What are the odds? The likelihood of information retention of behaviour-congruent and behaviour-incongruent information in the context of animal product consumption

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PSB3E-BT15: Bachelor Thesis

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January 7, 2024

Abstract

Many individuals who consume animal products (AP) experience cognitive dissonance as a consequence of the conflict between their attitude towards consumption (i.e. pro-environmental beliefs and affections towards animals) and their consumption behaviour. This paper investigates the likelihood that individuals retain behaviour congruent information compared to behaviour incongruent information in the context of AP consumption. Hereby, the study aims to explain why previous interventions advocating a large-scale reduction of AP consumption were unsuccessful in reaching the desired effect. Additionally, this study intends to contribute to a framework that can be used to design future interventions directed towards the decrease of AP consumption. In a survey, 161 participants were presented with two informational texts containing arguments in favour of and against a decrease in AP consumption. Hereafter, participants were asked which arguments they remembered being discussed in the informational texts. Data analysis showed that members of distinct dietary groups did not differ in retention scores on behaviour congruent or incongruent information. The present work cannot conclude dietary choices can be a predictor of the nature of information that an individual retains. Recommendations for future research address the limitations that this study has encountered and suggest further investigation of the topic.

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In recent decades, climate change has emerged as one of the most pressing challenges confronting humanity. According to the World Health Organization (2023), climate change is directly associated with the increasing frequency of extreme weather (e.g., heatwaves, wildfires, floods, etc.). The Intergovernmental Panel on Climate Change (IPPC, 2019) reports that 3.6 billion people worldwide inhabit regions that are vulnerable to climate change. In these regions, the last decade has shown a fifteen-time increase in recorded deaths that are directly attributable to these extreme weather conditions. Data from the WHO indicates that two billion people lack access to safe drinking water and 600 million people must endure the consequences of foodborne illnesses annually. The WHO calls for direct action: the temperature rise must be limited to 1.5 ˚C to minimise further escalation of these circumstances.

Among the major causes of global warming (e.g., industry, transportation, etc.), we find that agriculture, forestry, and other land uses are responsible for up to 23% of Greenhouse Gas (GHG) emissions (IPPC, 2019). Within this category, the livestock industry is responsible for a contribution of between 12 and 18 percentage points. Research by Allen and Hof (2019) stipulates that roughly 30% of earth's ice-free surface area is used to grow livestock feed or house livestock. Next to this, forests are cleared daily to ensure the industry of livestock farming can be expanded. Agriculture, specifically the livestock industry is not only a significant contributor of GHG but also a threat to biodiversity and the ecosystem's functioning. At the same time, this industry can be seen as vital to humanity to thrive. Animal products constitute a relatively cheap source of nutrients that the human body needs to survive. The livestock industry also employs numerous people and keeping and consuming livestock is deeply woven into the fabric of many cultures. While there is no denying that the

livestock industry harms the environment and those who live in it, the decision on whether to scale down the industry and how to do it sees humanity divided.

According to Petrovic and colleagues (2015), production and consumption of AP has more than tripled in industrialized countries in recent decades, increasing from around 70 million tons in 1961 to almost 300 million tons in 2010. Growing populations and greater per capita consumption for AP has led to a steep increase in demand and, by extension, supply. In the Western world, the intake of AP is a central part of the diet of many people. Following the growing consensus among scientists, changing 'Western diets' could have a positive outcome on both the environment and human health (Westhoek et al., 2014). Despite widespread attention given to the harmful effects of the livestock industry, many people are reluctant to lower or stop their consumption of AP. Ethical concerns also arise after critically appraising circumstances facing animals in the livestock industry. However, for many people, this is not considered incentive enough to alter their consumption behaviour. This inconsistency between attitude and behaviour has been coined the 'meat paradox' (Loannidou, 2023). Rothgerber (2020) introduced a framework to understand the phenomenon of meat-related cognitive dissonance (MRCD). He argues that people who consume meat experience negative affect as a consequence of the discrepancy between their attitude (i.e., the livestock industry is bad for the environment and I have ethical concerns about it) and their behaviour (i.e., continuation of AP consumption). Seeking to reduce this discomfort, people engage in several strategies to reduce cognitive dissonance (CD). This three-step process can be generalized to explain other behaviours as well, such as alcohol consumption and smoking. However, MRCD can also be extended to cover the consumption of all animal products (e.g., eggs, milk, leather, etc.), considering the ethical and environmental concerns have a substantial overlap.

Applying Rothgerber's (2020) framework to a wider scope of AP, people engaging in AP consumption behaviour experience MRCD. Following this attitude-behaviour

discrepancy, a negative affect is experienced, leading AP consumers to utilize CD reduction strategies. However, according to Festinger's (1962) classical formulation of CD, individuals engaging in questionable behaviour might pre-emptively attempt to evade situations and information that trigger CD altogether. In this case, individuals act ambivalently, trying to bypass confronting the issue in the first place. Therefore, evasion of triggers for CD is seen as the first strategy to avoid experiencing the consequential negative affect. Triggers can be categorized under five different categories: (1) exposure to information about the issue; (2) reminders that AP come from animals; (3) admitting that one consumes AP ; (4) admitting that one's AP consumption behaviour has negative consequences; and (5) being in the presence of vegans (Rothgerber, 2020; Rothgerber & Rosenfeld, 2021).

Although AP consumers often unconsciously try to evade triggers of MRCD, they can still encounter situations in which they are confronted with their behaviour. In this case, experiencing CD cannot be avoided, requiring the utilization of other strategies that help to decrease negative affect. Looking back at Festinger's (1962) original conception of cognitive dissonance theory, CD can be reduced by either decreasing discrepant cognitions or adding consonant cognitions. Research has pointed out that the former strategy is less likely to be chosen, as it would involve individuals convincing themselves they do not care about animal well-being and the environment or changing their consumption behaviour to be more consistent with their attitude (i.e., stop AP consumption). According to Bastian and Loughnan (2017), individuals are more likely to add consonant thoughts, such as justifications and rationalizations, to reduce CD. Strategies can be either direct or indirect.

A review, published by Rothgerber and Rosenfeld (2021), summarizes contemporary research on these strategies. They also distinguish between direct and indirect strategies. Indirect strategies of dissonance reduction are characterized by the exclusion of oneself from the problem behaviour or the reinforcement of one's moral identity in another way.

Individuals using indirect strategies may, for example, underreport AP consumption, or label themselves as a 'humane meat eater.' They might also blame third parties and are more likely to see themselves as 'powerless' to improve the animal welfare norm in the livestock industry. According to Alonso and colleagues (2020), the majority of people indicated that animal welfare is not a matter for consumers, but a responsibility for the government to make sure appropriate laws are in place to stimulate the production of 'humanely' sourced AP.

While indirect strategies may help reduce negative affect as a consequence of CD, they do not justify their behaviour. Direct strategies of dissonance reduction aim to justify and rationalize AP consumption, making individuals feel less conflicted about their behaviour. These strategies can be categorized into two groups: they either focus on animal-based reduction or meat-based reduction. A commonly utilized active strategy to combat animal-based reduction is to reject the existence of animal conscience. This argument incorporates the assumption that animals do not think, feel, or suffer like humans, and therefore, harming animals is not morally problematic. Here, the concept of speciesism is adapted to fit personal needs. On the other hand, the notion that the human body needs meat to survive is a common active strategy to combat meat-based reduction. These individuals might also argue that AP consumption is just normal or justify their behaviour through religious ideology or cultural norms.

Past research has provided an extensive understanding of cognitive dissonance theory and how it might be used in shaping interventions that can successfully tackle worldwide socio-economic and environmental challenges. However, an extensive review of 24 studies reporting on 59 campaigns with the objective of reducing meat consumption has concluded that neither providing information about the environmental impact of the livestock industry nor animal welfare concerns has any meaningful effect on consumption behaviour (Bianchi et al., 2018). In trying to gain insight into the effects of such campaigns, a study by Hwang

(2010) looked at the effectiveness of anti-tobacco campaigns in the context of selective perception. Selective perception refers to the concept of individuals having a bias towards perceiving information in a manner that is in line with their needs, goals, values, attitudes, and beliefs. This study found that individuals engaging in tobacco use were more likely to show disparagement of the campaign message compared to those who did not show this behaviour. This bias in information processing had been the topic of many studies throughout the past decades. According to Yoon and colleagues (2012), when individuals are presented with information, especially when presented with a large amount of information, they tend to shift their attention to information that is congruent with their own needs. Related to this cognitive process is the process of selective retention. This concept explains the tendency to retain certain information and store it for later use while other information is erased from memory. Like selective perception, selective retention shows a bias for information that is congruent with an individual's needs, making it more likely that it is stored for later recall (Shrum, 2015). In the context of campaigns promoting AP consumption reduction, this means that individuals tend to perceive and retain information that is congruent with their behaviour while neglecting information that conflicts with it and might cause CD. This conclusion is further supported by Rothgerber (2020), who argues that individuals are more likely to arrive at conclusions and make decisions that are in line with their behaviour, rather than changing their behaviour to accommodate their conflicting beliefs. Combining the ideas of cognitive dissonance theory, selective perception and selective retention might explain why campaigns promoting the reduction of AP consumption are still unsuccessful in delivering concrete results.

The current study aims to strengthen Rothgerber's conceptual framework of negative arousal reduction in individuals experiencing MRCD (2020) by acquiring knowledge about the effects of selective information retention on the experience of CD. Doing so, this study

intends to add to an already strong framework that can be used to shape interventions directed specifically at decreasing AP consumption behaviour. Examining the association between selective information retention and AP consumption behaviour might also provide insight into why many people are reluctant to change their diet to be in line with their pro-environment and pro-animal welfare beliefs. It is likely the case that the process of selective perception and retention makes it more likely that individuals retain information that is in line with their behaviour, thereby avoiding the experience of CD. The current study aims to address a gap in the literature and investigate how strong this effect is by producing an odds ratio as a final product: how much more likely are people to retain information that is congruent with their behaviour than information that is not? This is done by presenting participants with two separate texts containing pro-vegan and pro-AP arguments respectively, and later, asking them what arguments they remember being present in the respective texts. Specifically, this study will distinguish between different dietary groups (i.e., omnivore, pescatarian, flexitarian, vegetarian, or vegan) to examine nuances between these groups. It is hypothesized that: (1) omnivores are more likely to retain information that is congruent with their AP consumption behaviour and less likely to retain information that conflicts with their behaviour. In contrast, (2) Vegans are more likely to retain information that is congruent with their pro-vegan beliefs while also retaining pro-AP arguments. This is because pro-AP information does not provoke CD. (3) Participants who follow a diet that (strongly) reduces the consumption of AP will fall in between but are expected to have increased retention of information in line with pro-vegan beliefs. The results of this study might be used to help shape future interventions directed at the reduction or exclusion of AP from people in their diets.

Method

Participants

The full study included 161 participants; 115 (71,4%) female, and 35 (21.7%) males; 3 (1.9%) participants preferred to self-describe as a non-binary gender; 9 (5%) participants did not fill in information on their gender. The mean age of participants was 33.2 years old (SD = 14.9) with a minimum of 18 and a maximum of 93 years. Concerning diet, 58 (34.2%) participants self-described as omnivorous; 44 (27.3%) as flexitarian; 11 (6.8%) as pescatarian; 27 (16.8%) as vegetarian; and 21 (13.0%) as vegan.

Design

The current study is a correlational study that aims to investigate the effect of AP consumption behaviour on the selective retention of behaviour-congruent and incongruent information. Data was gathered using a digital survey made in collaboration with the group supervisor and other group members. The survey consisted of several questions and scales. The median time it took participants to fill in was 15 minutes. Data analysis was done in IBM SPSS.

Procedure

The current study uses a convenience sample. The researchers distributed the survey to people in their social environment and instructed them to relay the survey to anyone who might be interested. Participation was anonymous and participants did not receive any financial compensation for partaking in the study. Data was collected from 2023, November 29 until 2023, December 4. Before distribution, the survey was approved by the *Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen*.

Materials

At the start of the survey, participants were asked about their dietary preferences. Possible choices were 1) *omnivore*, 2) *flexitarian*, 3) *pescatarian*, 4) *vegetarian*, 5) *vegan*, and 6) *other*. Participants who specified their dietary preference as '*other'* were asked to explain

their answer. During data analysis, these participants were assigned to one of the dietary preference categories based on their explanation.

After this, participants were presented with two texts. One of these texts contained arguments in favour of a vegan diet (203 words), while the other text contained arguments in favour of a diet containing AP (252 words). Both texts can be found in Appendix A. Participants were instructed to read the texts carefully and that they would be asked questions about them later. The time that it took participants to submit each page containing a text was recorded. The median time it took participants to submit the texts was 69 and 75 seconds for the pro-vegan and pro-AP texts, respectively. This data was used during data analysis to determine which participants presumably had not read the text so they could be excluded from the analysis. The pro-vegan text was always shown before the pro-AP text as this was necessary for the thesis of another member of the thesis group.

Close to the end of the survey, participants were presented with eight statements about the contents of the text in random order. The statements can be found in Appendix B. For each text, two statements were presented that were discussed in the text. Additionally, two statements were presented that were not discussed in the text but that did relate to commonly used arguments in favour of or against the consumption of AP. Participants were asked to indicate on a Likert scale how certain they were on whether these statements were present in the text or not. Answer options were 1) *definitely not in the texts*; 2) *probably not in the texts*; 3) *I don't know*; 4) *probably in the texts*; and 5) *definitely in the texts*. Participants were instructed to only judge the statements on their presence in the text and not on whether they agreed with them. To give each participant a score for information retention, participants received points when they answered correctly and penalty points when they answered incorrectly. Participants' scores stayed the same when they answered, '*I don't know*'. This was done so that participants could be compared on their retention of the different texts.

Participants could not see their scores while filling in the survey or after. During data analysis, this score was used to give each participant a score on how well they memorized the texts. Furthermore, the score was used to determine the likelihood that behaviour congruent and incongruent information was retained.

Participants who were unlikely to have read the texts were excluded from the data analysis. Trauzettel-Klosinski and colleagues (2012) indicate that the average reading speed of a native English speaker is 228 ± 30 words/minute. For this study, participants who were more than three standard deviations above the average reading speed were excluded from the analysis because they probably had not read the texts. Therefore, participants who submitted the texts faster than 38 seconds or 47 seconds for the pro-vegan and pro-AP texts respectively were excluded from data analysis. Of 161 total participants, 72 (44.72%) participants were excluded from data analysis.

Results

After excluding participants based on reading speed, 89 (55,28%) participants remained for data analysis. This sample consisted of 66 (74.2%) females; 21 (23.6%) males; and 1 (1.1%) person that self-describes as a non-binary gender. 1 (1.1%) participant did not volunteer data on their gender. The mean age of the sample was 33.8 years old (SD = 15.9). Of the sample, 31 (34.8%) participants followed an omnivorous diet; 23 (25.8%) participants followed a flexitarian diet; 6 (6.7%) participants followed a pescatarian diet; 18 (20.2%) participants followed a vegetarian diet; and 11 (12.4%) participants followed a vegan diet. For the data analysis, participants' dietary preferences were generalised as 1) omnivorous, 2) flexitarian/pescatarian/vegetarian, and 3) vegan. The distribution of these categories is displayed in Table 1.

For the eight statements, participants could receive from -2 points, in case the answer was completely wrong (e.g. participant indicated to be certain a statement was present in the

text while it was not), up to 2 points per statement in the case the participant was completely correct (e.g. participant indicated to be certain a statement was present in the text while it was present). The variables were recoded to show these scores. Table 2 shows the statements; in which text they were present; the average number of points awarded and the standard deviation. The average number of points awarded per statement per participant was 0.88 (SD=0.43), ranging from -0.38 to 1.88.

Table 1

Generalised categories for dietary preferences

Dietary preference	*n*	%
Omnivorous	31	34.8
Flexitarian/pescatarian/ vegetarian	47	52.8
Vegan	11	12.4

Table 2

Information about retention statements

Did the text say that…	*Presence in text*	*Text*	*M*	*SD*
...many countries worldwide are not able to sustain a completely plant-based diet.	Yes	Pro-AP	1.02	1.305
...the animal product industry is an enormous provider of jobs to people worldwide.	Yes	Pro-AP	1.44	0.988
...the transportation sector is responsible for more carbon emissions than the bioindustry.	No	n/a	0.90	1.082
...meat consumption stimulates metabolism and bone strength.	No	n/a	1.06	1.122
...animals should not be harmed for human benefit.	Yes	Pro-vegan	0.62	1.045
...following a vegetarian diet can reduce your carbon footprint by more than 1.5 tons yearly.	Yes	Pro-vegan	1.37	1.004
...consuming animal products has adverse effects on one's health, increasing the risk for vascular disease.	No	n/a	0.56	1.097
...people should be more aware of the harm they cause to animals.	No	n/a	0.03	1.027

Participants in the three dietary preferences categories were compared on their scores on statements about the pro-vegan text; scores on statements about the pro-AP text; and the cumulative score of all statements. Scores for the individual texts were calculated by accumulating the points for each relevant statement and adding 8 points to ensure the lowest score that could be accomplished was 0. The highest score possible was 16. In the case of the cumulative scores for the eight statements combined, 16 points were added to the accumulation of the scores to ensure the lowest score possible was 0. The highest score possible was 32 points.

For the pro-vegan text, the flexitarian/pescatarian/vegetarian group scored the highest with an average of 10.7 (SD = 1.8) points, ranging from 5 to 15. The omnivores group followed with an average of 10.6 (SD = 2.1). These scores ranged from 4 to 14. The vegan group scored the lowest, averaging 10.2 (SD = 2.3). Scores in this group ranged from 6 to 13. The mean score of all participants was 10.6 (SD = 1.9).

For the pro-AP text, the vegan group scored the highest, averaging 13.5 (SD = 2.5). The highest score was 16 and the lowest score was 8. The omnivore group scored on average 12.6 (SD = 2.4), ranging from 5 to 16. The lowest scoring was the flexitarian/pescatarian/vegetarian group with an average of 12 (SD = 2.4). Scores ranged from 7 to 16. The mean score of all participants was 12.4 (SD = 2.5).

For the cumulative scores, the vegan group scored the highest, averaging 23.6 (SD = 4). Scores ranged from 17 to 29. The omnivore group followed with an average score of 23.2 (SD = 3.5). Scores ranged from 13 to 30. The lowest scoring was the flexitarian/pescatarian/vegetarian group with an average score of 22.74 (SD = 3.280). Scores ranged from 15 to 31. Table 3 shows an overview of how distinct groups scored.

An ANOVA was performed to see if scores differed significantly between the distinct dietary preference categories. The conditions for homogeneity and normality of the data were

met. The ANOVA did not show significant differences in scores between the distinct dietary groups according to their respective p-values. This is inconsistent with the hypotheses of the study. The results of the ANOVA are visible in Table 3.

Table 3

Means, Standard Deviations, and One-Way Analyses of Variance of scores on text statements.

Measure	Omnivores		Flex/pesc/veg		Vegan		*F*(2, 86)	*p*	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*			
Pro-vegan text	10.55	2.095	10.70	1.841	10.18	2.272	.314	.732	.007
Pro-AP text	12.61	4.418	12.04	2.440	13.45	2.505	1.648	.198	.037
Total scores	23.16	3.532	22.74	3.280	23.64	4.032	.347	.708	.008

Note: flex/pesc/veg = flexitarian/pescatarian/vegetarian.

After the ANOVA did not find significant results between the three dietary groups, participants were recoded to reflect their meat-eating behaviour (i.e. do they consume meat or not). An independent samples t-test was conducted to see if retention scores for both texts would differ based on their meat consumption. For the pro-AP text, the difference in mean scores of participants who eat meat (M = 12.5; SD = 2.4) and participants who do not eat meat (M = 12.2; SD = 2.6) was not significant (t (87) = 0.647; p = 0.26). For the pro-vegan text, the difference in mean scores of participants who eat meat (M = 10.8; SD = 2) and participants who do not eat meat (M = 10.2; SD = 1.8) was not significant (t (87) = 1.143; p = 0.128). As differences between dietary groups were not significant, an odds ratio was not calculated.

Discussion

Study Validity

The current study examined the effects of AP consumption behaviour on the retention of behaviour congruent and incongruent information. A survey was used that contained questions about participants' AP consumption behaviour, followed by two texts, one that

opposed the consumption of AP and one in favour of it. Near the end of the survey, participants were asked what they remembered from the texts. The survey was spread within the social circles of the members of the thesis group, using a snowball technique. This brought forth 161 participants. This was a convenience sample that might not be representative of the entire population. Therefore, results might be different when the study is repeated with other participants.

Retention of Behaviour Congruent and Incongruent Information

Data analysis showed that there were no significant differences in retention scores for behaviour congruent and incongruent information between different dietary groups. This means that the nature of presented information (i.e. being in line with one's behaviour or not) did not affect what information participants retained. Participants with different dietary preferences were not more likely to remember information that was consistent with their behaviour than information that was not. Furthermore, when only looking at meat consumption instead of AP consumption as a whole, no effect on information retention was found. This is in contrast with the expectations of the study. The study expected to find that participants who regularly consumed AP would be more likely to retain information that justifies their behaviour while having more trouble remembering information that opposes and threatens the morality of their behaviour. Contrariwise, it was expected that participants with reduced (or who had completely abolished) AP consumption would feel less moral threat as a result of information that opposed AP consumption, thereby not affecting information retention as much.

These hypotheses were strengthened by contemporary research on CD and selective information retention. According to Rothgerber's (2020) conceptual framework of how meat-eaters reduce negative arousal caused by CD, participants would have to go through a biased process of memory retrieval and construct of beliefs to process the information that they read

in the pro-vegan and pro-AP text. This would make it more likely to retrieve behaviour-congruent information for further processing. Additionally, according to Yoon and colleagues (2012), when individuals are presented with information, they tend to shift their attention to the information that is in line with their own needs and beliefs. This was added upon by Shrum (2015), who argued that this process of selective perception also leads to the storage of selective information in long-term memory. These combined processes of selective attention and retention also contribute to the expectation that participants would have a bias in information retention when presented with information on the consequences of their dietary choices. This, however, is in contrast with the findings of the present study.

Limitations

A possible explanation for this might be that the survey did not measure information retention well enough to reflect these (subtle) differences. Participants were presented with two texts and later asked questions about the content of these texts. While participants were explicitly instructed to only judge the statements based on their objective presence in the texts, it might still have been that participants' attitudes towards the statements affected their answers. Next to this, due to the exclusion of participants during data analysis, the sample size decreased from 161 to 89 participants, possibly creating a problem with lower statistical power. Combined with the small effect sizes for the pro-vegan text ($\eta=0.007$) and the pro-AP text ($\eta=0.037$), it is unlikely that a true effect would be detected unless it was very large. Hereafter, it is also possible that eight statements were not a sufficient amount to accurately measure if there is a difference in information retention between different dietary groups. Originally, 16 statements were created for the participants to answer, however, the number of statements was decreased to eight to shorten the survey. A larger number of statements might have been able to show more nuances in retention scores, and thereby, more accurately measure information retention.

Some factors related to the texts that could have influenced study results are the order of presentation, the writing styles, and the lengths of the texts. The pro-vegan text was always shown earlier in the survey before the pro-AP text. There were also some questions, irrelevant to this study, between the two texts. The fact that there was less time between reading the pro-AP text and evaluating the statements might explain why participants scored higher on the pro-AP text (M = 12.42) than on the pro-vegan text (M = 10.58). The writing styles and lengths of the two texts were also different. The pro-vegan text consisted of 203 words, while the pro-AP text was slightly longer with 252 words. Although the effect these factors had is unknown, more consistency in these factors should be ensured to eliminate the possibility that they influenced results. Research by Yoon and colleagues (2012) points out that when individuals are presented with a larger quantity of information, selective perception (and thereby selective retention) is more likely to occur. For practical reasons, however, using longer texts was not possible in the current study.

An overarching limitation of the survey is the length of the survey. Because all six members of the thesis group chose a different approach to the topic, the survey became very lengthy. Many respondents took over 20 minutes to finish the survey. According to research on the effect of questionnaire length on response quality (Galesic & Bosnjak, 2009), a longer questionnaire can hurt response quality. Their research argues that answers to questions later in the questionnaire are given faster and with less care. Additionally, the survey was only conducted in English. As many respondents were not native English speakers, response quality might have been negatively influenced.

Perhaps the biggest limitation of the study is that it did not consider the specific CD reduction strategy that an individual utilizes. As mentioned in the introduction section of this paper, individuals can engage in several strategies that help decrease negative arousal. Participants of the study may have adopted these strategies to convince themselves that

information was not incongruent with their behaviour in the first place, thus bypassing the principles of selective perception that underly this study's hypotheses.

Implications and Future Directions

Even though the current study has not been able to produce evidence of the effect of behaviour congruent or incongruent information on information retention, finding whether this effect exists and how strong it is can strengthen Rothgerber's conceptual framework of negative arousal reduction in individuals experiencing MRCD (2020). Doing so, it can contribute to designing interventions that target AP consumption behaviour on a large scale.

For future research on this topic, it is advised that researchers bear in mind that a more elaborate set of statements, accompanying more extensive information on both perspectives on AP consumption, might be more successful in detecting an effect on information retention. In addition to this, the CD reduction strategies that an individual utilizes should be monitored to control for the effect this might have on selective perception, and thereby, selective retention.

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Appendix A

Pro-vegan and pro-AP text used in the survey including instructions

Instructions

Below, there is a text. Some people disagree with it, and some people agree with it. Please read it; we will ask questions about it later.

Pro-vegan text

According to the United Nations "Animal-based diets have a high [negative] impact on our planet. [It results in] the need to clear land and deforestation to] make room for animal farms and growing animal feed. This results in loss of biodiversity, greater strain on resources like water and energy, [etc.]. In the case of livestock such as cows and sheep, methane production, a greenhouse gas that is more potent than carbon dioxide, [worsens] the problem. The issue extends to seafood where overfishing and degradation of our oceans from industrial activity and pollution put the future of our ocean at jeopardy." The UN also states that animals should be considered as individual beings, not just as something humans can use for their own benefit (UNCAHP). "The dignity of the animal consists in the animal's inherent worth, which must be respected in every interaction" (…) no one should cause suffering to (…) animals (…)" Switching to a plant-based diet can reduce an individual's annual carbon footprint by up to 2.1 tons with a vegan diet or up to 1.5 tons for vegetarians." The UN also states that there is a broad availability of vegan substitutions which also contribute to better health and saving money!

Pro-AP text

Eating animal products (AP) is natural. According to some doctors, AP contain essential nutrients and consumption boasts health advantages. Besides this, there is a strong cultural component to consuming AP. It has been central to humans since the beginning of our species. The bioindustry also provides countless jobs. Deletion of these jobs would

provoke socioeconomic challenges that outweigh the problems caused by AP consumption. Abolishment of AP globally would decrease carbon emissions; however, the environmental impact of large companies is far greater. Targeting those companies is much more sensible than targeting something vital as the food industry. Furthermore, not every country is able to solely rely on a plant-based diet. Countries, in which the landscapes do not support producing only plant-based food, would have to increase food imports significantly, causing supermarket prices to rise, making a healthy diet inaccessible to the general population. An article, published in the Journal of Agricultural and Environmental Ethics, speaks of the lack of conceptual connection between animal consciousness and their moral status, arguing that the argument of sentience alone is not sufficient for moral status. Since animals lack moral status, and many humans depend on their produce, causing them harm is not unjustified. Therefore, it is not morally wrong to eat them. An article, posted by the Cambridge University Press, adds to this by arguing that eating meat is our moral duty. The existence of domesticated animals depends on the practice of eating them. If this practice is stopped, so does their purpose and therefore, existence.

Appendix B

Statements used in the survey including instructions

Instructions

Earlier in this survey, you read two texts, one against the consumption of animal products and one in favour of it. How well can you remember the texts? Please indicate below how convinced you are that a certain argument was used in the texts.

Remember: it is not about if you agree or if they are true or false but if you think they were in the texts.

Pro-vegan statements

a. Animals should not be harmed for human benefit. *
b. Following a vegetarian diet can reduce your carbon footprint by more than 1.5 tons yearly. *
c. Consuming animal products has adverse effects on one's health, increasing the risk for vascular disease.
d. People should be more aware of the harm they cause to animals.

Statements containing an * were discussed in the texts.

Pro-AP statements

a. Many countries worldwide are not able to sustain a completely plant-based diet. *
b. The animal product industry is an enormous provider of jobs to people worldwide. *
c. The transportation sector is responsible for more carbon emissions than the bioindustry.
d. Meat consumption stimulates metabolism and bone strength.

Statements containing an * were discussed in the texts.