

Food Neophobia as a Function of Self-serving Bias in Meat Consumption

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Abstract

This study aims to investigate first and foremost the relation between dietary choice and moral disengagement as measured by how convincing a text message prepared by the authors was perceived and what motives are ascribed to the author of said message. While also further investigating the role that food neophobia might play in this process. Our sample consisted of 87 convenience sampled students. The participants filled in a questionnaire and were asked to read a text about the negative impact of animal agriculture and indicate how convinced they were by this text. Findings suggest moral disengagement did take place, indicated by the differences between groups on how convincing the message was perceived. However there was no meaningful difference in what motives were ascribed to the author. We reason this is due to a lack of emotionally charged or judgmental arguments in the text. The interaction of food neophobia and diet together was inconclusive but suggests influence on ascribing author motivations. These findings together allow us to better model messages meant to convince individuals to reduce their meat consumption and increase the impact such messaging could have. Furthermore extending food neophobia research could be an important and overlooked avenue of resistance against such messages, furthering our understanding of change in those with different levels of meat consumption.

Keywords: Moral disengagement, Dietary choice, Food neophobia, Motivation perception

Food Neophobia as a Function of Self-serving Bias in Meat Consumption

Food is an integral part of our lives, we need it to sustain ourselves. The choices of the type of foods we eat however, can differ widely from culture to culture. Current estimates suggest that the average person globally consumes about 48kg of meat annually (0.92Kg/week), 70 billion animals are required to cover this consumption (Faunalytics, 2020; FAO, 2013). This number however is rising steadily as more consumers who acquire increasing wealth also increase their meat consumption (Speedy, 2003). Thus, as more parts of the world develop and increase their wealth, meat consumption will likely increase going into the future due to population and income increases as well as urbanization (Milfort, et al., 2019). Current estimates suggest that by 2031 global meat consumption will have risen by 15% compared to 2021 (OECD/FAO, 2022, Parlasca & Qaim, 2022). This increase in meat consumption is problematic, first because of the negative environmental impact of animal production and maintenance, an example of this is global emissions from animal agriculture which is estimated at about a third of all emissions and climate warming (Eisen & Brown 2022; Climate Nexus, n.d.). Animal agriculture is also responsible for an estimated 18% of greenhouse emissions, this surmounts to more emissions than transportation globally (Tilman & Clark, 2014; Climate Nexus n.d.). An increase in such negative effect is bound to be detrimental for the longevity of our planet. Furthermore Western food consumption patterns exceed the recommendations of daily dietary intake of animal products (Dagevos & Verbeke, 2022 ; Stubbs et al., 2018). This highlights the second negative impact that our current meat consumption poses, to our personal health. The World Health Organization (WHO) and United Nations (UN) advise for a reduction of animal products because of detrimental effects on our health (Bouvard et al., 2015). Meat consumption has been linked to illness such as diabetes, cancer and coronary heart disease (Tilman & Clark, 2014; Bouvard et al., 2015) and reducing animal product consumption could improve most people's health (Melina et al., 2016; Willett et al., 2019). Despite this negative impact on our health, sentiments towards meat reduction intentions or behaviors are lackluster at best (Dagevos, 2021; Hartmann & Siegrist, 2017). Not only is our excessive meat consumption bad for

our health and planet, it also leads to millions of animals getting slaughtered every year (Joy, 2010). The conditions of the farms these animals are raised on are dubious at best, leading to 70% of Americans feeling some level of discomfort when asked about animal agriculture (Reese, 2017). Despite this discomfort felt by individuals reporting on these farms, they are funded consistently by individuals consuming animal products (Ipsos, 2016; Loughnan et al., 2010). This *meat paradox*, is the idea that despite the suffering animals undergo, and the negative impacts livestock has overall. Even though people are to some degree aware of these issues, they still buy these products and thereby are funding further livestock production keeping the problem intact. How can such a paradox come about?

In this research, we investigate the motivational and cognitive processes that allow people to continue behaving in certain ways, despite readily available information that indicts their behaviour like it happens in the meat paradox. The apparent mismatch between knowing about the conditions of meat production and peoples actual consumption might be attributable to the, *self-serving bias*. Specifically, we test the idea that the *self-serving bias* -in the context of the meat paradox- expresses itself as, *moral disengagement*. In the following this will be explained.

Self-serving biases can be understood as a type of cognitive bias, that allows individuals to make attributions about successes and failures in order to protect their *self-esteem* (Bradley, 1978). In the context of meat consumption, this may express itself by shifting blame on external factors such as “everyone does it, so why shouldn’t I?”. Self serving biases serve to satisfy psychological needs, such as the “*esteem need*” which can be broken down into *self-esteem*, the perception and perceived value of the self, which includes morality. Second *respect from others*, the need or desire fit in with a group, the group has norms and values that govern topics such as morality (Maslow, 1943). This desire to fit in can be highlighted by conformity experiments in which people went against their personal knowledge to fit in with the group showing how strong this group belonging effect can be (Sherif, 1935; Asch 1951). Failure to conform can lead to exclusion or ostracism by the group. Research on ostracism suggests that even for short durations it can lead to reduction in

feelings of belonging and self-esteem while also worsening mood and inducing anger (Zadro et al., 2004).

The individual thus has the need for respect from others -or simply, the need to belong- as each group has their own norms, values and morality. The individual will have to conform to fit in or risk being ostracized or excluded from the group, and as a result have a decrease in self-esteem. Translating this to the meat paradox, the individual might be able to partake in moral disengagement towards meat consumption because it is normal to consume meat and the action of meat consumption is therefore moral despite potentially going against the individual's judgement. Not consuming meat or having an alternative diet might also pose a risk for ostracism forming a significant risk for not abiding by consensus that could have negative impact on the individual and change itself is a difficult process. Comparatively following the norms and continuing the habit of meat consumption is easy and low risk. Thus consumption continues and no dietary change is made.

The individual has motives to feel good about the self because of the self-esteem need and achieves this through for example self-serving biases. These biases could allow someone to disengage with materials such as meat reduction cues and following the meat consumption norms, to allow them to continue on eating meat products going against their own judgement. One such bias is *Moral disengagement*, a mechanism for individuals to protect their self-esteem by distancing or disengaging their moral reasoning to justify their actions and to prevent or reduce the negative emotions that may arise towards the self, specifically when confronted with actions that are in conflict with the individual's moral reasoning (Bandura, 1999). Extending this idea to the meat paradox this could partially explain why individuals partake in the meat paradox. The individual purchases meat products where production and acquisition of meat products can be viewed as morally ambiguous if not actively harmful. Participating and funding this practice may thus cause negative emotions as a result of this action. Because of these negative emotions, to protect their self-esteem, the individual may decide to not think about how animal products are produced or they could discredit sources making such claims. This paper then argues that the meat paradox might be

enabled through a self-serving bias leading to moral disengagement as an explanation for this paradox.

Hypothesis 1: People who consume meat are motivated to morally disengage more compared to people who do not consume meat.

Food neophobia

People often times have adverse reactions to change, which may also be a reason for why norms around meat consumption do not appear to change. Especially when it comes to a change in dietary habits, *food neophobia* may be such a reason. Food neophobia describes individuals willingness/reluctance or approach/avoidance to try new and different foods (Pliner & Hobden, 1992). Despite the name neophobia we would argue that “phobia” is unclear wording, seeing as it is not so much a fear as it is a consistent approach and avoidance pattern around new foods (Nezlek & Forestell, 2019). Even though there is some deviance, most current literature suggests that predispositions and consistent response patterns are what makes a trait, as such research on food neophobia has conceptualized this construct as a trait (Nezlek & Forestell, 2019). More evidence suggesting that food neophobia is a trait can be found in genetic/twin studies which suggest heritability accounts for about 78% of food neophobia variance (Cooke et al., 2007). Food neophobia has been found crucial in adaptation as well as acceptance of food products that individuals might be reluctant towards (Nguyen et al., 2022). This effect has been found for “cultured meat” also known as “lab grown meat” (Pakseresht et al., 2022; Nguyen et al., 2022) as well as for insects (Florença et al., 2022; Kröger et al., 2022) but also for algae and the more familiar plant based alternatives such as pulses and soy (Onwezen et al., 2021). Despite these replacement products having different advantages over current animal agriculture, such as cultured meat not requiring animals and thus removing ethical issues regarding animal maintenance and slaughter. The lack of adaptation can be at least in some degree be ascribed to food neophobia, which has also shown to have significant effects on purchasing behaviour yet this topic has not

received adequate attention (Onwezen & Dagevos, 2023). Exploring the link between food neophobia and individuals motivations could be a potential avenue to reduce resistance towards meat replacements and alternatives and increasing the consumption of those alternative products that are less harmful. Considering research on the topic of neophobia is scarce, forming a more uniform base of knowledge is the priority. As such this paper will explore the role of food neophobia in moral disengagement. The line of reasoning is that if an individual has a stronger disliking for unexplored foods they might feel more threatened by morality messages because such an individual would not be willing to change their diet. This theoretically leads to their self-serving bias generating stronger external attributions because of an increased threat -because it can be seen as an impossible change for the individual- making them feel less competent in their situation. This sensation of incompetence is then added to the tension that is naturally present around the meat paradox such as self-esteem need and the need to belong, while also avoiding ostracism. Combined this leads to higher than expected threat levels because of food neophobia moderating self-esteem thus leading to more or less moral disengagement. If this hypothesis is supported by the data this could suggest food neophobia as a barrier not just to alternative meat products, but also to moral messaging surrounding such products.

Hypothesis 2: individuals who are higher in food neophobia will disengage more than those scoring lower on this trait.

Methods

Participants

The sample consists of 75 participants who completed the study online. Participants were recruited via Sona Systems (Sona Systems, n.d.) and convenience sampling. 75 were undergraduate first-year students from the University of Groningen (28 male, 45 female, 2 non-binary, and 2 other). Of the 75 participants, 21 were omnivores, 33 were flexitarians, 5 were pescetarians, and 16 followed a plant-based diet (i.e., vegans and vegetarians). The minimum age for participation was 18 years. Participation was voluntary, and all participants signed informed consent forms and were rewarded with 0.4 credits if recruited via Sona Systems. The study was approved by the ethical committee of the Department of Psychology at the University of Groningen (study code: PSY-2324-S-0259).

Materials and Procedure

The study is an experimental design study that focuses on between-subject measurements. For data collection participants completed the study online via the Qualtrics XM platform. And for data analysis, we employed JASP statistical software. The questionnaire began with a short explanation of the study, followed by an inquiry to attain participants' informed consent. The participants were then asked to specify their dietary preferences and habits. This was followed by a text they were asked to read that made an argument for meat reduction and different aspects of meat consumption that are problematic, the text was written in the style of a blog as to not be perceived as too academic or too emotionally charged. The text had a timer to measure and ensure participants were sufficiently engaged with the material.

Measures of Dietary Choice

Participants were asked to indicate their dietary habits, which served as the independent variable. The first one asked, “How would you describe your current diet?”. Participants could choose between “My meals almost always include meat.”. The second item asked how many days a week participants are consuming meat products on a 7-point Likert scale ranging from 1 day to 7 days a week. Lastly, we used a 5-point Likert scale to assess the question “Do you make efforts to reduce your meat consumption?” with answer options ranging from ‘absolutely no efforts’ to ‘significant efforts.’

Measures of Moral Disengagement

Due to methodological difficulties in measuring moral disengagement directly, we inferred moral disengagement by measuring the perceived motives of the author by the participants as well as how convincing the arguments in the text were perceived. As the text is written to expose negative aspects of meat consumption we predict this would elicit moral disengagement.

We measured the first dependent variable, the motives of the author the participants inferred, by using a bipolar scale ranging from -3 to +3 with the help of 6 items (e.g., “The author wants to communicate facts to the public.”, “The author wants to protect their personal interests.”). The Cronbach’s alpha for this measure was $\alpha = 0.65$ for prosocial motives and $\alpha = 0.7$ for selfish motives. The second dependent variable, perceived convincing of the arguments given in the text, was measured through the use of a six-point Likert-type scale, ranging from “Not credible at all” to “Very credible.” The Cronbach’s alpha for this measure was $\alpha = 0.6$.

Measures of food neophobia

The mediator food neophobia was measured using items exploring unknown food approach and avoidance habits respectively (e.g., “I am constantly sampling new and different foods”, “If I don’t know what a food is, I won’t try it”). These items were taken from previous studies by Ritchey et al 2003, and resulted in a Cronbach’s alpha of $\alpha = 0.81$ showing good internal consistency.

In the final section of the questionnaire, demographic information was collected (gender with the answer options ‘male,’ ‘female,’ ‘non-binary,’ and ‘other’ and political orientation, with answer options ranging from ‘extremely left-wing’ to ‘extremely right-wing’) and a debriefing on the purpose of the study was given in text format.

Results

Preliminary analysis

An Analysis of Covariance (ANCOVA) was applied to the data to determine the difference in dietary choices and how this relates to moral disengagement. The assumptions check for the analysis was done and Levene's test of homogeneity of variance was not met ($p = 0.003$). This is likely due to the small sample in our study ($N = 75$), however the data appear sufficiently normal on the residual plot to proceed using normal ANCOVA analysis. The Cronbach's α for the food neophobia questionnaire was 0.81, indicating good internal consistency. Internal consistency measures of the dependent measures all exhibited acceptable levels of internal consistency (all α 's = 0.6 to 0.7).

Descriptives of this sample; the author was perceived as acting primarily prosocially ($M = 1.25$, $SD = 0.78$) while selfish motives were ascribed less ($M = 0.16$, $SD = 1.25$). Overall the message was seen as convincing ($M = 4.78$, $SD = 0.87$). There appeared to be a high level of food neophobia in our sample ($M = 5.38$, $SD = 1.02$). Noteworthy correlations in the data is that the more prosocial the author motive is seen as the more convincing the messaging is perceived as ($r = 0.31$, $p = 0.008$) and Food neophobia does not appear correlated to our other measures, full overview below in *table 1*.

Table 1
Correlation Table

variable		selfish	Prosocial	Convince	FNS
1. Selfish	Pearson's r	----			
	p-value	----			
2. Prosocial	Pearson's r	0.53**	---		
	p-value	<0.001	---		
3. Convince	Pearson's r	-0.15	0.31*	---	
	p-value	0.21	0.008	---	
4. FNS	Pearson's r	0.05	0.09	-0.02	---
	p-value	0.67	0.46	0.88	---

Note. * $p < 0.05$. ** $p < 0.01$

Hypothesis Testing

A step by step Analysis of Covariance (ANCOVA) analysis was applied to each dependent measure separately. The goal being to determine the difference in dietary choices and how this influences how convincing the messaging is, as well as what motive is ascribed to the author being either selfish or prosocial.

Hypothesis 1: People who consume meat are motivated to disengage more compared to people who do not consume meat.

Regarding this first hypothesis, the ANCOVA analysis shows a significant difference for how convincing the message was perceived based on dietary choice when controlling for food neophobia $F(3, 6.750) = 13.05, p < 0.001, \eta^2 = 0.36$ (see *table 2* for ANCOVA).

Table 2

ANCOVA table Convincing

Cases	Sum of Squares	df	Mean Square	F	p	η^2
Diet	20.25	3	6.75	13.05	< 0.001	0.36
FNS	0.38	1	0.38	0.72	0.4	0.01
Residuals	36.21	70	0.52			

To investigate these differences further, contrast were created to test for the difference in each group. There was a significant difference between meat eaters and every other group when comparing how convincing the message was perceived. As can be seen in the simple contrast visualized below (see *Table 3*).

Table 3

simple contrast diet-convincing

Comparison	Estimate	SE	df	t	p
2- 1	0.45	0.20	67	2.24	0.028
3- 1	1.42	0.24	67	5.92	< 0.001
4- 1	1.13	0.36	67	3.15	0.002

Post hoc analysis on how convincing the message was depending on diet when controlling for neophobia was performed with a bonferroni adjustment (see *table 4*). Meat eaters were significantly less convinced by the messaging than veg*ns and pescatarians, furthermore those who have a mixed diet are also significantly different from veg*ns. As meat eaters were less convinced by the messaging this supports our hypothesis that meat eaters are motivated to disengage more

than their less or no meat consumption counterparts. For a visualization of this difference see *figure 1*, there appears to be a very clear gradient of how convincing the message appears as when comparing the diets.

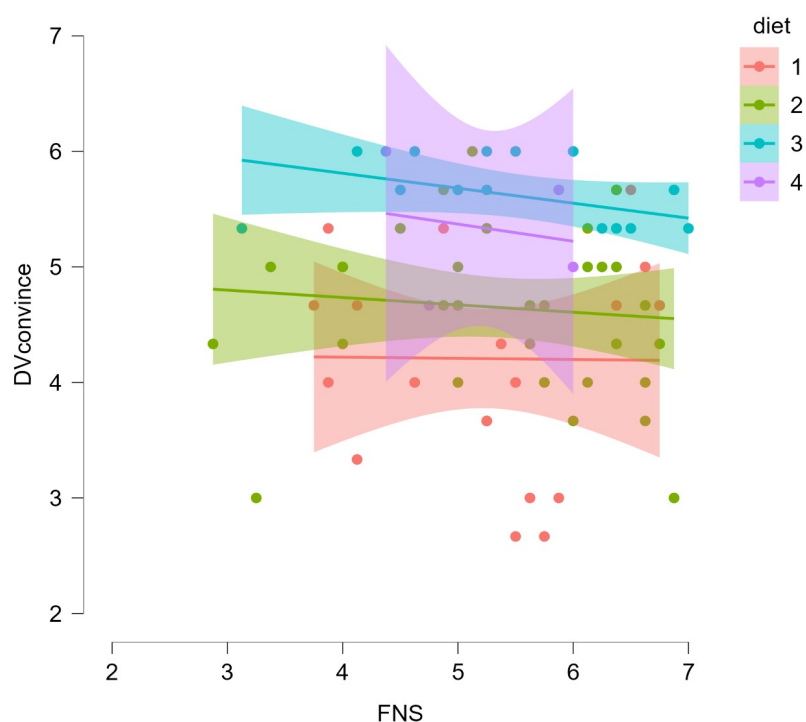
Table 4

Post hoc comparison- diet

		Mean Diff	SE	t	Cohen's d	p _{bonf}
1	2	-0.45	0.20	-2.24	-0.63	0.168
	3	-1.42	0.24	-5.92	-1.98	<0.001**
	4	-1.13	0.36	-3.15	-1.57	0.014*
2	3	-0.97	0.22	-4.42	-1.35	<0.001**
	4	-0.68	0.35	-1.96	-0.94	0.324
3	4	0.30	0.37	0.80	0.41	1.000

*Note- significance *p < 0.05, **p < 0.01*

Figure 1



Further investigation through ANCOVA analysis on author motive being either selfish or prosocial based on diet did not yield any significant results ($p = 0.678$ and $p = 0.883$ respectively) thus it appears that moral disengagement did not happen through this path.

Hypothesis 2: individuals who are higher in food neophobia will disengage more than those scoring lower on this trait.

The ANCOVA analysis was applied to measure food neophobia and diet as an interaction term for how convincing the messaging was perceived as, and whether selfish or prosocial motives

are ascribed to the author. A notable result from this analysis is the inclusion of the interaction term when comparing the selfish motive variable. Without the interaction term the model is non-significant (visualized in *table 5*). However when the interaction term is included, the interaction term itself approaches significance ($p = 0.068$) and diet becomes slightly more predictive as well ($p = 0.108$) suggesting this being a better model of estimates, for a full comparison see *table 6*.

Table 5
ANCOVA- Selfish Motive

Cases	Sum of Squares	df	Mean Square	F	p	η^2
Diet	2.42	3	0.81	0.51	0.68	0.02
FNS	0.24	1	0.24	0.15	0.70	0.002
Residuals	109.54	69	1.59			

Table 6
ANCOVA of Selfish motive including interaction of Diet and FNS

Cases	Sum of Squares	df	Mean Square	F	p	η^2
Diet	9.43	3	3.14	2.11	0.108	0.08
FNS	0.46	1	0.46	0.31	0.581	0
Diet*FNS	11.15	3	3.72	2.49	0.068	0.1
Residuals	98.39	66	1.49			

This approach to significance is promising as it very well could reach significance in a bigger study with more power. For further investigation of this finding below a simple contrast (see *table 7*) and a graphical visualization (see *figure 2*) are provided for further comparison. There do not appear to be any differences between the groups when comparing based on diet and there does not appear to be a clear trend in the visual representation of the data.

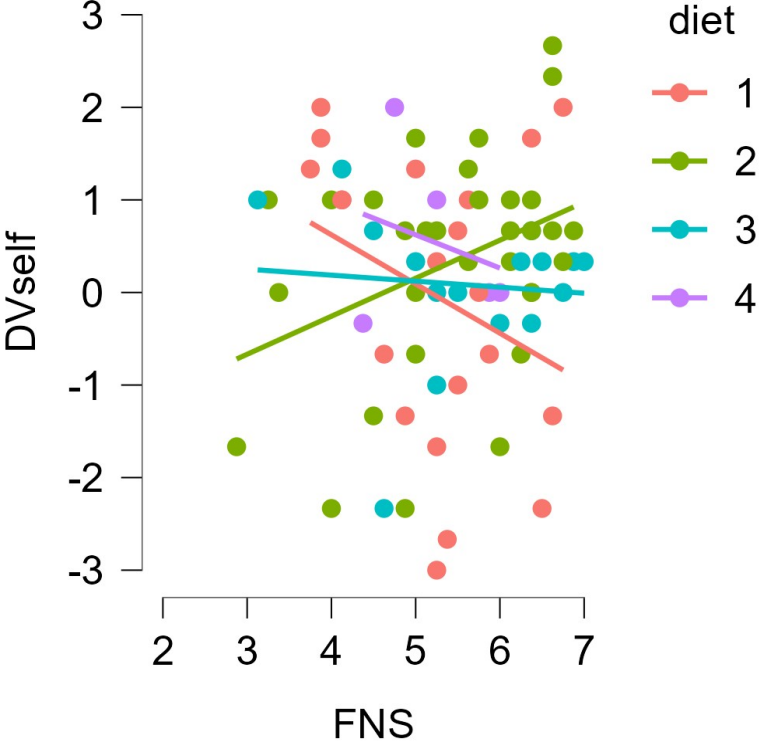
Table 7
Simple Contrast- Diet

Comparison	Estimate	SE	df	t	p
2- 1	0.44	0.35	66	1.27	0.21
3- 1	0.22	0.41	66	0.53	0.6
4- 1	0.6	0.62	66	0.96	0.34

In further analysis of other dependant variables the following results were found. When comparing for prosocial motive the interaction had no significance ($p = 0.407$). When the interaction term diet*food neophobia was included in the model for how convincing the message was, the measures diet and food neophobia on their own were no longer significant ($p = 0.471$ and

$p = 0.553$ respectively). The interaction term itself also had no significance ($p = 0.967$). As there was no significance in any of these models our hypothesis that food neophobia increases disengagement is not supported, however the approach to significance for the interaction in the selfish motive is a promising result.

Figure 2



Discussion

The aim of the study was to test if those higher in meat consumption morally disengage more than those that consume less meat. We also attempt to expand on a gap in the literature namely the role of food neophobia in moral disengagement.

The overall results suggest that diet has significant influence over how convincing the text was perceived as. This can be explained through a collection of self-serving biases, when considering that for example a vegetarian person has already been convinced of their position to not eat meat, therefore confirmation bias might lead them to further agree with the argumentation. This same line of reasoning applied to a meat eater might lead them to morally disengage more from the implications in the material, leading them to be less convinced. The finding of this difference in how convincing the text was seen as implies that there is at the minimum something different between these groups and we propose that this difference is an effect of moral disengagement. The reasoning behind this claim is that a meat eater finds this type of moral messaging to be in conflict with their own actions such as the meat paradox, and to preserve their self-esteem they use self-serving biases to avoid these negative implications.

Another way in which such a self-serving bias might present itself is by discrediting the author, in this research however no significant difference was found between the groups and how they perceived the motives of the author. This could be due to a lack of power from a small sample size, another reason might be that the text was written not to be judgmental or emotionally charged and was more a replication of facts that highlight the current issue. This low emotional or judgmental text therefore may not have been perceived as threatening enough to cause discrediting of the author and as such there was moral disengagement but because of a lack of threat no author selfish author motives were ascribed. This can be followed up in a study with a more emotionally charged text for further investigation.

Alternatively however it could be possible that moral disengagement happened through a different path than ascribing morality to the author, there being a significant difference between

meat eaters and the other dietary groups when measuring how convincing the message was perceived could potentially be explained through conformity. As within each of the dietary groups it can be presumed that they each conform to the norms and values behind their diet. In the case of meat consumption and it being the most common practice currently, they might find comfort in their conformity to this diet, as it limits their need to engage with a topic that could cause them distress when reflecting deeper on it, because it is socially acceptable thus avoiding the meat paradox. Not conforming to group norms can lead to ostracism which causes negative esteem, causing negative mood and damaging the need to belong (Zadro et al., 2004). It therefore is comparatively a lot more risky for the individual to change their diet making disengaging with the material a more attractive option.

An additional finding is that as prosocial author motive and how convincing the message was perceived as were positively correlated. This positive correlation could be because, when a judgment is made on the author, a prosocial motive is perceived as beneficial to society and this leads to a more positive response to the messaging and thus more convincing. While a selfish motive is viewed as being mostly beneficial to the author rather than society and this leads to more skepticism and less convincing (Rhamani, 2023).

The moderator measured for our second hypothesis, namely food neophobia did not appear to be significant either in terms of correlations or in terms of moderating how convincing the message was perceived as. However it is very notable that at ($P= 0.068$) the interaction between diet and food neophobia approaches significance for the selfish motivation perception. This non-significance could very well be due to a lack of power from our small sample size and we suspect that in a more powerful study significance could be achieved. This finding could suggest that food neophobia could be moderating whether or not selfish motivations are ascribed to the author.

However as our food neophobia measure only approached significance and did not reach it, caution is advised with interpretation. A potential explanation is that an individual that is more hesitant towards unknown foods would feel more threatened by messaging suggesting they should

change their diet, as this would be perceived as a bigger obstacle than in someone who does not share this same adversity towards unknown foods. This increased threat leads to discrediting of the source in the form of ascribing selfish motivations more frequently in higher levels of food neophobia. Because of inconclusive evidence the hypothesis that food neophobia could moderate moral disengagement cannot be fully supported without further replication.

As previously mentioned, the current text was non-threatening. Thus future replication could include a threatening text condition to potentially increase both the threat perceived and therefore increase moral disengagement strategies, but also further exemplify how food neophobia could be playing a role in this process because of a perceived increase in threat. It also stands to reason that as more selfish motives are ascribed and thus less prosocial motives are assumed that the degree of convincing of the message goes down. This is supported by our finding that the more prosocial motives were ascribed the more convincing the message was and that prosocial and selfish motives are in direct competition with each other (Rhamani, 2023). For this reason food neophobia needs to be further explored.

Conclusions

As increasing meat consumption and the sustainability of animal agriculture becomes a more prominent issue, meat reduction is becoming a more significantly important avenue of change. As such this paper set out to further explore the role between moral disengagement and current dietary choice in order to improve future messaging in terms of effectiveness. We theorized that those who consume meat would be feel a stronger need to morally disengage because of the meat paradox making them feel a level of discomfort that is to be avoided. For example through moral disengagement. The first hypothesis was supported by the results suggesting meat eaters do in fact find the messaging less convincing than other groups. This group difference however was not replicated in ascribing of motives to the author, potentially because of a lack of threat perceived from the text. Furthermore we propose an alternative method through which moral disengagement might be enabled, namely conformity. This is important because of the risks associated with being

ostracized from the group on the basis of diet. All this leads us to reason that moral disengagement did happen and should be further taken into account when creating media meant to persuade or convince people to change their diet. Finally food neophobia was investigated and results highlighted a near significant result for ascribing selfish author motives. As such this could support the hypothesis that those who are more higher in food neophobia could perceive more threat from the meat paradox because they are more avoidant of unknown foods, this increased threat then would lead to more moral disengagement by discrediting the author. So in conclusion, media that is aimed at changing peoples diets should be considerate of moral disengagement strategies and try to integrate methods to counteract these effects. If future research findings align with our neophobia findings this could be an example of a factor that might have high relevance for media communication. As moral disengagement might happen more rapidly in those more prone to avoiding unknown foods. Thus it is advised to take these factors into account going forward and improving our messaging surrounding dietary choice.

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Appendix

Measures

Author Motive

- 1) The author wants to communicate facts to the public (Prosocial)
- 2) The author wants to be important (Selfish)
- 3) The author wants to protect their personal interests (Selfish)
- 4) The author wants to gain recognition (Selfish)
- 5) The author wants to save the planet from climate change (Prosocial)
- 6) The author wants to help others make better decisions (Prosocial)

Perceived Convincing

- 1) plant based diets are categorically better for the environment
- 2) plant based diets are categorically better for your health
- 3) plant based diets prevent animal suffering

Cognitive Reflection

- 1) You are faced with two trays each filled with white and red jelly beans. You can draw one jelly bean without looking from one of the trays. Tray A contains a total of 10 jelly beans of which 2 are red. Tray B contains a total of 100 jelly beans of which 19 are red. From which tray should you draw to maximize your chance of drawing a red jelly bean?
- 2) Julie has 5 dolls. Julie has 4 more dolls than Angie. How many dolls does Angie have?
- 3) Does the conclusion follow logically from the premises? Premises: - All flowers need water
- Roses need water Conclusion: Roses are flowers
- 4) When playing slot machines, people win something about 1 in every 10 times. Julie, however, has just won on her first three plays. What are her chances of winning the next time she plays?
- 5) A farmer had 15 sheep and all but 8 died. How many are left?

6) Imagine that we are tossing a fair coin (a coin that has a 50/50 chance of coming up heads or tails) and it has just come up heads 5 times in a row. For the 6th toss do you think that: - more likely heads – heads and tails are equally probable

Food Neophobia

- 1) I am constantly sampling new and different foods (Reverse)
- 2) I don't trust new foods
- 3) If I don't know what a food is, I won't try it
- 4) I like foods from different cultures (Reverse)
- 5) Ethnic food looks too weird to eat
- 6) At dinner parties, I will try new foods (Reverse)
- 7) I am afraid to eat things I have never had before
- 8) I will eat almost anything (Reverse)