

## Article

# Does Anticipated Pride for Goal Achievement or Anticipated Guilt for Goal Failure Influence Meat Reduction?

Sara Pompili <sup>1</sup>, Giulia Scaglioni <sup>2</sup>, Margherita Guidetti <sup>2,\*</sup>, Simone Festa <sup>1</sup>, Italo Azzena <sup>1</sup>,  
Michela Lenzi <sup>3</sup>, Luciana Carraro <sup>3</sup>, Mark Conner <sup>4</sup> and Valentina Carfora <sup>1</sup>

<sup>1</sup> Department of International Humanistic and Social Sciences, University of International Studies of Rome, 00147 Rome, Italy; sara.pompili@unint.eu (S.P.); simone.festa@unint.eu (S.F.); italo.azzena@unint.eu (I.A.); valentina.carfora@unint.eu (V.C.)

<sup>2</sup> Department of Communication and Economics, University of Modena-Reggio Emilia, 42121 Reggio Emilia, Italy; giulia.scaglioni@unimore.it

<sup>3</sup> Department of Developmental and Social Psychology, University of Padua, 35122 Padua, Italy; michela.lenzi@unipd.it (M.L.); luciana.carraro@unipd.it (L.C.)

<sup>4</sup> School of Psychology, University of Leeds, Leeds LS2 9JT, UK; m.t.conner@leeds.ac.uk

\* Correspondence: margherita.guidetti@unimore.it

## Abstract

Excessive meat consumption is detrimental to personal health, the environment, and animal welfare. This study examined whether scenarios evoking anticipated pride for achieving, or anticipated guilt for failing, a meat reduction goal—focused on protecting health, the environment, or animal welfare—would affect participants’ anticipated emotions, desire and intention to eat less meat, and ultimately their selection of meat-based food. A between-subjects experimental design was used, with 380 participants randomly assigned to one of seven conditions (six experimental and one control conditions). Experimental scenarios varied by emotion (pride vs. guilt) and goal domain (health, environment, animal welfare), while the control condition focused on sugar reduction. Results showed that scenarios varied in effectiveness depending on the goal addressed and emotion elicited. Specifically, scenarios emphasizing pride for protecting health or the environment reduced meat selection directly, while pride for protecting animals and guilt for harming the environment reduced meat choice indirectly through positive anticipated emotions, desire, and intention. The guilt scenario about endangering animal welfare and the pride scenario for protecting the environment had a total negative effect. This study highlights that emotional appeals—particularly pride for achieving meat reduction goals—may serve as a promising lever for developing impactful communication strategies.

**Keywords:** anticipated emotions; healthy eating; sustainability; meat intake reduction; animal welfare



Academic Editor: Gianpiero Greco

Received: 30 June 2025

Revised: 1 August 2025

Accepted: 8 August 2025

Published: 10 August 2025

**Citation:** Pompili, S.; Scaglioni, G.; Guidetti, M.; Festa, S.; Azzena, I.; Lenzi, M.; Carraro, L.; Conner, M.; Carfora, V. Does Anticipated Pride for Goal Achievement or Anticipated Guilt for Goal Failure Influence Meat Reduction? *Sustainability* **2025**, *17*, 7231. <https://doi.org/10.3390/su17167231>

**Copyright:** © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Recently, promoting sustainable and healthy eating habits, especially the reduction in meat consumption, has become a critical worldwide issue due to its profound impact on human health, environmental sustainability, and animal welfare [1,2].

In terms of harmful health consequences, higher meat consumption is associated with an increased risk of various diseases [3], such as coronary heart disease, type 2 diabetes, chronic inflammatory bowel disease, and various cancers [4–7]. In addition to these potential individual health impacts, increased meat production is associated with numerous

environmental costs. These production practices lead to high greenhouse gas emissions, a significant water footprint, soil and groundwater pollution, and water scarcity [8,9]. Furthermore, to meet the high demand for meat, intensive farming practices are often employed to maximize production and profits. These practices can result in animals being mistreated and deprived of adequate space and the opportunity to engage in natural behaviors, thereby compromising their welfare and neglecting their dignity and natural needs [10]. Therefore, an urgent change in current dietary habits is needed, which should consist of reducing meat consumption and increasing the intake of plant-based products [11]. Opting for more plant-based foods is a dietary choice that not only reduces environmental impact and promotes animal welfare but also offers significant health benefits [12,13]. However, promoting healthier and more sustainable eating habits remains a significant challenge.

To encourage the adoption of plant-based diets, we can leverage the three goals of reduced meat consumption discussed above (i.e., protecting environmental sustainability, human health, and animal welfare) as compelling reasons for reducing meat consumption [14]. In leveraging them, much of the research has focused on identifying the most effective communication interventions [15–20]. For instance, messages promoting meat reduction were most effective when the content appealed to health and animal welfare concerns, and for individuals with pre-existing concerns about health and environmental issues related to meat [16,17,20]. However, some interventions, like daily text reminders, had limited or no impact on reducing meat consumption [19].

Notwithstanding this effort to test the effectiveness of different appeals, the majority of studies have employed informational messages without measuring or controlling for the emotions they evoke, making it difficult to draw conclusions about the role of emotional responses in impacting message effectiveness. Indeed, emotional reactions play an important role and have a remarkable influence on eating behavior [21]. Emotional appeals—whether centered on evoking negative or positive emotions—have been shown to significantly improve dietary behaviors [22–25]. For example, among participants with poor diet quality, pleasure-oriented messages were found to be as effective as traditional health-focused messages in promoting healthier food choices [24]. Similarly, positive emotional appeals enhanced both favorable emotions and the effectiveness of organic advertising, increasing purchases of products such as organic milk [25]. Negative emotions, such as physical and moral disgust, have also been effective in promoting plant-based choices. Physical disgust reduced the hedonic appeal of meat, while moral disgust lowered moral disengagement—especially among individuals with moderate-to-high beliefs in human supremacy—leading to increased plant-based food selection [23]. However, only a limited number of studies have employed emotional appeals to promote meat reduction—mostly relying on text messages [22,23]—and, to date, no study has examined the effectiveness of presenting different underlying motivations for meat reduction (i.e., protecting health, the environment, or animal welfare) through emotionally framed hypothetical scenarios capable of eliciting both positive and negative emotions.

Among the different types of emotions, anticipated emotions—defined as the emotions individuals expect to feel as a consequence of their future choices—play a particularly influential role in guiding human behavior, especially in the context of food choice decision-making [26,27]. Previous correlational studies have demonstrated that anticipated emotions, whether positive (e.g., pride, satisfaction) or negative (e.g., regret, worry), can serve as powerful motivators or deterrents, shaping individuals' dietary behaviors and preferences (e.g., [28–30]). For instance, positive anticipated emotions are associated with the selection of plant-based alternatives and diets and the desire to consume healthy and sustainable food (e.g., local products; fruit and vegetable), while negative anticipated emotions can

promote people's desire to change grocery habits and, most importantly, their intention to reduce meat intake [28,30–34].

Moreover, previous studies showed that eliciting positive or negative anticipated emotions is more effective than leveraging information only (e.g., [35,36]). In the environmental context, only a few intervention studies have tested how anticipated guilt and pride may differently affect sustainable choices and decisions, including buying eco-friendly home furniture and supporting an environmental organization [37,38]. However, to the best of our knowledge no study to date has implemented an intervention comparing the effectiveness of targeting positive and negative anticipated emotions in fostering meat consumption reduction, nor has one investigated whether they are differently effective depending on the type of meat reduction goal proposed, i.e., is protecting one's health, the environment, or animal welfare.

Based on the above, the present study aimed to investigate the effectiveness of emotionally framed scenarios—specifically, those activating either a positive anticipated emotion (i.e., pride) or a negative one (i.e., guilt)—in reducing the selection of meat-based foods. These scenarios were constructed to emphasize one of three widely recognized motivations for reducing meat consumption: protecting personal health, the environment, or animal welfare. By eliciting anticipated pride for meeting these goals, or anticipated guilt for failing to meet them, we sought to examine how these emotional activations influence individuals' food choice. Specifically, we expected that the activation of anticipated pride and guilt would generate a spillover effect on positive and negative anticipated emotions [39], which, in turn, would strengthen the desire and intention to reduce meat consumption, and ultimately lead to a decreased meat-based food selection. This emotional mechanism has been underexplored in previous interventions promoting meat reduction. In addition, to the best of our knowledge this is the first study to systematically test this process across different goal framings. The study thus addresses two main objectives. First, it examines whether scenarios evoking pride or guilt effectively shape anticipated emotions, enhance desire and intention, and influence food choices. Second, it compares the relative impact of the three goal framings—health, environmental sustainability, and animal welfare—on these outcomes, assessing whether some goals are more persuasive than others when emotionally framed.

By exploring these mechanisms, the study seeks to fill a critical gap in the literature regarding the role of anticipated self-conscious emotions and the salience of different meat reduction goals. The findings may support the development of emotionally resonant communication strategies to foster healthier, more sustainable, and animal welfare-conscious food choices.

## 2. Theoretical Background

To address the growing challenge of promoting healthier and more sustainable eating habits, leveraging emotions seems to be a more effective strategy for influencing dietary patterns, particularly reducing meat consumption, than merely relying on information about its negative consequences [35]. Emotions play a powerful role in influencing decision-making processes [40]. In particular, Loewenstein and Lerner [41] provided a conceptual framework to distinguish between immediate—i.e., emotions experienced in the moment of decision-making—and anticipated emotions. Research on decision-making processes has primarily focused on anticipated emotions, suggesting that decisions are often influenced by what an individual imagines they will feel after making one choice over another (e.g., [42]). Specifically, anticipated emotions with both a positive (e.g., pride) and a negative valence (e.g., guilt) influence decision-making regarding one's health and the environment [38,43].

An interesting model, the Model of Anticipated Emotions in Self-Control (MAESC; [44]), provides a comprehensive framework for understanding how anticipated emotions influence self-control decisions. According to this model, when individuals encounter self-control dilemmas, they engage in mental simulations of possible outcomes and anticipate the emotional reactions they may experience depending on their choice. These anticipated emotions are not only prospective affective responses but also serve a functional role in guiding decision-making as they allow individuals to evaluate the emotional significance of goal-congruent versus goal-incongruent behaviors before acting. In this sense, anticipated emotions act as motivational forces that shape behavior by highlighting the psychological consequences of one's actions. Specifically, the model emphasizes the role of self-conscious emotions as guilt and pride which are elicited through the simulation of either failing to meet or successfully adhering to one's goals. Guilt represents an important factor when people anticipate the negative feelings associated with failing to adhere to their goals. For instance, guilt may arise when individuals anticipate the consequences of unhealthy or unsustainable food choices, such as compromising their health or contributing to environmental degradation by consuming highly processed foods or excessive amounts of animal products. Conversely, pride plays a crucial role when individuals anticipate the positive feelings of successfully maintaining their goals. Therefore, they might anticipate pride from adhering to their goals of protecting animal welfare, the environment, or their health and resisting temptation by avoiding such unhealthy and unsustainable foods.

In this context, the model by Kotabe et al. [44] may also help highlight the contribution of prior research showing the predictive role of both negative and positive anticipated emotions in self-control goals [45,46]. In particular, negative anticipated emotions (e.g., guilt) related to a goal failure have been shown to significantly impact goal-related desires, intentions, and behaviors. Similarly, positive anticipated emotions (e.g., pride) have been found to predict the desire and, indirectly, the intention to engage in dieting behavior when they are related to a goal achievement such as decreasing or maintaining current body weight [46].

Among the range of emotions, anticipated guilt and pride have emerged as particularly relevant in promoting sustainable and healthy behaviors [47]. As self-conscious emotions, they are triggered by evaluations of specific actions in relation to internalized personal or social standards [48,49]. Rather than involving general self-evaluations, these emotions focus attention on specific behaviors—such as choosing to reduce meat consumption—making them especially actionable [47]. Moreover, guilt and pride serve as self-regulatory mechanisms, encouraging individuals to align their behavior with personal goals and shared social norms [50–52]. This dual personal–social nature makes them particularly powerful in guiding choices that reflect values like health, environmental sustainability, and animal welfare.

Despite this theoretical foundation, empirical studies in this domain remain scarce. Indeed, most of the existing communication studies on dietary choices appealed primarily to negative anticipated emotions for not protecting one's health (e.g., [53]). For example, two studies have investigated the effects of messages designed to evoke anticipated regret (i.e., the anticipation of feeling remorse) that might be experienced as a consequence of meat consumption [35,54]. The first study [54] demonstrated that messages evoking anticipated regret were effective in increasing the intention to reduce processed meat consumption and in achieving a reduction in participants' actual consumption. Similarly, the second study [35] included messages aimed at inducing anticipated regret for not protecting one's health and the environment, and showed their effectiveness in reducing red and processed meat consumption.

To the best of our knowledge, no study so far has investigated the effectiveness of the different types of motivations underlying meat reduction (protecting health, environment, and animal welfare) when presented as potential scenarios that elicit positive or negative anticipated emotions. This lack of research leaves a critical gap in our understanding of how different combinations of appeals affect meat consumption. Furthermore, although previous studies suggest that activating self-conscious emotions such as pride and guilt can influence goal-directed behavior, it remains unclear whether these emotions can also produce indirect effects—namely, a spillover—on other positive or negative anticipated emotions, which in turn may reinforce people’s desire, intention and meat-based food selection. This mechanism may be particularly relevant in the context of complex decisions like food choices, where emotional coherence across different anticipated emotions could amplify desire and intention to reduce meat consumption. Investigating this potential emotional spillover could thus provide novel insights into how emotional interventions operate and compound their effects across multiple psychological pathways.

### 3. The Present Study

The current study aimed to investigate the impact of scenarios that activate either a positive emotion (i.e., pride) or a negative emotion (i.e., guilt) in anticipation of achieving or failing to meet the goal of reducing meat consumption on participants’ positive and negative anticipated emotions, desire and intention to eat less meat, and in turn on simulated food choices. Specifically, we tested scenarios activating anticipated pride for successfully adhering to goals related to protecting health, the environment, or animal welfare; and scenarios activating anticipated guilt for failing to meet these goals. These scenarios were compared to a control condition regarding the goal of reducing sugar consumption (either eliciting pride for meeting the goal or guilt for failing). The neutrality of this control condition, and its suitability as a baseline in experiments on meat consumption, had already been established in a previous study [35].

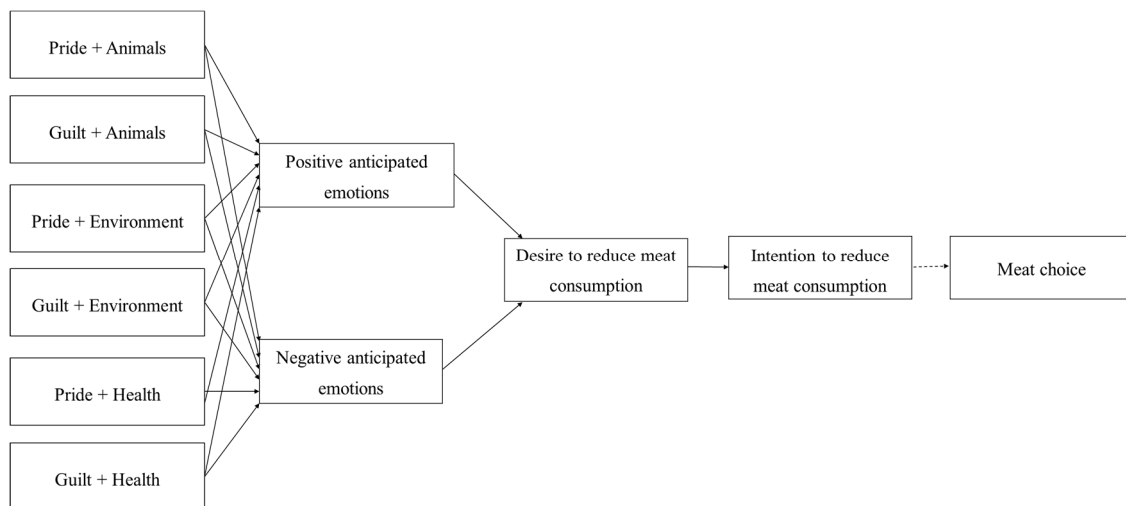
We expected that an effective activation of anticipated pride and guilt would increase participants’ positive and negative anticipated emotions in response to either achieving or failing to achieve the goal of reducing meat consumption. In addition, in line with previous studies showing that messages which appealed to anticipated regret were found to increase intentions and behaviors about reducing meat reduction [35,54], and with prior research highlighting the role of anticipated emotions in predicting desires, intentions and behaviors about dietary choices (e.g., [46]), our study tested the following hypotheses (the expected model is summarized in Figure 1).

**Hypothesis 1 (H1).** *Compared to control, scenarios designed to activate pride will reduce the selection of meat-based food (total effect: H1a) through other positive anticipated emotions (H1b), meat reduction desire (H1c), and intention (H1d).*

**Hypothesis 2 (H2).** *Compared to control, scenarios designed to activate guilt will reduce the selection of meat-based food (total effect: H2a) through other negative anticipated emotions (H2b), meat reduction desire (H2c), and intention (H2d).*

In addition, to our knowledge, no study so far has investigated differences in the goal of the scenarios (health vs. environmental vs. animal welfare), thus we formulated the following research questions:

Compared to control, will the goal of the scenarios (health, environment, or animal welfare) differently evoke negative (RQ1) and positive anticipated emotions (RQ2)? Compared to control, will the goal of the scenarios differently affect the selection of meat-based food (RQ3) through emotions, desire and intention?



**Figure 1.** Conceptual model illustrating the hypothesized indirect effects of scenario conditions on meat reduction intentions and behavior, via anticipated emotions. Direct paths are omitted for clarity. Dotted lines represent negative effects. Each condition is compared with control.

## 4. Materials and Methods

### 4.1. Procedure

The present research is an ancillary project drawn from a larger study. The full project was implemented after obtaining approval from the Ethics Commission of the University of International Studies of Rome (ID 17/2024—12 June 2024). Methods and hypotheses were pre-registered before data collection on Open Science Framework: <https://doi.org/10.17605/OSF.IO/Y5GSH>. The materials, data, and syntax of analyses supporting our findings are openly available at [https://osf.io/ps2d7/?view\\_only=57f9b33d1bf3477db2fc3fcfe39717c9](https://osf.io/ps2d7/?view_only=57f9b33d1bf3477db2fc3fcfe39717c9) (accessed on 5 August 2025). In particular, the present study tests the pre-registered Hypotheses 7 and 8. In June and July 2024, Italian participants were recruited using the online data collection platform Prolific, and received £0.80 (British Pound) (i.e., £6 hourly) to take part in the study. After accessing the study on Prolific, participants were directed via a link to the Qualtrics platform where they provided informed consent and then completed the survey. The research was advertised as a study about food choices and preferences. At the beginning of the questionnaire, participants were asked to indicate if they followed any diet. As inclusion criteria, only respondents who did not follow any specific dietary patterns and consumed more than 3 servings of meat per week could proceed with completing the questionnaire. As we were interested in meat reduction, we excluded both participants who adhered to diets that partially or completely exclude the consumption of meat, and those who reported occasional weekly meat consumption (see Section 4.3).

After answering these questions, participants were randomly assigned to one of the seven conditions, manipulating the type of anticipated emotions activated (guilt vs. pride) and their content (health vs. environment vs. animal welfare) or to the control condition (see Section 4.4). After exposure to the scenario condition, participants completed a simulated food choice task, anticipated emotions, desire, and intention measures (see Section 4.5). Finally, they were asked to indicate their sex, age, and level of education. Upon completing the questionnaire, all participants received detailed information about the study's objectives. This paper presents only the measures relevant to the current study. The other measures can be retrieved in the pre-registration.

#### 4.2. Participants

For a larger project including hypotheses of moderation that are not tested in the present paper, we ran a statistical power analysis to determine the required sample size using G\*Power software version 3.1 [55]. In the pre-registration, we reported the resulting goal of recruiting at least 395 participants, needed to detect a small effect size of  $f^2 = 0.02$ , with  $\alpha = 0.05$ , power = 0.80. We recruited 644 participants, including the 226 participants filtered out at the beginning of the questionnaire for reporting adherence to a specific diet ( $n = 26$ ) or for consuming fewer than 3 servings of meat per week ( $n = 200$ ). Although we did not foresee the exclusion of low-effort answers in the pre-registration, to improve data quality we chose to include in the analyses only those participants who spent at least 6 min on the survey (15 participants excluded), at least 7 s on reading the messages (18 participants excluded), who answered correctly to the attention check (4 participants excluded) and those providing complete data (1 participant excluded). After these exclusions, the final sample consisted of 380 participants, which is sufficient to detect a small effect size of  $f^2 = 0.02$ , with  $\alpha = 0.05$ , power = 0.80 for a linear multiple regression with ten predictors corresponding to our models.

Participants' age ranged from 18 to 69 years old, but most of them (75%) were under 32 ( $M = 29.06$ ). More than half of the participants were men (59%) and, regarding their educational level, 28.4% had a master's degree, 25.5% had a bachelor's degree, 44.5% had a high school diploma, a total of 53.9% had obtained an educational qualification higher than a high school diploma.

#### 4.3. Pre-Test

All participants were asked to indicate the number of servings of meat they usually consume in a typical week, considering that one serving equals 100 g of meat (such as a slice, a hamburger, or a small chicken thigh) or 50 g of sliced or processed meat (3–4 slices). The five response options were: "(1) Less than one serving per week; (2) 1–2 servings per week; (3) 3–4 servings per week; (4) One serving per day; (5) More than one serving per day". Participants who reported consuming less than 3–4 servings per week (response options 1 and 2) were not able to continue completing the questionnaire and were excluded from the study.

#### 4.4. Scenario Conditions

After the pre-test, participants were randomly assigned to one of the seven scenario conditions (six experimental conditions and one control condition). The experimental conditions were: *anticipated guilt + health goal* (GH) scenario ( $n = 50$ ), *anticipated guilt + environmental goal* (GE) scenario ( $n = 49$ ), *anticipated guilt + animal welfare goal* (GA) scenario ( $n = 48$ ), *anticipated pride + health goal* (PH) scenario ( $n = 47$ ), *anticipated pride + environmental goal* (PE) scenario ( $n = 50$ ), *anticipated pride + animal welfare goal* (PA) scenario ( $n = 46$ ). All the message texts were standardized in terms of length, tone, and structure.

As illustrated in Table 1, participants in the experimental conditions were asked to imagine that they had set a goal to reduce meat consumption in the last week. For scenarios eliciting anticipated guilt (guilt scenario: GH, GE, and GA scenarios), they read that they had failed to achieve their goal of meat reduction and that they would feel guilty if they continued to eat too much meat in the future. Specifically, in the GH scenario, participants read that they would feel guilty for violating the goal of protecting their health; in the GE scenario, for violating the goal of protecting the environment; and in the GA scenario, for violating the goal of protecting animal welfare. Conversely, those exposed to scenarios evoking anticipated pride (pride scenario: PH, PE, PA scenarios) read that they had succeeded in achieving their goal of meat reduction and that they would feel proud if

they continued to eat little meat in the future. In particular, in the PH scenario, participants read that they would feel proud for adhering to the goal of protecting their health; in the PE scenario, for adhering to the goal of protecting the environment; and in the PA scenario, for adhering to the goal of protecting animal welfare.

**Table 1.** The Seven Scenarios.

"Imagine you set a goal to reduce your meat consumption in the last week. Please read the following scenario carefully".		
<b>Anticipated Guilt + Health Scenario (GH scenario)</b>	<b>Anticipated Guilt + Environmental Scenario (GE scenario)</b>	<b>Anticipated Guilt + Animal Welfare Scenario (GA scenario)</b>
In the last week, you have not been able to achieve your goal of reducing meat consumption. For this, you think: "If I continue to eat too much meat, I will feel guilty about endangering my health".	In the last week, you have not been able to achieve your goal of reducing meat consumption. For this, you think: "If I continue to eat too much meat, I will feel guilty about endangering the environment".	In the last week, you have not been able to achieve your goal of reducing meat consumption. For this, you think: "If I continue to eat too much meat, I will feel guilty about endangering animal welfare".
<b>Anticipated Pride + Health Scenario (PH Scenario)</b>	<b>Anticipated Pride + Environment Scenario (PE Scenario)</b>	<b>Anticipated Pride + Animal Welfare Scenario (PA Scenario)</b>
In the last week, you have been able to achieve your goal of reducing meat consumption. For this, you think: "If I continue to eat little meat I will feel proud for protecting my health".	In the last week, you have been able to achieve your goal of reducing meat consumption. For this, you think: "If I continue to eat little meat I will feel proud for protecting the environment".	In the last week, you have been able to achieve your goal of reducing meat consumption. For this, you think: "If I continue to eat little meat I will feel proud for protecting animal welfare".
"Imagine you set a goal to reduce your sugar consumption in the last week. Please read the following scenario carefully".		
<b>Control</b>		
[Guilt] In the last week, you have not been able to achieve your goal of reducing sugar consumption. For this, you think: "If I continue to eat foods with too much sugar, I will feel guilty".		
[Pride] In the last week, you have been able to achieve your goal of reducing sugar consumption. For this, you think: "If I continue to eat foods with little sugar, I will feel proud".		

All participants in the control condition ( $n = 90$ ) were invited to imagine that they had set a goal to reduce their sugar consumption (a neutral food in relation to meat) in the last week. Half of the participants read that they had failed to achieve their goal of sugar reduction and that if they continued to eat foods with too much sugar, they would feel guilty, while the other half read that they had succeeded in achieving their goal of sugar reduction and that if they continued to eat foods with little sugar, they would feel proud (see Table 1).

#### 4.5. Post-Test

After participants had been exposed to one of the seven scenario conditions, they completed the comprehension manipulation check by answering the following questions: "The message you read was about: meat (option 1) or sugar (option 2)"; only for those who answered "meat", "The message you read was about: health (option 1) or environment (option 2) or animals (options 3); "The message you read was about: feeling guilty (option 1) or feeling proud (option 2)".

The effectiveness of the messages in activating anticipated pride and guilt was measured using two items adapted from Rezvani et al. [56]: "If I will reduce meat consumption, I will be proud of myself" and "If I will not reduce meat consumption, I will feel guilty".

Items were rated on a 7-point Likert scale (from 1 = “Completely disagree” to 7 = “Completely agree”).

Participants’ anticipated positive emotions for reducing meat consumption were measured using two other items adapted from Rezvani et al. [56]: “If I will reduce meat consumption, I will be satisfied”; “If I will reduce meat consumption, I will be at peace with myself”. Items were rated on a 7-point Likert scale (from 1 = “Completely disagree” to 7 = “Completely agree”;  $r = 0.85$ ). Anticipated negative emotions for not reducing meat consumption were measured using other two items (from Rezvani et al. [56]): “If I will not reduce meat consumption, I will be ashamed of it”; “If I will not reduce meat consumption, I will feel regret”. Items were rated on a 7-point Likert scale (from 1 = “Completely disagree” to 7 = “Completely agree”;  $r = 0.73$ ).

Participants’ desire to reduce meat consumption was measured using two items adapted from Perugini and Bagozzi [46]: “I desire to reduce my meat consumption” and “I would enthusiastically reduce my meat consumption”. Items were rated on a 7-point Likert scale (from 1 = “Completely disagree” to 7 = “Completely agree”;  $r = 0.84$ ).

Participants’ intention to reduce meat consumption was measured using three items adapted from Wolstenholme et al. [57]: “I am willing to reduce my meat consumption”, “I plan to reduce my meat consumption”, and “I will reduce my meat consumption”. Items were rated on a 7-point Likert scale (from 1 = “Completely disagree” to 7 = “Completely agree”;  $\alpha = 0.97$ ).

Participants’ selection of meat-based food was assessed using a mock choice task. The task required participants to select their lunches and dinners for the next 3 days. They were instructed to choose 1 single dish for each meal, resulting in a total of 6 dishes. They had to select from a list of 30 dishes, of which 15 were meat-based (categorized as “1”) and 15 were plant-based (categorized as “0”). Therefore, the meat choice variable ranged from 0 to 6, with a higher score corresponding to more meat-based dishes selected. Examples of meat-based dishes were pasta with Italian beef ragù and meat burger; examples of plant-based dishes were pasta with tomato sauce and veggie burger.

#### 4.6. Data Analyses

Data analyses were performed using SPSS Statistics Version 25 and jamovi version 2.6.26. Preliminary, on SPSS we checked whether we could use the control group as a single reference category and whether randomization was adequate. The homogeneity within the control condition was evaluated with *t*-tests comparing participants in the control-guilt scenario and those in the control-pride scenario for all the variables in the model. In order to confirm the homogeneity among the conditions, one-way Analyses of Variance (ANOVAs) were conducted on age and usual meat consumption. Chi-square tests were then used to assess the homogeneity among the groups in terms of sex and educational level. To test our hypotheses, we ran our analyses on jamovi. First, we conducted general linear models (GLM; GAMLj module; [58]) to test whether the experimental conditions had the intended effect on anticipated pride and anticipated guilt (vs. control). Second, to preliminarily test the fit of the expected models, we ran GLM analyses and correlation analyses on the mediators and the outcome. Finally, we conducted an analysis of indirect effects with the jAMM module [59].

These analyses were replicated including the 18 participants excluded for reading the messages too fast and the results are reported in the online material on OSF.

## 5. Results

### 5.1. Preliminary Analyses

Preliminary analyses confirmed the homogeneity of the two control conditions: participants in the control-guilt and control-pride scenarios did not differ for anticipated emotions, desire and intention to reduce meat consumption, or simulated choice of meat-based food ( $t(88) < |0.69|, p > 0.49$ ). Results from one-way ANOVAs showed no significant differences among conditions regarding age,  $F(6, 373) = 0.45, p = 0.84, \eta p^2 = 0.01$ , and meat consumption,  $F(6, 373) = 0.42, p = 0.87, \eta p^2 = 0.01$ . Similarly, the chi-square test did not indicate any significant differences as a function of sex,  $\chi^2(12) = 19.32, p = 0.08$ , and educational level,  $\chi^2(30) = 20.21, p = 0.91$  across the different conditions. Thus, preliminary analyses confirmed that randomization was adequate.

In total, 87.11% of participants responded correctly to the comprehension manipulation check questions. Results from GLM models showed that the experimental conditions differed only for anticipated pride ( $F(6, 379) = 2.78, p = 0.01, \eta p^2 = 0.04$ ) and not for anticipated guilt ( $F(6, 379) = 0.62, p = 0.71, \eta p^2 = 0.01$ ). In particular, only the GE and PA scenarios activated a stronger anticipated pride compared to the control condition ( $M_{\text{control}} = 4.08; M_{\text{GE}} = 4.88, p = 0.004; M_{\text{PA}} = 4.74, p = 0.019$ ). The effective manipulation of pride in the GE and PA scenarios spilled over participants' positive anticipated emotions ( $M_{\text{control}} = 3.96; M_{\text{GE}} = 4.68, p = 0.007; M_{\text{PA}} = 4.55, p = 0.03; F(6, 379) = 2.61, p = 0.02, \eta p^2 = 0.04$ ), whereas the analyses on anticipated negative emotions confirmed that these affects were not elicited by the experimental conditions ( $F(6, 379) = 1.00, p = 0.43, \eta p^2 = 0.02$ ). Given these analyses, we removed anticipated negative emotions from the final model because this variable was not significantly associated with the experimental conditions. Thus, it was not included in the exploration of indirect effects [60]. Therefore, H2b was rejected. Descriptive statistics for the key variables used in the present study are presented in Table 2. Participants were more inclined to anticipate feelings of pride and other positive emotions rather than guilt and negative emotions (see Table 2). As reported in Table 2, pride, guilt, positive emotions and negative emotions were positively correlated. Furthermore, the strong positive correlations between pride and positive emotions, and between guilt and negative emotions, support the presence of the expected spillover effect (see Section 1).

**Table 2.** Means, Standard Deviations and Correlations Between Study Variables.

	M (SD)	Anticipated Pride	Anticipated Guilt	Positive Anticipated Emotions	Negative Anticipated Emotions	Desire (Meat Reduction)	Intention (Meat Reduction)	Meat Choice
Anticipated Pride	4.39 (1.57)							
Anticipated Guilt	3.22 (1.65)	0.66 ***						
Positive Anticipated Emotions	4.22 (1.54)	0.88 ***	0.64 ***					
Negative Anticipated Emotions	2.85 (1.34)	0.62 ***	0.85 ***	0.63 ***				
Desire (meat reduction)	3.91 (1.75)	0.77 ***	0.66 ***	0.79 ***	0.64 ***			
Intention (meat reduction)	3.30 (1.68)	0.69 ***	0.63 ***	0.69 ***	0.62 ***	0.81 ***		
Meat Choice	2.83 (1.51)	−0.46 ***	−0.38 ***	−0.48 ***	−0.39 ***	−0.54 ***	−0.52 ***	
Age	29.06 (9.07)	0.07	0.00	0.06	0.09	0.04	0.08	−0.11 *
Gender (1 = woman, 2 = man)	-	−0.18 ***	−0.22 ***	−0.19 ***	−0.22 ***	−0.17 ***	−0.26 ***	0.27 ***

Note. \*\*\*  $p \leq 0.001$ , \*  $p \leq 0.05$ .

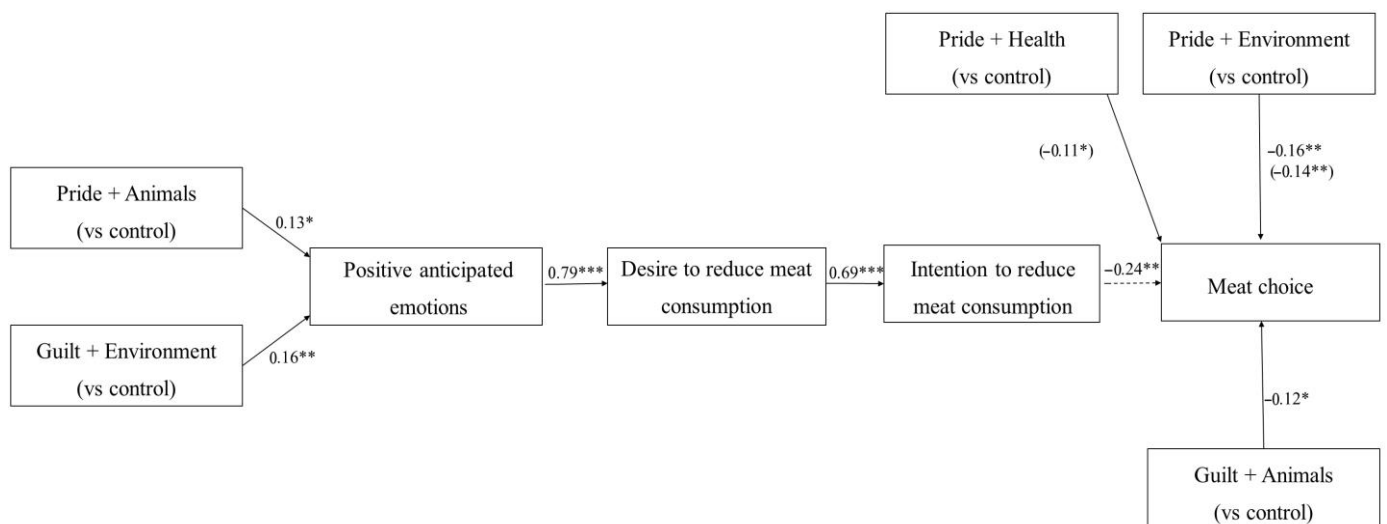
## 5.2. Main Analysis

To test our hypotheses and investigate our research question, we conducted an analysis of indirect effects (Figure 1) comparing each experimental condition (six dummy variables) with the control group (reference category). The model explained a third of the variance in meat choice ( $R^2 = 0.34$ ,  $f = 0.72$ ). Results are reported in Table 3 and significant paths are summarized in Figure 2.

**Table 3.** Analysis of Indirect Effects.

Type	Effect	<i>b</i>	<i>SE</i>	95% CI Lower Limit	95% CI Upper Limit	$\beta$	<i>z</i>	<i>p</i>
Component	PH → APE	−0.22	0.31	−0.92	0.36	−0.05	−0.71	0.478
	PH → Desire	0.14	0.19	−0.22	0.51	0.03	0.74	0.459
	PH → Intention	0.02	0.17	−0.36	0.33	0.00	0.09	0.925
	PE → APE	0.15	0.28	−0.41	0.68	0.03	0.55	0.580
	PE → Desire	0.02	0.18	−0.33	0.37	0.00	0.10	0.922
	PE → Intention	0.03	0.17	−0.29	0.38	0.01	0.19	0.847
	PA → APE	<i>0.60</i>	<i>0.24</i>	<i>0.10</i>	<i>1.06</i>	<i>0.13</i>	<i>2.44</i>	<i>0.015</i>
	PA → Desire	−0.15	0.24	−0.63	0.34	−0.03	−0.60	0.547
	PA → Intention	0.08	0.16	−0.23	0.40	0.02	0.48	0.629
	GH → APE	0.29	0.26	−0.20	0.81	0.06	1.15	0.250
	GH → Desire	0.01	0.18	−0.32	0.39	0.00	0.06	0.952
	GH → Intention	0.13	0.18	−0.24	0.46	0.03	0.71	0.475
	GE → APE	<i>0.73</i>	<i>0.25</i>	<i>0.27</i>	<i>1.22</i>	<i>0.16</i>	<i>2.94</i>	<i>0.003</i>
	GE → Desire	−0.14	0.19	−0.49	0.25	−0.03	−0.73	0.462
	GE → Intention	−0.29	0.18	−0.62	0.07	−0.06	−1.61	0.107
	GA → APE	0.49	0.30	−0.12	1.10	0.11	1.62	0.106
	GA → Desire	0.03	0.20	−0.38	0.43	0.01	0.14	0.888
	GA → Intention	−0.15	0.17	−0.43	0.24	−0.03	−0.87	0.382
	APE → Desire	<i>0.90</i>	<i>0.03</i>	<i>0.85</i>	<i>0.96</i>	<i>0.79</i>	<i>32.34</i>	<i>&lt;0.001</i>
	APE → Intention	<i>0.17</i>	<i>0.05</i>	<i>0.08</i>	<i>0.28</i>	<i>0.16</i>	<i>3.28</i>	<i>0.001</i>
APE → Meat Choice	−0.12	0.07	−0.25	0.00	−0.12	−1.82	0.069	
Desire → Intention	<i>0.67</i>	<i>0.05</i>	<i>0.57</i>	<i>0.75</i>	<i>0.69</i>	<i>14.37</i>	<i>&lt;0.001</i>	
Desire → Meat Choice	−0.21	0.08	−0.36	−0.06	−0.24	−2.72	0.007	
Intention → Meat Choice	−0.22	0.08	−0.37	−0.07	−0.24	−2.92	0.004	
Indirect	PH → APE → Desire → Intention → Meat Choice	0.03	0.05	−0.04	0.17	0.01	0.64	0.521
	PE → APE → Desire → Intention → Meat Choice	−0.02	0.04	−0.11	0.04	0.00	−0.52	0.605
	PA → APE → Desire → Intention → Meat Choice	−0.08	0.05	−0.21	−0.01	−0.02	−1.69	0.091
	GH → APE → Desire → Intention → Meat Choice	−0.04	0.04	−0.14	0.02	−0.01	−1.01	0.313
	GE → APE → Desire → Intention → Meat Choice	−0.10	0.05	−0.22	−0.03	−0.02	−1.99	0.047
	GA → APE → Desire → Intention → Meat Choice	−0.07	0.05	−0.19	0.00	−0.01	−1.36	0.173
Direct	PH → Meat Choice	−0.50	0.20	−0.91	−0.14	−0.11	−2.50	0.012
	PE → Meat Choice	−0.62	0.21	−1.02	−0.22	−0.14	−3.00	0.003
	PA → Meat Choice	−0.26	0.25	−0.73	0.27	−0.06	−1.06	0.291
	GH → Meat Choice	−0.08	0.22	−0.54	0.31	−0.02	−0.36	0.720
	GE → Meat Choice	−0.28	0.26	−0.78	0.21	−0.06	−1.10	0.273
	GA → Meat Choice	−0.31	0.20	−0.70	0.06	−0.07	−1.58	0.113
Total	PH → Meat Choice	−0.45	0.26	−0.94	0.05	−0.10	−1.70	0.089
	PE → Meat Choice	−0.71	0.25	−1.22	−0.20	−0.16	−2.85	0.004
	PA → Meat Choice	−0.52	0.29	−1.05	0.06	−0.11	−1.80	0.073
	GH → Meat Choice	−0.25	0.26	−0.79	0.25	−0.06	−0.97	0.332
	GE → Meat Choice	−0.52	0.29	−1.09	0.04	−0.11	−1.77	0.077
	GA → Meat Choice	−0.52	0.25	−1.05	−0.04	−0.12	−2.07	0.039

Note. Confidence intervals computed with Bias corrected bootstrap (5000 resamples). Italics emphasize statistically significant results. Only the overall indirect paths are reported. GH = Anticipated guilt + Health scenario, GE = Anticipated guilt + Environmental scenario, GA = Anticipated guilt + Animal welfare scenario, PH = Anticipated pride + Health scenario, PE = Anticipated pride + Environmental scenario, PA = Anticipated pride + Animal welfare scenario, APE = Anticipated positive emotions.



**Figure 2.** Highlight of significant paths in the tested model. Direct paths are reported in brackets. Dotted lines represent negative effects. Coefficients are reported as standardized beta. \*\*\*  $p \leq 0.001$ , \*\*  $p \leq 0.01$ , \*  $p \leq 0.05$ .

First, we expected pride and guilt scenarios to reduce meat-based food choice (H1a and H2a). These hypotheses were supported only for the PE and GA scenarios, having significant total effects on Meat Choice (Table 3, rows Total PE → Meat Choice and GA → Meat Choice).

Among the pride scenarios, only the PA scenario evoked greater anticipated positive emotions (Table 3, row PA → APE). However, also the GE scenario was positively associated with anticipated positive emotions (Table 3, row GE → APE). Thus, H1b was only partially supported. Consistently with the fact that only the PA and the GE scenarios were associated with stronger anticipated positive emotions (vs. control), only these conditions, respectively, had marginally significant and significant indirect effects on the simulated choice of meat dishes (Table 3, rows PA → APE → Desire → Intention → Meat Choice and GE → APE → Desire → Intention → Meat Choice). Therefore, H1c, H1d, H2c and H2d were supported for these scenarios. In addition, the PH and PE scenarios had significant negative direct effects on the selection of meat dishes (Table 3, rows Direct PH → Meat Choice and PE → Meat Choice), whereas none of the guilt scenarios had direct effects.

It should be noted that the total effect of GA; the effect of PA on anticipated positive emotions, and the indirect effect of PA were not replicated by including in the analyses those who read the experimental messages in less than 7 s.

To further explore the pattern of results observed in the main analyses, we conducted additional analyses that tested the underlying factorial structure of the present experimental design. Specifically, we ran a 2 (Emotion: pride vs. guilt) × 4 (Goal: health vs. environment vs. animal welfare vs. sugar) ANOVA on the outcome variables, along with an analysis in which the interaction between emotions and goal predicted meat choice indirectly via anticipated positive emotions, desire, and intention to reduce meat choice. These analyses were not pre-registered and are fully reported in the Supplementary Materials.

No main effects of emotions ( $p > 0.178$ ) nor interaction with the four goals ( $p > 0.176$ ) were observed. However, goals showed significant main effects on positive emotions ( $p = 0.028$ ) and meat choice ( $p = 0.031$ ). The analysis conducted to find any indirect effects revealed a significant total negative effect of the scenarios related to environment ( $b = -0.60$ ,  $SE = 0.22$ , 95% CI  $[-1.03, -0.18]$ ,  $\beta = -0.18$ ,  $p = 0.005$ ) and animal welfare ( $b = -0.51$ ,  $SE = 0.22$ , 95% CI  $[-0.95, -0.08]$ ,  $\beta = -0.15$ ,  $p = 0.020$ ). The scenarios about environment also had a direct effect on meat choice ( $b = -0.44$ ,  $SE = 0.18$ , 95% CI  $[-0.80, -0.09]$ ,  $\beta = -0.13$ ,

$p = 0.013$ ), whereas no significant direct or indirect effects were found for the animal welfare scenarios ( $p \geq 0.055$ ). The scenarios about health did not significantly differ from the control condition about sugar consumption for any outcome ( $p \geq 0.111$ ).

## 6. Discussion

The present study aimed to examine the effectiveness of two types of scenarios in promoting the reduction in meat-based food choice: those that evoke anticipated pride when individuals adhere to goals of meat reduction related to protecting health, the environment, or animal welfare, and those that elicit anticipated guilt when these goals are violated. Specifically, as shown in Figure 1, we hypothesized that these scenarios would decrease meat-based food selection by enhancing individuals' anticipated emotional responses, which in turn should affect desire and intention.

However, manipulation checks only partially confirmed the effectiveness of the scenarios in eliciting the intended anticipated emotions, as only anticipated pride was successfully elicited, while anticipated guilt did not significantly differ from the control condition. Our results showed that, compared to the control condition, the scenario eliciting anticipated guilt toward failing to protect the environment determined a lesser selection of meat-based foods through their impact on positive anticipated emotions rather than negative ones, and through the subsequent enhanced desire and intention to reduce meat consumption. Furthermore, as highlighted in Figure 2, compared to the control condition, the scenario eliciting anticipated guilt toward failing to protect animals had a total negative impact on meat choice, but we failed to find any indirect effect through anticipated emotions, desire, and intentions. This suggests that this effect might be explained by a different mechanism, such as empathy toward animals. However, it must be noted that this latter total effect was not replicated when including participants who read the messages too fast, thus it should be regarded with caution.

Although the limited evidence of emotional elicitation from the manipulation checks suggests caution in drawing strong conclusions, some of our findings are consistent with previous studies (e.g., [28,61,62]), highlighting the motivational role of anticipated emotions. In particular, it has been suggested [61] that negative anticipated emotions such as guilt can motivate goal-directed behavior. When individuals imagine feeling guilty for not reaching a goal, this can increase their motivation to take concrete actions to avoid such an aversive emotion and maximize positive outcomes. This heightened motivation increases people's perception that change is possible, which in turn helps them anticipate future positive emotions associated with reaching the goal [62]. In this context, anticipated guilt for failing to meet the goal of environmental protection through eating habits probably motivated individuals to make more deliberate plans and decisions to avoid that negative emotional outcome in the future. These deliberate plans, in turn, helped them anticipate positive emotions, such as satisfaction for meeting the goal in the future, and ultimately led them to select less meat-based foods to reach the goal. Specifically, when individuals read a guilt scenario for not adhering to moral standards related to environmental protection, their behavioral response (i.e., reducing meat choice) appeared to be influenced by whether they could foresee positive emotional outcomes from correcting their behavior (see Table 3). In other words, these findings imply that a positive emotional state—perhaps through the resolution of guilt by making a better choice—effectively motivates individuals through desire and intention.

However, this pattern does not hold true in the case of health-related goals. Overall, our main analyses (Table 3), as well as the replication using a factorial design (Supplementary Table S4), converge in showing that, when framed using affective language, health-related motivations appear to be less compelling to our sample than the

ethical concerns related to environmental protection and animal welfare. Indeed, only the health-focused scenarios failed to produce any total effect on meat choice. Notably, the guilt scenario for not protecting one's health was the only condition that had no detectable effects on participants' meat choice, whereas the corresponding pride scenario yielded only a direct effect. Finally, unlike the other two goals, health protection never significantly differed from control in the factorial analyses either.

Beyond the scenario eliciting anticipated pride for protecting one's health, the corresponding scenario about the environmental goal directly decreased the selection of meat-based food too (see Table 3). The direct association between these two anticipated pride scenarios and behavior implies that individuals might already be aligning their choices with a sense of personal achievement and self-congratulatory feelings, which are rewarding on their own [63]. In other words, pride scenarios might elicit an incentive to persevere on a task despite initial costs [64]. In addition, it is possible that for some individuals, the association between pride and behavior (choosing fewer meat-based foods) is so ingrained that it becomes an almost automatic response. Probably, participants may not need to consciously anticipate feeling proud; the knowledge that this behavior is aligned with their values or goals (and thus will make them proud) is enough to prompt action.

Overall, these findings suggest that scenarios framed around pride—particularly those connected to health and environmental goals—might be effective in influencing food choices, even if the mechanism is not fully explained by the anticipated emotions. An interesting result is that the pride scenario related to the environment is the most effective. This could be because pride serves an important function by motivating individuals to achieve and maintain behaviors that are socially valued, ultimately promoting acceptance and respect from others [63]. Thus, protecting the environment can be seen as a more altruistic and socially desirable act compared to safeguarding personal health. Environmental actions are often more visible to others, leading to greater social recognition and reinforcement. This external validation can strengthen the feeling of pride and motivation.

Unlike the health and environment pride scenario, which directly influenced behavior, the animal welfare pride scenario indirectly reduced meat choice by increasing anticipated positive emotions. However, this indirect effect did not reach statistical significance. This suggests that while participants might feel proud of supporting animal welfare, this pride alone may not be sufficient to drive behavior change unless it is reinforced by the anticipation of additional positive emotional outcomes.

In line with the MAESC model [44], our results offer only partial support for the notion that anticipated guilt and pride play a central role in self-control decisions. The finding that the anticipated pride scenarios led to lower meat-based food choices supports the MAESC concept that anticipated pride in meeting goals (e.g., making healthier choices) positively influences self-control. The scenario in which individuals expect to feel proud of choosing fewer meat-based foods supports the model's idea that positive anticipated emotions can promote adherence to long-term goals. However, the hypothesized emotional pathways involving pride were not consistently observed across all conditions, while those involving guilt were not supported. Nevertheless, the effects of anticipated emotions differed across goal domains (health vs. environment vs. animal welfare), suggesting that their influence on self-control may depend on the perceived relevance, urgency, and personal connection to each goal.

In addition, although the guilt-framed scenarios did not significantly increase self-reported anticipated guilt, some of them produced relevant psychological and behavioral effects. Indeed, the guilt scenario for not protecting the environment was linked to higher levels of anticipated positive emotions, which in turn was part of an indirect path associated with lower meat choice. The guilt scenario focused on animal welfare goals showed a sig-

nificant total effect on meat choice, although no indirect effect was observed. This suggests that guilt-based scenarios may influence behavior through more complex or indirect mechanisms. In particular, the observed increase in anticipated positive goal achievement in the guilt scenario related to environmental harm may reflect a motivated cognitive response—a way to reaffirm one’s intention to reduce meat consumption, possibly as a defensive reaction to an implicit sense of guilt. It is plausible that participants initially experienced guilt when exposed to the message but rejected it, instead reporting positive goal-related expectations or even anticipated pride. In this sense, the activation of pride could be interpreted not as the direct effect of the message, but rather as a compensatory response to the moral threat posed by guilt. This defensive mechanism would be consistent with prior research [65,66] showing that individuals often engage in motivated reasoning to preserve a positive moral self-image when confronted with ethically challenging information. Thus, our results offer a novel contribution to this topic, highlighting the possibility that guilt operates differently than pride, potentially through processes that are less accessible to conscious emotional self-report. Future research should explore whether guilt framing triggers defensive mechanisms, goal compensation, or affective resistance, and whether stronger or multimodal emotional cues might reveal different pathways of influence.

To sum up, scenarios aimed at inducing anticipated guilt for failing to meet goals of meat reduction related to the environment tend to decrease meat-based food selection by enhancing anticipated pride and positive anticipated emotions rather than negative ones. This suggests that anticipated guilt can motivate goal-directed behavior by prompting individuals to anticipate positive feelings associated with goal attainment. Conversely, scenarios evoking anticipated pride related to health and environmental goals directly decrease meat-based food selection, irrespective of resulting emotional anticipations, which reflects the role of pride as a motivating force aligned with personal and environmental benefits.

Regarding our research question, we found that the affective scenarios did not work uniformly across all goals. The guilt scenario related to health goals did not significantly impact meat choice, suggesting that health-related guilt may not be as effective in driving dietary changes compared to environmental goals. Moreover, while anticipated pride scenarios generally decreased meat-based food selection, the effectiveness of pride related to animal welfare goals was less straightforward. It was less effective unless reinforced by the anticipation of additional positive emotional outcomes, and this particular result was not replicated when including dropped participants.

Notably, this interpretation of our results—namely, that the persuasive impact of affective messages varies depending on the motivational goal they target—suggests the presence of an interaction between emotions and goals that did not emerge in the factorial analyses reported in the Supplementary Material. However, the interpretation of these factorial analyses requires caution. As outlined in the main text, our primary aim was not to isolate the effects of emotions and goals as independent variables, but to evaluate the persuasive impact of ecologically coherent and semantically integrated messages. In our design, emotional tone and motivational goal were purposefully entangled to mirror how real-world persuasive communications are typically constructed and perceived.

The main drawback of the factorial analyses, nevertheless, is that a pure control condition (i.e., non-emotional message) is lacking, meaning that pride and guilt are compared with each other rather than to a neutral condition. This probably explains the non-significant difference between pride and guilt: this finding does not imply that affective appeals are ineffective; rather, it suggests that using affectively framed messages about protecting the environment or animal welfare (regardless of whether they evoke pride or guilt) may be more comparably persuasive than suggested by the main analyses. However, while these additional factorial analyses provide relevant complementary insights, we maintain that

the primary analytical approach remains more consistent with the applied and theoretical goals of our study.

### *6.1. Limitations and Future Directions*

Although the present study provides an important contribution to the literature on interventions aimed at reducing meat consumption in response to health and sustainability challenges, certain limitations should be considered. First, the variables were assessed using self-report measures, which might be susceptible to social desirability bias. Additionally, respondents might have provided inaccurate answers to some of the survey questions. Although behavioral measures could offer a more objective assessment by observing actual behaviors rather than relying on self-reported data, their implementation often involves practical challenges and resources that were not available for this study. Moreover, the use of a simulated food choice task, although more behaviorally oriented than other self-reported measures, still cannot fully capture actual food behavior in real-life settings. Therefore, the reliance on simulated rather than observed consumption constitutes a limitation that requires caution in interpreting the outcomes. Second, our study involved an Italian convenience sample; thus, this may limit the generalizability of our findings to other populations. Specifically, it may not capture the diversity of perspectives, cultural values, and eating behaviors that may be found in other countries. This limitation should be explicitly considered when interpreting the scope of our conclusions. Future studies could replicate our findings with different populations. Meat is a food rich in symbolic cultural meaning [67], and meat consumption is deeply ingrained in cultural practices, daily habits, and social norms [68]. Cross-cultural studies could clarify how these scenarios perform in diverse contexts. Moreover, text messages promoting plant-based alternatives tend to be more effective among individuals already aware of meat's negative consequences [20]. Future research should examine whether such awareness moderates the impact of emotionally framed messages, not just informational ones.

In addition, the use of a simulated food choice task presented immediately after scenario exposure and the cross-sectional nature of the study limit the ability to draw conclusions on the long-term or causal impact of the intervention. Although our analyses explored patterns consistent with indirect effects, the absence of temporal separation between predictors, mediators, and outcomes precludes an interpretation of these patterns as mediation effects. Future studies should employ longitudinal or experimental designs with delayed follow-ups to more robustly evaluate causal pathways. Finally, the limited success in manipulating anticipated guilt represents a major methodological limitation, as it complicates the interpretation of guilt-related effects on participants' simulated food choices. Nonetheless, guilt-based scenarios may still influence dietary decisions indirectly—by enhancing positive emotions like pride. Future research should further clarify these emotional pathways to support the design of targeted interventions.

### *6.2. Study Implications*

The present research has important implications. As for the theoretical implications, our findings point to a potential role of anticipated emotions in shaping food choices. Indeed, it is worth noting that the results of our study should be interpreted as initial evidence, offering preliminary and exploratory insights. Nonetheless, the study is preregistered and provides a foundation for future investigations. Further research is needed to investigate the multiple ways guilt may operate—potentially through non-conscious mechanisms or affectively reappraised pathways—thereby pointing to important theoretical refinements. In addition, this study does not conclusively clarify which message is the most impactful, and this may be attributed to several factors. Firstly, this ambiguity could

stem from the complexity of emotion elicitation in behavioral interventions, suggesting that the scenarios we used may not represent the most effective communication strategy with respect to the selected goals. For example, future studies should consider alternative methods for eliciting such emotions. While our research focused on future anticipation, subsequent studies could explore counterfactual scenarios. Prior evidence highlighted how counterfactual arguments, which consider different possible outcomes of events that have already occurred, may influence environmental behaviors (e.g., [69,70]).

Additionally, it is crucial to recognize that these communication strategies may be influenced by personal characteristics, such as an individual's time orientation. Indeed, research has shown that an individual's tendency to focus on a specific time period—whether the past, present, or future—can differently impact the engagement in pro-environmental behaviors (e.g., [71,72]). Thus, future studies should account for this variable when designing communication strategies and scenarios, ensuring they consider personal factors that may moderate their effectiveness. Further research should also delve deeper into identifying which additional emotions might be more strongly connected to the scenarios under consideration. For instance, prior research showed that future-focused emotions like hope are more effective than present-focused emotions like amusement in promoting pro-environmental behaviors [71]. By exploring a broader range of emotional responses, such as future-oriented emotions, we can better understand how to leverage them to promote a healthier and more sustainable diet.

Moreover, it would be valuable to investigate other scenarios related to different types of goals, such as experimenting with new foods or saving money, to determine how emotional factors influence these areas as well. Furthermore, these insights should be applied to other healthy and sustainable behaviors beyond meat consumption, such as walking. Understanding how anticipated emotions can drive dietary changes across different contexts can help design more effective and tailored interventions. Integrating emotional considerations into strategies for promoting a variety of healthy and eco-friendly habits could offer significant benefits for public health, environmental sustainability, and overall well-being.

As for practical implications, our study provides limited evidence suggesting that messages leveraging anticipated pride and guilt might influence healthier and more sustainable food choices, though this effect was not consistently supported by manipulation checks. Specifically, only anticipated pride was significantly elicited by some scenarios, while anticipated guilt was not successfully elicited compared to the control. Emotional levers, such as the sense of pride for achieving the goal of reducing meat consumption or the sense of guilt for failing to do so, may represent promising tools, but their actual activation through the tested scenarios was not clearly demonstrated in this study. Individuals who anticipate feeling pride may be more likely to change their eating habits, while those who anticipate guilt might be motivated to avoid undesirable behaviors. Thus, anticipating a positive feeling like pride for reducing meat consumption can act as a positive reinforcement, motivating individuals to commit more to their behavior. Conversely, anticipating negative feelings like guilt can motivate avoidance of undesirable behavior, such as excessive meat consumption. However, our results do not allow firm conclusions on these mechanisms, as anticipated guilt was not significantly manipulated.

Notwithstanding the limitations of the present findings, understanding the role of anticipated emotions can help develop more effective and targeted communication strategies. Such interventions could be implemented through digital platforms, mobile health and wellness apps, or personalized programs for dietary behavior change, making the approach scalable and adaptable to different populations. Leveraging anticipated emotions

as a motivational tool can be a key strategy to encourage reducing meat consumption and adopting a more plant-based diet.

To enhance the impact of such strategies, messages should be tailored to match the relevance of the underlying goal for the target audience—whether health, environmental, or animal welfare—as individuals may respond more strongly to messages aligned with their personal values. In addition, digital tools can be used not only to deliver information but also to evoke pride through personalized feedback on receivers' progress and impact, such as environmental benefits or goal tracking, reinforcing motivation in real time. Communication efforts should also consider segmenting the audience and pre-testing emotional framings to ensure their effectiveness across different motivational profiles. These refinements may help strengthen engagement and increase the likelihood of behavior change.

From a clinical perspective, these insights may inform interventions in clinical nutrition, health psychology, and public health. Emotionally framed messages—particularly those promoting pride for making healthy and sustainable choices—can be integrated into dietary counseling, preventive health programs, and digital health platforms. Encouraging individuals to anticipate pride in achieving health or environmental goals may support more deliberate and lasting behavior change. Such strategies could help improve adherence to dietary recommendations and contribute to the prevention of chronic diseases related to excessive meat consumption, such as cardiovascular conditions, metabolic disorders, and many cancers.

Future research should test these approaches in clinical and real-world settings, evaluating their long-term effectiveness, to develop interventions that are applicable and effective in broader population settings.

## 7. Conclusions

The present study highlighted the partial effectiveness of scenarios designed to evoke anticipated pride or guilt for adhering to or violating the goal of meat reduction in decreasing meat-based food choices both directly and indirectly through their impact on individuals' emotional responses, desires, and intentions. The results indicated that only some scenarios significantly elicited anticipated pride, while none significantly elicited anticipated guilt compared to the control condition. Overall, the study underscores the importance of leveraging both positive and negative anticipated emotions to promote the reduction in meat-based food choices. Nonetheless, these findings should be interpreted with caution as the evidence for the successful elicitation of the targeted anticipated emotions was limited and inconsistent. It suggests that anticipated pride and guilt can serve as motivational factors influencing dietary behavior through emotional engagement, but further research is needed to strengthen the effectiveness of these emotional manipulations.

Despite these limitations, the study offers an original contribution by being among the first to experimentally compare anticipated pride and guilt across different motivational goals—namely health, environment, and animal welfare—in the context of meat reduction. It also provides preliminary evidence that guilt may operate differently from pride, possibly through implicit or defensive mechanisms, and that the effectiveness of emotional appeals may depend not only on the type of emotion but also on the relevance and framing of the underlying goal. These findings provide a foundation for future research aimed at confirming and expanding our understanding of these mechanisms.

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su17167231/s1>, Table S1: Univariate Tests; Table S2: Post Hoc comparison of goals on anticipated positive emotions; Table S3: Post Hoc comparison of goals on meat choice; Table S4: Models Info; Table S5: Indirect and Total Effects (4 × 2 design).

**Author Contributions:** Conceptualization, S.P., G.S., M.G. and V.C.; methodology, S.P., G.S., M.G., S.F., I.A., M.L., L.C. and V.C.; formal analysis, S.P. and G.S.; investigation, S.P., S.F., I.A. and V.C.; data curation, S.P. and G.S.; writing—original draft preparation, S.P., G.S., M.G., I.A. and V.C.; writing—review and editing, S.P., G.S., M.G., M.L., L.C., M.C. and V.C.; visualization, S.P. and G.S.; supervision, M.G., M.C. and V.C.; project administration, V.C.; funding acquisition, M.G., M.L., L.C. and V.C. All authors have read and agreed to the published version of the manuscript.

**Funding:** This work was funded by the European Union—NextGenerationEU, Italian Ministry of University and Research [Research projects: PRIN 2022 D.D. n. 104 del 2 febbraio 2022, “Promoting Healthy And Sustainable Eating (PHASE). A deep investigation to reduce and replace meat consumption.” Grant number: 2022SWM2E5, CUP: D53D23013050001; PRIN PNRR 2022 D.D. n. 1409 del 14/09/2022 “Adapting, Revising, and Tailoring Evidence-based interventions to enhance Mediterranean Diet adherence (DEMETRA <->ARTEMED)”. Grant number: P2022SJH5H, CUP: D53D23020480001].

**Institutional Review Board Statement:** This study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the University of International Studies of Rome (protocol code 17/2024 and date of approval 12 June 2024).

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The original data presented in the study are openly available in Open Science Framework at [https://osf.io/ps2d7/?view\\_only=57f9b33d1bf3477db2fc3fcfe39717c9](https://osf.io/ps2d7/?view_only=57f9b33d1bf3477db2fc3fcfe39717c9) (accessed on 5 August 2025).

**Conflicts of Interest:** The authors declare that they have no competing interests.

## References

- Bonnet, C.; Bouamra-Mechemache, Z.; Réquillart, V.; Treich, N. Regulating meat consumption to improve health, the environment and animal welfare. *Food Policy* **2020**, *97*, 101847. [[CrossRef](#)]
- Godfray, H.C.J.; Aveyard, P.; Garnett, T.; Hall, J.W.; Key, T.J.; Lorimer, J.; Pierrehumbert, R.T.; Scarborough, P.; Springmann, M.; Jebb, S.A. Meat consumption, health, and the environment. *Science* **2018**, *361*, eaam5324. [[CrossRef](#)]
- Grosso, G.; La Vignera, S.; Condorelli, R.A.; Godos, J.; Marventano, S.; Tieri, M.; Ghelfi, F.; Titta, L.; Lafranconi, A.; Gambera, A.; et al. Total, red and processed meat consumption and human health: An umbrella review of observational studies. *Int. J. Food Sci. Nutr.* **2022**, *73*, 726–737. [[CrossRef](#)]
- Abete, I.; Romaguera, D.; Vieira, A.R.; de Munain, A.L.; Norat, T. Association between total, processed, red and white meat consumption and all-cause, CVD and IHD mortality: A meta-analysis of cohort studies. *Br. J. Nutr.* **2014**, *112*, 762–775. [[CrossRef](#)] [[PubMed](#)]
- Alexander, D.D.; Weed, D.L.; Miller, P.E.; Mohamed, M.A. Red meat and colorectal cancer: A quantitative update on the state of the epidemiologic science. *J. Am. Coll. Nutr.* **2015**, *34*, 521–543. [[CrossRef](#)] [[PubMed](#)]
- Aune, D.; Ursin, G.; Veierød, M.B. Meat consumption and the risk of type 2 diabetes: A systematic review and meta-analysis of cohort studies. *Diabetologia* **2009**, *52*, 2277–2287. [[CrossRef](#)] [[PubMed](#)]
- Lippi, G.; Mattiuzzi, C.; Cervellin, G. Meat consumption and cancer risk: A critical review of published meta-analyses. *Crit. Rev. Oncol. Hematol.* **2016**, *97*, 1–14. [[CrossRef](#)]
- Farchi, S.; De Sario, M.; Lapucci, E.; Davoli, M.; Michelozzi, P. Meat consumption reduction in Italian regions: Health co-benefits and decreases in GHG emissions. *PLoS ONE* **2017**, *12*, e0182960. [[CrossRef](#)]
- Tilman, D.; Clark, M. Global diets link environmental sustainability and human health. *Nature* **2014**, *515*, 518–522. [[CrossRef](#)]
- Almeida, A.; Torres, J.; Rodrigues, I. The impact of meat consumption on human health, the environment and animal welfare: Perceptions and knowledge of pre-service teachers. *Societies* **2023**, *13*, 143. [[CrossRef](#)]
- Kwasny, T.; Dobernic, K.; Riefler, P. Towards reduced meat consumption: A systematic literature review of intervention effectiveness, 2001–2019. *Appetite* **2022**, *168*, 105739. [[CrossRef](#)]
- Cleveland, D.A.; Gee, Q.; Horn, A.; Weichert, L.; Blancho, M. How many chickens does it take to make an egg? Animal welfare and environmental benefits of replacing eggs with plant foods at the University of California, and beyond. *Agric. Hum. Values* **2021**, *38*, 157–174. [[CrossRef](#)]
- Wyckhuys, K.A.; Aebi, A.; van Lexmond, M.F.B.; Bojaca, C.R.; Bonmatin, J.M.; Furlan, L.; Guerrero, J.A.; Mai, T.V.; Pham, H.V.; Sanchez-Bayo, F.; et al. Resolving the twin human and environmental health hazards of a plant-based diet. *Environ. Int.* **2020**, *144*, 106081. [[CrossRef](#)] [[PubMed](#)]

14. Hopwood, C.J.; Bleidorn, W.; Schwaba, T.; Chen, S. Health, environmental, and animal rights motives for vegetarian eating. *PLoS ONE* **2020**, *15*, e0230609. [[CrossRef](#)] [[PubMed](#)]
15. Carfora, V.; Catellani, P.; Caso, D.; Conner, M. How to reduce red and processed meat consumption by daily text messages targeting environment or health benefits. *J. Environ. Psychol.* **2019**, *65*, 101319. [[CrossRef](#)]
16. Cordts, A.; Nitzko, S.; Spiller, A. Consumer response to negative information on meat consumption in Germany. *Int. Food Agribus. Manag. Rev.* **2014**, *17*, 83–106.
17. Dijkstra, A.; Rotelli, V. Lowering red meat and processed meat consumption with environmental, animal welfare, and health arguments in Italy: An online experiment. *Front. Psychol.* **2022**, *13*, 877911. [[CrossRef](#)]
18. Mathur, M.B.; Peacock, J.; Reichling, D.B.; Nadler, J.; Bain, P.A.; Gardner, C.D.; Robinson, T.N. Interventions to reduce meat consumption by appealing to animal welfare: Meta-analysis and evidence-based recommendations. *Appetite* **2021**, *164*, 105277. [[CrossRef](#)]
19. Ottersen, I.S.; Beningstad, N.C.; Kunst, J.R. Daily reminders about the animal-welfare, environmental and health consequences of meat and their main and moderated effects on meat consumption. *Clean. Responsible Consum.* **2022**, *5*, 100068. [[CrossRef](#)]
20. Vainio, A.; Irz, X.; Hartikainen, H. How effective are messages and their characteristics in changing behavioural intentions to substitute plant-based foods for red meat? The mediating role of prior beliefs. *Appetite* **2018**, *125*, 217–224. [[CrossRef](#)]
21. Jiang, Y.; King, J.M.; Prinyawiwatkul, W. A review of measurement and relationships between food, eating behavior and emotion. *Trends Food Sci. Technol.* **2014**, *36*, 15–28. [[CrossRef](#)]
22. Amiot, C.E.; Boutros, G.E.H.; Sukhanova, K.; Karelis, A.D. Testing a novel multicomponent intervention to reduce meat consumption in young men. *PLoS ONE* **2018**, *13*, e0204590. [[CrossRef](#)] [[PubMed](#)]
23. Carfora, V.; Festa, S.; Pompili, S.; Azzena, I.; Scaglioni, G.; Lenzi, M.; Carraro, L.; Catellani, P.; Guidetti, M. The Effects of Disgust Messages on Plant-Based Food Choice: Exploring Underlying Processes and Boundary Conditions. *J. Appl. Soc. Psychol.* **2025**, *55*, 442–454. [[CrossRef](#)]
24. Trudel-Guy, C.; Bédard, A.; Corneau, L.; Bélanger-Gravel, A.; Desroches, S.; Bégin, C.; Provencher, V.; Lemieux, S. Impact of pleasure-oriented messages on food choices: Is it more effective than traditional health-oriented messages to promote healthy eating? *Appetite* **2019**, *143*, 104392. [[CrossRef](#)]
25. Wang, J.; Dang, W.; Hui, W.; Muqiang, Z.; Qi, W. Investigating the effects of intrinsic motivation and emotional appeals into the link between organic appeals advertisement and purchase intention toward organic milk. *Front. Psychol.* **2021**, *12*, 679611. [[CrossRef](#)]
26. Bublitz, M.G.; Peracchio, L.A.; Block, L.G. Why did I eat that? Perspectives on food decision making and dietary restraint. *J. Consum. Psychol.* **2010**, *20*, 239–258. [[CrossRef](#)]
27. Prinyawiwatkul, W. Relationships between emotion, acceptance, food choice, and consumption: Some new perspectives. *Foods* **2020**, *9*, 1573. [[CrossRef](#)]
28. Carfora, V.; Morandi, M.; Catellani, P. Predicting and promoting the consumption of plant-based meat. *Br. Food J.* **2022**, *124*, 4800–4822. [[CrossRef](#)]
29. Onwezen, M.C.; Verain, M.C.; Dagevos, H. Positive emotions explain increased intention to consume five types of alternative proteins. *Food Qual. Prefer.* **2022**, *96*, 104446. [[CrossRef](#)]
30. Zandstra, E.H.; Ossel, L.; Neufingerl, N. Eating a plant-based burger makes me feel proud and cool: An online survey on food-evoked emotions of plant-based meat. *Food Qual. Prefer.* **2024**, *113*, 105046. [[CrossRef](#)]
31. Carfora, V.; Morandi, M.; Jelić, A.; Catellani, P. The psychosocial antecedents of the adherence to the Mediterranean diet. *Public Health Nutr.* **2022**, *25*, 2742–2757. [[CrossRef](#)] [[PubMed](#)]
32. Jung, S.E.; Santella, M.; Hermann, J.; Lawrence, J. Understanding college students' intention to consume fruits and vegetables: An application of the Model of Goal Directed Behavior. *Int. J. Health Promot. Educ.* **2018**, *56*, 211–225. [[CrossRef](#)]
33. Levitt, J.A.; Meng, F.; Zhang, P.; DiPietro, R.B. Examining factors influencing food tourist intentions to consume local cuisine. *Tour. Hosp. Res.* **2019**, *19*, 337–350. [[CrossRef](#)]
34. Thomas-Francois, K.; Jo, W.; Somogyi, S.; Li, Q.; Nixon, A. Virtual grocery shopping intention: An application of the model of goal-directed behaviour. *Br. Food J.* **2023**, *125*, 3097–3112. [[CrossRef](#)]
35. Carfora, V.; Bertolotti, M.; Catellani, P. Informational and emotional daily messages to reduce red and processed meat consumption. *Appetite* **2019**, *141*, 104331. [[CrossRef](#)]
36. Palomo-Vélez, G.; Tybur, J.M.; van Vugt, M. Unsustainable, unhealthy, or disgusting? Comparing different persuasive messages against meat consumption. *J. Environ. Psychol.* **2018**, *58*, 63–71. [[CrossRef](#)]
37. Hurst, K.F.; Sintov, N.D. Guilt consistently motivates pro-environmental outcomes while pride depends on context. *J. Environ. Psychol.* **2022**, *80*, 101776. [[CrossRef](#)]
38. Schneider, C.R.; Zaval, L.; Weber, E.U.; Markowitz, E.M. The influence of anticipated pride and guilt on pro-environmental decision making. *PLoS ONE* **2017**, *12*, e0188781. [[CrossRef](#)]
39. Izard, C.E. Four systems for emotion activation: Cognitive and noncognitive processes. *Psychol. Rev.* **1993**, *100*, 68–90. [[CrossRef](#)]

40. Lerner, J.S.; Li, Y.; Valdesolo, P.; Kassam, K.S. Emotion and decision making. *Annu. Rev. Psychol.* **2015**, *66*, 799–823. [[CrossRef](#)]
41. Loewenstein, G.; Lerner, J.S. The role of affect in decision making. In *Handbook of Affective Science*; Davidson, R., Scherer, K., Goldsmith, H., Eds.; Oxford University Press: Oxford, UK, 2003; pp. 619–642.
42. George, J.M.; Dane, E. Affect, emotion, and decision making. *Organ. Behav. Hum. Decis. Process.* **2016**, *136*, 47–55. [[CrossRef](#)]
43. Xu, Z.; Guo, H. Advantages of anticipated emotions over anticipatory emotions and cognitions in health decisions: A meta-analysis. *Health Commun.* **2019**, *34*, 774–781. [[CrossRef](#)] [[PubMed](#)]
44. Kotabe, H.P.; Righetti, F.; Hofmann, W. How anticipated emotions guide self-control judgments. *Front. Psychol.* **2019**, *10*, 1614. [[CrossRef](#)] [[PubMed](#)]
45. Bagozzi, R.P.; Dholakia, U.M.; Basuroy, S. How effortful decisions get enacted: The motivating role of decision processes, desires, and anticipated emotions. *J. Behav. Decis. Mak.* **2003**, *16*, 273–295. [[CrossRef](#)]
46. Perugini, M.; Bagozzi, R.P. The role of desires and anticipated emotions in goal-directed behaviours: Broadening and deepening the theory of planned behaviour. *Br. J. Soc. Psychol.* **2001**, *40*, 79–98. [[CrossRef](#)]
47. Onwezen, M.C.; Bartels, J.; Antonides, G. The self-regulatory function of anticipated pride and guilt in a sustainable and healthy consumption context. *Eur. J. Soc. Psychol.* **2014**, *44*, 53–68. [[CrossRef](#)]
48. Tracy, J.L.; Robins, R.W. Putting the self into self-conscious emotions: A theoretical model. *Psychol. Inq.* **2004**, *15*, 103–125. [[CrossRef](#)]
49. Lewis, M. Self-conscious emotions: Embarrassment, pride, shame, and guilt. In *Handbook of Emotions*; Lewis, M., Haviland, J.M., Eds.; Guilford Press: New York, NY, USA, 1993; pp. 563–573.
50. Beer, J.S.; Keltner, D. What is unique about self-conscious emotions? *Psychol. Inq.* **2004**, *15*, 126–129.
51. Baumeister, R.F.; Vohs, K.D.; DeWall, C.N.; Zhang, L. How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Pers. Soc. Psychol. Rev.* **2007**, *11*, 167–203. [[CrossRef](#)]
52. Onwezen, M.C.; Antonides, G.; Bartels, J. The Norm Activation Model: An exploration of the functions of anticipated pride and guilt in environmental behaviour. *J. Econ. Psychol.* **2013**, *49*, 141–153. [[CrossRef](#)]
53. Carfora, V.; Caso, D.; Palumbo, F.; Conner, M. Promoting water intake. The persuasiveness of a messaging intervention based on anticipated negative affective reactions and self-monitoring. *Appetite* **2018**, *130*, 236–246. [[CrossRef](#)]
54. Carfora, V.; Caso, D.; Conner, M. Randomised controlled trial of a text messaging intervention for reducing processed meat consumption: The mediating roles of anticipated regret and intention. *Appetite* **2017**, *117*, 152–160. [[CrossRef](#)]
55. Faul, F.; Erdfelder, E.; Lang, A.-G.; Buchner, A. G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* **2007**, *39*, 175–191. [[CrossRef](#)]
56. Rezvani, Z.; Jansson, J.; Bengtsson, M. Cause I'll feel good! An investigation into the effects of anticipated emotions and personal moral norms on consumer pro-environmental behavior. *J. Promot. Manag.* **2017**, *23*, 163–183. [[CrossRef](#)]
57. Wolstenholme, E.; Carfora, V.; Catellani, P.; Poortinga, W.; Whitmarsh, L. Explaining intention to reduce red and processed meat in the UK and Italy using the theory of planned behaviour, meat-eater identity, and the Transtheoretical model. *Appetite* **2021**, *166*, 105467. [[CrossRef](#)]
58. Gallucci, M. GAMLj: General Analyses for the Linear Model in Jamovi 2019. Available online: <https://gamlj.github.io/> (accessed on 2 February 2025).
59. Gallucci, M. JAMM: Jamovi Advanced Mediation Models 2020. Available online: <https://jamovi-amm.github.io/> (accessed on 2 February 2025).
60. Hayes, A.F. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*; Guilford Press: New York, NY, USA, 2018.
61. Bagozzi, R.P.; Pieters, R. Goal-directed emotions. *Cogn. Emot.* **1998**, *12*, 1–26. [[CrossRef](#)]
62. Zeelenberg, M.; Pieters, R. A theory of regret regulation 1.0. *J. Consum. Psychol.* **2007**, *17*, 3–18. [[CrossRef](#)]
63. Tracy, J.L.; Robins, R.W. Emerging insights into the nature and function of pride. *Curr. Dir. Psychol. Sci.* **2007**, *16*, 147–150. [[CrossRef](#)]
64. Williams, L.A.; DeSteno, D. Pride and perseverance: The motivational role of pride. *J. Pers. Soc. Psychol.* **2008**, *94*, 1007–1017. [[CrossRef](#)] [[PubMed](#)]
65. Kunda, Z. The case for motivated reasoning. *Psychol. Bull.* **1990**, *108*, 480–498. [[CrossRef](#)]
66. Mazar, N.; Amir, O.; Ariely, D. The dishonesty of honest people: A theory of self-concept maintenance. *J. Mark. Res.* **2008**, *45*, 633–644. [[CrossRef](#)]
67. Fiddes, N. Social aspects of meat eating. *Proc. Nutr. Soc.* **1994**, *53*, 271–279. [[CrossRef](#)]
68. Lenzi, M.; Scatolon, A.; Carraro, L.; Guidetti, M.; Carfora, V. Community connectedness and sustainable eating. *Curr. Opin. Psychol.* **2025**, *65*, 102047. [[CrossRef](#)] [[PubMed](#)]
69. Bertolotti, M.; Valla, L.G.; Catellani, P. “If it weren’t for COVID-19...”: Counterfactual arguments influence support for climate change policies via cross-domain moral licensing or moral consistency effects. *Front. Psychol.* **2022**, *13*, 1005813. [[CrossRef](#)] [[PubMed](#)]

70. Xie, Y.; Ma, W.; Tong, Z. How counterfactual thinking affects willingness to consume green restaurant products: Mediating role of regret and moderating role of COVID-19 risk perception. *J. Hosp. Tour. Manag.* **2023**, *55*, 344–354. [[CrossRef](#)]
71. Lagomarsino, M.; Lemarié, L. Hope for the environment: Influence of goal and temporal focus of emotions on behavior. *Int. J. Consum. Stud.* **2024**, *48*, e13020. [[CrossRef](#)]
72. Wittmann, M.; Sircova, A. Dispositional orientation to the present and future and its role in pro-environmental behavior and sustainability. *Heliyon* **2018**, *4*, e00882. [[CrossRef](#)]

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.