

**"Tastes Like Meat" or "Good for the Planet"? The Impact of Hedonic and Moral Framing on Consumer Responses to Plant-Based Meat Substitute Advertisements**

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# **"Tastes Like Meat" or "Good for the Planet"? The Impact of Hedonic and Moral Framing on Consumer Responses to Plant-Based Meat Substitute Advertisements**

Switching from animal-based to plant-based food can mitigate the negative environmental impact of meat production. However, plant-based alternatives have never been popular among meat eaters due to their low sensory appeal. Plant-based food brands often use taste appeals that stress the similarity between plant- and meat-based products. Building upon the goal-framing theory, this study compares the effect of hedonic and moral goal frames on purchase intention of plant-based burgers, considering the mediating effect of taste expectation and the moderating effect of environmental knowledge. Participants in an online experiment (N=191) were randomly assigned to the hedonic or moral goal frame. Our results demonstrate that moral framing leads to a higher purchase intention than the hedonic frame, and this effect is stronger for participants with high environmental knowledge. Taste expectations did not mediate the effect of the hedonic frame on purchase intention. These results have practical implications for promoting plant-based food.

Keywords: goal framing, moral frame, hedonic frame, plant-based food advertising, environmental knowledge, taste expectation

## **Introduction**

Environmental sustainability is one of the main drivers of developing meat substitutes (Kumar et al. 2017; Ismail et al. 2020), including meat-mimicking burgers (Li et al. 2023; Ye and Mattila 2021). Meat production, especially beef production, is a major source of greenhouse gases and causes a loss of biodiversity (Springmann et al. 2018; Onwezen 2022). Switching from animal-based to plant-based food can help to enhance the transition to a more sustainable lifestyle (Springmann et al. 2018).

However, persuading consumers to reduce their meat consumption is a major challenge (Li et al. 2023; Poore and Nemecek 2018; Schiemeier 2019). There is a discrepancy between the issues consumers claim to care about, including concern for

environment, and their actual purchase behaviour (Belk et al. 2005; Onwezen 2022). Consumers frequently show moral hypocrisy (Batson et al. 1999; Maehle et al. 2015): although they share concerns for environment, they do not consistently behave in line with these concerns (ElHaffar et al. 2020; Onwezen 2022).

Consumer food choices are often shaped by contextual factors that contradict their core values (Banovic et al. 2021). The theory of *goal framing* suggests that consumers activate various goals in different settings (Lindenberg and Steg 2007; Onwezen 2022). *Moral goal frame* activates long-term goals related to moral principles, including a more sustainable lifestyle (Onwezen 2022), while *hedonic goal frame* activates short-term goals, such as the need to seek immediate pleasure (Lindenberg and Steg 2007). This study aims to compare both goal frames to understand how goal activation might influence sustainable food choice.

Research found issue-related knowledge to be an important moderator of framing effects (Andrews et al. 2000). In particular, environmental knowledge has a positive influence on attitude towards the environment and sustainable behaviour (DeChano 2006; Oskamp et al. 1991). However, the moderating role of environmental knowledge on the relationships between goal framing and consumer behaviour remains rather unexplored (Kachersky and Kim 2011; Parguel et al. 2015). Therefore, this study considers the moderating role of environmental knowledge in the relationships between the goal framing and sustainable food choice intentions.

Taste expectations are one of the most important factors in food choice (Maehle et al. 2015). Previous studies found that consumers do not consider ethical company behaviour (i.e., green production) as a reasonable substitute for expectations of good taste (Maehle et al. 2015; Sen and Bhattacharya 2001). Restaurants and plant-based food companies often use taste appeals that emphasise the similarity between plant-

based and meat-based burgers (Ye and Mattila 2021), aiming to enhance taste expectations of plant-based foods. However, little research is done to test the success of taste appeals in the context of sustainable food. It is important to investigate whether taste expectations can mediate the effect of a hedonic goal frame on sustainable food choices.

Therefore, this study aims to answer the following research questions: *To what extent does the use of the goal framing (moral vs. hedonic) in advertising influence consumers purchase intention of a plant-based burger? How does environmental knowledge moderate the effect of goal framing on purchase intention? Is this effect mediated by taste expectations?*

## **Theoretical Framework**

### ***Goal Framing***

The theory of goal framing has gained increasing popularity in environmental psychology and communicational research (Lindenberg and Steg 2007; Onwezen 2022). It suggests that goal activation determines what knowledge and attitudes become cognitively accessible, how people assess situations and what they intend to do (Lindenberg and Steg 2007; Pancer et al. 2017). In the framework of sustainable food choices, studies on goal framing found that cues that stimulate sustainability-related goals positively influence sustainable consumer decisions (Tate et al. 2014; Thøgersen and Alfinito 2020; Onwezen 2022).

*Hedonic goal frame* triggers subgoals to avoid effort and negative feelings, to seek direct improvement of self-esteem and direct pleasure (Lindenberg and Steg 2007). In the context of food choices, this could entail looking for tastiness, treating oneself with a snack and seeking positive feelings (Onwezen 2022). For instance, studies

showed that if consumers were exposed to images of candies or chocolate, hedonic goals were predominantly activated (Onwezen 2022; Rozin et al. 1991).

*Moral goal frame* has been defined as the “intrinsic personal conviction to act morally” (Onwezen 2022, p.2). It is focused on ethics and activates moral responsibilities and personal norms (Onwezen 2022). Framing goals that trigger ethical obligations are shown to be positively associated with environmentally friendly behaviours (Vanhonacker and Verbeke 2014).

In the context of purchase intentions of plant-based burgers, moral framing might activate personal environmental values that trigger sustainable purchase behaviours (Onwezen 2022; Vanhonacker and Verbeke 2014). Based on the goal-framing theory, this study argues that it is possible to increase sustainable purchase intentions of the plant-based burger alternative by stimulating moral goals. Therefore, we propose H1: *Moral goal framing leads to a higher purchase intention of the plant-based burger compared to hedonic goal framing.*

### ***Taste Expectations***

Food advertisements tend to neglect approaches that highlight moral values and ethical beliefs (Maehle et al. 2015) and emphasise hedonic goals. Ethical alternatives are often not considered as a decent substitute for product attributes like good taste (Maehle et al. 2015, Sen and Bhattacharya 2001), especially because claims of sustainability or ethics can neither be seen or tasted (Ye and Mattila 2021). Hedonic goals are related to affect-based information processing (Parguel et al. 2015) and are triggered by sensory and verbal cues that highlight product tastiness (Maehle et al. 2015).

Plant-based protein alternatives have never very been popular among meat eaters mainly due to their low sensory appeal (Giacalone et al. 2022; Li et al. 2023). Since brands such as Beyond Meat or Impossible Burger have successfully achieved

high taste and texture quality of their products (Ye and Mattila 2021), their marketing strategy predominantly uses taste appeals. Plant-based burger advertisements that stress tastiness of the product can stimulate consumers' hedonic goals via enhanced taste expectations. Therefore, we propose *H2: Taste expectations mediate the effect of hedonic frame on purchase intention, so that hedonic goal framing leads to higher taste expectations of a plant-based burger compared to moral goal framing (H2a), while higher taste expectations lead to higher purchase intention (H2b).*

### ***Environmental Knowledge***

*Elaboration likelihood model* (Petty and Cacioppo 1986) assumes that cognitive processing of a persuasive message (such as advertising) can follow peripheral or central routes (Kitchen et al. 2014) depending on the cognitive effort to critically evaluate a message (Schumann et al. 2012). While the expected product tastiness stressed in the *hedonic goal frame* condition can prime consumers to follow the peripheral route, consumers presented with the *moral goal frame* are expected to follow the central route and engage in rational thinking about sustainability and moral issues.

The ability to process a message depends on many factors, including motivation to process, complexity of the issue and prior knowledge about it (Petty and Cacioppo 1986; Kitchen et al. 2014). We expect that the likelihood of central route processing can be stronger for consumers with high environmental knowledge compared to consumers who lack such knowledge. For the purpose of this study, environmental knowledge is defined as objective knowledge about environmental issues (Parguel et al. 2015; Schmuck et al. 2018). Environmental knowledge has been shown to positively influence pro-environmental behaviour (Parguel et al. 2015). Therefore, we propose *H3: The positive effect of moral goal framing on purchase intention of a plant-based burger will*

*be higher for consumers with high environmental knowledge compared to consumers with low environmental knowledge.*

All hypotheses are summarised in the Conceptual Model (see Figure 1).

## **Method**

### ***Design and participants***

Participants ( $N=191$ ; 56% female, mean age = 29.5,  $SD = 13.2$ ) in a between-subject online experiment were randomly assigned to one of the two conditions: hedonic or moral goal frame. In terms of diet type, 45% of participants were omnivore, 20.9% were vegetarian, 17.8% flexitarian (17.8 %), 10.5% pescetarian, and 5.8% vegan.

Randomisation checks demonstrated no differences between the two experimental conditions in *age* ( $t(189) = 0.38, p = .70, 95\% \text{ CI } [-3.04, 4.49]$ ), *gender* ( $\chi^2(3) = 1.40, p = .71$ ), and *diet type* ( $\chi^2(4) = 2.44, p = .66$ ).

### ***Procedure***

An online questionnaire was sent to the participants via an anonymous website link that was shared on several social media channels. After confirming their informed consent and legal age, respondents were shown one of the advertisings for a plant-based burger (see Figure 2). After the exposure to the stimuli of a minimum of 15 seconds, respondents were asked questions about their taste expectation, purchase intention, manipulation and attention check questions, their environmental knowledge, and demographics (*age, gender, diet type*).

### ***Stimulus Material***

Participants were exposed to either the moral goal frame or hedonic goal frame condition, both featuring a manipulated plant-based burger advertisement by a well-

known brand *Beyond Meat* (see Figure 2). The moral frame condition contained the text: "*Don't you want to save the environment for future generations? The climate is changing, so should we*". The hedonic goal frame condition contained the text: "*0% Beef, 100% Taste; Super Delicious*", which has shown effectiveness in previous research (Maehle et al. 2015, Ye and Mattila 2021).

### **Measures**

All variables were measured on the seven-point Likert-scale (from 1= strongly disagree to 7= strongly agree). *Taste expectation* was measured with four items (e.g., *This plant-based burger is tasty, I will enjoy eating the burger*). The scale demonstrated high reliability (Cronbach's  $\alpha = .85$ ,  $M = 5.35$ ,  $SD = 1.06$ ). *Purchase intention* was measured with three items (e.g., *I would choose this product over a traditional beef burger*) and was reliable (Cronbach's  $\alpha = .77$ ;  $M = 4.47$ ,  $SD = 1.48$ ). *Environmental knowledge* was tested with seven multiple choice questions based on Geiger et al. (2019). The mean score was 3.69 ( $SD = 1.72$ ).

### **Results**

The hypothesised conceptual model was tested in a single model using a bootstrapping approach (Hayes 2013). The "PROCESS" macro, model 5, in SPSS version 27 with bias-corrected 95% confidence intervals ( $n = 5000$ ) was used to test the direct effect of the goals frame (hedonic vs moral) on purchase intention, the indirect effect mediated by taste expectation, and the moderating effect of the environmental knowledge. The direct effect of goal frame on purchase intention was significant,  $b = 0.65$ ,  $SE = 0.18$ ,  $p < .001$ , 95% CI [0.29, 1.02], confirming H1. The analysis showed a non-significant effect of the goal frame on taste expectation,  $b = -0.04$ ,  $SE = 0.08$ ,  $p = .40$ , 95% CI [-0.41, 0.20], thus H2a is rejected. There was a significant effect of taste

expectation on purchase intention,  $b = 0.69$ ,  $SE = 0.09$ ,  $p < .001$ , 95 % CI [0.51, 0.85], confirming H2b. However, the indirect effect of goal frame on purchase intention via taste expectations was non-significant,  $b = -0.07$ ,  $SE = 0.10$ , 95 % CI [-0.28, 0.14].

Therefore, H2 was not confirmed (see Figure 3).

The interaction between goal frame and environmental knowledge score was marginally significant,  $b = 0.27$ ,  $SE = 0.10$ ,  $p = .05$ , 95% CI [0.02, 0.38]. Tests of simple slopes demonstrate a non-significant effect of moral goal frame on purchase intention for participants with low EK score ( $b = 0.35$ ,  $SE = 0.25$ ,  $p = .16$ ). The effect of moral frame for participants with mean EK score becomes significant ( $b = 0.66$ ,  $SE = 0.18$ ,  $p < .001$ ); and for participants with high EK score, the effect of the moral frame becomes even higher ( $b = 0.97$ ,  $SE = 0.26$ ,  $p < .001$ ). Therefore, H3 is confirmed (see Figure 4).

## **Discussion**

In line with previous research (Onwezen 2022; Vanhonacker and Verbeke 2014), our results demonstrate that moral goal framing is more successful than hedonic framing in persuading consumers to purchase plant-based meat alternatives. Our findings suggest that moral framing is a relevant strategy to trigger personal moral values and intrinsic motivations to engage in sustainable behaviours. Even though moral values are not always on the top of our mind, they can be present in the background and might be easily activated by contextual cues (Onwezen 2022). We have confirmed that an advertisement featuring a moral frame can positively affect environmentally friendly behaviours, such as buying plant-based meat alternatives. Our results highlight the effectiveness of moral framing in influencing sustainable purchase choices (Hoek et al. 2011; Ye and Mattila 2021).

The positive effect of moral goal frame on sustainable purchase intention was higher for participants with high environmental knowledge, confirming our predictions based on ELM (Petty and Cacioppo 1986) and empirical research in sustainable consumer behaviour (Parguel et al. 2015; Schmuck et al. 2018). This result highlights the importance of educational effort in spreading knowledge about climate change and sustainable consumer behaviour that can mitigate negative environmental consequences of meat-based diet (Liefländer and Bogner 2018). More research needs to be done on how to approach this goal more effectively.

Surprisingly, our hypothesis about mediating role of taste expectation in explaining the effect of hedonic frame on purchase intention was not confirmed. Even though the effect of taste expectations on purchase intention was significant, there was no relationship between hedonic goal framing and taste expectation. Taste appeals that activate the peripheral route of persuasion (Maehle et al. 2015) tend to be more successful when it comes to short-term pleasure (Turnwald et al. 2019). Our results show that taste appeals might not be successful in for sustainable food choices, such as plant-based meat alternatives. This result suggests that the popular marketing strategy amplifying taste benefits of plant-based meat alternatives might not be as successful for sustainable foods as it is for hedonic foods.

### ***Limitations and future research***

Our study relies on self-reported purchase intention and not on an actual food choice. Self-reported behavioural intentions tend to be unreliable because of intention-behaviour gap (Grimmer and Miles 2017) and social desirability bias (Larson 2019). Therefore, it is important to test our findings in field studies with actual purchase scenarios in more realistic settings (e.g., supermarkets or restaurants).

Another limitation of this study is using a convenience sample, which resulted in younger participants with higher percentage of vegetarians and vegans compared to the general population (Leahy et al. 2010). It is important to test our results in on a representative sample with lower affinity with vegetarian and vegan food.

Furthermore, this study considers only the impact of plant-based food on sustainability. The effectiveness of health appeals and health goals has not been addressed in this study (Oh 2020; Ye and Mattila 2022). Future research can compare sustainability and health appeals for different plant-based foods (Morren et al. 2021).

Finally, it is interesting to test if the combination of moral and hedonic goal framing might perform better than each of the frames separately in the context of sustainable food. Future research can test whether the combined moral and hedonic appeal ("Tastes like meat and good for the Planet") is more effective in persuading consumers to switch to plant-based diet.

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Figure 1. Conceptual model

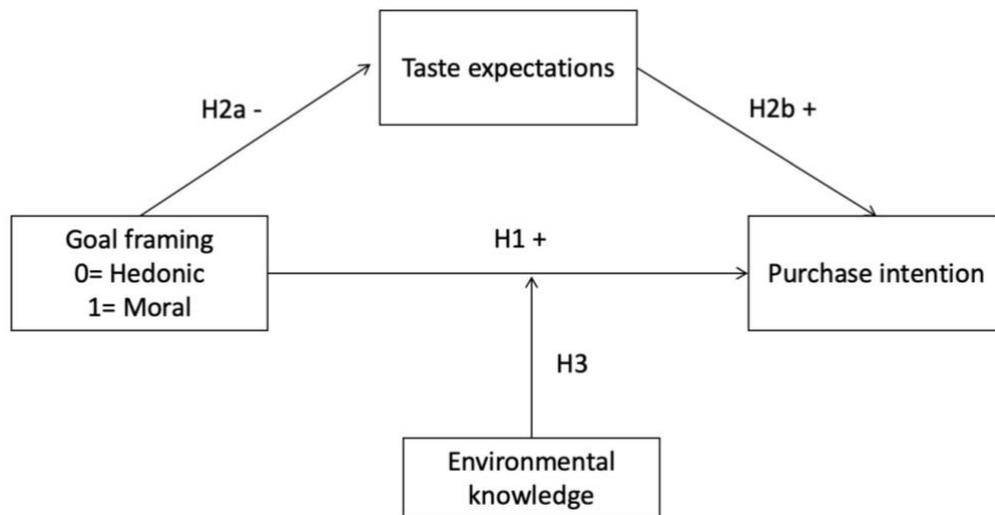


Figure 2. Stimulus Material: A) Moral Goal Framing. B) Hedonic Goal Framing





Figure 3. Summary of the main results

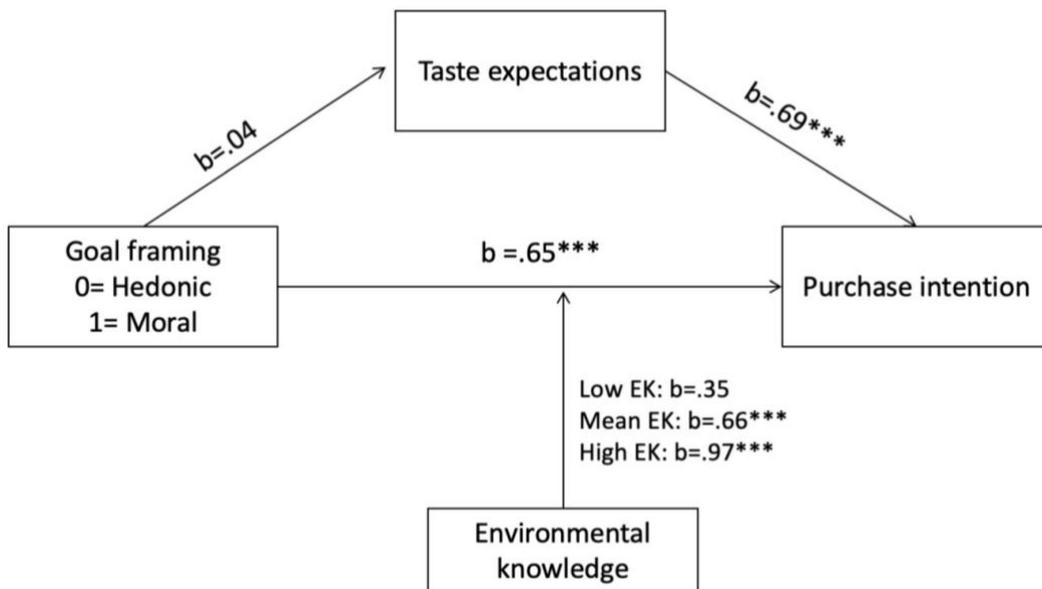


Figure 4. Interaction effects of goal framing and environmental knowledge on purchase intention of plant-based burger

