

Paths that lead astray: Examining the situational predictors of intention-behaviour gaps in meat consumption

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ABSTRACT

In many countries around the world, significant proportions of consumers report intentions to reduce their meat consumption. If followed through on, the intentions of these meat reducers could yield substantial environmental, health and animal welfare benefits. Existing research warns, however, that good intentions often go astray. In the current study, we examine the prevalence of intentions to reduce meat consumption in a representative sample of 1492 UK residents. We then investigate the situational correlates of intention-behaviour gaps in meat consumption among a group of 633 people with intentions to reduce their intake in a longitudinal survey involving event reconstruction exercises. Through these exercises, we collect data on the objective situational cues and psychological situational characteristics that predict when this group desired, ate and regretted eating meat during 2777 meal episodes. The results indicate that situational factors are predictive of the range of outcomes of interest. Situations that lend themselves to hedonic, rather than instrumental style, consumption, (e.g., non-routine meals, when the situation is perceived as being pleasant and when taste and craving are important decision factors), eating outside the home in cafés and restaurants and over at family or friend's homes and eating in the presence of others who are eating meat when are particularly predictive of intention-behaviour gaps. The findings highlight the need for intervention work which targets these situations to help meat reducers act as they intend.

1. Introduction

Reductions in meat consumption can significantly reduce the environmental, health and animal welfare harms associated with western diets (Hallström et al., 2015; Willett et al., 2019). Predominantly in recognition of these benefits, increasing numbers of people report intentions to reduce their meat consumption in many western countries (BEUC, 2020; Bonnet et al., 2020; Shukla et al., 2019). For example, in a recent representative sample of the UK's population just under 34 per cent of people report being at least somewhat likely to reduce their meat consumption in the coming four weeks (Çoker & van der Linden, 2020). Similarly, in a recent survey 35 per cent of Americans reported making a conscious effort to eat less meat (Bloomberg News, 2021). Estimates from other Western countries indicate similar figures (BEUC, 2020). If converted into actions, the intentions of these so-called 'meat reducers' would deliver substantial personal health benefits while also reducing the harm to the environment and animals arising from people's diets

(Dagevos, 2021; Grassian, 2020; Lacroix, 2018; Malek & Umberger, 2021; Rosenfeld et al., 2020).

However, people's intentions around food and other environmentally significant consumption behaviours are often poor predictors of how they go on to behave (Bamberg & Möser, 2007; Rosenfeld & Tomiyama, 2019). Meat reducers are often unsuccessful at achieving planned reductions (Loy et al., 2016). An intention-action gap has also been documented between people's intentions around alternative protein sources such as seaweed and pulses and their actions four years later (Onwezen et al., 2022). More generally, in work looking across a series of pro-environmental behaviours, Bamberg and Möser (2007) found that intentions accounted for just 27 per cent of the variance in people's actions. In other words, good intentions often fail to convert to action.

In the current work, we investigate the situational correlates of meat consumption among those with intentions to reduce their intake. To do so we use the event reconstruction methodology to measure the meat desires, meat consumption and regretful meat consumption of 633

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participants at 2777 meals on the previous day. At the same time, we measure objective features of the situation (e.g., the location and the presence of others) and people's interpretations and perceptions of the situation (e.g., the decision factors they report being important and social nature of the situation), building on advances in defining and measuring situational characteristics (Rauthmann & Sherman, 2020). We then examine which features of the situation predict intention-behaviour gaps in meat consumption.

Understanding the role of situational factors is of particular importance in environmentally significant behaviours like meat consumption which people have repeated opportunities to engage in across a variety of different situations. Shedding light on the situations in which people fail to enact their good intentions can help inform strategies to encourage them to follow through, for example by highlighting external constraints that get in peoples' way that need to be addressed for behaviour change to happen (Stern et al., 2023; Stern, 2011), or tailoring interventions to those situations that matter most (Laffan, 2021). This approach is aligned with the behaviour mapping called for by Nielsen et al. (2021) as part of the case they put forward for impact-focused environmental psychology, as well as with Papies (2016, 2017) who emphasises the importance of situated interventions to overcome intention-behaviour gaps.

In what follows, we explain our approach to measuring variables related to intention-behaviour gaps in meat consumption (Section 1.1.), recap recent advances in the psychological study of situations (Section 1.2.), highlight some psychological mechanisms that can link situations to intention behaviour gaps in meat consumption (Section 1.3), summarise recent advances in the measurement of everyday behaviours (Section 1.4) and summarise the present study approach (Section 1.5). In Section 2, we outline the study design and data, in Section 3 we report the results and in Section 4 discuss our findings and conclude.

1.1. Everyday intention-behaviour gaps in meat consumption

The gold standard for measuring intention-behaviour gaps pertaining to consumption reductions in everyday life has not yet been established. However, we can gain valuable insights on intention-behaviour gaps in meat consumption by investigating three everyday outcomes amongst people who have intentions to reduce their meat consumption: instances of meat desires, actual meat consumption and regretful meat consumption.

First, meat desires are of interest given the evidence linking meat and dairy reduction motivational conflicts and the need for self-control (Wehbe et al., 2022) and the conceptual links between hedonic goals and intention-behaviour gaps (Hofmann et al., 2012). While much of the psychological research on self-control has focused on cognitive concepts such as willpower, more and more studies also investigate the desires as an important motivator (Hofmann & Van Dillen, 2012, 2012; Hofmann & Vohs, 2016; Redden & Haws, 2013).

Second, meat consumption itself is important as it ultimately represents the area of consumption that has both environmental and health consequences and not all intention-behaviour gaps will involve meat desires. For example, in an investigation of the link between micro-environments and people with healthy eating goals, Bauer et al. (2022) find that the role of situational factors is only partially mediated by unhealthy food desires. In other words, desires matter but they are not the only pathway through which situations relate to unintended consumption.

Finally, not all instances of meat consumption among those with intentions to reduce their meat intake necessarily represent intention-behaviour gaps. There may be some specific occasions on which people never planned to enact their overall intentions – for example, people may have the intention to reduce meat consumption in the coming weeks but never intend to cut it out during family dinners on a Sunday. We included the measure of regretful meat consumption to deal with these two levels of specificity. A small but growing body of research

explores immediate and delayed regret that people experience after having engaged in a behaviour. Intention-behaviour gaps can induce retrospective feelings of regret (Pieters & Zeelenberg, 2005) and such feelings have been used to examine decision quality and post-decision dynamics relating to a wide range of choices, including medical treatment (Curtis et al., 2006), investments (Lin et al., 2006) and choices over risky options (Raeva et al., 2010), as well as consumer goods (Davvetas & Diamantopoulos, 2018). By examining meat consumption that people express regret over we arguably get at those instances which are most closely related to intention-behaviour gaps.

1.2. Examining situations

Although social psychologists have long debated the importance of situational influences on behaviour, in recent years significant progress has been made in systematically defining, taxonomising and measuring situations (Loy et al., 2016). First, Rauthmann & Sherman (2020) has distinguished between situational cues – objectively quantifiable stimuli – and psychological situational characteristics – which are people's interpretations and perceptions of these cues and the situation overall. Objective situational cues can be assessed using the “w” questions: What? When? Where? With whom? (Saucier et al., 2007). Psychological situational characteristics can be categorised into six dimensions: threat, stress, tasks, processing, fun and mundaneness, and several different psychologically validated assessment tools have been developed to assess situations across these dimensions (Rauthmann & Sherman, 2020). A key example is the DIAMONDS scale (Rauthmann & Sherman, 2015). The scale captures the extent to which the respondents perceive that a given situation involves: work (Duty), deep thinking (Intellect), somebody being accused, threatened or criticized (Adversity); potential romantic partners (Mating); a pleasant experience (pOsitivity); negative feelings (Negativity); somebody being deceived (Deception) and possible or necessary social interactions (Sociality).

A growing body of literature has begun to examine the situational correlates (both situational cues and psychological situational characteristics) of environmentally significant consumption behaviour (Maki & Rothman, 2017). In work specific to meat consumption, national nutrition surveys have been used to explore the situational correlates of consumption in representative samples from the UK (Horgan et al., 2019) and France, the Netherlands and Switzerland (Laffan, 2021). Horgan et al. (2019), for example, demonstrate that cues, such as eating with family, eating on a Sunday and out as opposed to at home, are all predictive of meat consumption in a representative UK sample. Similarly, travel diary surveys provide insights into the situational cues that predict travel mode choice including trip origin, trip destination and trip purpose (Chang et al., 2019). Other work has examined specific psychological characteristics of situations such as goal frames (Lindenbergh & Steg, 2007) and norm saliency (Fritzsche et al., 2010) that are linked to behaviours that can be considered environmentally significant. Further work is needed to understand the importance of situational factors in relation to a wide range of environmentally significant consumption behaviours and to provide a richer perspective on situations which incorporates both cues and psychological situational characteristics.

1.3. Psychological mechanisms linking situations to intention behaviour gaps in meat consumption

Several psychological mechanisms may link situational factors to intention behaviour gaps in meat consumption. First, situational cues may trigger habitual behaviour, and automatic behavioural responses can undermine individuals' ability to act in line with their intentions (Danner et al., 2008; Sheeran & Webb, 2016; Wood & Neal, 2007). If, for instance, an individual has a habit of ordering from the meat counter at their work canteen, they may automatically order from that counter despite having formulated intentions to eat vegetarian food earlier. Situations can also influence the likelihood of an intention-behaviour

gap if cues in the environment trigger hedonic goals by presenting an opportunity and creating a desire to consume tempting goods (Hofmann et al., 2012; Sheeran & Webb, 2016; Papies, 2017; Papies et al., 2022). This might occur, for example, if an individual is at a barbecue where enticing meat options are on offer.

Additionally, situations can cue social norms that are at odds with the individual's own intentions (Kallgren et al., 2000). Take a family dinner where everyone else is eating meat – eating meat is the descriptive norm – and thinks that eating meat is a good thing to do – the injunctive norm. A meat reducer in such a situation may conform to the salient norms (Higgs, 2015; Prinsen et al., 2013; Steg et al., 2014) despite them being at odds with their long-term goals. Situations can also present constraints that influence people's behavioural control (Carrington et al., 2010). In many situations, individuals may not be in control over their consumption choices. For example, if someone else is preparing the food to be eaten, and in other situations time, money or the availability of options may prohibit people from acting as they intend. Existing qualitative work by Wehbe et al. (2022) identifies the importance of food availability, cost and appeal in influencing meat and dairy reducers intake.

Relatedly, some of the psychological situational characteristics captured by the DIAMONDS scale are more theoretically relevant to intention-behaviour gaps in meat consumption than others. Self-regulation is key to individuals following through on their intentions (Sniehotta, 2009). Existing research suggests that negative emotions, and therefore likely also the situations that evoke these emotions (Negativity in the DIAMONDS scale), can undermine people's self-regulation efforts (Tice et al., 2004). In contrast, positive emotions and situations (pOsitivity in the DIAMONDS scale) can enhance people's capacity for self-regulation (ibid.). At the same time, situations that are perceived to be pleasant may present more temptations in the first place, creating a need for self-regulation. As a result, while positive and negative situations are expected to be linked to intention-behaviour gaps, exactly how is unclear. It is also unclear how a situation that is perceived as involving work or deep thinking (Duty and Intellect in the DIAMONDS scale) might influence reducers' meat consumption. The self-regulation strategies of self-monitoring, awareness of standards, and effort, collectively referred to as action control, are understood to mediate the relationship between intentions and behaviour (Sniehotta et al., 2005). On the one hand, if the work or deep thinking distracts from the consumption choice, reducers may be more likely to follow pre-existing meat consumption patterns. On the other hand, if that effort or thought is focused on consumption choices, then intention-behaviour gaps may be less likely to emerge. Finally, although the relevance of situations involving deception (Deception in DIAMONDS scale) is unclear, situations in which social contact is possible or necessary (Sociality in the DIAMONDS scale), where there is potential for romance (Mating in the DIAMONDS scale), or someone is being critical (Adversity in the DIAMONDS scale), may influence impression management making whichever course of action - eating meat or not eating meat - that is considered the norm or attractive in the situation more likely (Vartanian, 2015).

1.4. Measuring behaviour in everyday life

Progress has also been made on measuring situational influences on behaviour. Naturalistic monitoring tools, such as experience sampling and the day and event reconstruction methods, have been developed and can facilitate the study of individual behaviour in situ (Kahneman et al., 2004; Lades et al., 2022; Lucas et al., 2021; Shiffman et al., 2008). By asking individuals to report on situational factors like where they are and who they are with alongside their behaviour, these tools offer rich information on the situational correlates of activities of interest. Together, with the conceptual advances in social psychology on the influence of situations and how they might be linked to intention behaviour gaps in meat consumption, these methodological tools

facilitate the systematic investigation of the situational correlates of intention-behaviour gaps.

1.5. Present research

The current study investigates the situational correlates of meat desires, meat consumption and regretful meat consumption among people with intentions to reduce their meat intake. We first identify participants who reported intentions to reduce their meat consumption in the next four weeks in a screening survey and then follow up with them in up to three additional surveys (one baseline survey and two event reconstruction exercises). This procedure provides us with data on individual-specific information (e.g., existing patterns of food consumption) and situation-specific data on individuals' breakfast, lunch and dinner on up to two non-consecutive days. We assess intentions to reduce meat consumption in the screening survey and behaviour (i.e., meat consumption) in the later event reconstruction exercises to overcome limitations related to existing work on meat which has explored the intention-behaviour relationship cross-sectionally (as identified by Çoker & van der Linden, 2020).

2. Materials and methods

2.1. Procedure and participants

Participants were invited to take part in a pre-screener survey in late October 2021 on the online research platform Prolific. To obtain information about the prevalence of intentions to reduce meat consumption in the UK, we sent the pre-screener to the largest nationally representative sample (in terms of age, gender and ethnicity) allowed by the platform ($n = 1500$) which resulted in 1492 completed surveys with valid data. We additionally sent the pre-screener to 3000 further participants based on the conservative assumption that 10 per cent of them would report intentions to reduce their meat consumption over the coming four weeks which would allow us to achieve a target sample of at least 450 completed responses for the pre-screener. Our target sample size and our assumptions around attrition were based on existing literature using similar longitudinal designs on Prolific (Çoker & van der Linden, 2020; Nielsen & Hofmann, 2021).

Those who reported intentions to reduce their meat consumption in the pre-screener were then invited to participate in the follow-up baseline survey entitled 'A study about your food consumption' which was carried out in early November 2021. At that point, we flagged to participants that they may be invited to take part in follow-up surveys to further explore their food consumption patterns.

In week 1 post-baseline, participants in the eligible pool of people who had both reported intentions to reduce their meat consumption and had completed the baseline survey were invited to participate in a further study entitled 'A follow-up survey about your food consumption' consisting of an event reconstruction exercise based on their breakfast, lunch and dinner yesterday. This invitation was randomly assigned to be sent across the seven days so as to cover all days of the week approximately equally. The same approach was then taken for the second event reconstruction exercise which had the same title and took place in week three post-baseline. The final sample of participants who reported intentions to reduce their meat consumption and provided data on at least one day's worth of meals was 633 people who provided 2777 complete case reports of meal episodes.

Participants were paid £0.13 for answering the pre-screener survey, £1.50 for the completion of the baseline survey and £2.50 for the completion of each event reconstruction survey. We report all measures included in the current analysis in the Appendix Table A1. These measures and the full surveys were preregistered and are available to view at https://osf.io/ad67m/?view_only=121b4e403c4f46128e991fa9c6042e6c. The study was reviewed and received ethical approval from the University College Dublin Ethics Review Board.

2.2. Pre-screener survey and baseline survey

The pre-screener survey consisted of a definition of meat (Meat consists of everything from red meat (beef, goat, lamb) to poultry (chicken, turkey and game) and pork (pig's meat)) and a question about whether the respondent was currently following a diet and whether they had intended to reduce their meat consumption over the coming four weeks. If the respondents reported that they did hold intentions to reduce their meat consumption (with those saying 'Definitely yes' and 'Probably yes' on a 5-point Likert scale running from 0 to 'Definitely no' to 'Definitely yes' being considered as holding intentions), they were also asked what types of meat they intended to reduce ('red meat', 'pork', 'poultry' and 'other meat') and the reason(s) behind those intentions ('health', 'environment', 'animal welfare', 'expense', 'views and habits of social circle', 'views and habits of others', 'religious', 'political' or 'other reasons'). We also elicited other individual characteristics, as described in Appendix Table A41, that are not used in the analysis presented in the current manuscript.

2.3. Event reconstruction exercises

The event reconstruction exercises are built on existing approaches using the day reconstruction method to examine self-control failures and pro-environmental behaviour in everyday life (Delaney & Lades, 2017; Kahneman et al., 2004; Lades et al., 2021). Participants were asked to complete a short diary exercise about their breakfast, lunch and dinner yesterday in free-text notes. These notes were then presented back to the respondents in sequential order, and they were asked a series of specific questions about each of the consumption episodes. In cases where participants had not eaten at a given mealtime, they were instructed to leave that text box empty, and the survey skipped over that particular mealtime. This process of revivification before answering situation-specific follow-up questions is understood to help overcome some of the issues with recall bias (Kahneman et al., 2004).

For each meal, we asked participants how they felt prior to their consumption ('happy', 'sad', 'stressed/anxious', 'bored', 'hungry', 'thirsty', 'tired', 'under time pressure'), the precise time (hours and minutes), where ('home', 'friend's/relative's house', 'at work/school', 'dined out', 'other location') and with whom ('alone', 'family', 'friends', 'partner', 'children', 'others') they ate, whether the person/people around them were eating meat, whether their meal was routine or a special occasion and whether they were carrying out any other activities at the time. In addition, we asked participants about the decision factors that were important to them in terms of their consumption choice at the time ('cost', 'convenience', 'ethical considerations', 'nutritional value', 'organic', 'taste', 'quality', 'origin', 'animal welfare', 'environmental considerations', 'craving'), as well as whether they were responsible for the food choice. We also asked them to report on their perceptions of the episode on the ultra-brief form of the DIAMONDS scale. Finally, we asked the participants whether they wanted to eat meat during the episode, what they ate and, if they ate meat, whether they regretted it in retrospect. See Appendix Table A1 for the precise wording of the questions, the response scales and the coding used for the analysis.

2.4. Analytical strategy

We first present descriptive statistics of the data from the nationally representative pre-screener to provide a quantitative estimate of the proportion of the UK population who hold intentions to reduce their meat consumption in subsection 3.1. Afterwards, subsections 3.2 and 3.3. examine the responses of those participants who completed the baseline survey and one or more of the event reconstruction exercises. In an exploratory analysis, we present situational predictors of the three outcomes of interest (meat desires, meat consumption and regretful meat consumption) focusing on objective situational cues (in subsection 3.2) and psychological characteristics (in subsection 3.3). We model the

psychological situational characteristics, including the self-reported decision factors and the DIAMONDS scale factors, both separately and altogether. In the main text, we plot the results from the separate models to account for the substantial multicollinearity between the different factors (See Appendix Figure A1 & A2 for the correlation matrices and Figures A5 & A6 for plots of the models including all of the self-reported decision factors and elements of the DIAMONDS scale respectively). While we examine meat consumption and regretful meat consumption as we pre-registered, we deviate from our pre-registration by looking at meat desires instead of self-control failures (consisting of meat desires, resistance attempts and consumption) as a third outcome. The more complex analysis of self-control failures which combines two of our outcomes of interest will be the focus of follow-up work.

Following, Horgan et al., (2019), and as the dataset involves multiple observations per individual respondent, we use multi-level logistic regression models with random intercepts to test for statistically significant associations between the situational factors and the probability of meat being desired, consumed and consumed and regretted during a food consumption episode (Pinheiro & Bates, 2000), with individuals' unique identifiers being included as a random intercept. More precisely we estimate the effects as log-odds relative to the reference levels using the lme4 package in R Studio 1.3 (Bates et al., 2007). The models take on the following form:

$$Y_{ie} = \beta S_e + \alpha C_i + U_i + \varepsilon_{ie} \quad (1)$$

where \mathbf{Y} is a vector indicating the three outcomes for individual i in meal episode e , \mathbf{S} represents the situational factors reported in episode e , \mathbf{C} represents a vector of control variables related to individual i (their gender, age group and whether they have a university degree), U is the random intercept associated with the i th individual, and Epsilon is the error term. We plot the logit coefficients from these models using dot-whisker plots in Figs. 1–3 and Appendix Figures A4–A6 (including the logit coefficients for the sociodemographic controls).

We calculate the marginal pseudo R^2 for all models following the approach outlined by Nakagawa et al. (2017). We also estimate Brier scores (Rufibach, 2010) for null models for all three outcomes of interest containing a random intercept at the individual level only as well as for full models containing all of the situational predictors in one. This allows us to compute a Brier skill scores for the full models which indicate the percentage model performance improvement arises from including the situational predictors. See Appendix Table A39 for details.

3. Results

3.1. Descriptive statistics of the quasi-representative sample

In a sample of 1492 people representative of the UK population in terms of sex, age and ethnicity, 1.5% report being vegan, 5% vegetarian, 2.8% pescatarian. These figures are somewhat higher than those produced on behalf of the UK's Food Standards Agency in 2018, which estimated the share of vegans in the UK as 1% of the population and the share of vegetarians as 3% (Benson et al., 2019). This discrepancy may at least in part be due to the positive trend toward both diets in the UK that has been identified in market research (Johnson, 2022). Of the rest of the sample who report eating meat ($n = 1395$), 20.3 per cent of them report intentions to reduce their consumption in the following four weeks. This pattern does vary across gender, with women being statistically significantly more likely to hold intentions to reduce meat consumption (25 per cent) than men (18 per cent) according to Pearson's chi-squared tests (the statistical details are presented in Table 1). Intentions do not appear to vary across age groups but do depend on whether the respondent is white or non-white, with a greater proportion of non-whites reporting intentions than whites, again according to Pearson's chi-squared tests (see Table 1). When reporting the reasons behind these intentions, 72.79 per cent of respondents cited health

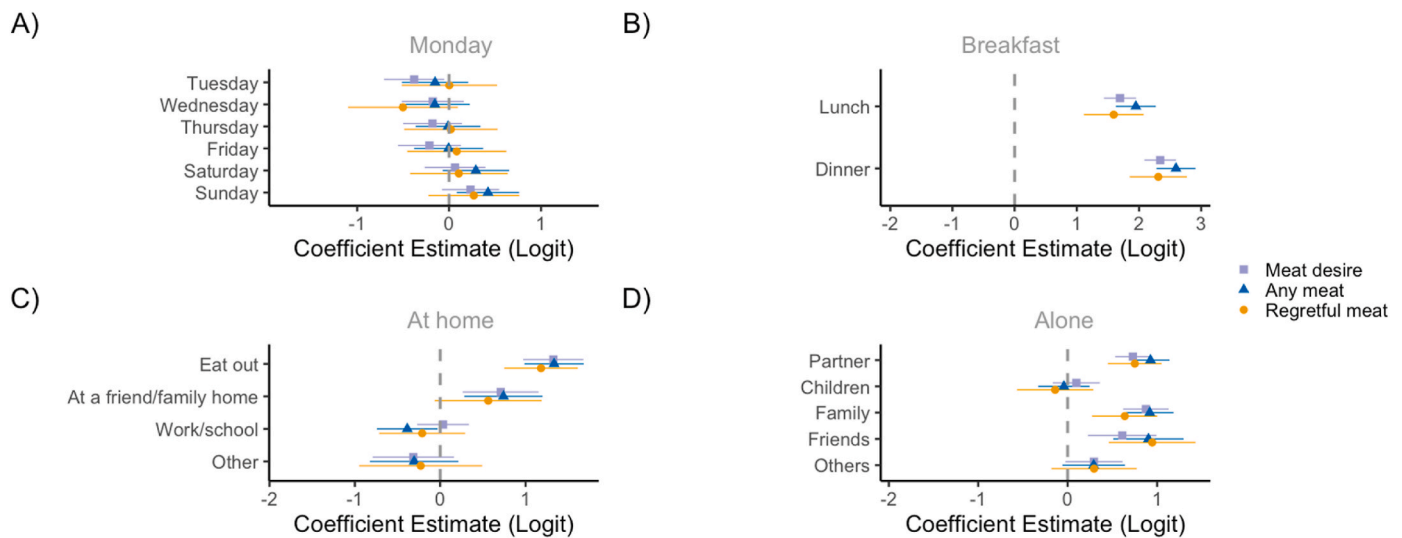


Fig. 1. Intention behaviour gaps and situational cues. Results from 12 multi-level regressions predicting meat desires, meat consumption and regretful meat consumption by the covariates listed in each panel as well as gender, age group and whether they have a university degree. The reference categories are Monday, breakfast, home and alone. $n = 2777$ observations from a sample of 633 individuals.

Table 1
Descriptive statistics for intentions to reduce meat among meat eaters by sociodemographics.

Meat reducers among those that eat meat	Frequency	Proportion	P-value
Female	161/644	0.25	
Male	118/652	0.181	<0.001
18–25	33/174	0.195	
26–35	53/238	0.223	
36–45	56/246	0.228	
46–60	83/341	0.214	
60+	54/297	0.215	0.96
Non-white	64/185	0.346	
White	215/1111	0.196	<0.001

reasons, 62.9 per cent of respondents cited environmental reasons and 51.59 per cent reported animal welfare. By comparison, far fewer mentioned expense (26.86 per cent), the views and/or habits of others in their household (7.42 per cent) or social circle (3.89 per cent) and religious (1.77 per cent) and political reasons (0.71 per cent). The reducers most often reported intentions to reduce red meat (90 per cent), followed by pork (60 per cent), poultry (41 per cent) and other meat (4 per cent). The major focus on red meat is encouraging as it is the type of meat consumption that poses the greatest environmental and health risks (Willet et al., 2019) ...

3.2. Intention-behaviour gaps and situational cues

In the follow-up surveys, we focus on people with intentions to reduce their meat consumption. In the sample of 633 meat reducers across 2777 meal episodes, people reported wanting meat on 33.12 per cent of the occasions, eating meat on 26.93 per cent of the occasions and eating and regretting eating meat on 12.5 per cent of the occasions. Looking across the motivations people gave for their intentions to reduce their meat intake (See Appendix Table 3), we see that those motivated by health concerns are more likely to desire meat than those who are not. Motivations related to animal welfare have the opposite effect, and those motivated by environmental concerns have the same likelihood to desire meat as those not motivated by environmental concerns. We do not find any associations between the three motivations to reduce meat intake and actual meat intake. However, those motivated by animal welfare concerns to reduce their meat consumption report regretting their meat consumption more than those not motivated by

animal welfare concerns. In future work, we plan to examine whether the relationships between our outcomes of interest and the situational variables vary across these groups. Descriptive statistics for all the dependent and independent variables in the intention-behaviour gap analysis can be found in Appendix Table A2.

The vast majority of meals are eaten at home (78.7%), followed by at work (8.4%), a restaurant or café (5.9%) and friends' and family members' homes (3.4%). People most commonly ate alone (38.7% of meal episodes), followed closely by eating with a partner (34.1%). Eating with children (15.3%), family (11.5%), friends (5.8%) and others (8%) were all less common but not unusual. Others were eating meat around the reducer during 30.2% of the episodes and someone else was entirely responsible for choosing the reducer's meal 8.4% of the time. The most important self-reported decision factors are in descending order taste (mean value of 4 on a 1–5 scale), quality (3.63) and nutrition (3.18) and craving (3.11). In terms of the elements of the DIAMONDS scale, the psychological situational characteristics which are most present in the meal episodes reported on are positivity (mean value of 4.05 on a 0–6 scale), followed by sociality (2.74) and Duty (1.73). Reports of other characteristics like adversity (0.14) and negativity (0.89) are much lower. The distribution of the meal episodes across the individuals in the sample can be seen in Figure A3.

When: We first explore the relationship between meat desires, meat consumption and regretful meat consumption and the temporal cues of the day of the week, meal type and whether the meal was routine or a special occasion, with Monday, breakfast and non-routine acting as the reference categories, respectively. The results indicate that in comparison with Monday, individuals are less likely to experience meat desires on a Tuesday and more likely to eat meat on a Sunday, but no other days of the week are predictive. The reducers are also much more likely to desire, eat and regret eating meat at dinner and to a lesser degree at lunch as compared to breakfast and when the meal is not routine. See Fig. 1, Panels A and B and Table A4–12 of the Appendix.

Where: We examine the role of location with home acting as the reference category. Here we see that meat is more likely to be desired, eaten and eaten and regretted when eating out at a café or restaurant compared to at home, desired and eaten at a friend's or family member's home. Meat is also less likely to be eaten at work. There are no significant differences between the three outcome variables and eating at home or in other places. See Fig. 1, Panel C and Table A13–15 of the Appendix.

With whom: We investigate the role of social factors, i.e., who a

person is with during the episode, whether the people present are eating meat and whether someone else chose the food. Here the reference categories are eating alone, not eating with someone eating meat and the person themselves choosing the food. Compared to when alone, reducers are more likely to desire, eat and regret eating meat with their partner, friends and extended family. They are no more likely to desire, eat or regret eating meat when they are with their children or other people outside of these groups. See Fig. 1 and Table A16-A18. We then go on to include a binary indicator of whether the reducers are with others who are eating meat. When we control for others eating meat the coefficients on being with all the different groups become either insignificant or significantly negative, while the coefficient on someone else choosing is strongly positive. See Table A19-A21. Finally, we examine whether someone else choosing the food matters. We find that this is a significant and positive predictor of all three outcomes of interest. See Table A22-24 of the Appendix.

3.3. Intention behaviour gaps, decision factors and psychological situational characteristics

We examine the relationship between wanting, eating and regretting meat consumption and the decision factors that people report being of importance to their consumption decision. These subjective reports arguably act as proxies for the environmental and physical constraints during the episode but can also be understood as individuals' recalled perceptions of the situation.

The results indicate that the more important the meat reducers report taste, craving and costs to be in the moment, the more likely they are to want, eat meat and regret eating meat. In contrast, the more important they report the environment to be, the less likely they are to report wanting, eating meat and regretting eating meat. Additionally, quality is positively associated with wanting and eating meat and convenience, ethics and animal welfare are negatively so. Lastly, the more important nutrition is the less likely they are to eat or regret eating meat. See Fig. 2 and Table A25-30 of the Appendix.

Finally, we explore the relationships between our outcomes of interest and the ultra-brief form of the DIAMONDS scale. The results indicate that when the meat reducers perceive a situation to involve

work needing to be done (Duty), they are less likely to desire, eat and regret eating meat. When they perceive the situation as potentially involving romance (Mating) or as being social (Sociality), they are more likely to want, eat and regret eating meat. When the situation is pleasant (Positivity), they are more likely to want and eat meat and when it contains negative feelings (Negativity), they are more likely to regret eating meat. Lastly, the more the reducers perceive the situation to require deep thinking, the less likely they are to eat meat. See Fig. 3 and Table A31-36 of the Appendix.

4. Discussion and conclusion

Encouraging dietary shifts away from overconsumption of meat represents an important policy challenge in the UK and beyond. Promisingly, increasing numbers of individuals report intentions to reduce their consumption of animal-based proteins and meat in particular. In our quasi-representative sample of the UK population, 21.5% of those that report eating meat have intentions to reduce their consumption over the coming four weeks, echoing findings in other work (Çoker & van der Linden, 2020). In our sample, woman and non-whites are more likely to report such intentions, but intentions do not appear to vary across age groups. The most common motivations for holding such intentions echo those found in other work, namely health, environmental and animal welfare (BEUC, 2020).

Irrespective of who holds them and why, encouraging the enactment of these intentions represents a promising pathway to reducing the reliance on meat in this overall group and may also contribute to social tipping points which see non-reducers form and enact intentions to reduce their meat intake as well (Stadelmann-Steffen et al., 2021). Existing work highlights the potential impact of dynamic dietary norms, with messages signalling that increasing numbers of people reduce their meat intake can influence others to make sustainable dietary choices (even when the norm being communicated applies to far less than the majority of the population) (Sparkman et al., 2020). Other research, however, indicates that it is not safe to assume that reducers' intentions will necessarily be converted into actions: intention-behaviour gaps are widely documented in the social psychology literature and across many domains including meat consumption (Loy et al., 2016; Sheeran &

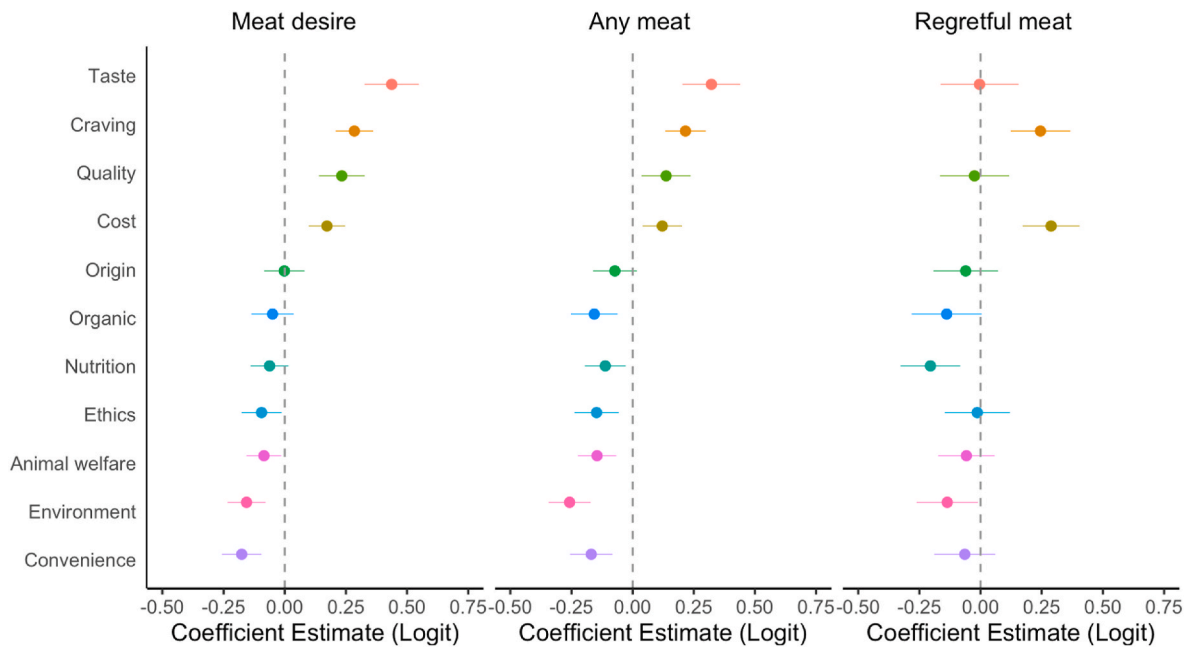


Fig. 2. Intention behaviour gaps and decision factors. Results from 33 logistic multi-level regressions predicting meat desires, meat consumption and regretful meat consumption by the 11 decision factors listed (one in each regression) as well as gender, age group and whether they have a university degree. These regressions do not control for the other variables shown in the same panel. n = 2777 observations from a sample of 633 individuals.

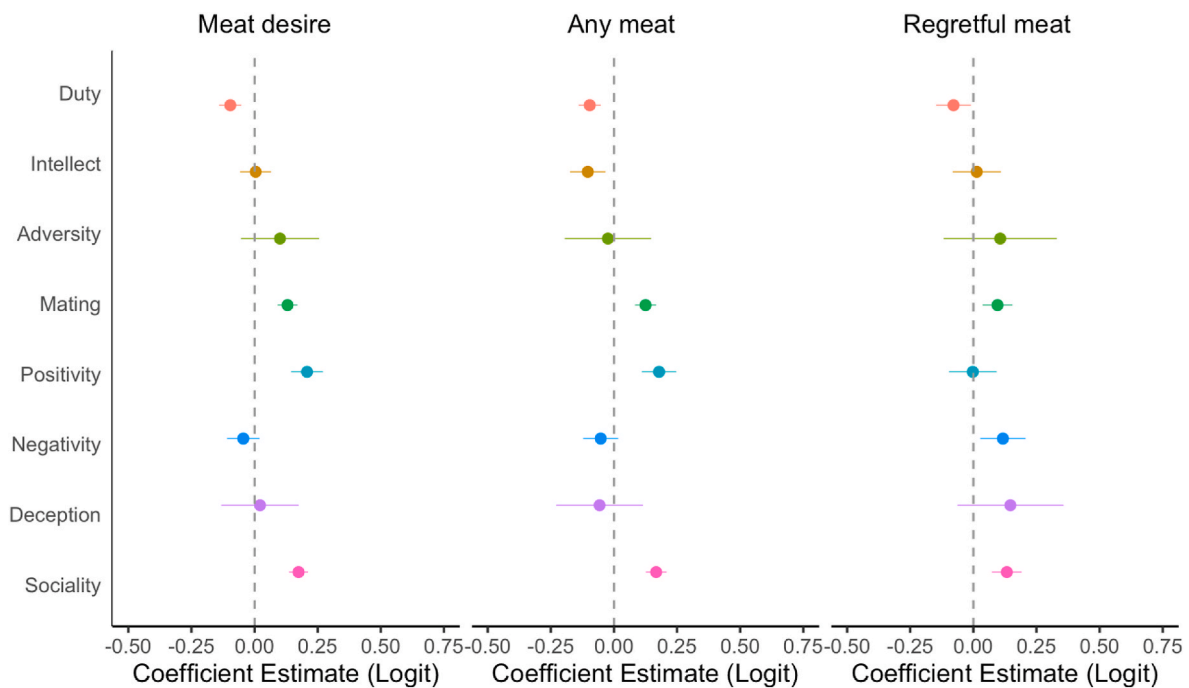


Fig. 3. Intention behaviour gaps and psychological situational characteristics. Results from 24 logistic multi-level regressions predicting meat desires, meat consumption and regretful meat consumption by the 8 psychological situational characteristics listed (one in each regression) as well as gender, age group and whether they have a university degree. These regressions do not control for the other variables shown in the same panel. $n = 2777$ observations from a sample of 633 individuals.

Webb, 2016).

In the current work, we explore the situational correlates of meat consumption, meat desires and regretful meat consumption to better understand the situations that can lead to intention-behaviour gaps among meat reducers. The results indicate that situational factors are predictive of the range of outcomes of interest and the key findings can be categorised into three takeaways as follows.

First, reducers are more likely to eat meat when the situational factors lend themselves to hedonic rather than instrumental consumption. Meat is more likely to be desired, consumed and regretted when the occasion is not routine. Similarly, in qualitative work, Rosenfeld and Tomiyama (2019) find that vegetarians are most likely to violate their diets and eat meat on special occasions and Wehbe et al. (2022) document similar patterns for reducers. Reducers are also more likely to stray across in terms of wanting and eating meat when taste is perceived to be an important decision factor and want, eat and regret eating meat when craving is. Wanting and eating meat are also more likely when the situation is perceived as being pleasant. There also exists a weekend effect in that meat is more likely to be eaten by reducers on a Sunday compared to a Monday, again suggesting the importance of more hedonic style consumption. In existing work, weekday/weekend differences have been found in diet quality (An, 2016) and a similar finding was documented in relation to both the propensity to eat meat and the amount of meat eaten in a general sample of the UK population (Horgan et al., 2019). Together these findings chime with the idea that situational factors can weaken normative goals in favour of hedonic ones (Steg et al., 2014) which is in line with work which identifies hedonism as a key component of meat attachment (Graça et al., 2015). By comparison, reducers appear to be less at risk of getting into trouble during instrumental food consumption situations. They are less likely to want, eat and regret eating meat when the reducer reports perceiving the situation to involve work (duty in the Diamonds framework) and want and eat it when convenience is reported as an important decision factor. Taken together these findings suggest that intention behaviour gaps are more likely to emerge when situations cue hedonic goals rather than instrumental goals or habitual responses.

Second, location matters. Reducers are more likely to want, eat and regret eating meat when reducers are eating at a café or a restaurant and want and consume meat when eating at a friend's and family member's home. These findings are in line with those of Bouwman et al. (2021) in relation to healthy eating who find that self-regulation is higher when eating at home compared to outside the home. Verain et al. (2022) also find evidence that food choice motives vary outside compared to inside the home, with the mood of the consumer mattering more when eating out. One potential reason for our findings is that reducers may follow temptation avoidance strategies (Ent et al., 2015) and avoid keeping meat at home. These individuals are at greater risk of straying in situations when it is more difficult to avoid being tempted by meat, such as when eating out. Despite being outside the home, reducers are no more likely to desire or regret eating meat when at work compared to at home and are less likely to eat it, arguably further emphasising the important role of hedonic versus instrumental motivations for consumption. It is also noteworthy that meat consumption is no more likely to be regretted when eating at a friend's and family members' home compared to at home but is more likely to be regretted than when dining out at a restaurant. While further research is needed to explore this more fully, one potential explanation is peoples' intentions to reduce their meat consumption are less focused on meals at family and friends' homes than outings at restaurants and cafés.

Third, social factors also appear to play a particularly important role in intention-behaviour gaps in meat consumption. Meat desires, consumption and regretful consumption are all more likely when the reducer is in the company of partners, friends and extended family compared to when eating alone. When controlling for whether the other person or people are eating meat, the relationships turn insignificant or negative suggesting that it is eating with others that are eating meat as well that is linked to reducers straying and that others' presence may have a protective impact if they are not consuming meat. This finding highlights the influence of salient descriptive social norms and may also indicate the role of conforming with socially approved behaviour to the extent that individuals may also infer injunctive social norms from others' behaviour (Farrow et al., 2017; Higgs, 2015; Prinsen et al.,

2013). Meat desires, consumption and regretful consumption are also more likely when reducers perceive the situation to be social in nature and when there is potential for romance. Some existing work has linked meat consumption among men to a desire for status and the promotion of their mating goals (Chan & Zlatevska, 2019). Additionally, when reducers directly report that someone else was responsible for their consumption choice, they were more likely to desire, consume and regret consuming meat. Relatedly, when eating over at a friend's or family member's home, reducers are not typically responsible for choosing their own meal, and they are more likely to desire and eat meat in this context compared to when at home. Rosenfeld and Tomiyama (2019) also find that vegetarians are most likely to violate their diets at family gatherings. While these results highlight the practical constraints reducers face when not responsible for choosing their meal, the fact that meat is desired, in addition to being eaten in these situations, suggests that others present the reducers with tempting options.

Some situational predictors help to explain more of our outcomes of interest than others. Looking at the odds ratios associated with the situational predictors, we see that meal type and having company that is eating meat are particularly closely associated with the three outcomes of interest. The odds of all three outcomes of interest are ten times or more higher at dinner compared to at breakfast. Being around others eating meat multiplies the odds of desiring meat by 18.7 times, of eating meat 14.1 times and eating regretful meat 7.5 times. We get a similar picture when we compare the marginal pseudo R^2 statistics across the different models (See Table A38). From this analysis we see that the models that include who the reducer is with and whether they are around others eating meat and, separately, what meal type is in question are those with the most explanatory power. In contrast, the models examining the day of the week and separately someone else choosing have the least explanatory power. The relative predictive power of the models is largely consistent across the three outcomes of interest. The only exception is the ranking between the model that examines company and the one which looks at the psychological situational characteristics where the latter is more predictive of meat desires and regretful meat consumption but the former is slightly more predictive of actually eating meat. Finally, we compute Brier skill scores which indicate the improvement in our ability to predict the three outcomes of interest based on models with and without any situational predictors. This analysis suggests that our ability to predict the outcomes of interest is improved by 38.1 per cent when we use the situational factors to predicting meat desires, 37.1 per cent when predicting actual meat consumption, and 23.9 per cent when we predict regretful meat consumption, with regretful meat being notably lower than the other two. Taken together this analysis suggest that situational variables are important correlates of our intention-behaviour gap related outcomes.

As previously mentioned, the survey measured participants' self-reported intentions to reduce their meat consumption over the next four weeks, which is a general measure. In contrast, actual consumption was measured in very specific situations. Hence, it is possible that participants who intend to reduce their meat consumption in general, did not intend to reduce their meat consumption on a specific meal. As a result, regretful meat consumption is arguably the outcome most closely related to intention-behaviour gaps. While the results are largely consistent across the three outcomes of interest, some interesting differences across the outcomes are worth noting: while eating in family or friends' homes is predictive of meat desires and meat consumption, it is unrelated to regretful meat consumption. This contrasts with eating out at a café or restaurant, which is predictive of all three. Similarly, when taste and quality are decision factors, people are more likely to desire and eat meat but not to eat and regret it. This difference potentially points to the reducers being more comfortable with choosing meat in situations when the non-meat alternatives are seen as inferior in terms of taste and quality. Insofar as they most closely reflect intention-behaviour gaps and result in negative emotions, these instances of regretful meat consumption are of relevance to behaviour change efforts

aimed at helping reducers follow through with their intentions. In line with 'affect as information' approaches, behavioural interventions may highlight feelings of regret to feed into the reducers' expectation of the future costs of eating meat (Ketelaar & Tung Au, 2003). The efficacy of such strategies should be examined given the mixed results on guilt-based messages and pro-environmental behaviour (Truelove & Nugent, 2020).

Overall, the findings from this work inform us about the paths that can lead meat reducers astray, including situations in which hedonic goals are particularly salient, food consumption takes place outside of the home and where others will likely be eating meat. Existing research which has put forward bridging strategies to help people overcome intention-behaviour gaps has largely focused on training interventions (Papies, 2017). Examples of such strategies that have been used to target meat consumption include implementation intentions (Rees et al., 2018; Shreedhar & Galizzi, 2021), mental contrasting exercises (Loy et al., 2016) which require people to make plans about how they will respond in specified situations in order to behave in ways that are aligned with their intentions. Other efforts have utilised reminders (Carfora et al., 2019). Armed with the current findings, these strategies can be tailored to train and remind people about the situations which matter most. Information and education campaigns can also use this information to target their messages to these situations and provide tips that directly address the barriers to meat reduction that arise in these situations.

Additionally, however, the results also highlight the potential for more 'situated interventions' such as nudges that target the choice architecture in those situations that our results indicate matter most (Hielkema & Lund, 2022; Parkin & Attwood, 2022; Thaler & Sunstein, 2021). For example, the results of the current work suggest restaurants and cafes as well as social gatherings represent promising situations in which to target intention-behaviour gaps. For example, in restaurants and cafes, menus could highlight meat alternatives by making them salient and attractive by presenting vegetarian dishes alongside meat ones (as opposed to separating them out) (Bacon & Krpan, 2018) or using carbon labelling (Betz et al., 2022) or appealing language (Bacon et al., 2018) to describe the vegetarian options. Alternatively, vegetarian meals could be made the default choice when choosing for others. Lastly, behavioural intervention strategies increasingly look to include elements of both reflection and situated interventions. For example, so-called 'nudge+' interventions embed reflective strategies into the design of nudges (John & Stoker, 2019). An example of a nudge+ in this space would involve a default vegetarian meal combined with a pledge to make efforts to eat vegetarian foods in similar situations in future (Banerjee & John, 2021). Findings from the current work could inform these strategies too, both in terms of the situations in which a default might be most effective and around which a commitment might be elicited.

This work is not without limitations. First, our study participants made relatively general, non-specific statements about their intentions to reduce their meat consumption over the coming four weeks. However, we measured actual meat consumption in very specific situations, i.e., on up to six meal episodes over two days. The different levels of specificity in these two measures mean that we cannot precisely identify those situations in which consuming meat represents an intention behaviour gap for our sample of meat reducers. We elicited information about feelings of guilt to get closer to being able to identify intention behaviour gaps (based on existing research that links feelings of regret to these gaps, Pieters & Zeelenberg, 2005) but this is an imperfect strategy. An alternative one would be to elicit very specific intentions around situations in which people intended to cut back on their consumption and it would be interesting to examine this question in follow-up work. Indeed, research on unhealthy snacking has demonstrated strong links between intention and behaviour over short, aligned time-frames (Inauen et al., 2016). However, this approach also has limitations. Eliciting very specific situational information around reduced consumption comes close to planning-type interventions that have been

shown to help people to follow through on their intentions (Loy et al., 2016) and would arguably convert the research study from a descriptive one into an intervention. It may also be the case that the kind of intentions that we examine are closer to the kind of intentions that people generally formulate, though further work is required to explore this.

Second, while our sample reported intentions to reduce their consumption, we do not know by how much. Some existing evidence suggests that flexitarians frequently reduce their meat consumption only slightly (Dagevos, 2021). The extent of meat reducers' intentions has clear environmental, health and animal welfare consequences and future work should examine this.

Third, the self-report nature of the meat desires, consumption and regretful meat consumption leaves the current research open to social desirability bias, a particular concern given the ethical motivations that many of our sample report as underpinning their intentions (Carrington et al., 2010). For example, we are unable to tell to what extent those who reported intentions and guilt about their consumption held and experienced those intentions and feelings or merely wanted to be seen to hold and feel them. We also cannot rule out other reporting biases including Hawthorne effects (Merrett, 2006). For example, reports of guilt around meat consumption may have been elicited by the reflection on the action in the survey rather than in direct response to the consumption choice itself. Or the reducers may have chosen to report on days when they had desired, eaten and regretted eating meat less in wave 2 compared to wave 1 as a result of knowing what the event reconstruction survey would be asked (see Appendix Table A40). Future research could look to examine the strength of people's intentions, as well as the dynamics between intentions, guilt and further consumption choices using experience sampling methods to shed some light on these issues but is unlikely to be able to overcome them entirely. This kind of dynamic inquiry would also be able to speak to spillover between consumption episodes and psychological phenomena like self-licensing (Prinsen et al., 2019).

Additionally, the work presents correlations between situational characteristics and the three outcomes of interest. The study's design precludes us from making causal claims around the influence of factors such as eating at friends' and family members' homes compared to at home on meat being desired, eaten and eaten and regretted. Instead, we interpret the results as highlighting the situational factors that are associated with our outcomes of interest. Notably, the self-reported decision factors were elicited based on the reducers' perceptions of the important factors behind their food decisions. These measures arguably represent proxy indicators of the environmental and physical factors of a given food consumption situation but also assess people's retrospective perceptions of the influences on their choices. Though perceptions of influences are not the same as the influences themselves, there is some causal reasoning behind the self-reported decision factors which is missing from any of the other situational factors under

consideration. Understanding the causal impact of situational factors and specific constraints like costs, for example, will require fieldwork in which such factors are experimentally varied. Other physical aspects of the situation which may influence consumption choices, even unconsciously, such as visibility and proximity of food options should also be explored (Raghoebar et al., 2019).

Furthermore, the current work does not compare the situational correlates of meat desires, consumption and regretful meat consumption among reducers and non-reducers or between different subgroups of reducers. The overlap between the results of this work and that of Horgan et al. (2019) in a general UK sample – for example, the existence of a Sunday effect and the eating out as an important predictor in both samples – raises the question of whether the situational correlates for meat reducers are systematically different than for those of people who do not hold intentions to reduce their meat intake. Future work should examine this question to better understand the likely effects of situated interventions on the UK population as a whole.

Finally, we almost entirely limited our current analysis to average effects across our whole sample of reducers. However, our initial analysis linking the three outcomes of interest to the motivations behind the reducers' intentions (health, environment, animal welfare or other) suggests that both meat desires and regrets vary depending on the reasons the reducers report being behind their intentions. These results highlight the potential for situational predictors of meat desires, consumption and regretful meat consumption to vary across people's motivations for reducing meat. For example, given that we find that health-motivated reducers experience more meat desires than those not motivated by health concerns might suggest that those motivated by health concerns are more influenced by those situations that lend themselves to hedonic consumption as well. Situated decision factors will very likely vary across people's motivations too. Examination of these, and other interactions between situational and individual characteristics (including both psychological and motivational ones) will be the focus of future work and will help to inform tailored intervention strategies.

Despite these limitations, the current work presents a rich picture of the situational correlates of meat desires, meat consumption and regretful meat consumption among meat reducers. The insights it offers help us to understand the situations in which intention behaviour gaps are likely to emerge and suggest avenues for future research into both planning and cueing bridging strategies that can help people act as they intend in this important domain.

Funding

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Appendix

Table A1
Survey measures

Measure	Question	Response categories and variable code
Intention	Do you intend to reduce your consumption of meat in the coming four weeks?	Definitely not Probably not Might or might not Probably yes Definitely yes 1 if Probably or definitely yes, 0 otherwise
Types of meat	Which of the following types of meat do you intend to reduce your consumption of in the coming four weeks? (Please select all that apply)	Red meat Poultry Pork Other
Reasons for intentions	Which of the following reasons are behind your stated intentions to reduce your meat consumption (Please select all that apply)	Health Animal Welfare

(continued on next page)

Table A1 (continued)

Measure	Question	Response categories and variable code
		Expense Environment View and/or habits of social circle Views and/or habits of others Religious Political Other (please specify)
Meat desired	Did you want to eat meat at breakfast* yesterday? (Wanting to eat meat could mean anything from “you felt it would be nice to eat some meat” to “having a strong craving for meat”, regardless of whether you actually did eat some meat or not.)	Yes (1) No (0)
Meat eaten	Which of the following other food categories did you eat at breakfast* yesterday? (Please select all that apply)	Grains/breads/cereals Dairy products Red meat, Poultry, Pork Seafood Junk food Vegetables Fruit Sweets (including sweet spreads such as jam) Eggs I don't know Other
Regretful Meat	In retrospect, do you regret your meat consumption at breakfast* yesterday?	1 if any of Red meat, Poultry or Pork were selected, 0 otherwise 1-5 Not at all to Very much regret 1 if any regret reported, 0 if not at all.
When	Meal Episode determined from the survey question order Day of the Week determined from the survey date Routine: Would you say yesterday's breakfast was a pretty regular routine meal?	Breakfast, Lunch, Dinner Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday Yes (1) No, please explain (0)
With whom	Who: Who were you with while having breakfast*? (Please select all that apply) Other eating meat: Was/were the person/people you were around eating meat while at breakfast*?	Alone Partner Family (including relatives) Friends Flatmates Work colleagues Siblings Child/children Others known to the respondent Others – general public We recoded to alone, family, friends, partner, children, others to reduce the number of categories. Others eating meat coded 1 if yes and 0 if no or I don't know Responsible coded 1 if I totally chose the food or I helped choose the food were selected, 0 otherwise
Responsible	To what extent were you responsible for choosing the food you ate at breakfast* yesterday?	We recoded to alone, family, friends, partner, children, others to reduce the number of categories. Others eating meat coded 1 if yes and 0 if no or I don't know Responsible coded 1 if I totally chose the food or I helped choose the food were selected, 0 otherwise
Where	Where did you have your breakfast*?	Home Friend's/relative's house Work/School Restaurant Pub/night club Coffee shop/Café/Shop/Deli/Sandwich bar Fast food outlet In transport Park/beach/street Other Recoded to home, friend's/relative's house, at work/school, dined out, other location to reduce the number of categories.
Decision factors	Thinking specifically about your breakfast* yesterday, how important were the following factors for the decision to eat the particular food items you had?	Cost Convenience Ethical considerations Nutritional value Organic Taste Quality Origin Animal Welfare Environmental considerations Craving
DIAMONDS scale	How much does each of the following statements apply to the time when you had breakfast*?	1-5 Not at all important to Extremely important. Duty: Work had to be done Intellect: Deep thinking was required

(continued on next page)

Table A1 (continued)

Measure	Question	Response categories and variable code
		Adversity: Somebody was being threatened/accused or criticised
		Mating: Potential romantic partners were present
		Positivity: The situation was pleasant
		Negativity: The situation contained negative feelings e.g. stress, anxiety, guilt etc.
		Deception: Somebody was being deceived
		Sociality: Social interactions were required or possible
		0 Not at all – 6 Totally

Note. *Also for Lunch and Dinner.

Table A2

Descriptive statistics for dependent and independent variables

	Observations	Mean	Standard Dev	Min	Max
Dependent variables					
Wanted meat	2777	0.353	0.478	0	1
Ate meat	2777	0.269	0.444	0	1
Ate regretful meat	2777	0.125	0.331	0	1
Day of the week					
Monday	352	0.127	0.33	0	1
Tuesday	455	0.164	0.37	0	1
Wednesday	334	0.12	0.32	0	1
Thursday	415	0.149	0.35	0	1
Friday	359	0.129	0.34	0	1
Saturday	377	0.136	0.34	0	1
Sunday	485	0.175	0.38	0	1
Type of meal					
Breakfast	882	0.318	0.47	0	1
Dinner	974	0.351	0.48	0	1
Lunch	921	0.332	0.47	0	1
Routine meal	2777	0.737	0.44	0	1
Location					
Home	2185	0.787	0.41	0	1
Café or restaurant	164	0.059	0.23	0	1
Friend's relative's	95	0.034	0.18	0	1
Work/school	234	0.084	0.28	0	1
Other	99	0.036	0.18	0	1
Social interaction					
Alone	1074	0.387	0.49	0	1
Family	319	0.115	0.34	0	1
Friends	161	0.058	0.22	0	1
Partner	947	0.341	0.47	0	1
Children	424	0.153	0.36	0	1
Others	222	0.08	0.28	0	1
Someone else chose food	2777	0.084	0.28	0	1
Others were eating meat	2777	0.302	0.49	0	1
Decision factors					
Cost	2777	2.556	1.191	1	5
Convenience	2777	3.604	1.065	1	5
Ethics	2777	2.35	1.074	1	5
Nutrition	2777	3.18	1.112	1	5
Organic	2777	2.061	1.028	1	5
Taste	2777	4	0.832	1	5
Quality	2777	3.634	0.96	1	5
Origin	2777	2.381	1.081	1	5
Animal welfare	2777	2.658	1.238	1	5
Environment	2777	2.582	1.151	1	5
Craving	2777	3.112	1.178	1	5
Psychological situational characteristics					
Duty	2777	1.725	2.022	0	6
Intellect	2777	0.902	1.403	0	6
Adversity	2777	0.14	0.54	0	5
Mating	2777	1.139	2.12	0	6
Positivity	2777	4.049	1.427	0	6
Negativity	2777	0.89	1.374	0	6
Deception	2777	0.126	0.556	0	6
Sociality	2777	2.739	2.333	0	6

Note. n = 2777 observations from a sample of 633 individuals.

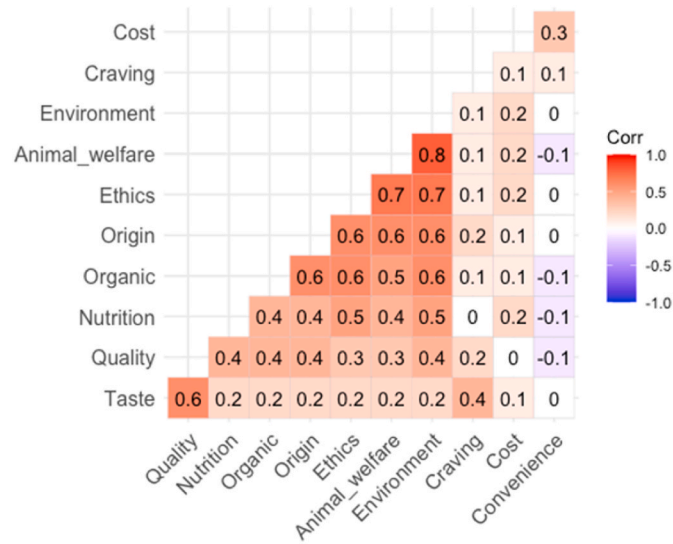


Fig. A1. Correlation matrix for decision factors. n = 2777.

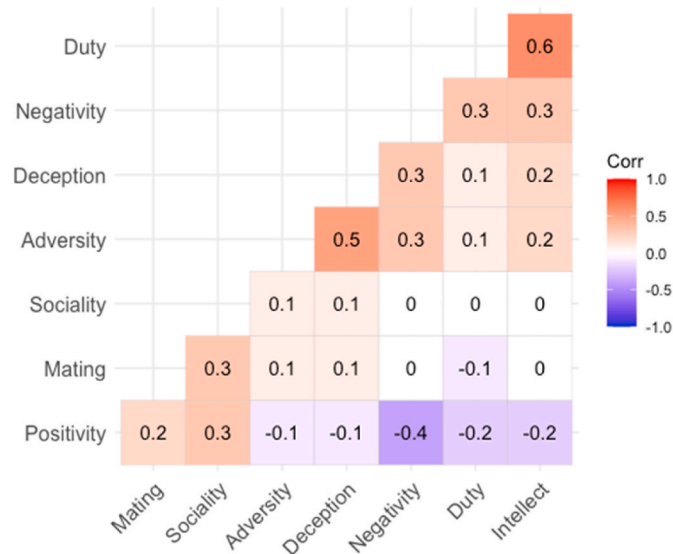


Fig. A2. Correlation matrix for DIAMONDS elements. n = 2777.

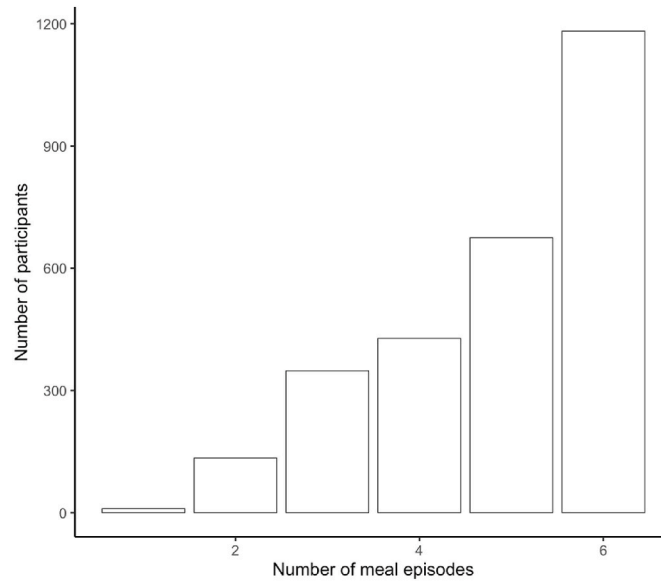


Fig. A3. The distribution of 2777 food episodes across the 633 individuals.

Table A3
Meat desires, consumption and regretful consumption and reducer motivations

	Dependent variable:		
	Meat Desire	Meat consumption	Regretful meat consumption
Health	0.285*** (0.110)	0.139 (0.121)	0.093 (0.181)
Animal welfare	-0.241** (0.100)	-0.094 (0.110)	0.466*** (0.166)
Environment	0.012 (0.111)	0.053 (0.122)	0.104 (0.186)
Constant	-0.748*** (0.130)	-1.197*** (0.144)	-2.744*** (0.222)
Observations	2777	2777	2777
Log Likelihood	-1779.166	-1597.859	-1014.582
Akaike Inf. Crit.	3568.331	3205.719	2039.164
Bayesian Inf. Crit.	3597.977	3235.365	2068.809
Marginal Pseudo R ²	0.008	0.001	0.014

Note. *p < 0.1; **p < 0.05; ***p < 0.01. Based on multi-level logistic regression models with random intercepts at the individual level. n = 2777 observations from a sample of 633 individuals.

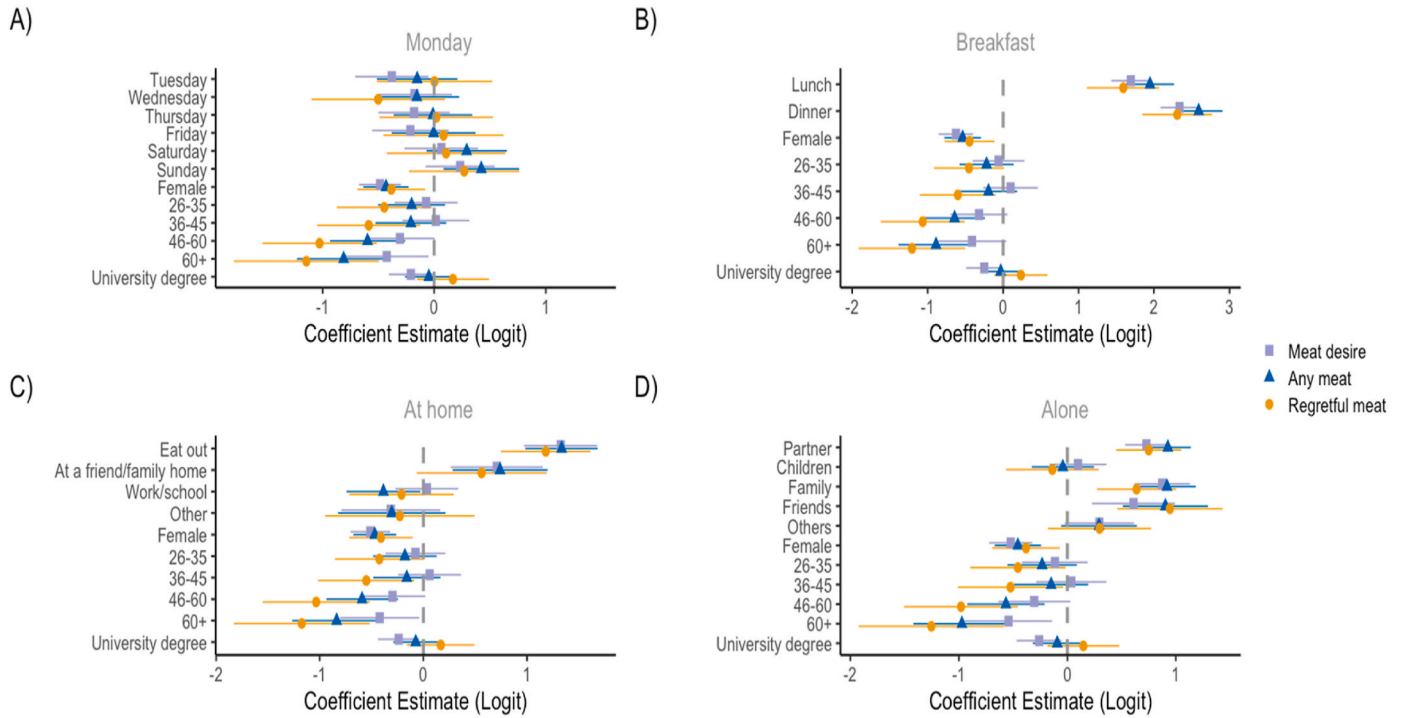


Fig. A4. Intention behaviour gaps and situational cues. Results from 12 multi-level regressions predicting meat desires, meat consumption and regretful meat consumption by the covariates listed in each panel. The reference categories are Monday, breakfast, home and alone. $n = 2777$ observations from a sample of 633 individuals.

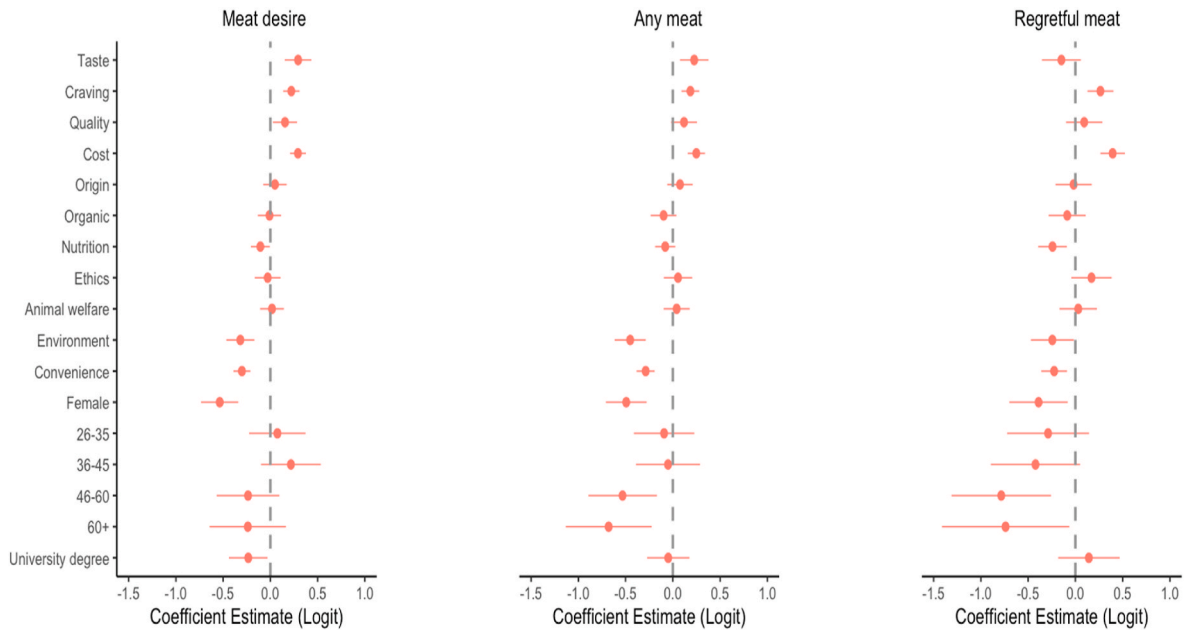


Fig. A5. Intention behaviour gaps and decision factors. Results from 3 logistic multi-level regressions predicting meat desires, meat consumption and regretful meat consumption by the 11 decision factors listed as well as gender, age group and whether they have a university degree. In contrast with Fig. 2 in the text, these figures represent a single model including all the decision factors together. $n = 2777$ observations from a sample of 633 individuals.

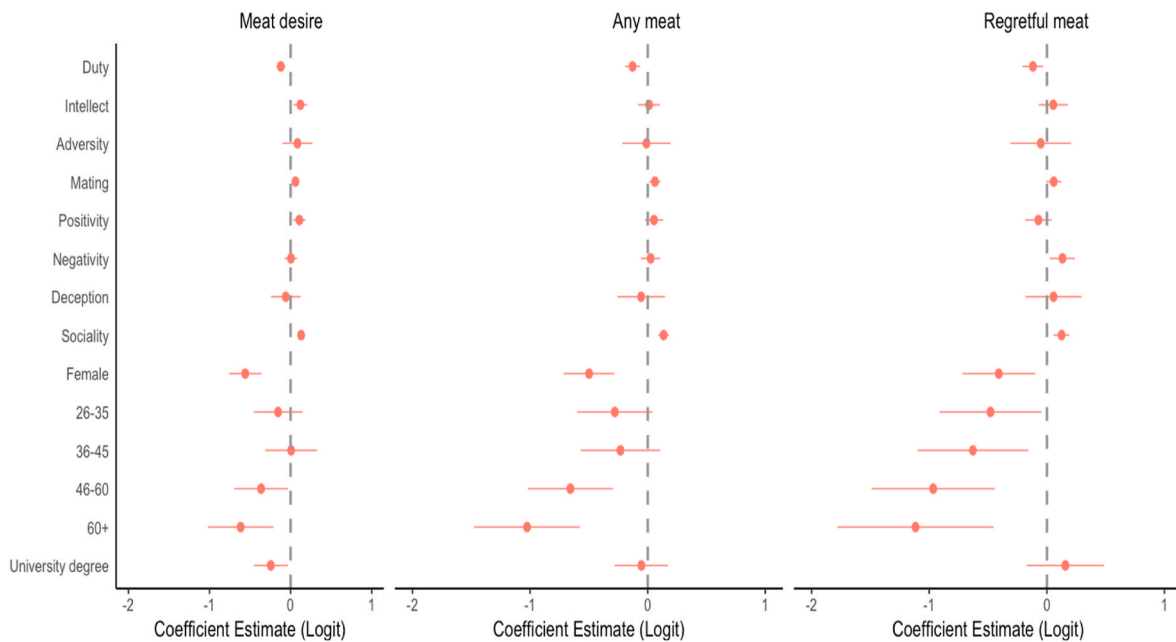


Fig. A6. Intention behaviour gaps and psychological situational characteristics. Results from 3 logistic multi-level regressions predicting meat desires, meat consumption and regretful meat consumption by the 8 psychological situational characteristics listed as well as gender, age group and whether they have a university degree. In contrast with Fig. 3 in the text, these figures represent a single model including all the psychological situational characteristics together. $n = 2777$ observations from a sample of 633 individuals.

Table A4
Meat desire and day of the week

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Monday							
Tuesday	-0.38**	0.167	-0.708	-0.052	0.684	0.492	0.949
Wednesday	-0.177	0.172	-0.514	0.161	0.838	0.598	1.175
Thursday	-0.18	0.163	-0.5	0.14	0.835	0.606	1.15
Friday	-0.214	0.175	-0.556	0.129	0.808	0.573	1.138
Saturday	0.065	0.168	-0.265	0.395	1.067	0.767	1.484
Sunday	0.233	0.158	-0.077	0.544	1.263	0.926	1.722
Constant	-0.056	0.175	-0.399	0.288	0.946	0.671	1.334
Marginal Pseudo R ²	0.012						

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Controlling for the individual's gender, age group and whether they have a university degree. $n = 2777$ observations from a sample of 633 individuals.

Table A5
Meat consumption and day of the week

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Monday							
Tuesday	-0.152	0.185	-0.514	0.21	0.859	0.598	1.234
Wednesday	-0.155	0.194	-0.536	0.226	0.856	0.585	1.253
Thursday	-0.011	0.18	-0.364	0.343	0.989	0.695	1.408
Friday	-0.004	0.192	-0.381	0.372	0.996	0.683	1.451
Saturday	0.292	0.184	-0.069	0.653	1.339	0.933	1.921
Sunday	0.423**	0.173	0.084	0.762	1.526	1.087	2.143
Constant	-0.605***	0.19	-0.976	-0.233	0.546	0.377	0.792
Marginal Pseudo R ²	0.041						

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Controlling for the individual's gender, age group and whether they have a university degree. $n = 2777$ observations from a sample of 633 individuals.

Table A6
Regretful meat consumption and day of the week

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Monday							
Tuesday	0.003	0.264	-0.515	0.521	1.003	0.597	1.684
Wednesday	-0.502	0.305	-1.1	0.097	0.606	0.333	1.101
Thursday	0.019	0.259	-0.488	0.527	1.019	0.614	1.693
Friday	0.084	0.275	-0.455	0.623	1.087	0.634	1.864
Saturday	0.107	0.271	-0.424	0.637	1.112	0.654	1.892
Sunday	0.27	0.252	-0.225	0.764	1.309	0.799	2.147
Constant	-1.675***	0.272	-2.208	-1.142	0.187	0.11	0.319
Marginal Pseudo R ²	0.048						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A7
Meat desire and meal type

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Breakfast							
Lunch	1.694***	0.131	1.437	1.951	5.44	4.207	7.034
Dinner	2.34***	0.129	2.086	2.593	10.377	8.052	13.373
Constant	-1.624***	0.191	-1.998	-1.25	0.197	0.136	0.287
Marginal Pseudo R ²	0.213						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A8
Meat consumption and meal type

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Breakfast							
Lunch	1.948***	0.164	1.627	2.269	7.015	5.091	9.666
Dinner	2.594***	0.16	2.28	2.908	13.383	9.777	18.321
Constant	-2.336***	0.218	-2.763	-1.909	0.097	0.063	0.148
Marginal Pseudo R ²	0.247						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A9
Regretful meat consumption and meal type

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Breakfast							
Lunch	1.593***	0.245	1.113	2.073	4.92	3.043	7.952
Dinner	2.309***	0.235	1.848	2.77	10.066	6.349	15.958
Constant	-3.355***	0.306	-3.956	-2.755	0.035	0.019	0.064
Marginal Pseudo R ²	0.196						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A10
Meat desire and routine food episode

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Routine	-0.382***	0.096	-0.57	-0.193	0.683	0.566	0.824
Constant	1.254	1.066	-0.835	3.343	3.503	0.434	28.294
Marginal Pseudo R ²	0.033						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A11
Meat consumption and routine food episode

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Routine	-0.504***	0.102	-0.704	-0.305	0.604	0.495	0.737
Constant	-0.939	1.308	-3.502	1.625	0.391	0.03	5.076
Marginal Pseudo R ²	0.04						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A12
Regretful meat consumption and routine food episode

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Routine	-0.65***	0.141	-0.925	-0.374	0.522	0.396	0.688
Constant	-15.317	1664.053	-3276.861	3246.226	0	0	Inf
Marginal Pseudo R ²	0.14						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A13
Meat desires and location

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: At home							
Dine out	1.325***	0.18	0.973	1.677	3.761	2.645	5.349
Friend’s/relatives	0.709***	0.226	0.265	1.152	2.031	1.304	3.165
Work/School	0.034	0.155	-0.27	0.338	1.035	0.763	1.402
Other	-0.314	0.243	-0.79	0.161	0.73	0.454	1.175
Constant	1.325	0.18	0.973	1.677	3.761	2.645	5.349
Marginal Pseudo R ²	0.054						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A14
Meat consumption and location

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: At home							
Dine out	1.334***	0.178	0.985	1.682	3.795	2.678	5.377
Friend’s/relatives	0.741***	0.234	0.283	1.199	2.097	1.327	3.315
Work/School	-0.385**	0.182	-0.742	-0.029	0.68	0.476	0.971
Other	-0.305	0.265	-0.824	0.214	0.737	0.439	1.239
Constant	-0.598***	0.15	-0.892	-0.303	0.55	0.41	0.739
Marginal Pseudo R ²	0.063						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A15
Regretful meat consumption and location

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: At home							
Dine out	1.181***	0.22	0.749	1.612	3.257	2.115	5.014
Friend’s/relatives	0.562*	0.319	-0.064	1.188	1.755	0.938	3.282
Work/School	-0.211	0.257	-0.715	0.293	0.81	0.489	1.341
Other	-0.228	0.368	-0.949	0.494	0.796	0.387	1.638
Constant	-1.744***	0.213	-2.161	-1.327	0.175	0.115	0.265
Marginal Pseudo R ²	0.06						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A16
Meat desires and people present

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Alone							
Family	0.875***	0.13	0.621	1.129	2.398	1.86	3.093
Partner	0.729***	0.1	0.533	0.925	2.072	1.703	2.521
Children	0.098	0.134	-0.165	0.36	1.103	0.848	1.434
Friends	0.61***	0.195	0.227	0.992	1.84	1.255	2.698
Other	0.294*	0.163	-0.025	0.613	1.342	0.976	1.847
Constant	-0.533***	0.151	-0.83	-0.236	0.587	0.436	0.79
Marginal Pseudo R ²	0.073						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A17
Meat consumption and people present

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Alone							
Family	0.918***	0.136	0.651	1.184	2.504	1.918	3.269
Partner	0.926***	0.109	0.713	1.139	2.524	2.04	3.122
Children	-0.042	0.146	-0.329	0.245	0.959	0.72	1.278
Friends	0.903***	0.2	0.51	1.296	2.467	1.666	3.653
Other	0.292	0.178	-0.058	0.641	1.339	0.944	1.898
Constant	-1.045***	0.161	-1.361	-0.729	0.352	0.256	0.483
Marginal Pseudo R ²	0.096						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A18
Regretful meat consumption and people present

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Alone							
Family	0.638***	0.186	0.273	1.003	1.892	1.313	2.726
Partner	0.75***	0.153	0.45	1.051	2.117	1.568	2.859
Children	-0.139	0.218	-0.565	0.288	0.871	0.568	1.334
Friends	0.945***	0.247	0.461	1.429	2.573	1.585	4.177
Other	0.296	0.243	-0.18	0.772	1.344	0.835	2.164
Constant	-2.108***	0.226	-2.552	-1.665	0.121	0.078	0.189
Marginal Pseudo R ²	0.076						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A19
Meat desires and people present controlling for whether they are eating meat

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Alone							
Family	-0.29*	0.167	-0.617	0.037	0.748	0.539	1.038
Partner	-0.514***	0.137	-0.782	-0.246	0.598	0.457	0.782
Children	-0.268*	0.161	-0.582	0.047	0.765	0.559	1.048
Friends	-0.398*	0.237	-0.863	0.067	0.672	0.422	1.069
Others	-1.227***	0.21	-1.638	-0.816	0.293	0.194	0.442
Company eating meat	2.93***	0.139	2.658	3.201	18.72	14.267	24.563
Constant	-0.642***	0.176	-0.987	-0.296	0.526	0.373	0.743
Marginal Pseudo R ²	0.290						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A20
Meat consumption and people present controlling for whether they are eating meat

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Alone							
Family	-0.213	0.168	-0.543	0.117	0.808	0.581	1.125
Partner	-0.252*	0.142	-0.531	0.027	0.777	0.588	1.027
Children	-0.417**	0.167	-0.744	-0.09	0.659	0.475	0.914

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Table A20 (continued)

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Friends	0.01	0.232	-0.443	0.464	1.01	0.642	1.591
Others	-1.126***	0.218	-1.552	-0.7	0.324	0.212	0.497
Company eating meat	2.646***	0.141	2.37	2.923	14.101	10.693	18.595
Constant	-1.183***	0.18	-1.535	-0.831	0.306	0.215	0.436
Marginal Pseudo R ²	0.272						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A21

Regretful meat consumption and people present controlling for whether they are eating meat

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Reference: Alone							
Family	-0.274	0.221	-0.708	0.16	0.76	0.493	1.173
Partner	-0.193	0.193	-0.571	0.185	0.824	0.565	1.203
Children	-0.41*	0.233	-0.866	0.046	0.664	0.421	1.047
Friends	0.269	0.272	-0.263	0.802	1.309	0.768	2.229
Others	-0.715**	0.278	-1.26	-0.17	0.489	0.284	0.844
Company eating meat	2.009	0.186	1.644	2.375	7.458	5.176	10.746
Constant	-2.305***	0.245	-2.785	-1.826	0.1	0.062	0.161
Marginal Pseudo R ²	0.173						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A22

Meat desires and responsibility for food choice

Meat desire	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Someone else chose	0.619***	0.147	0.331	0.908	1.858	1.392	2.479
Constant	1.013	1.057	-1.059	3.085	2.754	0.347	21.86
Marginal Pseudo R ²	0.032						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A23

Meat consumption and responsibility for food choice

Meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Someone else chose	1.041***	0.15	0.747	1.335	2.831	2.11	3.8
Constant	-1.182	1.305	-3.739	1.376	0.307	0.024	3.957
Marginal Pseudo R ²	0.049						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A24

Regretful meat consumption and responsibility for food choice

Regretful meat consumption	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Someone else chose	1.086***	0.19	0.713	1.459	2.962	2.041	4.301
Constant	-14.101	773.97	-1531.083	1502.881	0	0	Inf
Marginal Pseudo R ²	0.059						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A25

Meat desires and decision factors (separate models)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Cost	0.172***	0.038	0.098	0.247	1.188	1.103	1.28
Constant	-0.636***	0.177	-0.984	-0.288	0.529	0.374	0.75
Marginal Pseudo R ²	0.035						
Convenience	-0.176***	0.038	-0.257	-0.095	0.839	0.773	0.909
Constant	0.518**	0.177	0.113	0.923	1.678	1.12	2.516
Marginal Pseudo R ²	0.33						

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Table A25 (continued)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Ethics	-0.095**	0.042	-0.177	-0.012	0.91	0.838	0.988
Constant	0.08	0.164	-0.241	0.4	1.083	0.786	1.492
Marginal Pseudo R ²	0.027						
Nutrition	-0.062	0.04	-0.14	0.016	0.94	0.87	1.016
Constant	0.05	0.18	-0.303	0.403	1.051	0.738	1.496
Marginal Pseudo R ²	0.025						
Organic	-0.05	0.044	-0.136	0.037	0.951	0.873	1.037
Constant	-0.023	0.165	-0.347	0.301	0.977	0.707	1.352
Marginal Pseudo R ²	0.025						
Taste	0.437***	0.057	0.327	0.512	1.549	1.386	1.668
Constant	-1.884***	0.266	-2.405	-1.536	0.152	0.09	0.215
Marginal Pseudo R ²	0.058						
Quality	0.233***	0.038	0.139	0.327	1.263	1.15	1.387
Constant	-0.926***	0.177	-1.345	-0.506	0.396	0.26	0.603
Marginal Pseudo R ²	0.037						
Origin	-0.001	0.042	-0.083	0.08	0.999	0.92	1.084
Constant	-0.126	0.164	-0.449	0.196	0.881	0.639	1.216
Marginal Pseudo R ²	0.024						
Animal welfare	-0.085**	0.037	-0.156	-0.013	0.919	0.855	0.987
Constant	0.077	0.162	-0.24	0.395	1.081	0.787	1.484
Marginal Pseudo R ²	0.027						
Environment	-0.156***	0.04	-0.234	-0.079	0.855	0.792	0.924
Constant	0.252	0.166	-0.074	0.578	1.287	0.929	1.783
Marginal Pseudo R ²	0.033						
Craving	0.285***	0.039	0.208	0.362	1.329	1.231	1.436
Constant	-1.074***	0.19	-1.447	-0.702	0.342	0.235	0.496
Marginal Pseudo R ²	0.053						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A26
Meat desires and decision factors (all in one model)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Cost	0.292***	0.043	0.207	0.377	1.339	1.23	1.458
Convenience	-0.3***	0.046	-0.39	-0.211	0.741	0.677	0.81
Ethics	-0.028	0.07	-0.164	0.108	0.972	0.848	1.114
Nutrition	-0.105**	0.051	-0.205	-0.005	0.9	0.814	0.995
Organic	-0.009	0.063	-0.132	0.114	0.991	0.877	1.12
Taste	0.294***	0.072	0.153	0.434	1.341	1.166	1.543
Quality	0.155**	0.066	0.027	0.284	1.168	1.027	1.328
Origin	0.049	0.063	-0.075	0.173	1.05	0.927	1.189
Animal welfare	0.018	0.064	-0.108	0.143	1.018	0.897	1.154
Environment	-0.317***	0.076	-0.465	-0.168	0.728	0.628	0.845
Craving	0.222***	0.044	0.135	0.309	1.249	1.145	1.362
Constant	-1.293***	0.333	-1.945	-0.641	0.274	0.143	0.527
Marginal Pseudo R ²	0.124						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A27
Meat consumption and decision factors (separate models)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Cost	0.121***	0.041	0.041	0.201	1.129	1.042	1.223
Constant	-0.892***	0.19	-1.264	-0.52	0.41	0.283	0.594
Marginal Pseudo R ²	0.034						
Convenience	-0.169***	0.041	-0.256	-0.082	0.844	0.774	0.921
Constant	0.072***	0.19	-0.358	0.502	1.075	0.699	1.651
Marginal Pseudo R ²	0.037						

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Table A27 (continued)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Ethics	-0.147***	0.046	-0.238	-0.057	0.863	0.788	0.945
Constant	-0.199***	0.175	-0.543	0.144	0.819	0.581	1.155
Marginal Pseudo R ²	0.036						
Nutrition	-0.112***	0.043	-0.196	-0.028	0.894	0.822	0.973
Constant	-0.194***	0.191	-0.569	0.181	0.824	0.566	1.198
Marginal Pseudo R ²	0.033						
Organic	-0.157***	0.049	-0.253	-0.061	0.855	0.777	0.941
Constant	-0.188***	0.176	-0.534	0.157	0.828	0.586	1.17
Marginal Pseudo R ²	0.036						
Taste	0.322***	0.06	0.204	0.402	1.38	1.226	1.495
Constant	-1.841***	0.284	-2.398	-1.469	0.159	0.091	0.23
Marginal Pseudo R ²	0.046						
Quality	0.137***	0.041	0.037	0.237	1.147	1.037	1.267
Constant	-1.002***	0.19	-1.449	-0.554	0.367	0.235	0.574
Marginal Pseudo R ²	0.033						
Origin	-0.072	0.046	-0.162	0.017	0.93	0.851	1.017
Constant	-0.366***	0.175	-0.71	-0.023	0.693	0.492	0.977
Marginal Pseudo R ²	0.030						
Animal welfare	-0.145***	0.04	-0.224	-0.067	0.865	0.799	0.935
Constant	-0.171***	0.173	-0.509	0.168	0.843	0.601	1.183
Marginal Pseudo R ²	0.037						
Environment	-0.258***	0.044	-0.344	-0.172	0.773	0.709	0.842
Constant	0.102***	0.178	-0.247	0.451	1.107	0.781	1.569
Marginal Pseudo R ²	0.052						
Craving	0.216***	0.042	0.133	0.299	1.241	1.142	1.348
Constant	-1.256***	0.204	-1.656	-0.856	0.285	0.191	0.425
Marginal Pseudo R ²	0.046						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A28
Meat consumption and decision factors (all in one model)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Cost	0.248***	0.047	0.157	0.34	1.282	1.17	1.405
Convenience	-0.287***	0.049	-0.383	-0.192	0.75	0.682	0.826
Ethics	0.055	0.077	-0.095	0.205	1.057	0.909	1.228
Nutrition	-0.081	0.055	-0.188	0.026	0.922	0.829	1.027
Organic	-0.098	0.069	-0.234	0.038	0.906	0.791	1.039
Taste	0.226***	0.077	0.075	0.377	1.254	1.078	1.458
Quality	0.118*	0.07	-0.019	0.255	1.125	0.981	1.291
Origin	0.076	0.069	-0.06	0.211	1.079	0.942	1.235
Animal welfare	0.041	0.07	-0.097	0.178	1.041	0.907	1.195
Environment	-0.451***	0.084	-0.615	-0.287	0.637	0.54	0.751
Craving	0.185***	0.048	0.091	0.28	1.204	1.095	1.323
Constant	-0.974***	0.356	-1.672	-0.277	0.377	0.188	0.758
Marginal Pseudo R ²	0.117						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A29
Regretful meat consumption and decision factors (separate models)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Cost	0.288***	0.059	0.218	0.359	1.334	1.243	1.432
Constant	-2.513	0.279	-2.847	-2.18	0.081	0.058	0.113
Marginal Pseudo R ²	0.064						
Convenience	-0.064	0.059	-0.14	0.012	0.938	0.869	1.012
Constant	-1.429***	0.279	-1.804	-1.055	0.24	0.165	0.348
Marginal Pseudo R ²	0.040						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%

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Table A29 (continued)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Ethics	-0.013	0.068	-0.094	0.068	0.987	0.91	1.07
Constant	-1.614***	0.256	-1.921	-1.308	0.199	0.146	0.27
Marginal Pseudo R ²	0.038						
Nutrition	-0.205***	0.062	-0.279	-0.13	0.815	0.756	0.878
Constant	-1.05***	0.271	-1.374	-0.726	0.35	0.253	0.484
Marginal Pseudo R ²	0.050						
Organic	-0.138*	0.073	-0.226	-0.051	0.871	0.798	0.95
Constant	-1.395***	0.257	-1.702	-1.088	0.248	0.182	0.337
Marginal Pseudo R ²	0.042						
Taste	-0.004	0.081	-0.101	0.067	0.996	0.904	1.069
Constant	-1.692***	0.382	-2.148	-1.359	0.184	0.117	0.257
Marginal Pseudo R ²	0.036						
Quality	-0.025	0.059	-0.111	0.062	0.976	0.895	1.064
Constant	-1.553***	0.279	-1.931	-1.174	0.212	0.145	0.309
Marginal Pseudo R ²	0.039						
Origin	-0.061	0.067	-0.141	0.02	0.941	0.868	1.02
Constant	-1.513***	0.253	-1.816	-1.21	0.22	0.163	0.298
Marginal Pseudo R ²	0.039						
Animal welfare	-0.058	0.059	-0.128	0.013	0.944	0.88	1.013
Constant	-1.512***	0.252	-1.814	-1.211	0.22	0.163	0.298
Marginal Pseudo R ²	.039						
Environment	-0.136***	0.064	-0.213	-0.059	0.873	0.808	0.943
Constant	-1.315***	0.26	-1.626	-1.003	0.269	0.197	0.367
Marginal Pseudo R ²	0.044						
Craving	0.245***	0.062	0.171	0.319	1.278	1.186	1.376
Constant	-2.485***	0.298	-2.841	-2.128	0.083	0.058	0.119
Marginal Pseudo R ²	0.056						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A30

Regretful meat consumption and decision factors (all in one model)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Cost	0.394***	0.066	0.315	0.474	1.484	1.37	1.606
Convenience	-0.224***	0.07	-0.307	-0.141	0.799	0.735	0.869
Ethics	0.17	0.109	0.04	0.301	1.186	1.041	1.351
Nutrition	-0.241***	0.077	-0.334	-0.149	0.786	0.716	0.862
Organic	-0.086	0.1	-0.206	0.033	0.917	0.814	1.034
Taste	-0.148	0.105	-0.273	-0.023	0.863	0.761	0.978
Quality	0.093	0.098	-0.023	0.21	1.098	0.977	1.234
Origin	-0.018	0.098	-0.135	0.099	0.982	0.874	1.104
Animal welfare	0.03	0.101	-0.09	0.151	1.031	0.914	1.163
Environment	-0.243***	0.116	-0.382	-0.105	0.784	0.682	0.901
Craving	0.265***	0.07	0.181	0.349	1.304	1.199	1.417
Constant	-1.536***	0.489	-2.12	-0.951	0.215	0.12	0.386
Marginal Pseudo R ²	0.115						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A31

Meat desires and psychological situational characteristics (separate models)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Duty	-0.096***	0.022	-0.123	-0.069	0.908	0.885	0.933
Constant	0.037	0.144	-0.135	0.209	1.037	0.874	1.232
Marginal Pseudo R ²	0.034						
Intellect	0.004	0.031	-0.033	0.042	1.005	0.968	1.043
Constant	-0.134	0.139	-0.3	0.032	0.874	0.741	1.032
Marginal Pseudo R ²	0.024						
Adversity	0.101	0.079	0.006	0.195	1.106	1.006	1.216

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Table A31 (continued)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Constant	-0.159	0.138	-0.324	0.006	0.853	0.724	1.006
Marginal Pseudo R ²	0.025						
Mating	0.131***	0.02	0.107	0.155	1.14	1.113	1.168
Constant	-0.287***	0.142	-0.457	-0.117	0.751	0.633	0.889
Marginal Pseudo R ²	0.044						
Positivity	0.208***	0.032	0.169	0.235	1.231	1.185	1.265
Constant	-0.932***	0.187	-1.156	-0.761	0.394	0.315	0.467
Marginal Pseudo R ²	0.046						
Negativity	-0.045	0.022	-0.084	-0.005	0.956	0.92	0.995
Constant	-0.086	0.144	-0.253	0.081	0.918	0.776	1.085
Marginal Pseudo R ²	0.025						
Deception	0.022	0.078	-0.072	0.115	1.022	0.931	1.122
Constant	-0.136***	0.138	-0.301	0.029	0.873	0.74	1.03
Marginal Pseudo R ²	0.024						
Sociality	0.175***	0.019	0.151	0.198	1.191	1.163	1.219
Constant	-0.541***	0.148	-0.718	-0.363	0.582	0.488	0.696
Marginal Pseudo R ²	0.066						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A32

Meat desires and psychological situational characteristics (all in one model)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Duty	-0.121***	0.029	-0.156	-0.086	0.886	0.856	0.918
Intellect	0.121**	0.042	0.004	0.171	1.129	1.073	1.187
Adversity	0.088	0.095	-0.09	0.199	1.092	0.975	1.223
Mating	0.061**	0.023	-0.125	0.087	1.063	1.034	1.092
Positivity	0.109**	0.037	-0.084	0.153	1.115	1.066	1.166
Negativity	0.005	0.039	-0.228	0.051	1.005	0.959	1.053
Deception	-0.063	0.093	-0.647	0.052	0.939	0.84	1.05
Sociality	0.13***	0.022	0.009	0.156	1.139	1.109	1.168
Constant	-0.836***	0.214	-1	-0.572	0.433	0.335	0.56
Marginal Pseudo R ²	0.087						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A33

Meat consumption and psychological situational characteristics (separate models)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Duty	-0.144***	0.025	-0.174	-0.114	0.866	0.84	0.892
Constant	-0.293	0.154	-0.477	-0.108	0.746	0.621	0.897
Marginal Pseudo R ²	0.049						
Intellect	-0.104***	0.036	-0.147	-0.061	0.901	0.864	0.941
Constant	-0.455	0.148	-0.631	-0.278	0.635	0.532	0.757
Marginal Pseudo R ²	0.034						
Adversity	-0.024	0.088	-0.129	0.081	0.976	0.879	1.084
Constant	-0.521	0.146	-0.696	-0.346	0.594	0.499	0.707
Marginal Pseudo R ²	0.029						
Mating	0.125***	0.021	0.1	0.151	1.134	1.105	1.163
Constant	-0.705	0.151	-0.885	-0.525	0.494	0.413	0.592
Marginal Pseudo R ²	0.046						
Positivity	0.179***	0.035	0.137	0.209	1.196	1.147	1.232
Constant	-1.219	0.2	-1.458	-1.035	0.295	0.233	0.355
Marginal Pseudo R ²	0.045						
Negativity	-0.052	0.025	-0.095	-0.01	0.949	0.909	0.99
Constant	-0.476	0.154	-0.653	-0.298	0.621	0.52	0.742
Marginal Pseudo R ²	0.030						
Deception	-0.057	0.088	-0.162	0.048	0.945	0.851	1.049

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Table A33 (continued)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Constant	-0.511	0.146	-0.686	-0.336	0.6	0.504	0.715
Marginal Pseudo R ²	0.029						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Sociality	0.167***	0.021	0.142	0.193	1.182	1.153	1.212
Constant	-0.938	0.158	-1.127	-0.749	0.392	0.324	0.473
Marginal Pseudo R ²	0.067						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A34

Meat consumption and psychological situational characteristics (all in one model)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Duty	-0.131***	0.032	-0.169	-0.093	0.877	0.845	0.911
Intellect	0.011	0.047	-0.046	0.067	1.011	0.955	1.069
Adversity	-0.013**	0.105	-0.138	0.112	0.987	0.871	1.119
Mating	0.061	0.024	0.032	0.089	1.063	1.033	1.093
Positivity	0.056	0.041	0.007	0.104	1.057	1.007	1.11
Negativity	0.027	0.042	-0.023	0.077	1.027	0.977	1.081
Deception	-0.055	0.103	-0.179	0.068	0.946	0.836	1.071
Sociality	0.134***	0.024	0.106	0.162	1.143	1.111	1.176
Constant	-0.954***	0.231	-1.23	-0.678	0.385	0.292	0.508
Marginal Pseudo R ²	0.087						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A35

Regretful meat consumption and psychological situational characteristics (separate models)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Duty	-0.079**	0.035	-0.121	-0.036	0.924	0.886	0.964
Constant	-1.514***	0.216	-1.772	-1.255	0.22	0.17	0.285
Marginal Pseudo R ²	0.044						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Intellect	0.014	0.049	-0.045	0.072	1.014	0.956	1.075
Constant	-1.691***	0.211	-1.944	-1.438	0.184	0.143	0.237
Marginal Pseudo R ²	0.036						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Adversity	0.106	0.114	-0.03	0.243	1.112	0.97	1.276
Constant	-1.699***	0.211	-1.951	-1.448	0.183	0.142	0.235
Marginal Pseudo R ²	0.038						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Mating	0.096***	0.03	0.06	0.132	1.101	1.062	1.141
Constant	-1.788***	0.214	-2.043	-1.532	0.167	0.13	0.216
Marginal Pseudo R ²	0.047						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Positivity	-0.002	0.048	-0.06	0.04	0.998	0.942	1.041
Constant	-1.661***	0.276	-1.991	-1.402	0.19	0.137	0.246
Marginal Pseudo R ²	0.038						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Negativity	0.117***	0.035	0.062	0.172	1.124	1.064	1.188
Constant	-1.759***	0.216	-2.011	-1.506	0.172	0.134	0.222
Marginal Pseudo R ²	0.044						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Deception	0.147	0.107	0.019	0.275	1.158	1.019	1.316
Constant	-1.689***	0.21	-1.94	-1.438	0.185	0.144	0.237
Marginal Pseudo R ²	0.040						
	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Sociality	0.133***	0.03	0.097	0.169	1.142	1.102	1.184
Constant	-1.967***	0.222	-2.233	-1.702	0.14	0.107	0.182
Marginal Pseudo R ²	0.060						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual's gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A36
Regretful meat consumption and psychological situational characteristics (all in one model)

	B	S.E.	2.5%	97.5%	Odds Ratio	2.5%	97.5%
Duty	-0.118***	0.044	-0.171	-0.065	0.889	0.843	0.937
Intellect	0.057	0.063	-0.018	0.133	1.059	0.982	1.142
Adversity	-0.054	0.131	-0.211	0.103	0.947	0.81	1.108
Mating	0.057*	0.033	0.018	0.097	1.059	1.018	1.102
Positivity	-0.071	0.057	-0.139	-0.003	0.931	0.87	0.997
Negativity	0.129**	0.054	0.064	0.194	1.138	1.066	1.214
Deception	0.054	0.122	-0.092	0.2	1.055	0.912	1.221
Sociality	0.125***	0.034	0.084	0.166	1.133	1.088	1.181
Constant	-1.742***	0.315	-2.12	-1.365	0.175	0.12	0.255
Marginal Pseudo R ²	0.077						

Note. *p < 0.1; **p < 0.05; ***p < 0.01; † Controlling for the individual’s gender, age group and whether they have a university degree. n = 2777 observations from a sample of 633 individuals.

Table A37
Marginal Pseudo R-squared for the fixed elements of each of the models examining situational predictors and socioeconomic characteristics

	Meat desire	Ate any meat	Ate regretful meat
Model	Marginal Pseudo R ²		
Day of the week	0.012	0.041	0.048
Someone else chose	0.032	0.049	0.059
Routine meal	0.033	0.04	0.14
Location	0.054	0.063	0.06
Who with	0.073	0.096	0.076
Diamonds	0.087	0.087	0.077
Decision factors	0.124	0.117	0.115
Meal type	0.213	0.247	0.196
Who with and others eating meat	0.290	0.272	0.173

Note. n = 2777 observations from a sample of 633 individuals in all models.

Table 38
Meat desires, consumption and regretful consumption and event reconstruction wave

	Dependent variable:		
	Meat Desire	Meat consumption	Regretful meat consumption
Reference: Wave 1			
Wave 2	-0.126 (0.082)	-0.208** (0.090)	-0.282** (0.130)
Constant	-0.605*** (0.062)	-1.009*** (0.066)	-2.224*** (0.096)
Observations	2777	2777	2777
Log Likelihood	-1784.044	-1596.232	-1017.205
Akaike Inf. Crit.	3574.087	3198.463	2040.409
Bayesian Inf. Crit.	3591.875	3216.251	2058.197

Note. *p < 0.1; **p < 0.05; ***p < 0.01.

Table A39
Brier skill scores

	Brier score null model*	Brier score full model†	Brier skill score
Meat desire	0.194	0.120	0.381
Ate any meat	0.167	0.105	0.371
Ate regretful meat	0.0888	0.0676	0.239

Note. *containing random intercept at the individual level, † containing random intercept at the individual level and all situational characteristics.

Table A40
Meat desires, consumption and regretful consumption and event reconstruction wave

	Dependent variable:					
	Meat Desire		Meat consumption		Regretful meat consumption	
Reference category: Wave 1						
Wave 2	-0.126 (0.082)	-0.112 (0.086)	-0.208** (0.090)	-0.200** (0.094)	-0.282** (0.130)	-0.262* (0.136)

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Table A40 (continued)

	Dependent variable:					
	Meat Desire		Meat consumption		Regretful meat consumption	
Constant	-0.605*** (0.062)	-0.615*** (0.067)	-1.009*** (0.066)	-1.018*** (0.073)	-2.224*** (0.096)	-2.273*** (0.105)
Observations	2777	2,492 [†]	2777	2492 [†]	2777	2,492 [†]
Log Likelihood	-1784.044	-1597.944	-1596.232	-1430.246	-1017.205	-899.656
Akaike Inf. Crit.	3574.087	3201.888	3198.463	2866.491	2040.409	1805.312
Bayesian Inf. Crit.	3591.875	3219.350	3216.251	2883.954	2058.197	1822.775

Note. **p* < 0.1; ***p* < 0.05; ****p* < 0.01. [†]sample restricted to those reporting on episodes in both waves.

Table A41

Additional measures on individual characteristics to be included in follow-up work

Measures	Wording and scale
Stage of change in Transtheoretical Model of Change (from Klöckner & Ofstad, 2017)	Please select the statement that best applies to you: I am satisfied with the level of my meat consumption at the moment and see no need to change it. I should reduce my level of meat consumption but at the moment I feel that this is impossible for me. I would like to reduce my meat consumption, but I am at the moment unsure about how to replace it. I know how I can reduce my meat consumption, but I have not put it into practice. I have reduced my meat consumption in the last months.
Risk preference measure (from Falk et al., 2018)	In general, how willing or unwilling you are to take risks. (0 = Completely unwilling to do so; 10 = Very willing to do so)
Time preference measures (from Falk et al., 2018)	How willing or unwilling are you to give up something that is beneficial for you today in order to benefit more from that in the future? (0 = Completely unwilling to do so; 10 = Very willing to do so) I tend to postpone tasks even if I know it would be better to do them right away. (0 = Does not describe me at all; 10 = Describes me perfectly)
Trust and social preference measures (from Falk et al., 2018)	How willing or unwilling are you to punish someone who treats you unfairly, even if there may be costs for you? How willing or unwilling are you to punish someone who treats others unfairly, even if there may be costs for you? How willing or unwilling are you to give to good causes without expecting anything in return? (0 = Completely unwilling to do so; 10 = Very willing to do so) When someone does me a favour I am willing to return it. I assume that people have only the best intentions. If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so. (0 = Does not describe me at all; 10 = Describes me perfectly)
Trait self-control (from Tangney et al., 2018)	Please indicate how much each of the following statements reflects how you typically are. I am good at resisting temptation I have a hard time breaking bad habits I am lazy I say inappropriate things I do certain things that are bad for me, if they are fun I refuse things that are bad for me I wish I had more self-discipline People would say that I have iron self-discipline Pleasure and fun sometimes keep me from getting work done I have trouble concentrating I am able to work effectively toward long-term goals Sometimes I can't stop myself from doing something, even if I know it is wrong (0 = Not at all; 10 = Very much)
Situation selection scale (from Ent et al., 2015)	Please indicate the extent to which the following statements apply to you. I avoid situations in which I might be tempted to act immorally I choose friends who keep me on track to accomplishing my long-term goals When I work or study, I deliberately seek out a place with no distractions In my life, the line between right and wrong is very clear and sharply drawn When I want something, I work out a systematic plan for how to get it (0 = Not at all; 10 = Very much)

References

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