics better predict observers' evaluations of others (Wojciszke et al., 1998).

According to the BIAS Map, different combinations of the evaluated warmth and competence of target social group members are postulated to elicit certain emotions (admiration, contempt, pity, envy) in observers (Cuddy et al., 2007). For instance, those evaluated as warm/cold and competent/incompetent evoke admiration/contempt. Emotions, in turn, are classically thought to connect to behaviors, and the BIAS Map conceptualization also adheres to this premise. To illustrate, admiration can encourage facilitative social behaviors directed at target group members (e.g., helping or cooperating), whereas contempt can bring out harmful behaviors (e.g., social exclusion or even aggression).

The BIAS Map has not extensively been used to explore social cognitions in the sustainable food consumption context. MacInnis and Hodson (2017) applied the competence and warmth attributes to study the public image of vegetarians and vegans, and indicated that both dietary groups were viewed negatively compared with omnivores. De Groeve et al. (2022) included the competence stereotype in their research, but replaced warmth with morality and sociability stereotypes in researching how omnivores perceive vegetarians, vegans, and flexitarians. The results showed that vegetarians and vegans were seen as higher in morality, but more negatively stereotyped, whereas flexitarians were viewed in a more positive light. These two studies indicate that people tend, stereotypically, to see socially distant groups more negatively. However, the aforementioned studies did not focus on the emotional and behavioral responses associated with stereotyped social groups, and the study at hand seeks to fill that gap.

### 2.2. Fundamental social motives of group affiliation and status

Understanding evolutionary needs and how they work can provide information about consumer behavior in the modern world. These needs not only describe seeking a partner with whom to start a family (Kenrick et al., 2010), but also consuming products in general (Griskevicius & Kenrick, 2013). Group affiliation and status are both fundamental social motives drawn from the evolutionary perspective (Neel et al., 2016), and closely tied to the same goal, namely social approbation (Hirsch &

Clark, 2019). The need for affiliation explains consumers' need to belong to certain groups, while status represents the urge to seek superiority in our social circles (Griskevicius & Kenrick, 2013). Bearing this in mind, Folwarczny et al. (2023) suggested that sustainable food consumption can be used as a form of (self-) impression management, when the intention is to be seen in a desired way.

According to Griskevicius and Kenrick (2013), group affiliation is about forming and maintaining social connections, such as friendships. Group affiliation strongly relates to pre-existing social norms, since in order to fit into a group, an individual has to acknowledge them, adjust his/her actions in line with the group identity, and avoid any conflicting behaviors (Cialdini, 2005). Affiliation to a group can occur unconsciously (Hirsch & Clark, 2019), where the individual shares demographic characteristics with other members, or unintentionally joins due to similar interests, attributes, or shared identities (e.g., hobbies). On the other hand, individuals can be willing to affiliate with a group simply because they wish to associate with it. In order to signal their belongingness to a group of people, an individual can seek to consume certain products (Griskevicius & Kenrick, 2013; Pandelaere, 2022). For instance, there is a connection between green consumption and group affiliation in that friends can maintain their social bonds by exchanging opinions on which products represent sustainable options (Khare, 2015). Purchasing green products can satisfy the individual motivations of being moral, but it can also be a useful action to purposefully highlight affiliation to a particular group (Moisander & Pesonen, 2002).

The status motive is about obtaining and perpetuating respect and prestige in a social group in order to stand out. The traditional way to implement this is signaling your position through the consumption of luxury goods (Han et al., 2010; Ivanic et al., 2011; Rucker & Galinsky, 2008). However, status consumption is not always about choosing products or brands that satisfy your personal desires over group goals. There is evidence that status motivations can activate green or prosocial consumption, for example, in the case of buying hybrid cars (Griskevicius et al., 2010) or organic foods (Luomala et al., 2020; Puska et al., 2018). In fact, Konuk and Otterbring (2024) found that the tendency to engage in status consumption led to more positive organic food purchasing intentions.

Group affiliation and status motivations can be regarded as both situational states and more enduring personal characteristics, suggesting that their typical level of strength varies from one individual to another. For instance, people high in group affiliation motive were more likely to play team sports and attend religious services (Neel et al., 2016). According to Schultz et al. (2023), the low group affiliation of an individual has a negative effect on how they respond to sustainable products. From the status perspective, De Silva et al. (2021) found that consumers' status consciousness moderated purchasing intentions of remanufactured products. Applying these findings to the present research context, we propose that the strength of an observer's affiliation and status motive can moderate how consumers favoring meat alternatives are stereotypically viewed, emotionally experienced, and socially treated.

Consequently, it is possible that if observers with a strong (vs. weak) status motive construe meat alternatives as highly valued among elite social groups, then their favorers can excite more positive perceptions, emotional experiences, and behavioral responses. Extending this logic, if observers with a strong (vs. weak) group affiliation motive interpret general news and social media coverage on the topic to mean that increasing numbers of their fellow citizen-consumers are abandoning meat products and replacing them with alternatives, then their favorers can, again, be subject to elevated perceptions and emotional and behavioral responses.

In sum, we pose two empirical research questions: 1) What kind of stereotypical beliefs, emotional responses, and behavioral treatment tendencies do consumers favoring meat products and their alternatives to a varying degree evoke in observers? 2) Do observers' strength of affiliation and status motives moderate the formation of stereotypical beliefs, emotional responses, and behavioral treatment tendencies

toward consumers who differently favor meat products and their alternatives? The theoretical framework of this research is presented in Fig. 1.

### 3. Methodology

#### 3.1. Study design and experimental procedure

To tackle the empirical research questions, the study applied a "shopping list" approach in a between-subject online experiment with three experimental conditions. In practice, each study participant evaluated one fictional consumer who used a predetermined shopping list with varying combinations of meat and/or meat alternative products. This shopping list approach has the capability to penetrate unconscious and conscious mental defenses and provide motivational material from which inferences can be drawn about the target person of the study (Rivas et al., 2023; Vidal et al., 2013).

The variation between the shopping lists was based on the inclusion or exclusion of animal and plant-based protein products from similar product categories (Table 1). List 1 ("meat shopper") included meatballs and sausage, List 2 ("flexible shopper") chicken balls and vegetarian sausage, and List 3 ("meat alternative shopper") plant-protein balls and vegetarian sausage. All the lists included the same five staple food products: pasta, bread, apple juice, carrots, and bananas. Their inclusion was intended to obscure the primary purpose of our study. The product order on the lists was randomized for each participant. It should also be noted that the study participants were not aware of the list titles.

Once the participants had joined the study, they were randomly assigned to one of the experimental conditions. They were then given a short informative and instructive narrative: "A person goes grocery shopping and uses the shopping list below as a memory aid. Read the shopping list and try to form an impression of how an average person perceives him/her. We are not asking how you personally view this person, but how you think the average person views this person." In order to limit the shopper evaluations strictly to the products shown in the list, the narrative intentionally avoided giving any reasons for the purchase of the products or any specific consumption context. Another conscious choice was related to the shopper evaluation. Following Antonetti and Maklan (2016) and Cuddy et al. (2007), the participants were asked to evaluate the shopper from a third-person perspective, that is, the average person. The third-person perspective is beneficial in cases where the intention is to discover a shared cultural perspective instead of personal views (Cuddy et al., 2007). This choice was also considered to reduce the social desirability bias (Fisher, 1993), which might be present in situations where participants need to provide evaluations that include negative views (in this case, emotional and behavioral responses).

Once the participants had familiarized themselves with the shopping list, they started the shopper evaluation from the BIAS perspective. After the evaluation, participants were asked to answer questions related to their demographic and socioeconomic characteristics, their social motives concerning status, and group affiliation.

#### 3.2. Data collection and sample

The starting point for the study was to gather insights from Europe with broad, empirical data. We conducted data collection in summer 2021 in Finland, the United Kingdom, Germany, and Sweden. The countries were chosen for the following reasons. Finland represents a small but open-minded market for food innovations (EIT Food, 2021). Sweden is also a small market, but Swedish consumers see meat alternatives as unnatural and costly, so the population can be considered slightly reserved toward such kinds of food innovation (Spendrup & Hovmalm, 2022). Germany is a large market and considered the main EU market for meat alternatives (Statista, 2022). In the UK, consumers are generally receptive to meat alternatives, and the market is mature

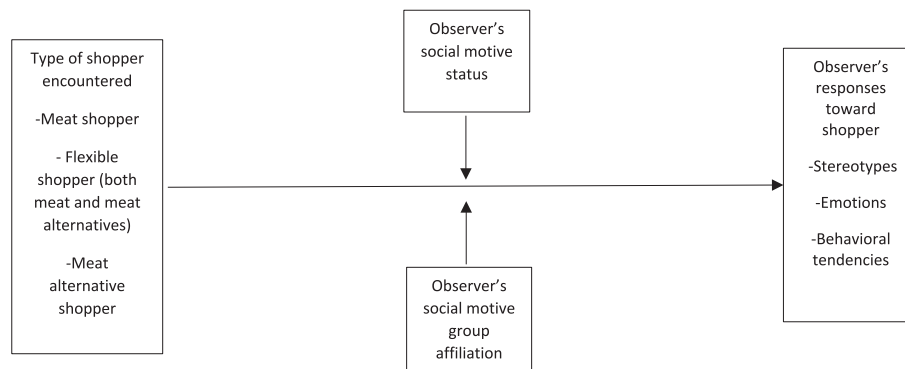


Fig. 1. Conceptual framework.

Table 1

Shopping lists used in the study. Participants not exposed to the shopping list titles.

Shopping list 1: Meat shopper	Shopping list 2: Flexible shopper	Shopping list 3: Meat alternative shopper
Pasta	Pasta	Pasta
Bread	Bread	Bread
<i>Meatballs</i>	<i>Chicken balls</i>	<i>Plant-protein balls</i>
<i>Sausage</i>	<i>Vegetarian sausage</i>	<i>Vegetarian sausage</i>
Apple juice	Apple juice	Apple juice
Carrots	Carrots	Carrots
Bananas	Bananas	Bananas

Note: Target foods are marked in italics.

and large (Statista, 2022). An external service provider with large consumer panels in each study country was used to collect the data. Two participant recruitment criteria were set: an equal share by gender, and an age range of 18–75 years. The service provider rewarded the study participants according to its panel rules. They anonymized the data, that is, the study participant’s name and contact information were not included.

A random sample of 3600 participants was recruited, 900 from each study country (300 participants per experimental condition per country). Table 2 presents the sample. Cross-tabulation and one-way ANOVA results indicate that the sample is equally distributed within the study groups, as there were no significant differences between the groups based on study country, gender, mean age, education level, income level, or place of residence.

The study design was approved by the ethical committee of VTT Technical Research Centre of Finland Ltd. Before deciding whether to continue with the study, the participants were given a brief informative summary of the study purpose (generate understanding on food consumption), the organization conducting the research, the funding body, data handling procedures, and the estimated response time. Finally, informed consent to join the study was requested.

### 3.3. Measures

The scales used in this study were mainly adopted from previous research. All scales and items along with the descriptive statistics and scale reliabilities are reported in Table 3 below. The stereotypes (Competence, Warmth) were measured with four items originating from Cuddy et al. (2007). The stereotype measure was extended with three additional yet relevant stereotypes for the study context: environmental friendliness, morality, and health orientation (Hartmann et al., 2018). The inclusion of these measures was considered to provide in-depth contextual information once applied together with the BIAS stereotype measures. The question for the stereotype measure read: “Look at the shopping list. I believe that an average person perceives a consumer who

Table 2

Sample. Differences between study groups tested with Chi-square or one-way ANOVA.

	Shopping List 1. Meat shopper (N = 1200)	Shopping List 2. Flexible shopper (N = 1200)	Shopping List 3. Meat alternative shopper (N = 1200)	X <sup>2</sup> / F	p
Country				0.03	1.00
Finland	25.0	25.0	25.0		
UK	25.1	24.8	25.1		
Germany	25.0	25.1	24.9		
Sweden	24.9	25.1	25.0		
Gender (%)				5.17	0.52
Male	48.9	50.0	50.0		
Female	50.9	50.0	49.6		
Other	0.2	0.0	0.4		
Mean age (SD)	44.9 (15.07)	44.5 (15.0)	45.0 (15.42)	0.41	0.67
Education (%)				6.83	0.34
Compulsory	6.8	6.8	6.6		
Secondary	64.2	61.5	61.0		
High	27.8	31.1	31.5		
Not known	1.2	0.6	0.9		
Income level %				2.46	0.65
Low	30.7	29.5	31.5		
Middle	62.7	64.2	61.3		
High	6.6	6.3	7.2		
Place of residence				6.40	0.17
Capital area	22.3	23.4	22.3		
Other urban area	57.4	52.9	54.4		
Rural area	20.3	23.7	23.3		

uses this shopping list as...”, followed by the stereotype items in randomized order. A 5-point scale in which 1 = Not at all and 5 = Extremely was applied.

The scale for the emotional responses was adopted from Cuddy et al. (2007). Each of the BIAS emotions (Contempt, Admiration, Pity, Envy) was measured with two items. It should be noted that the reliability of Pity was compromised in all study countries other than the UK. This might originate from cultural differences. It is possible that in countries other than the UK, the two items (sympathy and pity) might have a mixed emotional tone, sympathy leaning toward positive and pity toward negative. Consequently, Pity was removed from further analyses. In addition to the BIAS Map emotions, Anger and Fear were added. The literature has shown that both anger (Bresnahan et al., 2016) and fear (Markowski & Roxburgh, 2019) are relevant when people are evaluating others following plant-based diets; these measures were therefore considered useful additions to provide context-relevant descriptions of the emotional responses. The question read: “Look at the shopping list. I

**Table 3**  
 Constructs, items, descriptive statistics, and construct reliabilities.

Construct/Item	Mean (SD) Complete data	Mean (SD) Finland	Mean (SD) United Kingdom	Mean (SD) Germany	Mean (SD) Sweden	CA complete data	CA Finland	CA United Kingdom	CA Germany	CA Sweden
<i>Stereotypes</i>										
Competence	3.24 (0.82)	3.03 (0.81)	3.52 (0.81)	3.26 (0.75)	3.14 (0.84)	0.81	0.81	0.80	0.77	0.82
Competent	3.24 (0.89)	3.06 (0.87)	3.48 (0.90)	3.25 (0.84)	3.16 (0.89)					
Capable	3.24 (0.91)	3.01 (0.90)	3.56 (0.88)	3.28 (0.83)	3.12 (0.93)					
Warmth	3.28 (0.76)	3.24 (0.74)	3.37 (0.80)	3.25 (0.73)	3.28 (0.78)	0.76	0.81	0.80	0.65	0.77
Warm	3.19 (0.86)	3.17 (0.79)	3.31 (0.87)	3.11 (0.88)	3.17 (0.87)					
Friendly	3.38 (0.85)	3.30 (0.83)	3.42 (0.88)	3.39 (0.81)	3.39 (0.86)					
Environmentally friendly	3.37 (0.94)	3.27 (0.95)	3.50 (0.86)	3.37 (0.93)	3.32 (1.01)	0.84	0.88	0.78	0.83	0.86
Environmentally friendly	3.38 (1.01)	3.31 (0.99)	3.46 (0.96)	3.39 (0.98)	3.34 (1.10)					
Interested in the balance of nature	3.35 (1.02)	3.22 (1.03)	3.54 (0.95)	3.35 (1.02)	3.30 (1.06)					
Morality	3.21 (0.86)	3.12 (0.87)	3.40 (0.81)	3.16 (0.87)	3.16 (0.87)	0.76	0.76	0.74	0.77	0.75
Ethical	3.23 (0.98)	3.13 (1.02)	3.45 (0.93)	3.18 (0.92)	3.18 (1.00)					
High in morality	3.19 (0.94)	3.10 (0.91)	3.36 (0.89)	3.13 (1.01)	3.15 (0.94)					
Health orientation	3.46 (0.93)	3.27 (0.91)	3.68 (0.87)	3.57 (0.98)	3.33 (0.99)	0.83	0.80	0.81	0.82	0.88
Health orientation	3.47 (1.04)	3.28 (1.07)	3.70 (0.99)	3.56 (0.98)	3.32 (1.07)					
Physical wellbeing	3.46 (0.97)	3.26 (0.91)	3.66 (0.92)	3.58 (0.97)	3.33 (1.04)					
<i>Emotions</i>										
Contempt	2.01 (0.97)	2.06 (0.96)	2.07 (1.01)	1.85 (0.91)	2.06 (1.00)	0.80	0.85	0.75	0.82	0.80
Contempt	2.05 (1.09)	2.09 (1.05)	2.21 (1.18)	1.88 (1.00)	2.01 (1.09)					
Disgust	1.97 (1.04)	2.02 (1.02)	1.92 (1.08)	1.83 (0.98)	2.12 (1.06)					
Admiration	2.48 (0.96)	2.33 (0.90)	2.54 (1.03)	2.31 (0.93)	2.73 (0.91)	0.77	0.81	0.81	0.79	0.73
Admiration	2.54 (1.05)	2.45 (0.98)	2.70 (1.13)	2.46 (1.04)	2.55 (1.05)					
Adoration	2.41 (1.07)	2.21 (0.98)	2.38 (1.13)	2.15 (1.01)	2.91 (1.00)					
Pity	2.44 (0.87)	2.51 (0.76)	2.15 (1.01)	2.55 (0.70)	2.55 (0.89)	0.41	0.14	0.73	-0.06	0.51
(removed from further analyses)										
Pity	2.15 (1.11)	2.22 (1.11)	2.03 (1.11)	2.06 (1.07)	2.30 (1.13)					
Sympathy	2.73 (1.07)	2.80 (0.97)	2.27 (1.17)	3.04 (0.93)	2.80 (1.05)					
Envy	1.88 (0.91)	1.82 (0.88)	1.95 (0.97)	1.79 (0.90)	1.98 (0.90)	0.80	0.80	0.83	0.84	0.72
Envy	1.93 (1.02)	1.88 (0.98)	2.01 (1.06)	1.83 (1.00)	2.00 (1.04)					
Jealousy	1.84 (0.98)	1.75 (0.94)	1.89 (1.04)	1.75 (0.94)	1.96 (1.00)					
Anger	1.92 (0.92)	1.91 (0.92)	1.97 (0.99)	1.77 (0.88)	2.03 (0.89)	0.81	0.87	0.83	0.83	0.70
Anger	1.82 (0.99)	1.87 (0.99)	1.87 (1.03)	1.72 (0.93)	1.84 (1.01)					
Indignation	2.02 (1.03)	1.95 (0.97)	2.07 (1.12)	1.83 (0.97)	2.22 (1.02)					
Fear	1.88 (0.92)	1.86 (0.91)	1.89 (0.98)	1.85 (0.86)	1.93 (0.94)	0.80	0.79	0.87	0.76	0.79
Fear	1.78 (0.99)	1.77 (0.97)	1.84 (1.04)	1.67 (0.91)	1.85 (1.02)					
Anxiety	1.98 (1.03)	1.95 (1.03)	1.94 (1.04)	2.02 (1.01)	2.01 (1.05)					
<i>Behavioral tendencies</i>										
Active facilitation	2.76 (0.86)	2.76 (0.75)	2.73 (0.89)	2.73 (0.89)	2.70 (0.86)	0.81	0.75	0.84	0.86	0.77

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Table 3 (continued)

Construct/Item	Mean (SD) Complete data	Mean (SD) Finland	Mean (SD) United Kingdom	Mean (SD) Germany	Mean (SD) Sweden	CA complete data	CA Finland	CA United Kingdom	CA Germany	CA Sweden
Helpfully	2.93 (0.98)	2.95 (0.90)	2.97 (1.02)	2.87 (0.98)	2.93 (1.01)					
Protectively	2.47 (1.03)	2.44 (0.95)	2.53 (1.09)	2.49 (1.04)	2.42 (1.06)					
Supportively	2.87 (1.01)	2.90 (0.91)	3.00 (1.04)	2.84 (1.01)	2.75 (1.06)					
Active harm	1.82 (0.93)	1.80 (0.90)	1.79 (0.88)	1.79 (0.88)	1.75 (0.90)	0.86	0.88	0.87	0.84	0.86
Aggressively	1.77 (0.97)	1.76 (0.94)	1.87 (1.04)	1.73 (0.92)	1.71 (0.96)					
In a hostile manner	1.87 (1.02)	1.84 (0.97)	2.00 (1.13)	1.85 (0.98)	1.80 (0.98)					
Passive harm	2.10 (0.99)	2.23 (0.98)	2.07 (0.94)	2.07 (0.94)	2.00 (0.97)	0.80	0.82	0.84	0.76	0.78
Excluding him/her	2.07 (1.07)	2.17 (1.03)	2.09 (1.13)	2.08 (1.05)	1.96 (1.07)					
Derogatively	2.13 (1.09)	2.30 (1.09)	2.12 (1.12)	2.07 (1.05)	2.04 (1.06)					
Passive facilitation	2.82 (0.87)	3.03 (0.85)	2.65 (0.79)	2.65 (0.79)	2.80 (0.89)	0.71	0.84	0.79	0.50	0.69
Cooperatively	2.95 (0.98)	3.01 (0.92)	2.93 (1.02)	2.91 (0.96)	2.95 (1.01)					
Associatively	2.69 (1.01)	3.04 (0.91)	2.68 (1.05)	2.39 (0.97)	2.65 (1.01)					
Imitation	2.37 (0.96)	2.35 (0.93)	2.38 (0.99)	2.35 (0.91)	2.39 (0.99)	0.83	0.84	0.83	0.81	0.83
Copying his/her behavior	2.39 (1.04)	2.37 (2.00)	2.45 (1.08)	2.38 (1.00)	2.38 (1.06)					
Imitating his/her behavior	2.34 (1.03)	2.32 (2.00)	2.32 (1.07)	2.32 (0.99)	2.40 (1.07)					
<i>Fundamental social motives</i>										
Need for group affiliation	3.61 (0.84)	3.60 (0.82)	3.52 (0.83)	3.67 (0.85)	3.63 (0.84)	0.87	0.86	0.87	0.88	0.86
Being part of a group is important to me	3.30 (1.12)	3.27 (1.10)	3.21 (1.11)	3.34 (1.14)	3.37 (1.13)					
I enjoy working with a group to accomplish a goal	3.55 (1.07)	3.46 (1.09)	3.54 (1.02)	3.58 (1.09)	3.64 (1.05)					
I like being part of a team	3.58 (1.07)	3.51 (1.08)	3.52 (1.05)	3.67 (1.05)	3.64 (1.09)					
Working in a group is usually more trouble than it's worth REV (removed from the analysis)	3.22 (1.10)	3.25 (1.15)	3.08 (1.08)	3.32 (1.08)	3.23 (1.08)					
When I'm in a group, I do things to help the group stay together	3.71 (0.95)	3.76 (0.92)	3.59 (0.95)	3.82 (0.94)	3.68 (0.98)					
Getting along with the people around me is a high priority	3.88 (0.96)	4.02 (0.95)	3.75 (0.98)	3.92 (0.93)	3.82 (0.97)					
Need for status	3.08 (0.83)	3.25 (0.78)	2.97 (0.87)	2.99 (0.86)	3.13 (0.79)	0.80	0.79	0.85	0.80	0.77
It's important to me that other people look up to me	2.92 (1.16)	3.58 (0.98)	2.88 (1.11)	2.40 (1.13)	2.83 (1.08)					
I want to be in a position of leadership	2.73 (1.20)	2.58 (1.18)	2.77 (1.17)	2.65 (1.24)	2.93 (1.18)					
It's important to me that others respect my rank or position	3.32 (1.08)	3.35 (1.06)	3.06 (1.07)	3.46 (1.12)	3.42 (1.03)					
I do things to ensure that I don't lose the status I have	2.99 (1.05)	3.15 (1.03)	2.85 (1.05)	3.02 (1.09)	2.92 (1.02)					
I do not like being at the bottom of a hierarchy	3.44 (1.12)	3.57 (1.04)	3.27 (1.12)	3.40 (1.19)	3.53 (1.11)					
I do not worry very much about losing status REV (removed from the analysis)	2.58 (1.09)	2.54 (1.07)	2.65 (1.08)	2.58 (1.12)	2.55 (1.09)					

believe that the average person would feel about a consumer who uses this shopping list...”, followed by the emotion items in randomized order. A five-point scale was applied with the extremes 1 = Not at all and 5 = Extremely.

Behavioral responses were measured through five dimensions. The original BIAS Map dimensions (Active facilitation, Passive facilitation, Active harm, Passive harm) (Cuddy et al., 2007) were enriched with the Imitation dimension, which has been found important in the sustainable consumption context (Antonetti & Maklan, 2016). Each of these

dimensions was captured with two items (except Active facilitation with three) and measured with a similar five-point scale as Stereotypes and Emotional responses. The participants were asked the following question: “Look at the shopping list. I believe that the average person behaves toward a consumer who uses this shopping list...”, followed by the items in randomized order.

The social motives scales (need for status and need for affiliation) with six individual items were originally adopted from Neel et al. (2016). An exploratory factor analysis (EFA) was conducted for both

scales in all country data to analyze the relationships between the items and the constructs. The analysis revealed one problematic item in both scales, which showed poor loadings and were removed. In the scale measuring the need for group affiliation, the item “Working in a group is usually more trouble than it’s worth” was removed and the item “I do not worry very much about losing status” from the need for status scale. As a result, both of the social motive scales were measured with five individual items. For the details of the exploratory factor analysis, see Attachment 1. The measures for the social motives applied five-point Likert scales, 1 = totally disagree to 5 = totally agree.

The questionnaire was first prepared in English. After that, a back-translation method with two independent professional translators was applied to translate it into Finnish, German, and Swedish.

### 3.4. Data analysis

The first step in the data analysis was to perform two-way MANOVA with country and shopping list as fixed factors. Although it was expected that the countries chosen for the study might cause variation, only four out of the 16 possible country\*shopping list interaction effects turned out to be significant stereotype Environmental friendliness: [F(6, 3609) = 2.93,  $p = .007$ ], Stereotype Health orientation: [F(6, 3609) = 4.38,  $p < .001$ ], Behavioral tendency Active facilitation: [F(6, 3609) = 2.46,  $p = .02$ ], and Behavioral tendency Passive facilitation: [F(6, 3609) = 3.35,  $p = .003$ ]. This result suggests that the shoppers were in most cases perceived in a similar manner regardless of the country. Therefore, it was decided that further analyses would be conducted with the pooled data. Furthermore, the similar cross-country factor structures from the EFA supported this decision (see Attachment 1).

For the remainder of the analyses, one-way ANOVA with Tukey’s post-hoc test was performed to analyze the main effects caused by the shopping list on the dependent variables with IBM SPSS Statistics software (Version 29, IBM Corp, Chicago, IL, USA). For the moderation analyses, Model 1 in the PROCESS macro V4.2 for SPSS was applied (bootstrapping with 5000 samples, 95 % confidence interval). For the significant moderations, simple slope analyses with conditioning values set as -1 SD, Mean, + 1 SD were performed. In all analyses, significance

level was set to  $p \leq .05$ .

## 4. Results

### 4.1. Main effects of shopper types on evoked stereotypes, emotions, and behavioral tendencies

One-way ANOVA was performed to compare how shoppers’ distinct meat product and meat alternative favoring patterns affected observers’ stereotypical beliefs, emotional responses, and behavioral treatment tendencies toward them. Regarding the stereotypes, main effects were detected for the competence evaluation,  $F(2, 3597) = 5.30, p = .01, \eta^2 = 0.003$ . The pairwise comparisons showed that the meat alternative shopper was evaluated more competent than the meat shopper (Fig. 2). Regarding warmth evaluations, both meat and flexible shoppers were evaluated warmer than the meat alternative shopper [ $F(2, 3597) = 13.49, p < .001, \eta^2 = 0.007$ ]. The meat shopper received the lowest evaluations concerning environmental friendliness [ $F(2, 3597) = 455.37, p < .001, \eta^2 = 0.20$ ], morality [ $F(2, 3597) = 172.69, p < .001, \eta^2 = 0.09$ ], and health orientation [ $F(2, 3597) = 308.38, p < .001, \eta^2 = 0.15$ ] followed by the flexible and meat alternative shoppers.

Concerning the emotional responses, the meat shopper provoked less contempt than the other two (Fig. 3). Also, the flexible shopper was perceived as less contemptible than the meat alternative shopper [ $F(2, 3597) = 48.34, p < .001, \eta^2 = 0.03$ ]. A significant main effect was detected for admiration as well [ $F(2, 3597) = 29.81, p < .001, \eta^2 = 0.02$ ]. The meat shopper was admired less than the other two shoppers. The emotions of envy [ $F(2, 3597) = 30.43, p < .001, \eta^2 = 0.02$ ], anger [ $F(2, 3597) = 24.58, p < .001, \eta^2 = 0.01$ ], and fear [ $F(2, 3597) = 32.91, p < .001, \eta^2 = 0.02$ ] followed the same logic. The meat shopper received the lowest scores in terms of every emotion, while the meat alternative shopper received the highest. The flexible shopper fell in between.

Regarding observers’ behavioral tendencies toward the shoppers, no differences were detected for the active facilitation aspect, despite the main effect being significant (Fig. 4),  $F(2, 3597) = 3.07, p = .05, \eta^2 = 0.002$ . The same applied to the imitation tendency [ $F(2, 3597) = 2.70, p = .07, \eta^2 = 0.002$ ]. In the case of passive facilitation, the meat and

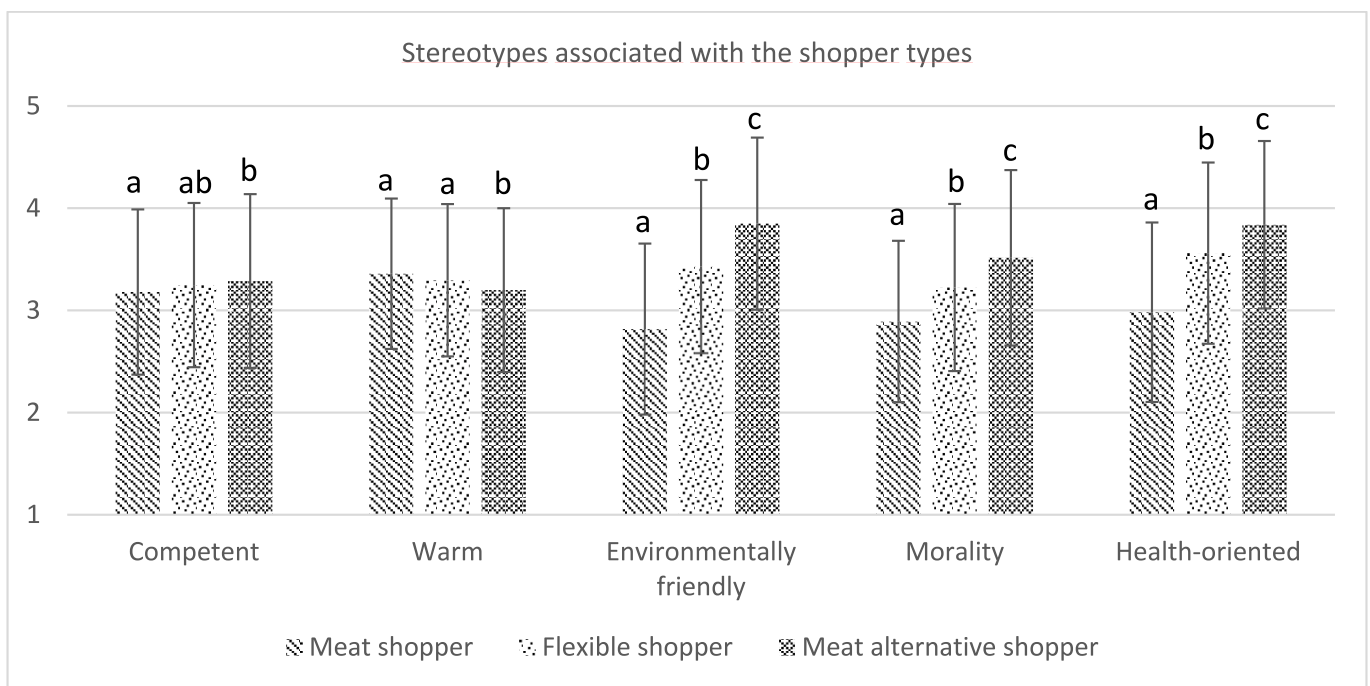


Fig. 2. Stereotypes associated with the shopper types. Bars represent means with standard deviations. Significant differences in main effects are denoted with different superscript letters.

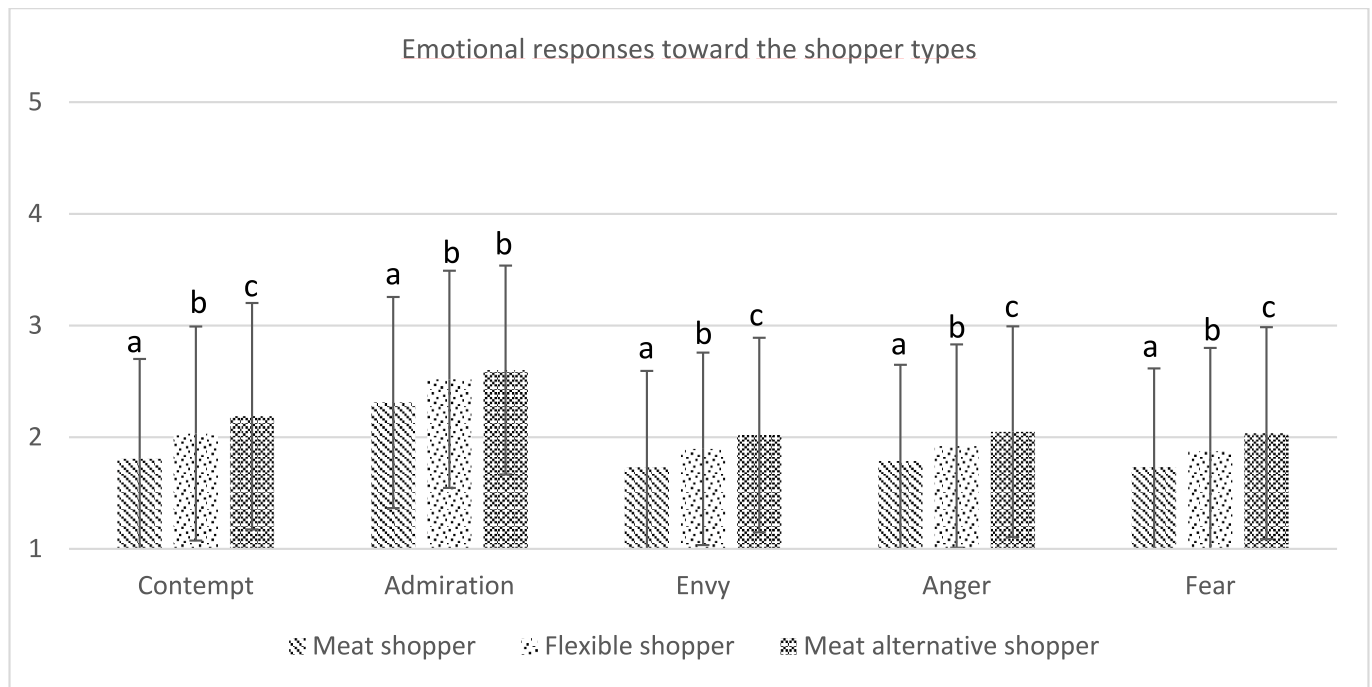


Fig. 3. Emotional responses toward the shopper types. Bars represent means with standard deviations. Significant differences in main effects are denoted with different superscript letters.

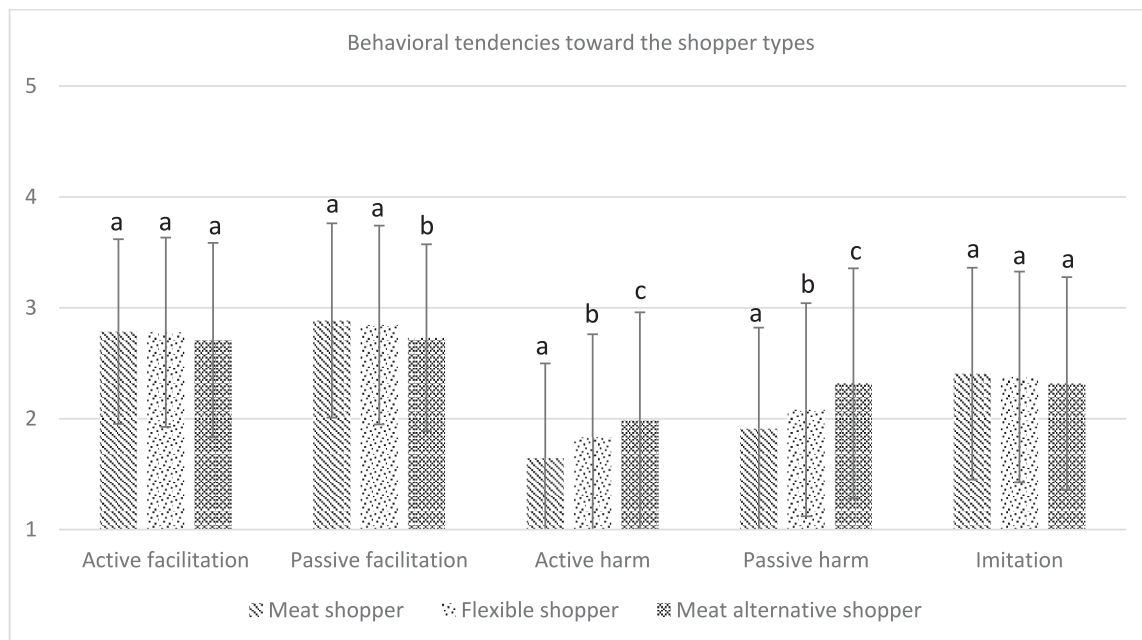


Fig. 4. Behavioral tendencies toward the shopper types. Bars represent means with standard deviations. Significant differences in main effects are denoted with different superscript letters.

flexible shoppers received higher evaluations than the meat alternative shopper [ $F(2, 3597) = 10.33, p < .001, \eta^2 = 0.01$ ]. As far as the harming tendencies were concerned, the observers expressed the weakest active [ $F(2, 3597) = 40.32, p < .001, \eta^2 = 0.02$ ] and passive [ $F(2, 3597) = 53.88, p < .001, \eta^2 = 0.03$ ] harming intentions toward the meat shopper. There was also a significant difference between the flexible and meat alternative shoppers—observers were more inclined to consider harming the latter.

#### 4.2. Moderating effects of observers' need for status and affiliation

The moderating effects of observers' need for status and group affiliation in the shopper evaluations were analyzed next. With regard to the observers' need for status and the meat alternative shopper evaluations, a significant interaction was detected in Health orientation. However, this effect did not lead to a change in the model's explained variance, thereby indicating no support for moderation. On the other hand, two significant moderation effects were found in emotions Envy ( $b = 0.102, t(3594) = 2.278, p = .023, LLCI = 0.014, ULCI = 0.190$ ), and

**Table 4**  
Moderation analyses results by Shopper type\*Need for status. The meat shopper list was used as a reference.

Dependent variable		Flexible shopper*Need for status (B)	Meat alternative shopper*Need for status (B)	R <sup>2</sup> change
Stereotypes	Competence	.03 <sup>ns</sup>	.06 <sup>ns</sup>	.001 <sup>ns</sup>
	Warmth	-.001 <sup>ns</sup>	-.007 <sup>ns</sup>	.00 <sup>ns</sup>
	Environmental friendliness	.004 <sup>ns</sup>	.017 <sup>ns</sup>	.00 <sup>ns</sup>
	Morality	.044 <sup>ns</sup>	.059 <sup>ns</sup>	.001 <sup>ns</sup>
	Health orientation	-.065 <sup>ns</sup>	-.095*	.001 <sup>ns</sup>
	Emotions	Contempt	-.018 <sup>ns</sup>	.068 <sup>ns</sup>
Admiration		.036 <sup>ns</sup>	.05 <sup>ns</sup>	.00 <sup>ns</sup>
Envy		.005 <sup>ns</sup>	0.102*	0.002*
Anger		.001 <sup>ns</sup>	0.112*	0.002*
Fear		-.009 <sup>ns</sup>	.062 <sup>ns</sup>	.001 <sup>ns</sup>
Behavioral tendencies	Active facilitation	-.002 <sup>ns</sup>	.015 <sup>ns</sup>	.00 <sup>ns</sup>
	Active harm	.025 <sup>ns</sup>	.075 <sup>ns</sup>	.001 <sup>ns</sup>
	Passive facilitation	.028 <sup>ns</sup>	.045 <sup>ns</sup>	.00 <sup>ns</sup>
	Passive harm	.012 <sup>ns</sup>	.078 <sup>ns</sup>	.001 <sup>ns</sup>
	Imitation	-.044 <sup>ns</sup>	.067 <sup>ns</sup>	.002 <sup>ns</sup>

ns = non-significant, \* =  $p \leq .05$ .

Anger ( $b = 0.112$ ,  $t(3594) = 2.461$ ,  $p = .014$ , LLCI = 0.023, ULCI = 0.201) - increasing the model’s explanatory power (Table 4). In practice, observers’ increased need for status results in stronger envy and anger toward the meat alternative shopper. Simple slope analysis with observation points at -1 SD, Mean, and +1 SD was performed in those cases in which significant interaction was detected, and the explained variance of the model was improved. In the meat alternative shopper case, the moderation effect in Envy and Anger was significant in all levels of observers’ need for status. The results are presented in Table 5 and Fig. 5.

With regard to the need for group affiliation, first, two significant effects were found, which did not lead to a change in the model’s explained variance. One relating to flexible shopper (stereotype Competence), and another to meat alternative shopper (stereotype Environmental friendliness). Some moderating effects of observers’ need for group affiliation were detected, which increased the model’s explanatory power (Table 6). In the case of the flexible shopper evaluations, significant interaction with observers’ need for affiliation was detected in Contempt ( $b = -0.12$ ,  $t(3594) = -2.61$ ,  $p = .01$ , LLCI = -0.210, ULCI = -0.030), Anger ( $b = -0.13$ ,  $t(3594) = -2.95$ ,  $p = .003$ , LLCI = -0.217, ULCI = -0.044), Active Harm ( $b = -0.104$ ,  $t(3594) = -2.36$ ,  $p = .018$ , LLCI = -0.191, ULCI = -0.018), and Passive Harm ( $b = -0.098$ ,  $t(3594) = -2.095$ ,  $p = .036$ , LLCI = -0.189, ULCI = -0.006). In practice, observers’ increased need for group affiliation resulted in lower Contempt and Anger toward the flexible shopper. In addition, the increased affiliation motive resulted in lower tendency to actively and passively harm the flexible shopper.

Simple slope analysis with observation points at -1 SD, Mean, and +1 SD was performed in those cases in which significant interaction was

**Table 5**  
Decomposition of the moderation effect of need for status.

Meat alternative shopper	-1 SD	Mean	+1 SD
Envy	0.19***	0.28***	0.36***
	[3.73]	[7.57]	[6.88]
Anger	0.16*	0.25***	0.35***
	[3.01]	[6.74]	[6.43]

Observation points -1 SD, Mean, +1 SD.

[ ] = T statistics; ns = non-significant, \* =  $p \leq .05$ , \*\*\* =  $p \leq .001$ .

detected, and the explained variance of the model was improved. In the flexible shopper case, the moderation effect in Contempt was significant in all levels of observers’ need for group affiliation. With regards to Anger, Active harm and Passive harm, the effect was significant when the observers’ need for group affiliation was at a low and average level, but not when it was high. The results are presented in Table 7 and Fig. 6.

## 5. Discussion

Our study solidifies the conceptual foundations of sustainable food consumption research by harnessing the BIAS Map framework (Cuddy et al., 2007) for the first time to advance understanding of social influences and symbolic communication in the European meat (alternative) marketplace. Our findings indirectly reveal that meat (alternative) consumption represents a social area where highly mixed and charged meanings are sent/signaled and received/interpreted. We draw detailed portraits of consumers who favor meat products versus meat alternatives, as viewed by others. These two target groups evoke clearly different stereotypical beliefs, emotional responses, and behavioral treatment tendencies in others. We also introduce an unrecognized but potentially impactful theoretical construct to the sustainable food research community, that is, observer characteristics. We depict that the observers’ need for status partly explains their negative emotions toward consumers favoring meat alternatives. Furthermore, we show that the observers’ need for affiliation can play a role in shaping other consumers’ perceptions of certain emotional responses to and behavioral treatment tendencies toward those who favor meat products, meat alternatives, or both. Taken together, our conceptual and empirical contributions give rise to implications and future research suggestions. These will be tackled below, starting with the theoretical implications.

### 5.1. Theoretical implications

In terms of the stereotypical beliefs, the meat alternative shopper was considered low in warmth but at the same time competent. According to [Glick and Fiske \(2001\)](#), this indicates the existence of “envious prejudice”: the groups perceived in this way are commonly seen as competitors or as so-called “model minorities.” Our results are in line with [MacInnis and Hodson \(2017\)](#), who researched perceptual biases toward vegetarians and vegans. Both of these groups were perceived low in warmth but higher in competence. [MacInnis and Hodson \(2017\)](#) also proved that the bias toward these two groups was stronger when the deviation from the cultural norms was greater. Even though we did not measure cultural norms, we surmise that eating meat is still a strong norm in many western societies (see, e.g., [Niva & Vainio, 2021](#)).

Based on our results, the flexible shopper was seen to be similar in terms of social acceptability to the meat shopper. [Burrows et al. \(2023\)](#) researched how people stereotypically saw activists who belonged to advantaged groups, for example, white racial justice activists, male feminists, and people who identified as straight but were also LGBT rights activists. The results showed that allies who shared a characteristic in common with people outside the disadvantaged group (e.g., male feminists and straight LGBT rights activists) evoked more positive emotions and perceptions of kindness, and were seen as more altruistic and accepting compared with the activists from disadvantaged groups ([Burrows et al., 2023](#)). In contrast, activists from disadvantaged groups were viewed as more radical and morally superior to other people ([Phelan, 2019](#)). Therefore, we suggest that flexible shoppers could be considered a group that is not envied, but instead considered more socially approachable. This makes them an easier target to identify with, as they do not seem too extreme, and they also remind others of something familiar (e.g., meat eating). Social norms referring to a close group member are more effective than those referring to abstract or distant groups ([Melnyk et al., 2022](#)).

According to [Hurrh and Kim \(1989\)](#), positive attributes related to

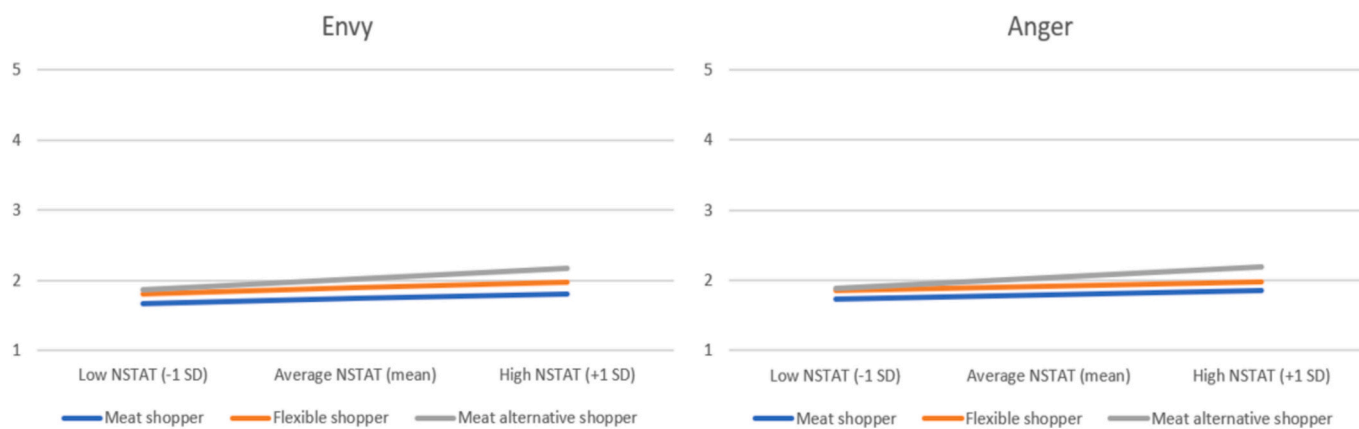


Fig. 5. Moderating effect of the Need for status (NSTAT) on emotions Envy and Anger of different shopper types. Y-axis depicts the level of measured variable (envy and harm) on a scale 1 to 5, and x-axis depicts the level of the observer’s need for status in three different observation points (–1 SD, mean, and + 1 SD).

Table 6

Moderation analyses results by Shopper type\*Need for group affiliation. The meat shopper list was used as a reference.

Dependent variable		Flexible shopper*Need for group affiliation (B)	Meat alternative shopper*Need for group affiliation (B)	R <sup>2</sup> change
Stereotypes	Competence	0.072*	.041 <sup>ns</sup>	.001 <sup>ns</sup>
	Warmth	.045 <sup>ns</sup>	.023 <sup>ns</sup>	.00 <sup>ns</sup>
	Environmental friendliness	.043 <sup>ns</sup>	0.092*	.001 <sup>ns</sup>
	Morality	.023 <sup>ns</sup>	0.077 <sup>ns</sup>	.001 <sup>ns</sup>
	Health orientation	.035 <sup>ns</sup>	0.075 <sup>ns</sup>	.001 <sup>ns</sup>
Emotions	Contempt	–0.12*	.012 <sup>ns</sup>	0.003*
	Admiration	.08 <sup>ns</sup>	.076 <sup>ns</sup>	.001 <sup>ns</sup>
	Envy	.030 <sup>ns</sup>	.015 <sup>ns</sup>	.00 <sup>ns</sup>
	Anger	–0.13*	-.005 <sup>ns</sup>	0.003*
	Fear	-.052 <sup>ns</sup>	.023 <sup>ns</sup>	.001 <sup>ns</sup>
Behavioral tendencies	Active facilitation	.024 <sup>ns</sup>	.015 <sup>ns</sup>	.00 <sup>ns</sup>
	Active harm	–0.104*	-.013 <sup>ns</sup>	0.002*
	Passive facilitation	.043 <sup>ns</sup>	.031 <sup>ns</sup>	.00 <sup>ns</sup>
	Passive harm	–0.098*	.044 <sup>ns</sup>	0.003*
	Imitation	.02 <sup>ns</sup>	0.098*	.001 <sup>ns</sup>

ns = non-significant, \* =  $p \leq .05$ .

Table 7

Decomposition of the moderation effect of need for group affiliation.

Flexible shopper	–1 SD	Mean	+ 1 SD
Contempt	0.32***	0.22***	0.12*
	[5.86]	[5.63]	[2.17]
Anger	0.24***	0.13***	.02 <sup>ns</sup>
	[4.51]	[3.40]	[0.34]
Active harm	0.27***	0.18***	.09 <sup>ns</sup>
	[5.06]	[4.75]	[1.72]
Passive harm	0.25***	0.17***	.08 <sup>ns</sup>
	[4.47]	[4.18]	[1.50]

Observation points – 1 SD, Mean, + 1 SD.

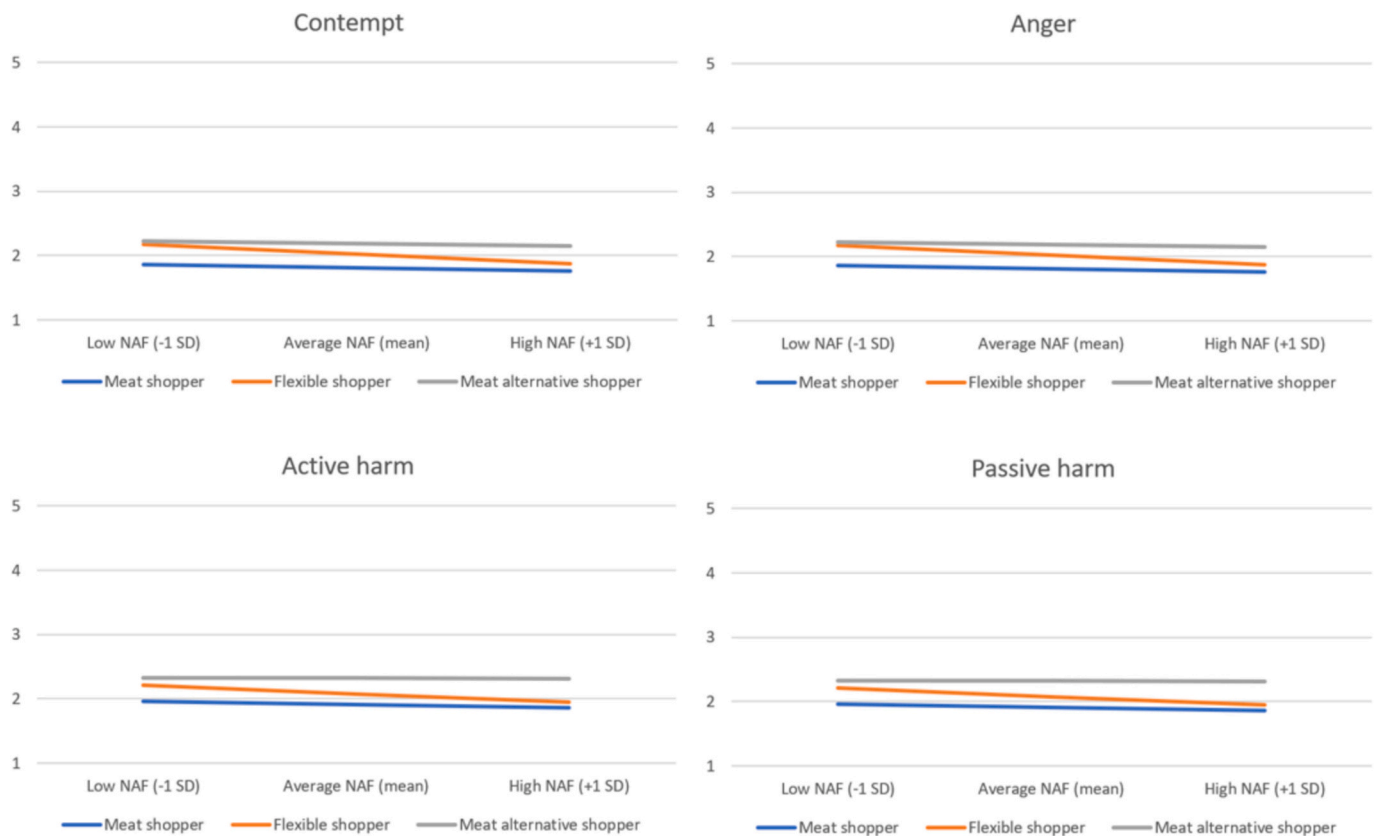
[ ] = T statistics; ns = non-significant, \* =  $p \leq .05$ , \*\*\* =  $p \leq .001$ .

outgroups can only be appreciated as long as they reflect the observing individual and his/her ingroup. This is well portrayed in the present study in terms of emotions, since the meat alternative shopper is admired, but also evokes negative emotions such as contempt, envy, anger, and fear. De Groot et al. (2022) offered one explanation for this phenomenon in their study involving vegans. Their findings indicated that people tended to admire the moral acts and commitment of vegans, but also saw them as arrogant, overcommitted, and worthy of derogation. Even though the present research did not directly study impressions formed by dietary identities, the products on the shopping lists might have acted as subtle identity signals for the study participants (Luomala et al., 2020). Precisely for this reason, our research indirectly provides insights – through the stereotypes and emotions evoked by the

meat alternative user – on the general sociocultural valuation of advocates of the new meat-free food consumption regime. In practice, this means meat alternative products carry charged and ambivalent meanings in the mind of consumers.

According to Cuddy et al. (2008), active harm is about acting against the target in a negative way, such as insulting or bullying, whereas passive harm is about acting from a distance, such as by removing social support by excluding, ignoring, or neglecting the target. Our results concerning behavioral tendencies suggest that the meat alternative shoppers can induce passive and active harming behaviors in others; for instance, in social situations, they can be neglected and harassed. With regard to flexible shoppers, observers’ behavioral reactions were weaker compared with the meat alternative shopper, indicating again that eating both meat and meat alternatives is seen to be more socially acceptable, and does not evoke radical negative behaviors. This finding directly relates to Bublitz et al.’s (2023) reflection on the role of social influences in fostering sustainable food consumption. They, in considering future research ideas for the facilitation of plant-based eating, underscored the importance of understanding the circumstances where pressure from various social groups encourages positive behavior change and when it backfires.

With regard to observers’ social motives (need for status and need for group affiliation), significant moderating effects were identified in both. Our results suggest that those consumers who seem to favor meat alternatives evoke stronger feelings of anger and envy in observers with high need for status. Unfortunately, our study falls short of offering and testing an explanation for this. Following Rosenfeld et al. (2024), it could be that meat alternatives represent a symbolic threat to observers’



**Fig. 6.** Moderating effect of the Need for group affiliation (NAF) on emotions Contempt and Anger, behavioral tendency Active harm, and Passive harm of different shopper types. Y-axis depicts the level of measured variable (contempt, anger, active harm, passive harm) on a scale 1 to 5, and x-axis depicts the level of the observer's need for group affiliation in three different observation points (−1 SD, mean, and + 1 SD).

dominant socio-cultural values. We surmise that those observers with a high need for status are highly sensitive and cognizant of prevailing societal valuations (the hegemonic norm of meat-eating), and consequently perceive meat alternative favorers as symbolically threatening—accounting for their anger response. In a similar vein, the high need for status observers can also be painfully aware that in the current era of climate change and environmental crisis, reduction of meat-eating stands for an ideal and “right” solution. This realization could then explain their envious response toward meat alternative favorers, whose behaviors cannot be copied without some degree of self-sacrifice. It is a classical notion that by advertising your willingness to incur costs for the sake of others and/or society can reap reputational benefits and benign envy (Luomala et al., 2020). We refer to Devos et al. (2023), and conjecture that the envy response of observers with high need for status can be explained by their attribution of considerateness (of others and society) to favorers of meat alternatives.

Results related to the need for affiliation are aligned with the findings of Pennanen et al. (2024). Namely, they showed that the need for affiliation more strongly underlies the effect of personal values on the meat alternative interest than the need for status. The moderation effects we observed mean that when observers' need for group affiliation is high, they experience less contempt and anger, coupled with lower harming intentions, toward the flexible shopper, than those observers with a lower level of affiliation needs. Schultz et al. (2023) indicated that when the individual had a lower sense of belonging (cf. need for affiliation), they tended to evaluate the sustainable products in a less positive way and were not willing to pay extra for them. On the contrary, when the individual had a high sense of belonging, they tended to view sustainable products more positively and were also willing to pay more for them. In the current research context, our moderation results suggest that flexible shoppers are seen as more neutral by people who possess a

strong affiliation need to want to belong, since, as already noted, it is within their comfort zone and not excessively radical. In other words, these individuals can affiliate with a group that advocates for change, if the need for it is generally recognized and would not require them to abandon meat eating immediately and entirely.

## 5.2. Implications for promoting sustainable food product consumption

It is essential to reduce meat consumption, if we want to ensure a livable future for humans and animals on our planet (Willett et al., 2019). The critical question is: How can sustainable food consumption, especially that of meat alternatives, be mainstreamed? Creative marketing is required beyond merely emphasizing the environmental benefits (White et al., 2019) or promoting the vegan aspect of the products (Aschemann-Witzel, Mulders, & Mouritzen, 2023). Our study results support the idea of applying social influences in achieving these goals (e.g., Aschemann-Witzel, Mulders, Janssen, & Perez-Cueto, 2023).

Based on the results, we see that the idea of “envious prejudice” could be applied to the marketing of meat alternatives. Both envy and admiration stem from competence, which generally indicates the achievement of excellence in something (Onu et al., 2016). Envy does not always have a malicious origin; it also has a brighter side that can motivate individuals to strive for an envied position or a trait in social comparison situations (Cohen-Charash, 2009). Admiration is revealed to manifest when people see themselves capable of attaining the traits of an admired person (Onu et al., 2016; Smith, 2000). Therefore, it could be useful to experiment with highlighting the superiority of the meat alternative shopper in advertisements, as that would elicit both envy and admiration, depending on the observing individual, and might then motivate people to make better food choices.

Another strategy to harness vegetarian consumers to promote plant-

based eating, based on our results, would be to portray them in softer and warmer terms. For example, they could be described as the kind of people who care about others and enjoy life to the fullest, especially by eating indulgent, yet plant-based, foods. Namely, engaging in indulgent consumption signals interpersonal warmth (Tang et al., 2022). This might assist in humanizing the cold picture of vegetarian consumers by increasing perceptions of authenticity. According to Tang et al. (2022), consumers believe that indulgent consumption is what people genuinely prefer.

Our results indicate that, currently, one reason meat alternative products might be staying on store shelves is that meat alternative shoppers are considered socially deviant from consumers buying animal-based protein products. In order to make the meat alternatives more socially acceptable, this existing prejudice needs to be reduced. Glick and Fiske (2001) suggested focusing on emphasizing rather than challenging the prevailing stereotypes. This could be achieved by applying humor in the marketing of meat alternative products, since it has a positive influence on stereotypes, emotions, and behavioral responses (e.g., Cline et al., 2003). For example, humor tends to draw attention and improve focus, and, thus, exerts a positive influence on attitudes and cognitions (Eisend, 2011). Humor creates a different tone in advertising stereotypes, since it is processed differently in the mind of consumers; it functions as a distraction from content that is considered unfavorable (Duncan & Nelson, 1985). Successful humor exploits expectations that something is normal, for example, aligns with social norms, by breaking down such expectations with something that does not “fit” (Veatch, 1998). Based on the results of our research, marketers could play with existing stereotypes of the meat shopper and meat alternative shopper, and add something unexpected to the equation. Another way to reduce the prejudice against meat alternative shoppers could be to utilize the concept of “extended contact.” It stems from the idea that members of the ingroup acknowledge that some individuals in their group are also familiar with people from the outgroup. That functions as a way to extend contact and reduce intergroup bias and prejudice (Wright et al., 1997). One concrete example in Finland is the Vegan Challenge, a campaign supporting people to go vegan for a whole month, typically in January. The Vegan Challenge originates from Veganuary, a similar campaign in the UK. Both campaigns are promoted by celebrities who take part in the challenge. This persuades the omnivore audience to take part in the campaign by demonstrating that familiar celebrities, with whom the consumers identify, are open to changing their eating practices toward those that are more sustainable through an activity that is usually only considered acceptable to vegetarians or vegans.

As our results indicated, favoring meat alternatives can be seen as a threat to people with higher status. In order to defuse this emotional response, framing meat alternatives in terms of less threatening connotations can work. For example, communication emphasizing how eating meat alternatives helps to assure the continuance of traditional ways of life, or how it helps to prevent major societal disruptions could reduce the perceived symbolic threat. Furthermore, as we interpreted, those consumers high in need of status could already acknowledge that the poor state of the climate demands actions, such as a reduction in eating meat, but can still fail to act accordingly, resulting in envy toward the “virtuous” meat alternative consumers. Thus, to mainstream meat alternatives, their consumption could be linked to esteem, belonging, and the need for self-actualization, through signs and symbols that can be created and imbued with meaning by brands and advertising (Armstrong Soule & Sekhon, 2022).

Last, the group with which the consumer identifies should be positioned at the center, associating it with sustainable consumer behavior (White et al., 2019). Similarly, Schultz et al. (2023) suggested that sustainable food products should be positioned through the profile descriptions specific to those groups that the targeted consumer segment has the highest need with which to affiliate. As Aschemann-Witzel, Mulders, and Mouritzen (2023) stated, the plant-based food market is

shifting away from linking the products to vegetarians or vegans, toward targeting a larger audience, the flexitarian consumers. The results of the present study support this message. The shopper consuming both meat and meat alternatives was evaluated in a more positive way compared with the meat alternative shopper. This means the most promising avenue for transitioning from meat-intensive diets to more plant-based diets is through promoting a diet that does not entirely eliminate meat but replaces it with plant-based meat alternatives on a weekly basis. Rosenfeld et al. (2020) found that those consumers who identified themselves as flexitarians felt less judged on their diet compared with vegetarians.

### 5.3. Limitations and suggestions for future research

This study has some limitations. First, our research utilized the BIAS Map with the intention of shedding light on the shared cultural experience pertaining to meat alternative shoppers. Thus, it is important to note that we cannot predict how individuals perceive these phenomena from the perspective of the population at large. Pluralistic ignorance manifests when people have a distorted belief that the general attitude is different from their own (Van Boven, 2000). This has to be considered in terms of the present research. If the intention is solely to examine individual consumers, the study participants should be instructed to evaluate the shopper from their own point of view, which in turn might increase the social desirability bias. This was deliberately tackled by instructing the participants to think about how the average person perceives the matter. Additionally, we did not control for participants' dietary orientation, and, therefore, its potential effect cannot be determined. Also, with regard to the results of the shopper evaluations of Competence and Warmth, it must be noted that despite the result indicating significance, the Eta squared value only indicates a small effect for the results.

Second, as our study results are based on self-reporting, they do not necessarily apply to real-life food choices. Therefore, we recommend that the effect of messages presenting how consumers affiliate with different dietary group members on sustainable food choices be tested in real-life environments such as lunch restaurants. This would also serve future research seeking to provide practical insights on how to conduct nudge interventions in real-life settings to mobilize consumers toward less meat-intensive diets (Bauer et al., 2022). Another suggestion for future research would be to discover whether promoting meat eaters or vegetarians as co-developers of dishes served in a lunch restaurant would further encourage consumers to choose the more sustainable dish from the options available. Additionally, when promoting a meat eater as co-developer, indulgence could be emphasized, as promoting content with indulgence can be appealing to consumers (Tang et al., 2022). The vegetarian co-developer, in turn, could be presented as one that appreciates environmental values, which can be seen as being at the opposite end of the spectrum from meat eaters and indulgence.

Third, our study considered only the role of observers' need for status and affiliation as moderators, even though in reality there are probably others, too. In fact, research has recently started to focus on the interplay between the target and observer characteristics (Hester & Hehman, 2023; Jaeger & Wilks, 2023). One such factor is the observer's political orientation. Tiganis et al. (2023) showed that conservatism was positively associated with naturalness and tradition, and negatively with environmental impact. Petersen et al. (2024) reported that voting for the Green Party and parties with strong climate protection ambitions was positively related to the market share of meat substitutes. Moreover, whether the observer personally knows people who consume meat alternatives can exert a moderating impact. According to Aloni et al. (2024), perceivers viewed vegans more positively when they were more familiar with them in person. Obviously, these notions invite further research. In using the BIAS Map in our sample, it is important to note the reliability issues involved with the Pity variable. These might be due to poor interrelatedness of the Pity and Sympathy items in the mind of the

study participants. Additionally, it should be noted that we utilized the BIAS Map only in the context of European countries, specifically Finland, Sweden, Germany, and the UK. It could be worth researching how meat alternative consumers are culturally viewed in other continents such as the Americas and Asia. That approach could be particularly beneficial to international companies aiming to promote meat alternatives worldwide.

## 6. Conclusion

Our study introduced the BIAS Map conceptualization to unearth how consumers favoring meat alternatives are perceived, and what kind of emotional and behavioral responses are evoked in other consumers observing them. This approach, though not uncommon in marketing research (Guo et al., 2022), has been underutilized in food consumption studies. We showcased its potential in producing new insights and understanding for academics, practitioners, and policy-makers. We conclude that the BIAS Map approach holds great promise as a conceptual tool for decomposing socio-cultural valuations associated with various products, ingredients, processing methods, and food consumption practices. We encourage its wider application in food consumption research, given that the approach offers at least two key advantages.

First, the BIAS Map represents a solid theory that various researchers have conceptually built and empirically tested over the last 20 years or so. It delivers a formal conceptualization of how stereotypical beliefs, emotions, and behavioral tendencies evoked by others constitute interconnected and validated measurement instruments to capture them, rendering exploratory takes and ad hoc scale use unnecessary (cf. Funk et al., 2020). Second, the basic model has been further refined for analyzing the social perception of brands, based on the underlying assumption that people form impressions about brands as they do about social groups (Kervyn et al., 2022). This equips food consumption scholars with countless opportunities to examine the symbolic meanings of brands (e.g., local vs. global), country of origin (e.g., from developed state vs. developing state), and package designs (e.g., single use vs. reusable).

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## CRedit authorship contribution statement

**Roosa-Maaria Malila:** Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Kyösti Pennanen:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Formal analysis, Conceptualization. **Harri T. Luomala:** Writing – review & editing, Supervision, Methodology, Conceptualization.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.foodqual.2024.105380>.

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