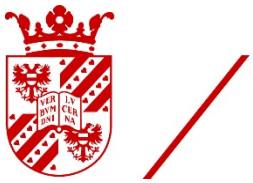

The role of environmental- and health information and commitment on the intention to reduce meat consumption, to enhance the meat tax in the Netherlands

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Master Thesis – Environmental Psychology

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December 2021
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Abstract

Meat consumption is one of the biggest contributors to greenhouse gas emissions (up to 18%). Too much meat consumption can increase the risk of various diseases (i.e. diabetes, cancer, and heart disease). A meat tax can help in reducing meat consumption. Interventions, such as informational strategies and commitment can enhance a meat tax. This study will investigate people's intention to reduce meat consumption after a manipulation of information (health, environment, or control) and a manipulation of commitment (commitment vs control). The informational manipulation was not significant, however, signing a commitment led to a significantly higher intention, attitude, and subjective norm on reducing meat consumption. This study suggests that the investigated group (18-30 years and highly educated) will not profit from informational strategies in reducing meat consumption. However, commitment strategies could be effective in increasing one's intention to reduce meat consumption. Results are discussed with recommendations for future research and policies.

Keywords: Meat-tax, Environment, Health, Commitment, Intention

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The worldwide consumption of meat is rising, due to increased welfare and the growing world population (Sanchez-Sebate & Sabaté, 2019). In fact, in 2010 it was estimated that meat consumption would increase globally by 73% over the next 40 years (Graham & Abrahamse, 2017). The expansion of meat consumption is posing a threat to the environment because it causes, for example, higher temperatures, water pollution, and loss of biodiversity (González, et al., 2020). The meat industry is one of the biggest significant contributors to greenhouse gas emissions (GHG emissions; IPCC, 2018; IPCC, 2021; Lentz et al., 2018). Up to 18% of GHG emissions are caused by the livestock sector, using land for agriculture, and requiring high levels of freshwater (Allen, & Hof, 2019; González, et al., 2020; IPCC, 2019; Sanchez-Sebate & Sabaté, 2019). Humans are partly responsible for the consequences of climate change (IPCC 2021). Therefore, we can impact the environment by changing our behavior, so that our GHG emissions will decrease as well as the rising temperature of the earth. In fact, reducing our meat consumption will help us to a great extent to achieve the global agreement: less than a 2°C increase in temperature worldwide (González, et al., 2020; IPCC, 2018). This requires, among other things, behavioral change in our meat consumption on an individual level, but also nationwide.

Ministry of Finance

This study was conducted as part of an internship at the Ministry of Finance. For the Ministry of Finance, it is interesting to know which strategies can enhance the effect of a meat tax. A meat tax installed by the government is sometimes used in countries to reduce meat consumption. Does the government need to emphasize the health consequences of meat consumption or is emphasizing the environmental consequences of consuming meat more

effective? This leads to the following main research question: Which informational and commitment strategies can enhance the effect of the meat tax on reducing meat consumption?

Effectiveness of a Meat Tax

A meat tax could potentially decrease meat consumption by facilitating a change in consuming habits (Broeks et al., 2020; Lentz et al., 2018; Wirsenius, 2010). In Denmark, a tax on saturated fat (which is found in a high percentage of red meat) was introduced in 2011. However, it was repealed in 2012 (Vallgårda, Holm & Jensen, 2014). It was argued that the repeal of the tax had more to do with the political opposition than with the actual benefits of the tax. Research published right after the repeal showed that the consumption of products with a high percentage of saturated fat (for example butter) decreased by 10-15% (Jensen & Smed, 2013). This was observed directly after the introduction of the tax was implemented, so no conclusions can be drawn for any long-term effects. However, research in Sweden about the long-term effect of a meat tax showed a decrease in demand for meat products and dairy products (Säll & Gren, 2015). A meat tax of 33% for beef was used since the consumption of beef is one of the biggest contributors to GHG emissions. After the meat tax, the demand for beef decreased by approximately 17-19% per year (Säll & Gren, 2015). Research on a meat tax in the Netherlands also showed an estimated decrease in the consumption of meat (Broeks et al., 2020). With a meat tax of 15%, it was calculated that over a timeline of 30 years the impact of GHG emissions will be reduced by 8.6% in the Netherlands. Besides that, the health impact of a meat tax of 15% is found mostly in the prevalence of diabetes type 2: over a timeline of 30 years, 449 cases of type 2 diabetes would be averted in the Netherlands (Broeks et al., 2020).

Yet, pricing strategies can be even more effective if combined with other strategies to change behavior, demonstrated by a meta-analysis (Lentz et al., 2018). A meat tax is more likely to be effective when people understand why it is implemented (Lentz et al., 2018), and

especially so for long-term behavioral change (Jensen & Smed, 2013; Vallgårda, Holm & Jensen, 2015). Increasing knowledge of the consumer has proven to be effective, especially in combination with other interventions (such as a meat tax) (Bonnet et al., 2020; Harguess, 2020). Informational strategies can therefore support the implementation of a meat tax. Besides a higher price of meat, there are a few well-known reasons for people to change their meat consumption behavior. The most important reasons are the health concerns, the environmental impact, and animal welfare (Lentz et al., 2018).

Informational Strategies for Meat Consumption

Environmental Strategy

Information about the impact of consuming meat on the environment appears to positively change intentions towards pro-environmental behavior and to increase the intention to reduce meat consumption (Graham & Abrahamse, 2017; Lentz et al., 2018). People who consume meat regularly tend to indicate that the environmental impact is not an incentive for them to consume less meat (Lentz et al., 2018). Studies show that this could be due to a lack of knowledge and that perhaps if they gain more knowledge about the environmental impact of consuming meat, it will become a more urgent reason to change their consumption behavior (Lentz et al., 2018; Sanchez-Sebate & Sabaté, 2019). Flexitarians (people who occasionally eat meat and do not follow the vegetarian diet strictly) and vegetarians mention the environmental impact of consuming meat as an important reason to reduce their meat intake (Derbyshire, 2017; Lentz et al., 2018; Sanchez-Sebate & Sabaté, 2019).

Health Strategy

Besides the impact of consuming meat on the environment, consuming meat also has an impact on the health of individuals. Meat consumption can increase the risk of various diseases (e.g. cancer, heart disease, and diabetes; Godfray et al., 2018; Nelson et al., 2016) and of becoming resistant to antibiotics (Dumont et al., 2016). Furthermore, an observational

study showed that meat consumption might be related to weight gain (Vergnaud et al., 2010). However, meat consumption can also have health benefits, since it is an important source of protein (Pereira & Vicente, 2013). These benefits are only applicable if meat is consumed within the recommended amount. The recommended amount of meat per year is 15-20 kilograms (Dagevos et al., 2020). On average, the recommended amount of meat is exceeded in the Netherlands; 39 kilograms of meat was eaten per capita in 2019 (Dagevos et al., 2020). This is more than the recommended amount, which increases the risks of the above-mentioned consequences (Dagevos et al., 2020). Moreover, the health benefits from meat consumption can be covered by consuming high protein plant-based products (e.g. beans, chickpeas, or lentils), which also contain the necessary vitamins and minerals (Leterme, 2002; Neacsu & Johnstone, 2017; Tso & Forde, 2021). Health benefits associated with reducing meat consumption are one of the primary motivators to reduce (the intention to) meat consumption, especially for people who eat a lot of meat (Lentz et al., 2018).

Animal Welfare

Finally, animal welfare is also mentioned in the literature as a reason to reduce meat consumption (Lentz et al., 2018). Many consumers are concerned with animal welfare but are not willing to pay more money for better animal welfare (Bonnet et al., 2020). This is partly because most people have romanticized the image of animals in the livestock sector (Sanchez-Sebate & Sabaté, 2019). Animal welfare is mentioned as a reason for vegans and vegetarians to adopt a vegetarian diet but is not a primary reason to become a vegetarian (Lentz et al., 2018; Sanchez-Sebate & Sabaté, 2019). Flexitarians are less concerned with animal welfare and find health and environmental reasons more compelling to reduce their meat consumption (Sanchez-Sebate & Sabaté, 2019).

Commitment

Apart from informational strategies, there are other ways to achieve behavioral change. Even if people want to change their behavior, changing one's behavior is often experienced as difficult, especially pro-environmental behavior (Coker & van der Linden, 2020). It is difficult for people to mentally link their dietary choices to environmental and health impact, however, the choices of the daily consumer have a great influence on the environment (Coker & van der Linden, 2020; Roy & Pal, 2009; Chan & Bishop, 2013). The difficulty of linking their dietary choices to environmental and health impacts makes it hard for individuals to make a long-lasting change in their behavior (Coker & van der Linden, 2020). A way to help sustain behavioral change that has shown to be effective in realizing long-lasting change is asking people to sign a commitment. A commitment intervention entails that people are asked to promise to themselves to engage in a specific behavior (Lokhorst et al., 2013), in this case reducing meat consumption. A commitment appears to be most effective when it is active, voluntary, made in public, and specific (Cialdini, 2001; Gollwitzer & Sheeran, 2006). If participants feel that they can influence what kind of commitment they sign, they will be more likely to sign (Lokhorst, et al., 2013). That way people will commit and internalize the commitment (Lokhorst, et al., 2013). Such a commitment motivates people to act in line with their promise, as people want to be or appear to be consistent (Festinger, 1957). Commitments are already often used as behavioral interventions in the field of environmental psychology (Lokhorst, et al., 2013). The use of a signed commitment led to more recycling, reduction in energy use, and taking public transport instead of the car (Lokhorst, et al., 2013). The commitment intervention also led to reduced meat consumption, when combined with other behavioral interventions such as nudging (making the desired behavior easy for the individual; Banerjee, 2019). However, in that study, there was no use of a no-treatment group. Therefore, more research is needed on the effectiveness of commitment on reducing meat consumption. A commitment may make it

more likely that a financial instrument is sustainable and can lead to long-lasting behavior changes (Lokhorst et al., 2013).

Theory of Planned Behavior

The theory of planned behavior is used to examine which informational strategies can enhance the effects of a meat tax and how commitment can enhance the effects of a meat tax. The theory of planned behavior (TPB), developed by Azjen (1991), is a theory that suggests that behavior can be predicted by intention (Çoker, & Van der Linden, 2020). Furthermore, the theory describes that attitudes, subjective norms, and perceived behavioral control (PBC) influence our intentions. Explaining actual human behavior is complex (Azjen, 1991) and in the case of this study even more complex. Measuring the effects of an actual meat tax is difficult since there is not yet a meat tax in place in the Netherlands. The theory of planned behavior suggests that behavior can be predicted for a large amount by our intention to engage in the actual behavior (Çoker, & Van der Linden, 2020). A meta-analytic study shows that intention predicts pro-environmental behavior (Bamberg, & Möser, 2007; Maki, & Rothman, 2017). Moreover, studies have shown that intentions to eat meat can predict the behavior of consuming meat (Povey, 2001). Measuring the actual behavior is not possible in this study, and intention has been proven to be a good predictor of behavior. The intention is used as the dependent variable in the current study.

Our intention is influenced by our attitudes, subjective norms, and PBC (Çoker, & Van der Linden, 2020). Attitudes are overall evaluations of behavior (Graça, 2015). Attitudes are not predictors of the actual behavior of reducing meat consumption, however, they are a significant predictor of the intention of reducing one's meat consumption (Verbeke & Viaene, 1999). Attitudes about meat intake for health reasons are found to be one of the most important predictors for meat consumption, among subjective norms and PBC (Coker & van der Linden, 2020). Subjective norms are beliefs about what others might expect, or think of

one's behavior (Graça, 2015; Çoker, & Van der Linden, 2020). Subjective norms are important predictors when it comes to reducing your meat intake for environmental reasons (Coker & van der Linden, 2020). People buy products (or food) under social pressure. Recently the social pressure to buy sustainable products is increasing (Nystrand & Olsen, 2020) and since we as individuals do not want to be rejected, we feel the need to buy more sustainable products. Since buying less meat and replacing it with more sustainable products is also a way of sustainable consumption (Dagevos et al., 2018), subjective norms could mediate the relation between the informational strategy about environmental impact and intention. Lastly, PBC is the perception of control people think they have over their performed behavior (Graça, 2015). PBC is a strong predictor of both intention and behavior, especially in reducing meat consumption (Coker & van der Linden, 2020). PBC is a strong predictor of a vegetarian, or vegan diet (Coker & van der Linden, 2020).

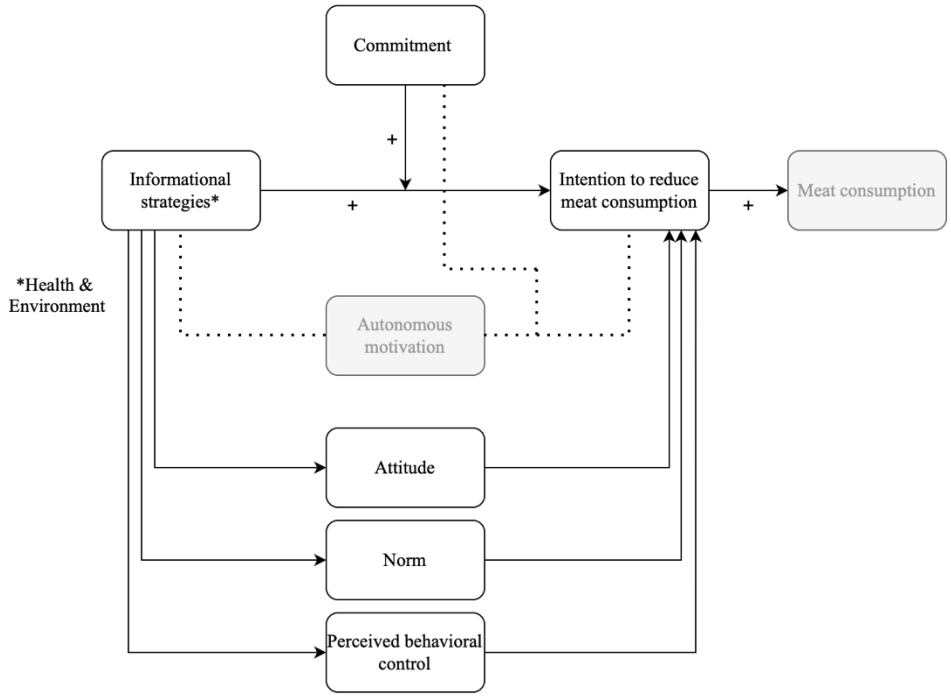
Current Research

The current study will consist of an online study, where participants are asked to imagine a scenario in which there is a meat tax in the Netherlands. Since most of the Dutch voters will support a meat tax of 15% (New Food Kieswijzer, 2021), it is assumed in this study that there is a meat tax in the Netherlands of approximately 15%, applicable for consumers. The tax will be added to the price of the final product, putting the tax on meat consumption, as suggested in most of the literature (Nordgren, 2011; Wirsenius, 2010). A meat tax can be made more effective when combined with other strategies, hence this study aims to examine which informational strategies (health and environment) can enhance the effects of a meat tax. Since this study will focus on meat-eaters primarily, it is hypothesized that health information will increase the intention to reduce meat consumption more than environmental information. Meat-eaters indicate health benefits as one of the primary motivators to reduce meat consumption, while flexitarians and vegetarians indicate the

environmental impact of meat consumption as one of the primary motivators to reduce meat consumption (Lentz et al., 2018). Since animal welfare seems to be a less promising informational strategy, this study will therefore investigate if providing information on the environmental and health impact of meat consumption will lead to reduced meat consumption compared to no informational strategy. This leads to three frames (conditions): health, environmental, and control. The following hypotheses (see Figure 1) will be tested.

Figure 1

Process model showing relations between variables



Note. The autonomous motivation variable (PhICAM scale) is included but made grey because it will be used in additional analyses beyond the scope of this thesis.

1. Informational strategies will increase the intention to reduce meat consumption compared to no informational strategies.

    1.1. Health frame will increase the intention to reduce meat consumption compared to no informational strategy.

1.2. Environmental frame will increase the intention to reduce meat consumption compared to no informational strategy.

1.3. Health frame will increase the intention to reduce meat consumption compared to the environmental frame.

2. Commitment will strengthen the relationship between the informational strategies and the intention to reduce meat consumption and will therefore be a moderator.

3. The relationship between the meat tax frame and intentions will be mediated by attitude. Attitude will be a stronger mediator for participants in the health frame than for participants in the environmental frame.

4. The relationship between the meat tax frame and intentions will be mediated by the subjective norm. The subjective norm will be a stronger mediator for participants in the environmental frame than for participants in the health frame.

5. The relationship between the meat tax frame and intentions will be mediated by perceived behavioral control. There will be no significant difference between the three conditions.

Methods

Participants

The survey was conducted through the program Qualtrics (Qualtrics, 2005). In total 213 participants were recruited from the direct environment of the researchers, through social media channels (e.g., Whats-App, E-mail, Facebook, Linked-in, and Instagram). To increase participation, a chance of winning a gift card through a lottery was offered to the participants. Participants were excluded if they indicated that they never eat meat, did not meet the age requirements, and did not give consent.

As a result, the final sample consisted of 198 participants between 18 and 30 years old (M = 23.5, SD = 2.34). This age group was chosen because young adults are an important target group when it comes to change for the long term (Bonnet, 2020), shifting to more plant-based diets (Wynes & Nicholas, 2017), and they are more open to signing a commitment (Gollwitzer & Sheeran, 2006; Lokhorst et al., 2013). Around 66.7% identified as female (n = 132), 34.3% as male (n = 65 males) and 0.5% as nonbinary (n = 1). Approximately 29.8% of the participants completed a master's degree (n = 59), 35.9% completed a bachelor's degree (n = 71), 14.6% completed higher vocational education (n = 29), 10.1% middle level vocational education (n = 20) and 9.6% said to have another education (n = 19; most of them indicated they are still going to high school). Around 44.4% of the participants perceived themselves as meat-eaters (n = 88), 46.0% as flexitarians (n = 91), 1.5% as vegetarians (n = 3), 1.5% as pescatarians (n = 3), 0.5% as vegans (n = 1) and 5.9% as different (n = 12; most of them indicating as flexitarians). The sample of 198 was sufficient since the power analysis that was conducted beforehand with G*power, required at least 175 participants (alpha level of .95, effect size = 0.3) (Faul, et al., 2009).

Procedure

The participants could take the questionnaire at any time on a laptop, tablet, or phone and took about 8-10 minutes to complete. The questionnaire started with informed consent (see Appendix 1). This stated that participation was voluntary, data would be analyzed anonymously, and participation could be stopped at any moment without having to explain. Then, participants were randomly assigned to one of the three manipulation texts with information about the potential meat tax: health frame, environmental frame, or the control condition (i.e. meat tax without frame; see Appendix 2). After that, they were asked if they could indicate how interesting they found the text.

Next, they were randomly assigned to one of two conditions: a commitment text about reducing meat consumption or a control condition (an irrelevant commitment) about listening more to podcasts (see Appendix 3). After the reducing meat commitment condition, participants were asked if they were willing to sign the commitment. Since the podcast condition was a control condition, the participants that were shown this text were only asked for their opinions on the text to match the cognitive load.

Following these conditions, the questionnaires on intention to reduce meat consumption, attitude, subjective norms, PBC (see Appendix 4 & 5), and autonomous motivation scale were presented. After this, participants were presented with manipulation checks for both the framing and the commitment conditions (see Appendix 6) as well as some demographic questions (see Appendix 7). Finally, participants were debriefed (see Appendix 8). They were then given the opportunity to choose to participate in the lottery. Their answers to the questionnaire were separately stored and not linked to participation in the lottery.

Materials

Manipulation

The manipulation text in each condition consisted of an informational text and some images to support the text. Before reading the text, the participants were informed that they should imagine the information in the text to be the current situation in the Netherlands. All three conditions started with the same text about the meat tax including that meat would be taxed at 15% and applicable to the consumers. The majority of the text for the control condition explained how the meat tax would work; for example, that this financial incentive will help reduce our meat consumption. In addition to this, the health frame provided participants with health-based arguments for introducing this meat tax. The text explained that consuming less meat will help reduce health risks, such as heart disease and diabetes (Nelson et al., 2016; Godfray et al., 2018). On the other hand, the environmental frame provided participants with environmental arguments for introducing this meat tax. It explained that the meat tax is introduced because eating meat is one of the biggest contributors to GHG emissions (IPCC, 2021). Reducing our meat consumption will help reduce GHG emissions.

Commitment

The commitment was developed for this study, based on the characteristics found in the literature and already discussed in the introduction. The commitment is made active by signing and voluntary by giving the participants the choice to sign or not to sign. For the control condition, it was important to make it resemble the commitment condition as much as possible, without asking the participants to sign the commitment. Since the topic of the control condition needed to be different from the commitment condition, ‘listening to podcasts’ was chosen. This topic appeared to be a neutral, yet slightly interesting topic for the target group.

Intention

The intention of reducing meat consumption was measured with 4 items on a 7-point Likert scale (*strongly disagree* = 1 to *strongly agree* = 7) (e.g. "I plan to eat less meat"), based on the intention scale from Fishbein & Ajzen (2011). They developed the general intention scale, so for this research, it was adapted to the specific topic of reducing meat consumption. This was done based on another published thesis that used the translation of Hans Hoeken (Straten, 2020). Cronbach's α indicated that the intention scale had good internal reliability (α = .92).

Theory of Planned Behavior

The attitude, subjective norms, and PBC about reducing meat consumption were measured each with 4 items on a 7-point Likert scale (*strongly disagree* = 1 to *strongly agree* = 7), based on the attitude, subjective norm, and PBC scale from Fishbein & Ajzen (2011). They developed the general scale, so for this thesis, it was adapted to the specific topic of reducing meat consumption for attitude (e.g. "If I will eat less meat products, that will be .."), subjective norm (e.g. "People like me started eating less meat") and PBC (e.g. "If I really want to, I can eat less meat"). This was done based on another published thesis that used the translation of Hans Hoeken (Straten, 2020). Cronbach's α indicated that the attitude (α = .78) and PBC (α = .73) had acceptable internal reliability. The internal reliability of the subjective norm variable was acceptable to questionable (α = .67)

Philosophically Informed Conceptualization of Autonomous Motivation scale

This scale is included because it will be used in additional analyses beyond the scope of this thesis. The PhICAM scale is used to measure a participant's autonomous motivation to engage in pro-environmental behavior (in this case reducing meat consumption; van Rugge et al., forthcoming). It was measured with 16 items (and one attention check) on a 7-point Likert scale (*strongly disagree* = 1 to *strongly agree* = 7).

Manipulation checks

The two manipulation checks entailed two questions, one for the informational frames and one for the commitment. The manipulation checks for the different conditions asked the participants to rate how they valued health, environmental and financial reasons for reducing their meat consumption, on a 7-point Likert scale (*strongly disagree* = 1 to *strongly agree* = 7; e.g., "How important would you rate the following reasons for reducing your meat consumption?" rating health, environment, and money). The same scale was used for the commitment manipulation check, where participants were asked to indicate how important three categories were to them: reading more books, reducing meat consumption, and listening to more podcasts.

Demographic data (see Appendix 7)

Demographic data about gender, age, income, and education level were asked. In addition, for potential explorative research, participants were asked how they perceived their diet choice (for example if they think of themselves as a meat-eater, vegetarian, flexitarian, pescatarian, or vegan) and how often they ate meat (once a year, once a month, once a week, once a day or more than once a day). Also, information about the living situation of the participants was asked, living with parents/caregivers or living with other people. If the latter was true, it was also asked with how many other people the participant lived.

Data Analysis

The analysis will be done with and without the outliers on intention since results were overall the same but differ for a few analyses (see result section). First, the manipulation checks were conducted with a 2x3 one-way ANOVA between groups, using SPSS (version 28) and PROCESS (v3.5 by Andrew F. Hayes). To test whether the conditions had a significant influence on the intention in reducing meat consumption, a one-way ANOVA between groups was conducted. With moderation analysis, it was possible to investigate if

commitment strengthened the relationship between the condition and the intention to reduce meat consumption. With mediation, it was possible to investigate if attitude, subjective norm, and PBC explained the relationship between the condition and the intention to reduce meat consumption.

Results

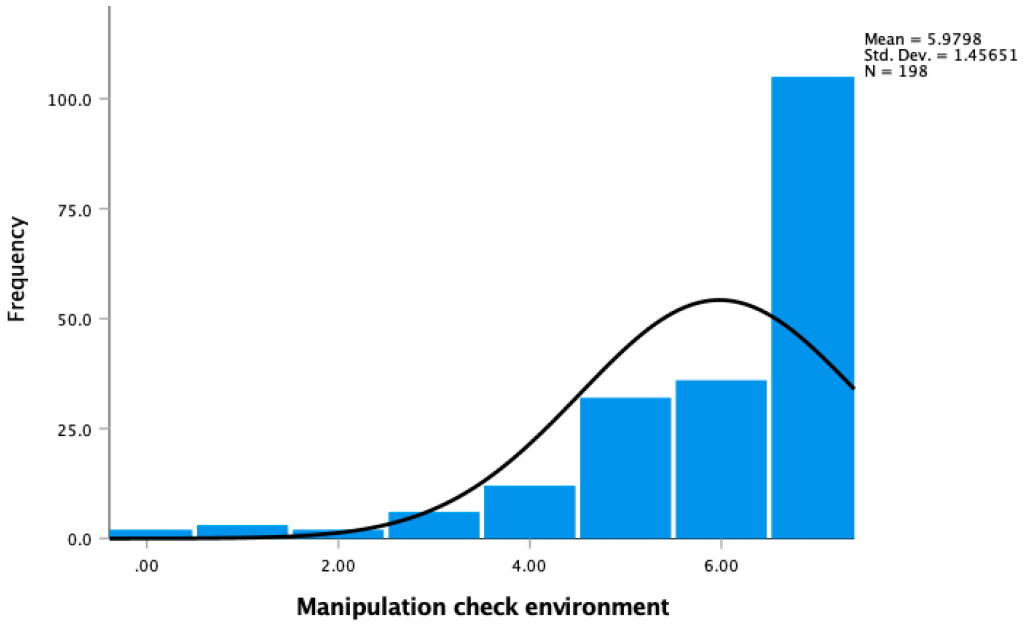
In this section, the results of the different analyses that were conducted to test the hypotheses will be discussed. There were six outliers on the intention scores, detected via boxplots. All analyses were firstly done with the outliers removed, meaning all figures are made from the sample where outliers are removed. Then all analyses were done with outliers included. Furthermore, explorative analyses that were carried out are explained here.

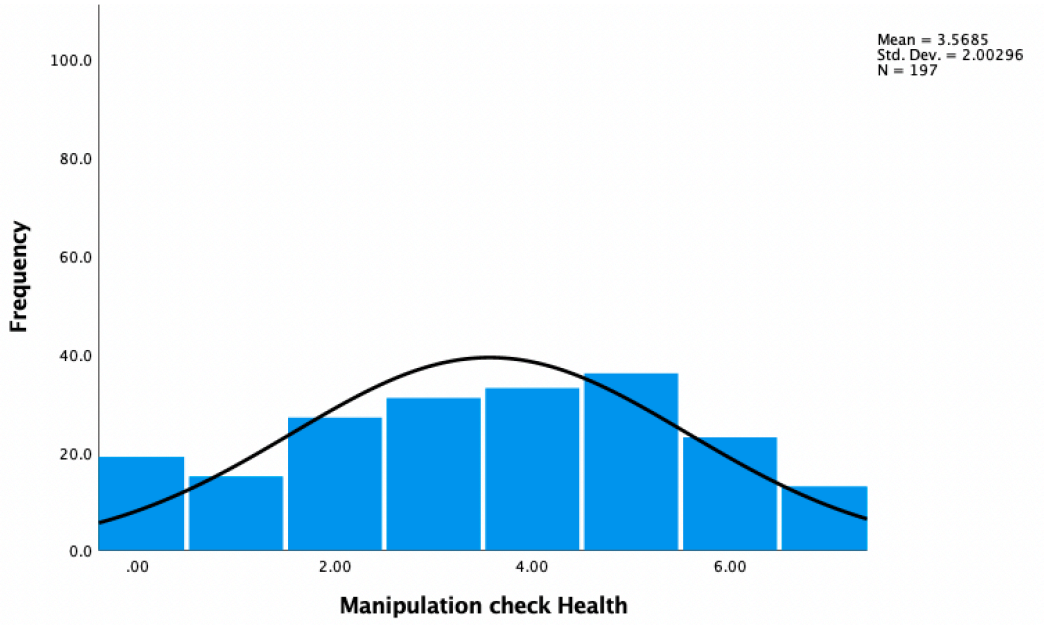
Preliminary Analyses

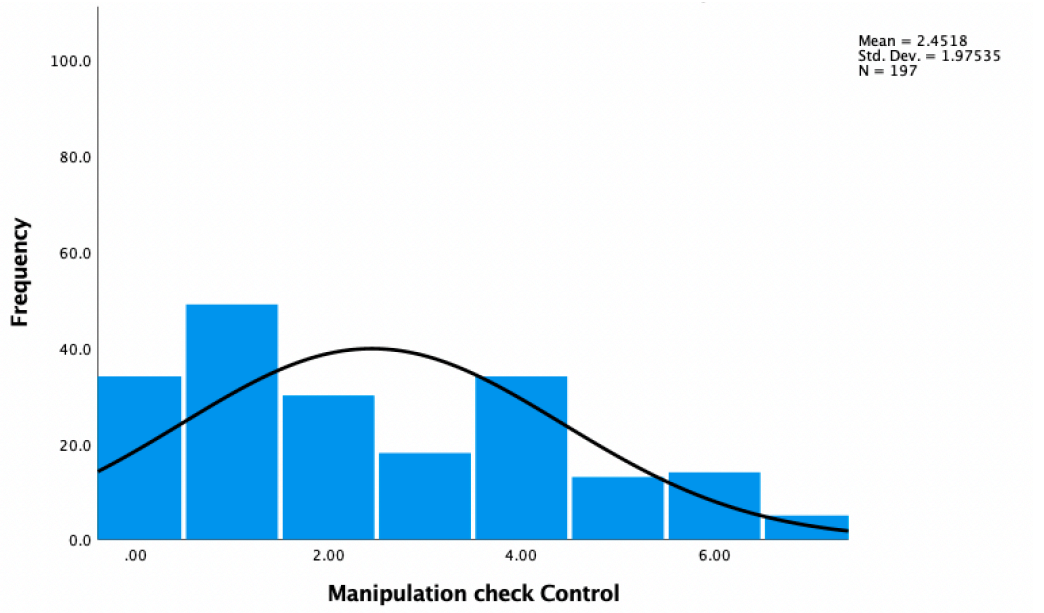
To evaluate the effect of the manipulations, a one-way ANOVA between groups was conducted. The dependent variable was the score of the question asked as the manipulation check. The independent variable was the condition corresponding with the manipulation check. For all the manipulation checks, the assumption of homogeneity was not violated but the assumption of normality was. See Figure 2 for a graph of the distribution of the data on the manipulation check.

Figure 2

Frequencies of the score on manipulation check







Note. The three figures show the frequencies of the scores on the manipulation check for respectively environment, health, and money. The black line indicates the distribution curve.

To this end, data was transformed using a root square transformation, which still did not lead to a normal distribution, but was closer to a normal distribution. The manipulation checks were not significant for the environmental frame ($F(2,195) = 0.88$, $p = .916$, $n^2_p = .001$), the health frame ($F(2,194) = .350$, $p = .705$, $n^2_p = .004$) or the control frame ($F(2,194) = .398$, $p = .627$, $n^2_p = .004$).

The last manipulation check was conducted for the commitment conditions ($F(1,196) = .994$, $p = .320$, $n^2_p = .005$). Note that for the question of the commitment manipulation check there were 20 missing values.

These analyses were conducted without the outliers on intention, when including these outliers there was still no significant difference found in the analyses for the manipulation checks: control condition ($F(2,200) = .371$, $p = .691$, $n^2_p = .004$), environmental condition ($F(2,201) = 0.053$, $p = .949$, $n^2_p = .001$), health condition ($F(2,200) = .357$, $p = .700$, $n^2_p = .004$) and commitment ($F(1,202) = .770$, $p = .381$, $n^2_p = .004$).

Main Analysis

For testing hypothesis 1, a one-way ANOVA between groups was conducted with intention as the dependent variable and framing (i.e. health, environment, and control) as the independent variable. First, the assumptions of homogeneity and normality were checked for intention. The assumption of homogeneity was violated because Levene's test was significant ($F = 3.097$, $p = .044$.) and the normality assumption was violated as well because the Shapiro-Wilk test was significant ($W = .157$ (198), $p < .001$). However, the ANOVA is quite robust against the homogeneity violation especially with a larger sample size, thus it was still considered an appropriate analysis (Blanca Mena, et al., 2017). The intention scores were left-skewed, so the intention scores were squared. The one-way ANOVA tests for whether the condition made a significant difference in intention score, was not significant ($F(2,195) = .157$, $p = .855$, $n^2_p = .002$). This was also the case when outliers on the intention score were included ($F(2,201) = .134$, $p = .875$, $n^2_p = .001$). Therefore, no evidence was found for hypotheses 1, 1.1, 1.2, and 1.3.

Moderation Analysis

To test hypothesis 2, a moderation test was performed with PROCESS, with intention as the dependent variable, framing condition as the independent variable, and commitment as

a potential moderator. The moderation was not significant ($F(3, 194)=.310$, $p = .818$, $R^2 = .005$). When the intention outliers were included, it was also not significant ($F(3, 200)=.322$, $p = .810$, $R^2 = .005$).

Mediation Analyses

To test hypotheses 3, 4, and 5, a mediation was performed with PROCESS. The intention to reduce meat consumption was the dependent variable, the framing condition (health, environment, and control) the independent variables, and attitude, subjective norm, and PBC as hypothesized mediators. However, the manipulation checks of the conditions were not significant, so neither of the three variables was a significant mediator of the total model ($F(1, 195)=.307$, $p = .580$, $R^2 = .002$). When intention outliers were included, there was also no significant result of the total model ($F(1, 201)=.256$, $p = .612$, $R^2 = .001$).

Exploratory Analyses

All the hypotheses included the role of the framing conditions. However, all the manipulation checks were not significant, so a few more analyses were conducted exploratory without the framing conditions as a factor.

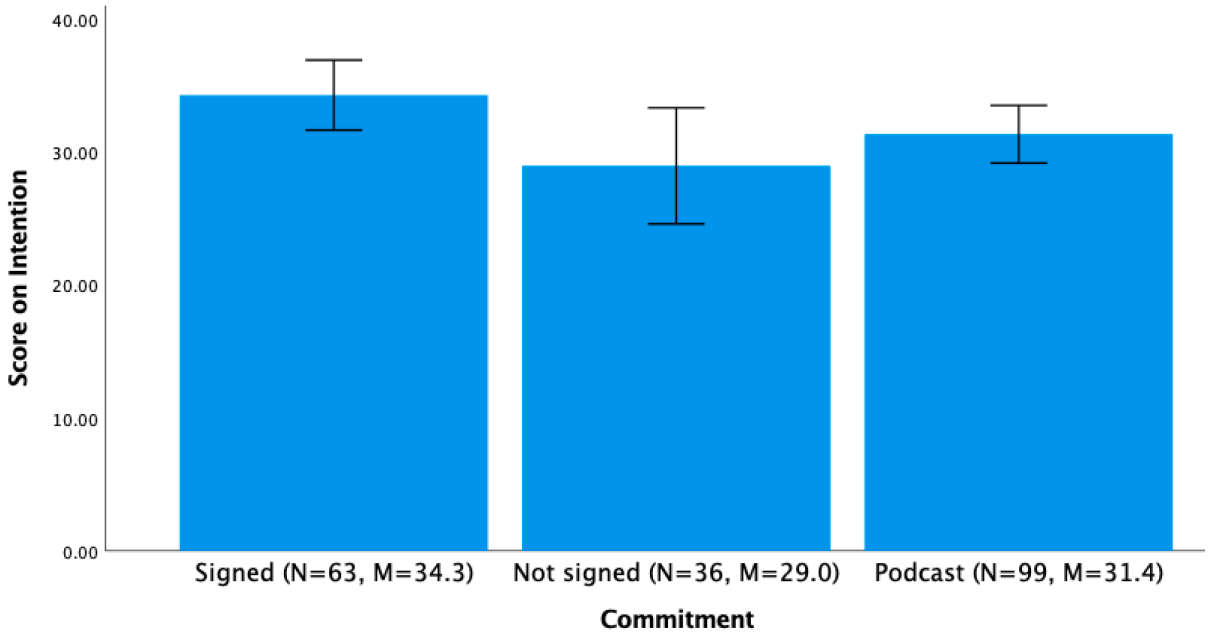
Commitment influencing intention

In the explorative analyses, commitment has been treated as a factor influencing the intention to reduce meat consumption. Instead of only considering whether people saw a relevant commitment or not, it is now separated into three levels: a signed commitment, an unsigned commitment, and the control condition (i.e. an irrelevant commitment). Exploratory analyses were conducted to see if signing a commitment could have a significant influence on the intention to reduce meat consumption. The commitment check was significant ($F(2,195) = 3.779$, $p = .025$, $n^2_p = .037$). The ANOVA between the three groups was marginally significant ($F(2, 195) = 2.870$, $p = .059$, $n^2_p = .029$). In other words, participants that signed the commitment scored (marginally significantly) higher on the intention to reduce meat

consumption than participants that did not sign the commitment or did not see a relevant commitment. See Figure 3 for a histogram with error bars.

Figure 3

The score for intention per commitment condition for the total sample



Note. Since the data for the scores of intentions was transformed with a root transformation, the maximum score is 49. The number of participants (N) and the mean score on intention to reduce meat consumption (M) of the total sample are given by each level (error bars show standard errors).

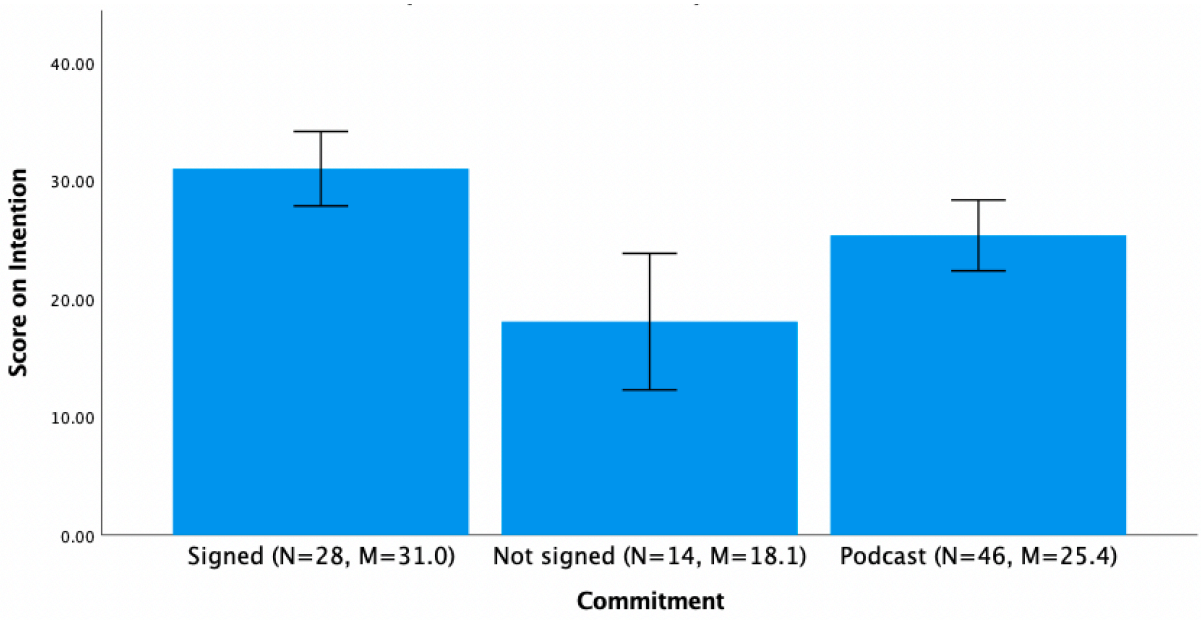
When the outliers of the intentions scores were included, the manipulation check of commitment with three levels was significant ($F(2,200) = 5.164$, $p = .007$, $n^2_p = .049$), the overall ANOVA for commitment and intention showed significant results ($F(2, 201) = 6.358$, $p = .002$, $n^2_p = .059$).

Literature indicated that considering yourself a meat-eater, influences intentions (Dagevos & Voordouw, 2013). The following analyses were conducted with only the participants that perceived themselves as meat-eaters (see Figure 4). This shows a significant

manipulation check ($F(1, 86) = 4.001$, $p = .049$, $n^2_p = .010$) and a significant ANOVA with the three levels of commitment on intention ($F(2, 85) = 8.900$, $p < .001$, $n^2_p = .173$).

Figure 4

The score for intention per commitment condition for meat-eaters



Note. Since the data for the scores of intentions was transformed with a root transformation, the maximum score is 49. The number of participants (N) and the mean score on intention to reduce meat consumption (M) for the meat-eaters are given by each level (error bars show standard errors).

Still looking only at the meat-eaters sample, when the intention outliers were included, it led to the following results for the commitment check ($F(1, 91) = 3.241$, $p = .075$, $n^2_p = .034$) and for the ANOVA analysis on intention ($F(2, 91) = 14.199$, $p < .001$, $n^2_p = .238$). However, this led to a smaller sample, so to check if this was the case for the whole sample an interaction effect was analyzed. A two-way ANOVA was conducted that examined the effect of commitment and the identification of diet choice on intention. There was a significant main effect of the commitment variable (three levels) ($F(2,194) = 3.916$, $p = .022$, $n^2_p = .039$). The marginal mean difference within the main effect showed that signing the commitment (three

levels) had a significant effect on intention (p = .006), but there were no differences between not signing the commitment and the control condition (p = .112) and signing the commitment and the control condition (p = .099). Important to note here is that while the analyses were conducted, the sample size was too small to have good power for such an interaction effect; g*power calculated an estimated sample size of 279 for this analysis, whereas we had a sample size of 197 (Faul, et al., 2009).

Signing a commitment as the outcome variable

Considering the significant difference in intention to reduce meat consumption in signing a commitment or not, it was exploratively looked at to what extent we can predict the willingness to sign a commitment using the informational strategies (health, environment, and control). Especially, since the significant outcomes of signing a commitment indicate that participants who have signed a commitment are more likely to engage in sustainable behavior (eating less meat). These analyses were done with a Chi-square test. For the part of the total sample that saw the meat commitment (n = 99), 36 participants (36.4%) did not sign the commitment. For the participants that did sign the commitment (n = 63, 63.6%), we see that 21 participants (33.3%) in the environmental condition signed the commitment, 24 participants (38.1%) in the health condition, and 18 participants (28.6%) in the control condition. There was no significant difference (Chi-sq(197) = 7.364, p = .146).

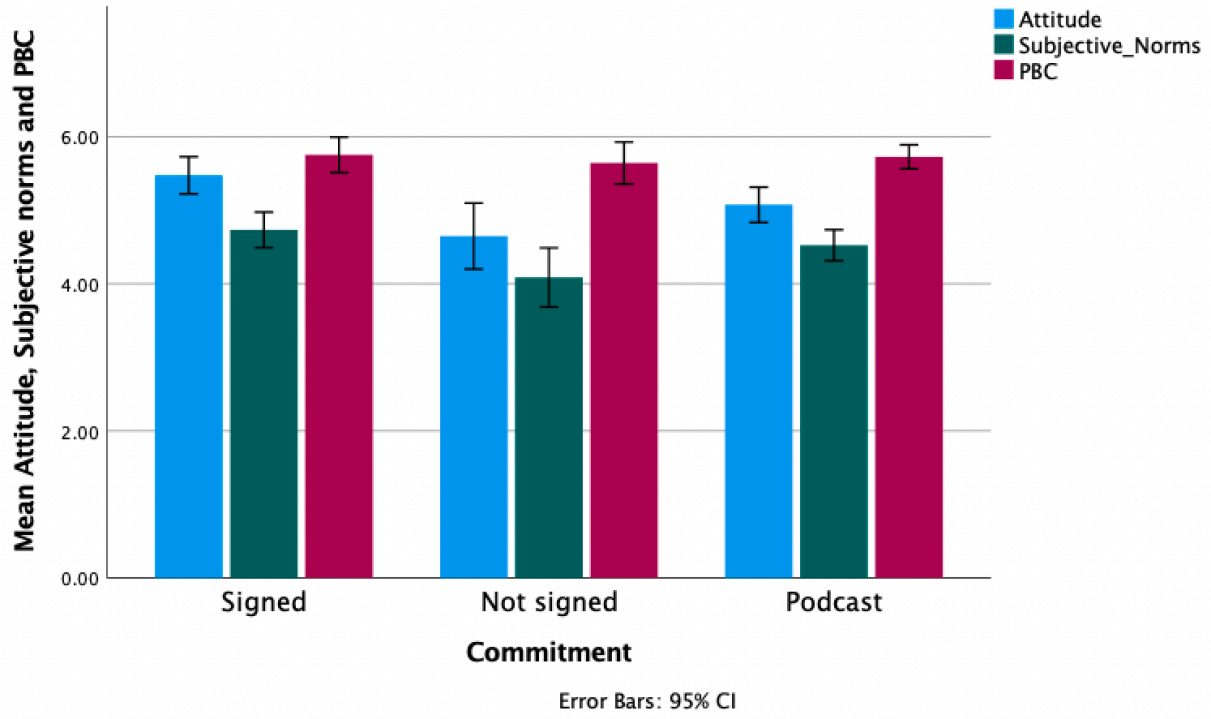
Attitude, subjective norm, and PBC as outcome variables

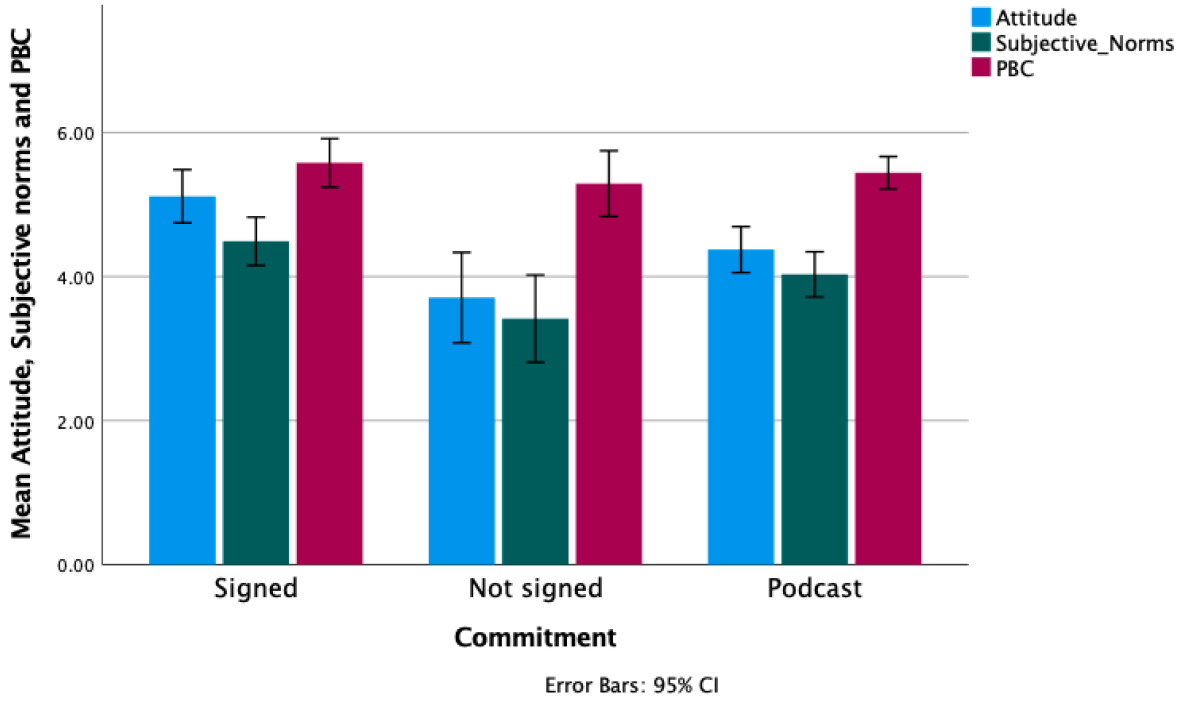
Attitude, subjective norm and PBC were not found to be significant mediators for the relationship between the informational strategies and the intention to reduce meat consumption. Therefore, it was analyzed whether attitude, subjective norm and PBC could be predictors of intention and be predicting variables for reducing meat consumption. Indeed, a separate ANOVA for each variable showed that attitude (F(1, 195) = 116.734, p < .001, R^2 = .374), subjective norm (F(1, 196) = 93.775, p < .001, R^2 = .324) and PBC (F(1, 196) =

60.743, $p < .001$, $R^2 = .234$,) were all predictive variables of intention. After that, separate ANOVAs were conducted to see if commitment influenced attitude, subjective norm and PBC. When analyzed with ANOVA as with attitude, subjective norm and PBC as dependent variables and commitment as independent variables it showed the following results. For attitude the ANOVA with commitment as independent variable was significant ($F(2,194) = 3.633$, $p = .028$, $n^2_p = .036$), for subjective norm ($F(2,195) = 2.543$, $p = .081$, $n^2_p = .026$) and for PBC ($F(2, 195) = .266$, $p = .767$, $n^2_p = .003$) it was not significant. When the analyses were repeated only with participants that identify as meat eaters, both attitude ($F(2, 85) = 8.544$, $p < .001$, $n^2_p = .167$) and subjective norm ($F(2, 85) = 3.507$, $p = .034$, $n^2_p = .076$) were significant, and PBC was, again, not significant ($F(2, 85) = 1.093$, $p = .340$, $n^2_p = .025$). See Figure 5 for the mean scores of attitude, subjective norm and PBC categorized per commitment level.

Figure 5

Score on attitude for each commitment condition of the total sample (above) and meat eaters' sample (below)





Note. The graph above shows the mean score of attitude, subjective norms, and PBC for each commitment level; signed, not signed, and the irrelevant commitment (i.e. podcast) for the total sample size (N=198). The graph below shows the mean score of attitude, subjective norms, and PBC for each commitment level; signed, not signed, and the irrelevant commitment (i.e. podcast) for the meat-eaters sample size (N=88). Error bars show standard errors.

Discussion

The present study looked at the intention to reduce meat consumption. The first hypothesis was that informational strategies (both health and environmental framed) would increase the intention to reduce meat consumption. A commitment was predicted to strengthen this relationship, as a mediator. Attitude, subjective norm, and PBC were predicted as moderators. ANOVA analyses showed that there was no significant influence from the informational strategies, commitment was not a significant moderator, nor were attitude, subjective norm, or PBC significant mediators. This was not conform the hypotheses. The statistical analyses that were used (mostly one-way ANOVA between groups) were sufficient for testing the hypotheses. The a-priori g*power analysis showed that a sample of at least 178 participants was needed for a good power to test the hypotheses. Our final sample size consisted of 198 participants, enough so for a good power. Exploratory analyses were conducted and showed, among other things, that signing a commitment significantly influences the intention to reduce meat consumption.

Explanatory Notes to the Results

The manipulation check for the informational strategies was not significant, indicating that participants were not manipulated by the text that was shown to them. However, it should be noted that although all the manipulations checks were not significant, the manipulation was going in the right direction. This means that for example, the participants in the environmental frame condition rated environmental reasons to reduce meat consumption higher than the participants in the other conditions. However, for the manipulation check to be successful the participants should have scored the environmental reasons significantly higher than the other participants. This right direction of the manipulation check was reflected in all the conditions. This insignificant manipulation check suggests that the informational texts did not influence the knowledge and beliefs of the participants about the environmental and health impact of

meat consumption. Therefore, the informational strategies could not significantly influence the intention to reduce meat consumption. Since the hypothesized relationship between condition and intention was not there, commitment could not strengthen this relationship, nor was it mediated by attitude, subjective norm, or PBC.

However, conclusions can be drawn from these non-significant results. One potential reason for the non-significant manipulation check could be that the participants rated health and environmental reasons for reducing meat consumption as very highly before the study. More than 53% gave the environmental reasons a maximum score of 7, regardless of which condition the participants were shown. This is very left-skewed data (See Figure 2) and is called a ceiling effect; this occurs when most of the scores are in the highest possible scale and there is not much room to score higher (Austin & Brunner, 20003). Since people already valued environmental reasons to consume less meat, there was little to nothing to manipulate with the environmental condition. The data of the health condition still violated the normality assumption but had a better normal distribution. Those with a higher knowledge of the environmental impact of meat consumption are also more likely to be more informed about the health aspects of meat consumption. Awareness about environmental issues makes other motivators (health in this case) more salient (Lentz et al., 2013).

Commitment

Initially, the commitment condition was divided into two levels: a relevant commitment and an irrelevant one (the control condition). The commitment check, consisting of an indication of how important reducing meat consumption was, was not significant. Therefore, exploratory research was conducted on commitment with three levels (signing, not signing, and control condition). This led to a significant commitment check, which meant that the commitment was successful and had influenced the participants on their response to the manipulation check.

The commitment had a marginally significant effect on intention, and this became significant when outliers were included. This means that signing the commitment led to a (marginally) significantly higher intention to reduce meat consumption, than not signing the commitment, or seeing the control condition. This corresponds to the characteristics of a commitment given by literature; it emphasizes that a commitment is most effective when it is active, voluntary, and made in public (Cialdini, 2001; Gollwitzer & Sheeran, 2006; Lokhorst, et al., 2013). The current research included an active commitment since the participants needed to sign the commitment to really commit themselves.

The commitment was also voluntary, people could decide for themselves if they want to sign the commitment. Interestingly, the participants who did not sign the commitment to reduce meat consumption had the lowest intention to reduce meat consumption, even when compared to the control condition (an irrelevant commitment). This could indicate that not signing a commitment evokes reactance. However, the commitment was voluntary so people should not have felt pressured to sign the commitment (Cialdini, 2001). The difference between the score in intention for not signing the commitment and seeing the control condition could therefore indicate that some people felt pressured and therefore did not sign the commitment out of reactance. In their book *Psychology Reactance,* Brehm and Brehm (2013) tell us if you are being pressured to sign a commitment, it creates resistance and increases the chances of behaving in the opposite manner than the desired behavior. Future research should make their commitments active and voluntary as well since this study adds to the existing literature that an active commitment is more effective.

The three levels of commitment were also examined as predictors of the intention to reduce meat consumption for only those participants who perceived themselves as meat-eaters. Literature shows that perceiving yourself as a meat-eater influences intentions (Dagevos & Voordouw, 2013). The analyses showed significant results, indicating that if you

perceive yourself as a meat-eater, your intention to reduce meat consumption will increase if you sign a commitment. Note that with these analyses due to the sample size was, statistical power was lower than desired (Faul, et al., 2009).

Theory of Planned Behavior

The manipulation had no effect, which led to an insignificant relationship between conditions and intention. Attitude, subjective norm, and PBC were not significant mediating variables for the relationship between the informational strategies and the intention to reduce meat consumption. However, when explorative analyses were conducted, it showed that attitude, as well as the subjective norm and PBC, were significant predictors of the intention to reduce meat consumption. This is in line with findings in the literature since a meta-analysis showed that these three factors explained 39% of the variance in intention (Armitage & Conner, 2001), and in another study explained 54% of the variance (Coker & van der Linden, 2020).

Since attitude, subjective norm, and PBC were indeed predictors of intention, we analyzed exploratory if they were significant outcome variables with commitment as the independent variable. The results show that attitude towards reducing meat consumption is significantly influenced by commitment. This is in line with the literature, showing that attitude is the one of strongest predictors of intention, among subjective norm and PBC (Coker & van der Linden, 2020). People appear to want to be consistent with their behavior and beliefs (Jones & Mills, 2019). When signing a commitment to change one's behavior (reducing meat consumption), to be consistent in one's behavior and beliefs, one's attitudes tend to fall in line with one's behavior (Lokhorst, et al., 2013). This is based on the cognitive theory and can be explained either by self-perception (Bem, 1972) or dissonance (Aronson, 1999).

The subjective norm was not significant when outliers were deleted but the subjective norm was significantly influenced by signing a commitment when outliers were included. The literature explains that subjective norms can cause people to sign a commitment (Abrahamse, et al., 2005). A subjective norm could be developed publicly, which is why it is important to commit in such a public setting (Cialdini, 2003). However, due to the resources from our study, a public commitment could not be incorporated. Kerr et al. (1997) showed that even when participants were alone and were not influenced by others, they kept their promises. This indicated that subjective norms can be developed without the presence of other people, explaining the significance of the subjective norm in our study while the commitment was not publicly signed.

Interestingly, our non-significant results of PBC correspondents to the literature. Coker and van der Linden (2020) found that PBC was the weakest predictor of meat consumption compared to attitude and subjective norm. One of the explanations could be that there are a lot of factors involved that would inhibit the extent to which you have PBC when it comes to reducing your meat consumption. When you are trying to reduce your meat consumption and you have dinner with other people, you might be dependent on what other people cook. Therefore, it could feel like you are not in control, hence PBC is a weak predictor of reducing meat consumption.

Limitations and Recommendations for Future Research

The following limitations should be considered. The data was left-skewed, causing a normality violation in the data of the manipulation checks. This could be due to the chosen age group; Young adults are already consuming less meat than other age groups (Clonan, et al., 2016) and are more open to shifting to a more plant-based diet for environmental reasons (Wynes & Nicholas, 2018). However, this age group was chosen for the reason that young adults are an important target group when it comes to behavioral change for the long term

(Bonnet, 2020). A meta-analysis showed that age was not a covariate, meaning no differences in meat consumption were established over different ages (Sanchez-Sabaté & Sabaté, 2019). The present study suggests that this age group does not profit the most from additional information on why a meat tax would be installed to reduce your meat consumption. Future research should investigate if these results are also applicable to other age groups, by for example comparing different age groups.

The ceiling effect might have caused the insignificance of the manipulation check. This might be due to either one of the following factors: education level or self-report. Only 16% of the population of the Netherlands has completed university education (Maslowski, 2020), while in this study 65.3% have completed university education. Education level can influence pre-existing beliefs about the health impact of meat consumption (Rimal, 2002). People with a high-level education (university) already tend to agree to reduce their meat consumption, mostly because they are aware of and value the health risk (Putler & Frazao, 1994; Rimal, 2002). Additionally, a higher level of education seems to expand the knowledge of environmental issues (Kollmuss & Agyeman, 2002), but a meta-analysis shows that this cannot be extended to a higher intention to reduce meat consumption (Sanchez-Sebate & Sabaté, 2019). One study found a small effect size of education level as covariate (De Boer, et al., 2016), however, most of the studies did not find a significant effect of education level as a covariate for the intention of reducing meat consumption (Sanchez-Sebate & Sabaté, 2019). Our study had a higher education level than a representative for the Netherlands. This means that participants had more pre-existing beliefs of the environmental impact of meat consumption which is hard to manipulate but does not affect the intention of reducing meat consumption. Therefore, the higher education level in the current study could explain the ceiling effect and therefore the non-significance of the manipulation check. Future research

should investigate if a more representative educational level can influence the results so that the data is less or not left-skewed.

The third factor that could have been a part of the non-significance of the manipulation check, is the manipulation check itself. The manipulation check itself focused on the opinion of the participant regarding important reasons to reduce meat consumption. This implies the knowledge participants should have on the environmental and health reasons to reduce meat consumption. Initially, the manipulation should have influenced the following response; if you were assigned to the environmental condition, you would be likely to rate the environmental reasons to reduce meat consumption higher than when you were assigned to the health condition. However, this was not the case. Maybe because the manipulation check implies the knowledge you have on the subject, and it uses self-reported answers. Knowledge alone is not sufficient to change behavior, which is why in the current study providing knowledge is combined with a financial incentive (meat tax) and a commitment. However, the manipulation check was focused on the knowledge aspect alone and the meat tax or the commitment was not integrated into the manipulation check question. The place of the manipulation check could have also influenced the effect of the manipulation check. The manipulation was presented at the beginning of the questionnaire, but only at the end, the manipulation check question was asked. Placing the manipulation check after the dependent variable may have provided a weakened effect on the manipulation check due to the short-lived effect of the manipulation (Fayant, et al., 2017). Therefore, for future research, the manipulation check could be made stronger by also referring to the meat tax or the commitment and the place of the manipulation check in the questionnaire should be considered.

Although many features were already considered by the making of the manipulation itself, the manipulation had no significant effect and could therefore be made stronger. The

salience of the text and the retention of attention while reading the text was already tried to achieve in the current study. This was done with pictograms, highlighting the most important conclusions, and splitting up the information into three different parts. However, the manipulation could be made stronger with other techniques so that participants will experience an effect from the manipulation. This could be done by adding an extra influencing technique to the manipulation, such as adding an extra sentence that shows a consensus that other people are engaging in the desired behavior as well (i.e. responding to the principle of social proof of Cialdini (2001)).

Besides the manipulation check, the last limitation that will be discussed is the use of the intention measure as the dependent variable. The current study measured intention to reduce meat consumption, based on self-reported answers instead of the actual behavior. Studies show that self-reported measures could affect the results since it could be influenced by personal biases and social desirability for preferences in diet choices (Cerri et al., 2019; Lentz et al., 2018), and objectively observed behavior can increase the power and reliability opposed to self-report (Armitage & Conner, 2001). The intention is the prominent determinant of behavior (Coker & van der Linden, 2020) and can be used to explain pro-environmental behavior (Bamberg & Möser, 2007; Maki & Rothman, 2017). However, intention explains about 30% of the variance in actual behavior (Armitage & Conner, 2001; Coker & van der Linden, 2020). To investigate if self-report measures such as the intention measure, influenced our results, future research could include a more objective measure, for example including a social desirability questionnaire or a questionnaire completed by others to decrease the self-reported bias.

Policy Recommendations

The current research did not find proof that the intention for reducing meat consumption will increase when presenting people with information on the impact of meat

consumption on the environment and/or the impact of meat consumption on health. Further research will need to tell if this is also the case for another age group or another education level. However, the current research showed that signing a commitment to reduce your meat consumption leads to a significantly higher intention to reduce your meat consumption. The current study suggests that getting people to commit to reducing meat consumption would be an interesting and promising strategy to enhance the efficacy of a meat tax. Especially since a public commitment is promised to be even more effective (Cialdini, 2003). The current study adds to the literature that an active commitment is most effective. A solution could be to implement the commitment in places where people have the time to think about the commitment and places that are relevant for thinking about eating patterns (e.g. supermarket or airport near restaurants). When people have time to think about it and the commitment forces people to think about how they want to commit (similar to this study), the commitment will be more effective. Even though the majority of the Dutch voters would support a meat tax (New Food Kieswijzer, 2021), a meat tax has not been installed in the Netherlands and it is not yet clear if and when it would be installed. Therefore, it would be interesting for the Ministry of Finance to investigate if just signing a commitment without the external incentive of a meat tax has the same significant effect as the current research indicated.

Conclusion

The research question was if informational strategies and commitment could enhance the meat tax. Since the participants in this study are already aware of the health and environmental impact of meat consumption, the results of the current study indicate that providing extra information about the health and environmental impact of meat consumption does not increase the intention to reduce meat consumption, at least for this age group and education level. Younger and higher educated people already know the importance of reducing their meat consumption regarding health and the environment. Future research may

then provide insight into other age- and education groups to see if the results found in this study are generalizable to other groups. However, to increase an individual's intention to reduce their meat consumption, a commitment to reduce meat consumption appears to be effective. When a commitment to reduce meat consumption was signed, it showed that intention to reduce meat consumption was significantly higher than when the commitment was not signed, or an irrelevant commitment was shown. Understanding how to change the behavior surrounding meat consumption is important since the impact of consuming too much meat has negative consequences for the environment and general health (IPCC, 2021; Sanchez-Sebate & Sabaté, 2019).

References

Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. Journal of Environmental Psychology, 25, 273-291.

Allen, A. M., & Hof, A. R. (2019). Paying the price for the meat we eat. *Environmental Science & Policy*, *97*, 90–94. https://doi.org/10.1016/j.envsci.2019.04.010

Armitage, C., Conner, M., 2001. Efficacy of the theory of planned behavior: a meta-analytic review. *Br. J. Soc. Psychol. 40*(4), 471–499. https://doi.org/10.1348/014466601164939

Aronson, E. (1999). The power of self-persuasion. American Psychologist, 54, 875-884.

Austin, P. C., & Brunner, L. J. (2003). Type I error inflation in the presence of a ceiling effect. *The American Statistician*, *57*(2), 97-104. DOI: 10.1198/0003130031450

Azjen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211.

Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, *27*(1), 14–25. https://doi.org/10.1016/j.jenvp.2006.12.002

Bem, D. J. (1972). Self-perception theory. In *Advances in experimental social psychology* (Vol. 6, pp. 1-62). Academic Press. https://doi.org/10.1016/S0065-2601(08)60024-6

Blanca Mena, M. J., Alarcón Postigo, R., Arnau Gras, J., Bono Cabré, R., & Bendayan, R. (2017). Non-normal data: Is ANOVA still a valid option?. *Psicothema, 2017, vol. 29, num. 4, p. 552-557*. https://doi.org/10.7334/psicothema2016.383

de Boer, J., de Witt, A., & Aiking, H. (2016). Help the climate, change your diet: A cross-sectional study on how to involve consumers in a transition to a low-carbon society. *Appetite*, *98*, 19-27. https://doi.org/10.1016/j.appet.2015.12.001

Boneau, C. A. (1960). The effects of violations of assumptions underlying the t test. *Psychological Bulletin*, *57*(1), 49–64. https://doi.org/10.1037/h0041412

Bonnet, C., Bouamra-Mechemache, Z., Réquillart, V., & Treich, N. (2020). Viewpoint: Regulating meat consumption to improve health, the environment and animal welfare. *Food Policy*, *97*, 101847. https://doi.org/10.1016/j.foodpol.2020.101847

Brehm, S. S., & Brehm, J. W. (2013). *Psychological reactance: A theory of freedom and control*. Academic Press.

Broeks, M. J., Biesbroek, S., Over, E. A. B., Van Gils, P. F., Toxopeus, I., Beukers, M. H., & Temme, E. H. M. (2020). A social cost-benefit analysis of meat taxation and a fruit and vegetables subsidy for a healthy and sustainable food consumption in the Netherlands. *BMC Public Health*, *20*(1). https://doi.org/10.1186/s12889-020-08590-z

Cerri, J., Thøgersen, J., & Testa, F. (2019). Social desirability and sustainable food research: A systematic literature review. *Food Quality and Preference*, *71*, 136-140. https://doi.org/10.1016/j.foodqual.2018.06.013

Chan, L., &Bishop, B. (2013). Amoral basis for recycling: Extending the theory of planned behaviour. Journal of Environmental Psychology, 36,96–102.

Cialdini, R. B. (2001). Influence: Science and practice. Boston, MA: Allyn & Bacon.

Cialdini, R. B. (2003). Crafting normative messages to protect the environment. Current Directions in Psychological Science, 12, 105-109.

Clonan, A., Roberts, K. E., & Holdsworth, M. (2016). Socioeconomic and demographic drivers of red and processed meat consumption: implications for health and

environmental sustainability. *Proceedings of the Nutrition Society*, *75*(3), 367-373. doi:10.1017/S0029665116000100

Çoker, E. N., & Van der Linden, S. (2020). Fleshing out the theory of planned of behavior: Meat consumption as an environmentally significant behavior. *Current Psychology*. Published. https://doi.org/10.1007/s12144-019-00593-3

Dagevos, H., & Voordouw, J. (2013). Sustainability and meat consumption: is reduction realistic? *Sustainability: Science, Practice and Policy*, *9*(2), 60–69. https://doi.org/10.1080/15487733.2013.11908115

Dagevos, H., Verhoog, D., van Horne, P., & Hoste, R. (2020). *Vleesconsumptie per hoofd van de bevolking in Nederland, 2005-2019* (No. 2020-078). Wageningen Economic Research.

Derbyshire, E. J. (2017). Flexitarian Diets and Health: A Review of the Evidence-Based Literature. *Frontiers in Nutrition*, *3*. https://doi.org/10.3389/fnut.2016.00055

Dumont, B., et al., 2016. Rôles, impacts et services issus des élevages en Europe. Synthèse de l'expertise scientifique collective, INRA (France), 133 pages.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Fayant, M. P., Sigall, H., Lemonnier, A., Retsin, E., Alexopoulos, T. (2017). On the limitations of manipulation checks: An obstacle toward cumulative science. International Review of Social Psychology, 30, 125-130.

Festinger, L. (1957). *A theory of cognitive dissonance.* Oxford, England: Stanford University Press.

Fishbein, M., & Ajzen, I. (2011). *Predicting and changing behavior: The reasoned action approach*. Psychology press.

Godfray, C., et al., 2018. Meat consumption, health and the environment. Science 361.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in experimental social psychology*, *38*, 69-119. https://doi.org/10.1016/S0065-2601(06)38002-1

González, N., Marquès, M., Nadal, M., & Domingo, J. L. (2020). Meat consumption: Which are the current global risks? A review of recent (2010–2020) evidences. *Food Research International*, *137*, 109341. https://doi.org/10.1016/j.foodres.2020.109341

Graham, T., & Abrahamse, W. (2017). Communicating the climate impacts of meat consumption: The effect of values and message framing. *Global Environmental Change*, *44*, 98–108. https://doi.org/10.1016/j.gloenvcha.2017.03.004

Graça, J., Calheiros, M. M., & Oliveira, A. (2015). Attached to meat? (Un)Willingness and intentions to adopt a more plant-based diet. *Appetite*, *95*, 113–125. https://doi.org/10.1016/j.appet.2015.06.024

Harguess, J. M., Crespo, N. C., & Hong, M. Y. (2020). Strategies to reduce meat consumption: A systematic literature review of experimental studies. *Appetite*, *144*, 104478. https://doi.org/10.1016/j.appet.2019.104478

Harmon-Jones, E., & Mills, J. (2019). An introduction to cognitive dissonance theory and an overview of current perspectives on the theory. *Cognitive dissonance: Reexamining a pivotal theory in psychology* (pp. 3–24). https://doi.org/10.1037/0000135-001

IPCC (2021): Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O.Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.

IPCC (2019). Climate change and land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. Research Handbook on Climate Change and Agricultural Law, 423–449. 10.4337/9781784710644

IPCC (2018). Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

Jensen, J. D., & Smed, S. (2013). The Danish tax on saturated fat – Short run effects on consumption, substitution patterns and consumer prices of fats. *Food Policy*, *42*, 18–31. https://doi.org/10.1016/j.foodpol.2013.06.004

Kerr, N. L., Garst, J., Lewandowski, D. A., & Harris, S. E. (1997). That still, small voice: Commitment to cooperate as an internalized vs. a social norm. Personality and Social Psychology Bulletin, 23, 1300-1311.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental education research*, *8*(3), 239-260. https://doi.org/10.1080/13504620220145401

Lentz, G., Connelly, S., Mirosa, M., & Jowett, T. (2018). Gauging attitudes and behaviours: Meat consumption and potential reduction. *Appetite*, *127*, 230–241. https://doi.org/10.1016/j.appet.2018.04.015

Leterme, P. (2002). Recommendations by health organizations for pulse consumption. *British Journal of nutrition*, *88*(S3), 239-242. https://doi.org/10.1079/BJN2002712

Lokhorst, A. M., Werner, C., Staats, H., van Dijk, E., & Gale, J. L. (2013). Commitment and behavior change: A meta-analysis and critical review of commitment-making strategies in environmental research. *Environment and behavior*, *45*(1), 3-34. https://doi.org/10.1177/0013916511411477

Maki, A., & Rothman, A. J. (2017). Understanding pro-environmental intentions and behaviors: The importance of considering both the behavior setting and the type of behavior. The Journal of Social Psychology, *157*(5), 517–531. https://doi.org/10.1080/00224545.2016.1215968

Maslowski, R. (2020). Onderwijs. *De sociale staat van Nederland: 2020.* Consulted on the 15th of December 2021 through https://digitaal.scp.nl/ssn2020/onderwijs/

Neacsu, M., McBey, D., & Johnstone, A. M. (2017). Meat reduction and plant-based food: replacement of meat: nutritional, health, and social aspects. *Sustainable protein sources*, 359-375. https://doi.org/10.1016/B978-0-12-802778-3.00022-6

Nelson, M.E., et al., 2016. Alignment of healthy dietary patterns and environmental sustainability: a systematic review. Adv. Nutrition. 7, 1005–1025.

New Food Kieswijzer (2021). Wat vindt Nederland van de Eiwittransitie? De rol van de Overheid. Found on (28th of March): https://newfoodkieswijzer.nl

Nordgren, A. (2011). Ethical Issues in Mitigation of Climate Change: The Option of Reduced Meat Production and Consumption. *Journal of Agricultural and Environmental Ethics*, *25*(4), 563–584. https://doi.org/10.1007/s10806-011-9335-1

Nystrand, B. T., & Olsen, S. O. (2020). Consumers' attitudes and intentions toward consuming functional foods in Norway. *Food Quality and Preference*, *80*, 103827. https://doi.org/10.1016/j.foodqual.2019.103827

Pereira, P. M. D. C. C., & Vicente, A. F. D. R. B. (2013). Meat nutritional composition and nutritive role in the human diet. *Meat Science*, *93*(3), 586–592. https://doi.org/10.1016/j.meatsci.2012.09.018

Povey, R., Wellens, B., & Conner, M. (2001). Attitudes towards following meat, vegetarian and vegan diets: an examination of the role of ambivalence. *Appetite*, *37*(1), 15–26. https://doi.org/10.1006/appe.2001.0406

Putler, D. S., & Frazao, E. (1994). Consumer awareness of diet-disease relationships and dietary behavior: the case of dietary fat. *Journal of Agricultural Economics Research*, *45*(1491-2016-130253). Doi: 10.22004/ag.econ.137436

Qualtrics (2005). Qualtrics. Utah. Through: https://www.qualtrics.com

Rimal, A.P., 2002. Factors affecting meat preferences among American consumers. Fam. Econ. Nutrition. Rev. 36–43.

Roy, J., & Pal, S. (2009). Lifestyles and climate change: Link awaiting activa- tion. Current Opinion in Environmental Sustainability, 1(2), 192–200.

Säll, S., & Gren, I. M. (2015). Effects of an environmental tax on meat and dairy consumption in Sweden. *Food Policy*, *55*, 41–53. https://doi.org/10.1016/j.foodpol.2015.05.008

Sanchez-Sabate, R., & Sabaté, J. (2019). Consumer Attitudes Towards Environmental Concerns of Meat Consumption: A Systematic Review. *International Journal of Environmental Research and Public Health*, *16*(7), 1220. https://doi.org/10.3390/ijerph16071220

Straten, van, L. H. (2020). Meat the future: De persuasieve effecten van een boodschap over de effecten van de vleesconsumptie, al dan niet met talig metafoorgebruik, op de gedragsintentie om minder vlees te consumeren.

Tso, R., & Forde, C. G. (2021). Unintended consequences: Nutritional impact and potential pitfalls of switching from animal-to plant-based foods. *Nutrients*, *13*(8), 2527. https://doi.org/10.3390/nu13082527

Vallgårda, S., Holm, L., & Jensen, J. D. (2014). The Danish tax on saturated fat: why it did not survive. *European Journal of Clinical Nutrition*, *69*(2), 223–226. https://doi.org/10.1038/ejcn.2014.224

Verbeke, W., Viane, J.(1999). Beliefs. Attitude and behavior towards fresh meat consumption in Belgium: empirical evidence from a customer survey. *Food Quality and Preference, 10*, 437- 445

Vergnaud, A. C., Norat, T., Romaguera, D., Mouw, T., May, A. M., Travier, N., & Peeters, P. H. (2010). Meat consumption and prospective weight change in participants of the EPIC-PANACEA study. *The American journal of clinical nutrition*, *92*(2), 398-407.

Wirsenius, S., Hedenus, F., & Mohlin, K. (2010). Greenhouse gas taxes on animal food products: rationale, tax scheme, and climate mitigation effects. *Climatic Change*, *108*(1–2), 159–184. https://doi.org/10.1007/s10584-010-9971-x

Wynes, S., Nicholas, K. A., Zhao, J., & Donner, S. D. (2018). Measuring what works: quantifying greenhouse gas emission reductions of behavioural interventions to reduce driving, meat consumption, and household energy use. *Environmental Research Letters*, *13*(11), 113002.

Appendices

Appendix 1 - Informed consent

Informatie over het onderzoek "De effectiviteit van een vleesbelasting in Nederland" PSY-2021-S-0468

Waarom ontvang ik deze informatie?

Je bent uitgenodigd om deel te nemen aan dit onderzoek, met als doel jouw mening en ideeën over vleesbelasting te onderzoeken. Het onderzoek richt zich op mensen die (af en toe) vlees eten met een leeftijd tussen 18 en 30 jaar.

Ben ik verplicht deel te nemen aan dit onderzoek?

Deelname aan dit onderzoek is geheel vrijwillig. Je hebt het recht om op elk moment, ook nadat je toestemming hebt gegeven, te stoppen met het onderzoek.

Waarom dit onderzoek?

Dit onderzoek bestaat uit 4 kleine, losse onderzoekjes. De meeste van deze onderzoekjes zullen gaan over vleesbelasting.

Wat vragen we van jou tijdens het onderzoek?

Met jouw toestemming vragen we je om een aantal vragen in te vullen over je dieet keuzes, intenties, autonomie en ten slotte een aantal algemene gegevens. Alle losse onderzoeken bij elkaar zullen ongeveer 7 minuten duren om uit te voeren.

Hoe gaan we om met jouw data?

De data zullen gebruikt worden voor een Master Thesis aan de Rijksuniversiteit Groningen en inzichten zullen gedeeld worden met onder andere het Ministerie van Financiën. De data zullen nooit te herleiden zijn naar jou.

Wat moet je nog meer weten?

Mocht je nog meer informatie willen verwijzen we je graag naar een uitgebreider document (Verdere informatie).

Je mag ook altijd vragen stellen over het onderzoek: Nu, tijdens het onderzoek en aan het eind van het onderzoek. Dit kun je doen door de onderzoeker te mailen: Florieke Wattel (f.j.wattel@student.rug.nl).

- Ik heb de informatie over het onderzoek gelezen. Ik heb genoeg mogelijkheden gehad om hier vragen over te stellen.
- Ik begrijp waar het onderzoek over gaat, wat er van mij gevraagd wordt, welke gevolgen deelname aan dit onderzoek kan hebben, hoe mijn data behandeld wordt en wat mijn rechten als participant zijn.
- Ik begrijp dat deelname aan dit onderzoek vrijwillig is. Ik kies er zelf voor om deel te nemen. Ik kan mijn deelname stoppen op elk moment. Als ik stop, hoef ik niet uit te leggen waarom. Stoppen met deelname zal geen negatieve gevolgen voor mij hebben.
- Onderstaand geef ik aan waarmee ik instem.

    o Ja, ik geef toestemming om deel te nemen en ik geef toestemming voor het verwerken van mijn data; deze toestemming is geldig totdat ik dit tabblad sluit.

    o Nee, ik geef geen toestemming om deel te nemen aan dit onderzoek en ik geef geen toestemming voor het verwerken van mijn data.

Appendix 2 - Manipulation

Vleesbelasting voor je gezondheid

Er is een nieuwe belasting op vlees ingesteld. De belasting is met 15% verhoogd, wat betekent dat jij als consument **15% meer** gaat betalen voor je stukje vlees. Als voorbeeld: kostte twee stuks kipfilet eerst **€3,59**, met de nieuwe vleesbelasting zal je nu **€4,13** voor dezelfde hoeveelheid kipfilet betalen.

Hoewel vlees belangrijke proteïnen en vitamines bevat, kan het te vaak eten van vlees leiden tot **gezondheidsproblemen**. In Nederland eten mensen vaak twee keer zoveel vlees als de aangeraden hoeveelheid[1].

Zo kan het eten van te veel vlees leiden tot overgewicht, diabetes en hart- en vaatziekten. De verhoging in prijs moet ervoor zorgen dat je wat vaker geen vlees koopt, waardoor dit **positieve effecten op je gezondheid** kan hebben.

[1] Voedingscentrum. Minder rood en bewerkt vlees eten blijft nodig, (geraadpleegd op 30 juli 2020).

Vleesbelasting voor het klimaat

Er is een nieuwe belasting op vlees ingesteld. De belasting is met 15% verhoogd, wat betekent dat jij als consument **15% meer** gaat betalen voor je stukje vlees. Als voorbeeld: kostte twee stuks kipfilet eerst **€3,59,** met de nieuwe vleesbelasting zal je nu **€4,13** voor dezelfde hoeveelheid kipfilet betalen.

Nederland heeft als doel om onze CO2-uitstoot te verminderen en daarmee bij te dragen aan een duurzamer Nederland. De vleesindustrie is een van de grootste veroorzakers van de **CO2-uitstoot** die veroorzaakt wordt door de keuzes van de mens[1].

De prijsverhoging moet ervoor gaan zorgen dat wij minder vlees gaan kopen, waardoor de uitstoot van de vleesindustrie omlaag gaat. Hierdoor zullen wij ons steentje bijdragen aan een **groener en duurzamer Nederland**.

[1]IPCC, 2018: Summary for Policymakers. In: *Global Warming of 1.5°C*. In Press.

rijksuniversiteit groningen

Vleesbelasting

Er is een nieuwe belasting op vlees ingesteld. De belasting is met 15% verhoogd, wat betekent dat jij als consument **15% meer** gaat betalen voor je stukje vlees. Als voorbeeld: kostte twee stuks kipfilet eerst **€3,59,** met de nieuwe vleesbelasting zal je nu **€4,13** voor dezelfde hoeveelheid kipfilet betalen.

De vleesbelasting zal gaan gelden **op elk product dat vlees bevat**. Niet alleen kipfilet zal duurder worden, maar ook producten waar vlees in verwerkt zit (zoals pizza's en soepen) zullen duurder worden.

Een vleesbelasting is een financiële prikkel die ervoor moet zorgen dat het kopen van vlees minder aantrekkelijk wordt[1]. De prijsverhoging moet je dan ook aanmoedigen om **minder vlees te eten**.

[1] Broeks, M. J., Biesbroek, S., Over, E. A., van Gils, P. F., Toxopeus, I., Beukers, M. H., & Temme, E. H. (2020). A social cost-benefit analysis of meat taxation and a fruit and vegetables subsidy for a healthy and sustainable food consumption in the Netherlands. *BMC public health*, *20*(1), 1-12.

Appendix 3 – Commitment

Onderzoekje 2: Vul de tekst aan

Lees de volgende tekst goed door. Probeer voor jezelf na te denken over de gaten in de tekst. Wat zou voor jou haalbaar zijn? Je kan de tekst aan het eind van de vragenlijst uitprinten om de belofte aan jezelf op papier in te vullen.

Ik teken bij deze de volgende belofte aan mezelf om de komende _____ (bijvoorbeeld: week/2 weken/maand) minder vlees te eten.

Door minder vlees te eten zal ik _____.

Om dit vol te houden ga ik _____ (bijvoorbeeld: vlees vervangen met peulvruchten/vaker mee eten met vegetarische vrienden).

Datum: _____ Handtekening: _____

Gebaseerd op de tekst die je net gelezen hebt, zou je deze belofte met jezelf aan willen gaan?

- ○ Ja, ik wil dit ondertekenen!
- ○ Nee, ik wil dit niet ondertekenen.
- ○ Anders, namelijk: _____

Onderzoekje 2: Vul de tekst aan

Hier volgt nu een kort onderzoekje over podcasts. Het luisteren naar podcasts is een laagdrempelige manier om informatie te ontvangen over een onderwerp naar jouw keuze.

Lees de volgende tekst goed door. Probeer voor jezelf na te denken over de gaten in de tekst. Wat zou voor jou haalbaar zijn? Je kan de tekst aan het eind van de vragenlijst uitprinten om de belofte aan jezelf op papier in te vullen.

Meer naar podcasts luisteren de aankomende _____(bijvoorbeeld: week/2 weken/maand) is iets wat ik graag zou willen.

Er zijn veel verschillende soorten podcasts. Ik vind podcasts met het onderwerp____ het leukste om naar te luisteren.

Door naar podcasts te luisteren zal ik _____ (bijvoorbeeld: mijn kennis vergroten/een moment voor mezelf creëren).

Hoe interessant vind je het om naar podcasts te luisteren?

- ○ Zeer oninteressant
- ○ Een beetje oninteressant
- ○ Neutraal
- ○ Een beetje interessant
- ○ Zeer interessant

Appendix 4 - Intention

Onderzoekje 3: Vleesconsumptie

Geef alsjeblieft aan in hoeverre je het eens of oneens bent met de volgende overwegingen.

	Sterk mee oneens (1)	Mee oneens (2)	Een beetje mee oneens (3)	Neutraal (4)	Een beetje mee eens (5)	Mee eens (6)	Sterk mee eens (7)
Ik ben van plan minder vlees te eten (1)	○	○	○	○	○	○	○
Ik zal minder vlees gaan eten (2)	○	○	○	○	○	○	○
Ik ben bereid om minder vlees te eten (3)	○	○	○	○	○	○	○
Ik ga minder vlees eten (4)	○	○	○	○	○	○	○

Appendix 5 – Attitude, subjective norm & PBC

Attitude

Als ik minder vleesproducten eet, dan is dat:

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Slecht	○	○	○	○	○	○	○	Goed
Onplezierig	○	○	○	○	○	○	○	Plezierig
Schadelijk	○	○	○	○	○	○	○	Voordelig
Saai	○	○	○	○	○	○	○	Interessant

Subjective norm

Geef alsjeblieft aan in hoeverre je het eens of oneens bent met de volgende overwegingen.

	Sterk mee oneens (1)	Mee oneens (2)	Een beetje mee oneens (3)	Neutraal (4)	Een beetje mee eens (5)	Mee eens (6)	Sterk mee eens (7)
De meeste mensen die belangrijk voor me zijn, vinden dat ik minder vlees moet eten. (1)	○	○	○	○	○	○	○
De meeste mensen van wie ik het oordeel belangrijk vind, zouden het goedkeuren als ik minder vlees ga eten. (2)	○	○	○	○	○	○	○
De meeste mensen die ik respecteer en bewonder, zullen minder vlees gaan eten. (3)	○	○	○	○	○	○	○
Mensen zoals ik zijn minder vlees gaan eten. (4)	○	○	○	○	○	○	○

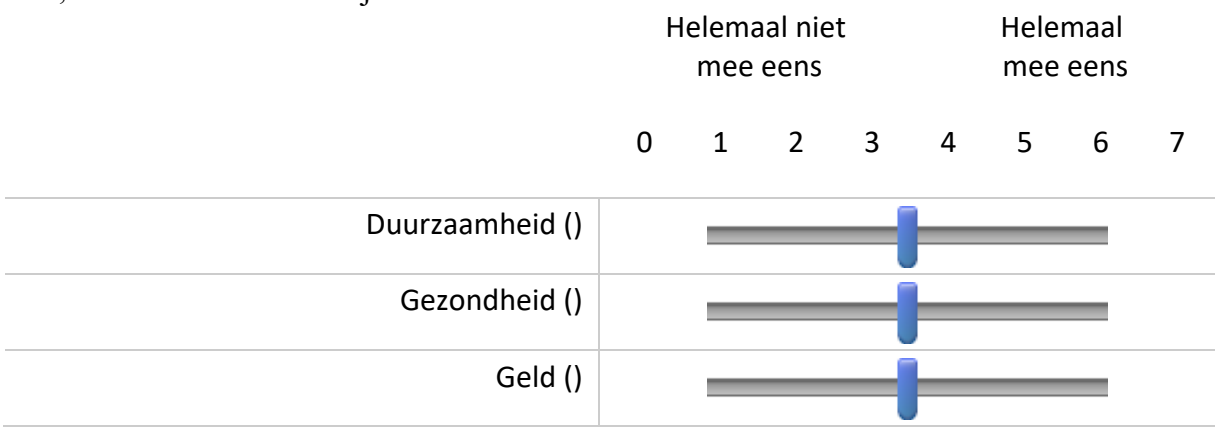
PBC

	Sterk mee oneens (1)	Mee oneens (2)	Een beetje mee oneens (3)	Neutraal (4)	Een beetje mee eens (5)	Mee eens (6)	Sterk mee eens (7)
Ik ben er zeker van dat ik minder vleesproducten kan eten. (1)	○	○	○	○	○	○	○
Of ik minder vlees eet, heb ik volledig in eigen hand. (2)	○	○	○	○	○	○	○
Als ik dat echt wil, dan kan ik minder vlees eten. (3)	○	○	○	○	○	○	○
Er staat mij niets in de weg om minder vlees te eten. (4)	○	○	○	○	○	○	○

Appendix 6 – Manipulation checks

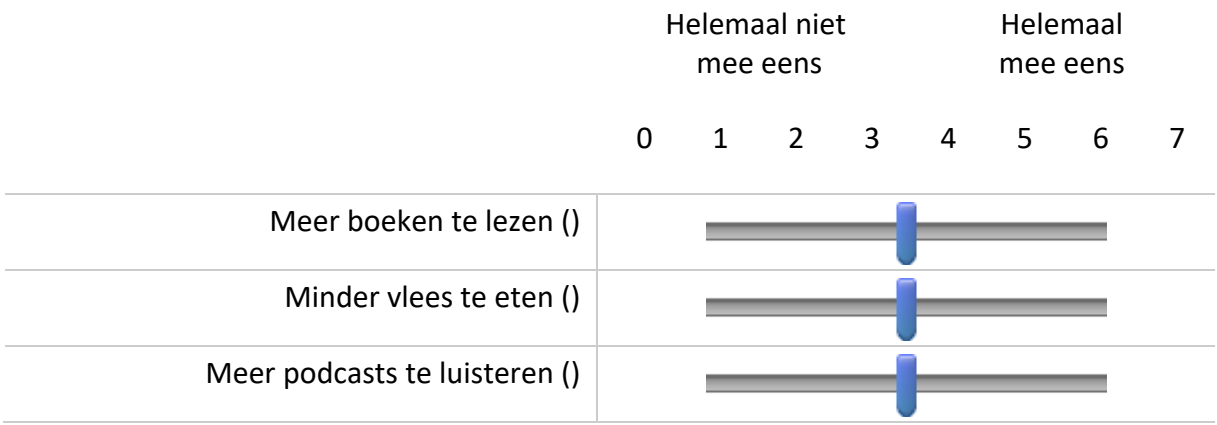
Manipulation check informational strategies (environment, health, control)

Als je nu een reden zou moeten opgeven waarom jij het belangrijk vindt om minder vlees te eten, welke reden zou dat zijn?



Manipulation check commitment

Geef alsjeblieft met de slider aan hoe belangrijk je het vind om...



Appendix 7 – Demographic data

Wat is je geslacht?

- ○ Vrouw
- ○ Man
- ○ Zeg ik liever niet
- ○ Anders, namelijk... _____

Wat is je leeftijd?

_____

In welk land woon je momenteel?

- ○ Nederland
- ○ België
- ○ Anders, namelijk: _____

Hoe ziet je woonsituatie eruit?

- ○ Ik woon bij mijn ouders/verzorgers
- ○ Ik woon in een studentenhuis
- ○ Ik woon zelfstandig (of samen met een partner)
- ○ Anders, namelijk: _____

Display This Question:

If Hoe ziet je woonsituatie eruit? = Ik woon in een studentenhuis

Met hoeveel mensen deel je je studentenhuis?

_____

Wat is je hoogst behaalde opleiding?

- ○ Universiteit Master opleiding
- ○ Universiteit Bachelor opleiding
- ○ Hoger beroeps onderwijs
- ○ Middelbaar beroeps onderwijs
- ○ Anders, namelijk: _____

Wat heb je netto per maand te besteden? (eventuele huur/zorgkosten zijn al van dit bedrag afgehaald)

- ○ Minder dan €290
- ○ €290-€350
- ○ €350-€410
- ○ €410-€470
- ○ €470-€530
- ○ €530-€590
- ○ €590-€650
- ○ €650-€710
- ○ €710-€770
- ○ €770 of meer

Hoe zou je jezelf identificeren?

- ○ Vleeseter (wel vlees, wel vis)
- ○ Pesco-tariër (geen vlees, wel vis)
- ○ Flexetariër (overwegend vegetariër)
- ○ Vegetariër (geen vlees, geen vis)
- ○ Veganist (geen dierlijke producten)

- ○ Anders, namelijk: _____

Hoevaak eet je ongeveer vleesproducten?

- ○ Ik eet geen vleesproducten
- ○ Een paar keer per jaar
- ○ Een paar keer per maand
- ○ Een paar keer per week
- ○ Iedere dag
- ○ Meerdere keren per dag

Heb je allergieën voor bepaalde producten?

- ○ Ja, zie volgende vraag
- ○ Nee

Display This Question:
If Heb je allergieën voor bepaalde producten? = Ja, zie volgende vraag

Waar ben je allergisch voor?

- ○ Gluten
- ○ Lactose
- ○ Bepaalde fruitsoorten
- ○ Noten
- ○ Soja
- ○ Vlees
- ○ Vis en schaaldieren
- ○ Anders, namelijk: _____

Q29 Heb je nog opmerkingen over de studie of over de vragen die je hebt beantwoord?

_____

Appendix 8 – Debriefing

Debriefing irrelevant commitment

Hartelijk dank voor je deelname aan dit onderzoek.

Allereerst is het belangrijk om nog een keer te benadrukken dat er voor dit onderzoek vanuit is gegaan dat er in Nederland al een vleesbelasting is, dit is echter niet zo. Er is geen verhoogde belasting op vlees in Nederland, echter was dit voor het doel van het onderzoek van belang.

Het doel van dit onderzoek is om te onderzoeken hoe een eventuele vleesbelasting in de toekomst in Nederland effectief geïmplementeerd zou kunnen worden. Dit hebben we gedaan door te kijken naar verschillende soorten framing over de hypothetische verhoogde vleesbelasting. Er waren drie verschillende soorten framing: alleen een vleesbelasting, een gezondheidsperspectief en een duurzaamheidsperspectief. Daarnaast werd er gevraagd om na te denken over een belofte aan jezelf. Dit kon gaan over minder vlees eten of over meer naar podcasts luisteren. Hierdoor kan het effect van een belofte doen aan jezelf worden onderzocht op de intentie om minder vlees te eten.

Wil je het commitment over meer podcasts luisteren downloaden zodat je het zelf in de praktijk kunt toepassen?
Klik dan Hier.

Nogmaals hartelijk dank voor de deelname,
Mocht je vragen hebben dan hoor ik het graag,

Florieke Wattel
f.j.wattel@students.rug.nl

Als je doorklikt naar de volgende pagina, zal je naar een nieuwe studie worden geleid waar je je emailadres kunt invullen om deel te nemen aan de loterij en kans te maken op een cadeaubon. Je emailadres zal losgekoppeld worden van je antwoorden op de vragenlijst. Nadat de winnaar van de loterij bekend is gemaakt, zullen alle emailadressen worden verwijderd.

- ○ Ja, ik wil mijn e-mailadres achterlaten om deel te nemen aan de loterij
- ○ Nee, ik wil hiermee de vragenlijst beëindigen

Debriefing commitment

Hartelijk dank voor je deelname aan dit onderzoek.

Allereerst is het belangrijk om nog een keer te benadrukken dat er voor dit onderzoek vanuit

is gegaan dat er in Nederland al een vleesbelasting is, dit is echter niet zo. Er is geen verhoogde belasting op vlees in Nederland, echter was dit voor het doel van het onderzoek van belang.

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Wil je het commitment over minder vlees eten downloaden zodat je het zelf in de praktijk kunt toepassen?
Klik dan Hier.

Nogmaals hartelijk dank voor de deelname,
Mocht je vragen hebben dan hoor ik het graag,

Florieke Wattel
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Als je doorklikt naar de volgende pagina, zal je naar een nieuwe studie worden geleid waar je je emailadres kunt invullen om deel te nemen aan de loterij en kans te maken op een cadeaubon. Je emailadres zal losgekoppeld worden van je antwoorden op de vragenlijst. Nadat de winnaar van de loterij bekend is gemaakt, zullen alle emailadressen worden verwijderd.

- ○ Ja, ik wil mijn e-mailadres achterlaten om deel te nemen aan de loterij
- ○ Nee, ik wil hiermee de vragenlijst beëindigen.