

MEAT THE FUTURE

How consumer categorisation influences the adoption of a new hybrid product: the case of cultured meat



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Abstract. Although there are various studies in consumer behaviour and marketing research on categorisation and its effect on attitude, this study contributes to the consumer behaviour and marketing research by focussing on the effects of situational consumer goals in relation to the presentation and categorisation process of a new hybrid food product, cultured meat. The categorisation process is seen as the combination of perception, categorisation and the resulting inferences. Data was gathered by two studies based on a theoretical framework build up around this concept of categorisation. The first study, an interview (N=10) gathered information on the specific situational consumer goals, the characteristics of meat and meat substitutes and the level of hybridity perception of cultured meat. The second study incorporated these findings to create a survey (N=246). The results showed that the situational consumer goals have a moderating effect on the presentation of cultured meat and the hybridity perception of cultured meat. The different perceptions of cultured meat showed to have an effect on the categorisation of cultured meat and consequently on the inferences. Hence, when cultured meat is categorised with the meat category this mainly results in meat inferences associated to cultured meat. While the categorisation with the meat substitute category does not mainly result in meat substitute inferences. This study concludes that the inferences influence the attitude towards cultured meat, showing their importance. Where both, meat substitute inferences associated with cultured meat, and meat inferences in combination with a positive attitude towards meat, prove to influence the attitude of cultured meat positively.

KEYWORDS: *cultured meat, consumer attitude, categorisation, inferences, traditional meat, meat substitutes, hybrid product, situational consumer goals, perception*

Preface

This way I would like to express my gratitude to my supervisor, Dr. ir. Arnout Fischer, for the challenging feedback, the interesting ideas and helpful advice. Due to his enthusiastic and keen supervision, I was able to enhance my academic competences for which I am very grateful. Furthermore, I would really like to thank my second reader Dr. Ivo van der Lans for showing me the weak points within my framework, for his useful comments and feedback. Finally, I would like to show my special thanks to Lizzy Doorewaard, Marthe Tijsterman, Jan-Maarten and Maarten van der Meulen, for critically reading my drafts and their unconditional support. Even though I did not always chose the easiest way and had some struggles along the process, I am very proud to present my master thesis.

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1. Introduction: Cultured meat as a promising solution.

The world population is expected to increase drastically from 7.4 billion now to 9.9 billion in 2050 (Population Reference Bureau, 2016). The growing world population causes a fast increase of the global food demand (Godfray et al., 2010). In comparison with 2009, it is predicted that the global food demand will increase by more than 70% in 2050 (IFAD, 2013). This expansion is accompanied by rapidly increasing welfare in developing countries, which increases not only the demand for more products but especially for higher quality products such as meat (Dagevos, 2016; Godfray et al., 2010). This would lead to a transformation from low cost traditional diets in developing countries (i.e. mainly including staples such as wheat and rice) to the higher cost food consumption patterns from the Western world, in which animal proteins such as meat and dairy products are the major components (Boland et al., 2013; Fiala, 2008). Besides this booming meat demand in developing countries, the meat consumption in Western countries is also expected to keep rising (Post, 2012). This may cause the meat consumption to double in the coming forty years (Daniel, Cross, Koebnick & Sinha, 2011). This is a substantial problem since its production process is seriously demanding for the environment (Fiala, 2008). The current production processes of meat already cause 18% of the global greenhouse gas emissions (Stehfest et al., 2009), use 8% of global fresh water and 30% of the global ice-free terrestrial land (Tuomisto, & Teixeira de Mattos, 2011). For this reason, it is crucial to find a fitting solution for this growing meat problem.

A possible solution to this problem might be found in meat substitutes. Over the last decades meat substitutes made of vegetable components, proteins and soy have become more known to the consumer and gained a small market share (Egbert & Borders, 2006; Post, 2012). However, the consumption of these products is still limited among meat consumers. This might be explained by the lack of resemblance to meat in the taste and texture of the meat substitutes (Elzerman, 2006; Verbeke et al., 2015a). Another main factor that could influence the lack of adoption may be food neophobia: the hesitation and fear consumers may have towards new foods (Hoek, van Boekel, Voordouw & Luning, 2011). Since still few consumers are vegetarians (Post, 2012) it is especially important to influence the diets of non-vegetarians in order to lower the current meat consumption. A way to achieve acceptance and adoption among non-vegetarians and to overcome the previously mentioned issues is to create a product that looks and tastes as traditional meat (Pliner & Salvy, 2006). This might be found in *in-vitro meat* or *cultured meat*, since this might be a closer resemblance to meat in comparison to other meat substitutes (Post, 2012). The techniques to produce cultured meat are still developing, but most techniques use stem cells and/or muscle tissue technology. In this way the animal tissue grows into ‘meat’ with the use of protein and a scaffold (i.e. a rack designed to enhance the process of growing the muscle tissue) (May, 2013; Bhat, Kumar & Bhat, 2017).). The technique will enable an almost endless supply of sustainable meat to be produced without the need to kill animals (Post, 2012). Besides the closer resemblance to traditional meat cultured meat also holds a great environmental promise, animal welfare benefits and consumer health benefits. The

environmental benefits cultured meat is expected to generate 7-45% less energy use, 78-96% lower greenhouse gas emissions, 82-96% lower water use and 99% less land use (Tuomisto & Teixeira de Mattos, 2011). Cultured meat also increases animal welfare over the traditional production of meat, since there are no animals killed during the production process (Tuomisto & Teixeira de Mattos, 2011). Finally, cultured meat holds health advantages over the consumption of traditional meat since the fat content in cultured meat could be controlled, there is a smaller risk of diseases spreading from animal to human with only the use of little antibiotics (Bonny, Gardner, Pethick, & Hocquette, 2015; Post, 2012).

To ensure that these environmental, animal welfare and health benefits will eventually take place, potential acceptability and eventual adoption of cultured meat is crucial. Various scholars focussed on the adoption process and found a strong influence of attitude towards products on adoption intention and actual adoption behaviour (Cook, Kerr & Moore, 2002; Patch, Tapsell & Williams, 2005). This showed that a positive attitude is necessary to accept new products and thus needed for successful adoption behaviour (e.g. Ajzen, 1991; Cook et al., 2002; Patch et al., 2005). In light of this, it could be argued that the success of new products (i.e. cultured meat) strongly depends on the attitude of consumers. Some studies have focussed on possible acceptance and consumer attitude towards cultured meat (Hoek et al., 2011; Verbeke, Sans & Van Loo, 2015b) as well as of other meat replacements such as insects and algae (Beverland, 2014; Lensvelt, & Steenbekkers, 2014). A reappearing and corresponding finding within these studies is that attitude and acceptability of new food products are associated with the categorisation of the product. Especially in the case of cultured meat this showed to be important. However, the categorisation of cultured meat is not that straightforward since it possesses features from multiple categories (i.e. meat and meat substitutes) (Bekker, Tobi, Fischer and van Trijp, 2017a; Hoek et al., 2011), indicating it to be a hybrid product. This causes that cultured meat may potentially fall into one or both of these categories (Rajagopal & Burnkrant, 2008).

The process of (new) product categorisation depends on a twofold of factors: the extent product attributes are (in)congruent with a specific consumer-driven category (e.g. Meyers-Levy & Tybout, 1989) and whether the product is (in)congruent with the goals of the consumer (e.g. Felcher, Malaviya & McGill, 2001). Within the goal derived categories there are two different kind of goals to be distinguished: personal and situational goals (Ratneshwar, Pechmann & Shocker, 1996). Personal goals are related to the personal interests of the consumer and are therefore relatively stable (e.g. health). Situational goals on the other hand may be goals triggered by a specific situation and are therefore of a more temporary nature (e.g. convenience). Ratneshwar, Barsalou, Pechmann and Moore (2001) argue that these situational goals could have more effect than personal goals, since personal goals are constantly present but situational goals are often salient in a specific situation overruling the personal goal for a short instance. Therefore, while the current research acknowledges the importance

of personal goals it will focus on the situational goals and product attributes to understand consumer perception and categorisation of cultured meat.

Since cultured meat is not available on the market for regular consumers and the techniques for mass production are still under development, research in this area is necessary to see how it should be presented and introduced to consumers in the future. Nevertheless, among what is researched, the main focus has mainly been on taxonomic categorisation and the understanding of how consumers perceive meat and meat substitutes (e.g. Hoek et al., 2011; Verbeke et al., 2015a). By focussing on the presentation in combination with situational consumer goals on the categorisation process of cultured meat as a hybrid product, this study aims to contribute to a deeper understanding on consumer categorisation of new food products and the effect of this categorisation on the attitude. Based on this, the current research tries to provide managerial insights with regard to the presentation and successful introduction of cultured meat on the food market. Which is needed to create a positive attitude and increase the acceptance of cultured meat and consequently contribute in solving the world food problem. This leads to the following research question:

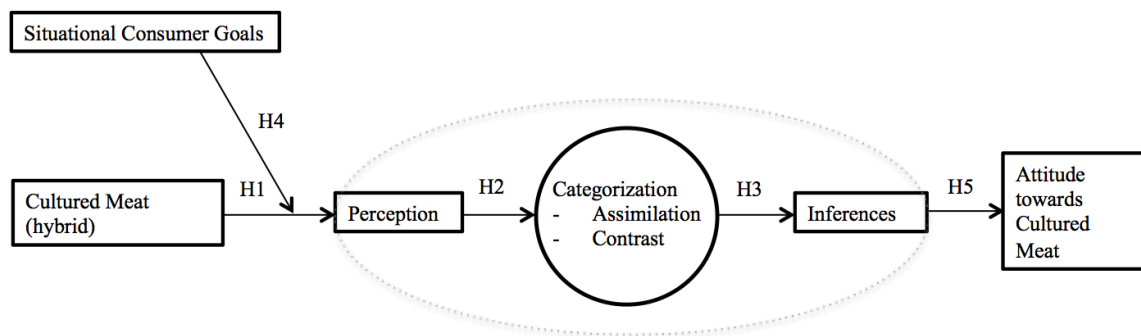
How do consumer perceptions of cultured meat influenced by the presentation of cultured meat and the present situational goals, influence the categorisation process and consequently the attitude towards cultured meat?

In order to answer this question, this study is subdivided into five chapters. This study will start with elaborating the conceptual framework, explaining the attitude formation of cultured meat through the categorisation process starting with consumer perception of cultured meat as a (non-) hybrid product and the influence of situational consumer goals. Followed by the third chapter, which describes the data, collection (i.e. interview and survey) as well as the operationalization and methods for analyses will be explained. The fourth chapter elaborates on the results and finally, the last chapter will discuss the results and critical notes to this study together with some recommendations for further research.

2. Theoretical framework

To answer the main research question and get insight in the categorisation process of cultured meat this study considers a framework that incorporates theories on consumer driven goal-derived categorisation (e.g. Ratneshwar et al., 2001), assimilation and contrast (e.g. Kardes, Posavac & Cronley, 2004), and hybrid products (e.g. Rajagopal & Burnkrant, 2008) Figure 1 provides an overview of the framework that will be explained in this chapter.

Figure 1. Theoretical framework



2.1 Background categorisation

Various studies showed that categorisation has an important influence on the attitude formation process of new products (Gregan-Paxton, Hoeffler, & Zhao, 2005; Rajagopal & Burnkrant, 2008). For consumers, categorisation enables them to construct the world into smaller units so it is more understandable and manageable (Gutman, 1982). More specifically, it is a way for consumers to organise thoughts about specific product alternatives into meaningful structures (e.g. apples among fruit) and in this way create similarity among (non-) identical products to simplify decision-making. In light of this, accessing a category is not an end in itself, but rather a mean to understand and handle a new product appropriately by using the existing category knowledge. The existing category knowledge creates assumptions and inferences helping the consumer to make expectations with regard to the new product. However, how a product is assigned to a category with its resulting inferences relies on the perception of the product by the consumer. Therefore, the process of categorisation is strongly related with both the perception of the products and the inferences based on the existing category knowledge (e.g. Kardes et al., 2004; Loken 2006; Loken, Barsalou and Joiner, 2008). This makes these three different concepts closely linked and hard to separate (e.g. Rajagopal, 2004). However, to find the attitude towards cultured meat and understand the process that leads to this attitude it is important to understand the different intermediate steps by themselves. Therefore, this study separates these different concepts as individual steps of categorisation but recognizes that these are highly interlinked and may overlap. In line with this, the above-mentioned framework

acknowledges that perception, categorisation and inference making are different aspects of a ‘single central process’, which is indicated with the dotted circle in figure 1.

As previously mentioned, it is especially important to influence the diets of non-vegetarians in order to lower the current and expected worldwide meat consumption. To be able to influence these dietary habits it is necessary to understand if and why (not) meat consumers assign cultured meat to the traditional meat category. This will also be interesting with regard to marketing purposes since this indicates how cultured meat may be best introduced to the food market. Consequently, the focus of this study is on the categorisation process of cultured meat to the traditional meat category.

2.2 Cultured meat as a hybrid product

Categorisation flexibility and even ambiguity arises when the information of a new product makes it difficult or even impossible to place this product in an existing category (Gregan-Paxton et al., 2005). This occurs when products possess features of multiple categories and consequently have multi-product functionality. These products are so called *hybrid* or ambiguous products and may potentially be categorised into different categories (Rajagopal & Burnkrant, 2008). In light of this, cultured meat may be seen as a hybrid product since it contains features of meat (e.g. it consist of real meat) and meat substitutes (e.g. no animal was killed during the process). In addition, Noseworthy and Goode (2011) argue that when consumers encounter a new product consisting of properties from two or more categories they tend to categorise it under only one pre-existing category. More specifically, consumers categorise the new hybrid product within the first single category that comes to their minds.

2.3 Consumer perception

Before the process of categorisation may be understood, it is important to recognize that consumers might perceive cultured meat and its hybridity different. When consumers encounter cultured meat for the first time, they might not think of the same category (Noseworthy and Goode, 2011). Consumer perception might be defined as the act of a consumer to apprehend a product with the use of their senses and/or their mind (Troy & Kerry, 2010). This sensory information consists of the product characteristics and features that are noticed and recognized by the consumers and may be highlighted with the use of marketing (e.g. framing) (e.g. Ganzach & Karsahi, 1995; Krishna, 2012). Following this reasoning, based on the characteristics consumers might perceive cultured meat as either meat, meat substitute or even as both at the same time (i.e. a specific product or as a hybrid product). Consequently, when cultured meat is presented (or framed) as traditional meat thus presenting it with solely features of traditional meat, consumers will recognize these characteristics and perceive cultured meat as traditional meat. In other words, cultured meat will be perceived as a product that may be assigned to only one category. While on the other hand, if cultured meat is presented (or framed) as having features of both meat and meat substitutes (multiple products), consumers will

based on this sensory information recognize both characteristics and perceive cultured meat as a hybrid product. In all situations some sort of meaning (e.g. what kind of product the sensory object is) is attached to the sensory information of cultured meat (Krishna, 2012). Accordingly, the following is hypothesised:

***H1:** When cultured meat is presented as possessing features of both traditional meat and meat substitutes, it is more likely to be perceived as a hybrid product than when cultured meat is presented as solely possessing features of traditional meat or meat substitutes.*

2.4. Categorisation: Assimilation and contrast

Consequently, the question to which category consumers assign the new hybrid product rises. Various scholars have shown that how consumers categorise products does not solely depend on the product itself but also on how the product relates to other products (e.g. Shocker, Bayus, & Kim, 2004). Therefore, to get insight in which category consumers assign cultured meat, it is necessary to see how they relate it in comparison to traditional meat and meat substitutes. Assimilation and contrast theories might explain and could give insights to this process (Loken et al., 2008).

2.4.1. Assimilation theories

Assimilation will occur when consumers perceive a high similarity between the new and the existing category (Loken et al., 2008). In this case, the new product has a substantial (however not perfect) overlap with the already known category and there are no disturbing differences (e.g. the new product has a new colour or different shape than the prototypical product from the existing category). In the case of cultured meat, this would indicate that consumers acknowledge similarities between cultured meat and traditional meat or meat substitutes resulting in assimilation. Bekker, Tobi and Fischer (2017b) showed that cultured meat was sometimes indeed associated with traditional meat. This was due to the similarity in physical properties and features, which according to Bekker et al. (2017b) implies some overlap between the symbolic representations of traditional meat and cultured meat (i.e. food source). The similarity between the two was also present because both cultured meat and traditional meat originate from animal meat. Verbeke, Sans and Van Loo (2015b), argue that consumers could also view cultured meat as being similar to meat substitutes, based on the characteristics both products hold (e.g. no animals are killed during the process). This indicates that assimilation could occur based on the similar characteristics (i.e. symbolic representation; originating from animals), which makes it easy to categorise cultured meat and enables the transfer of beliefs from the traditional meat category (i.e. existing category) to the cultured meat (i.e. new product) making it familiar and acceptable (Michaut, 2004). Enabling the beliefs and expectations of traditional meat to be transferred and applied to cultured meat.

2.4.2. Contrast theories

On the contrary, when consumers perceive low similarity or even observe a mismatch between the existing category and the new product it is likely contrast will occur. In this case the new product is too different from the existing category and is not eligible with the compared category knowledge. In this case of contrast, existing information from the existing category, which is used as a standard of comparison, is excluded from the judgement of the new product (Loken et al., 2008; Schwarz & Bless, 1992). Here, beliefs will not be transferred from the existing category, but the contrast effects will ensure a categorisation in the opposite category (Michaut, 2004). Bekker et al. (2017b) found that this could occur in the case of cultured meat. Their research showed that cultured meat could be associated with being not real meat resulting in placing cultured meat outside the symbolic boundary of traditional meat. Following this line of reasoning, cultured meat could also be contrasted with traditional meat. Furthermore, cultured meat could also be seen as not similar enough to the meat substitute category (e.g. since cultured meat contains muscle-tissue from animals). In this case, cultured meat will not be eligible with the category knowledge of meat substitutes and lead to cultured a contrast with meat substitute.

2.4.3. The influence of assimilation and contrast on the cultured meat categorisation

All in all, it could thus be stated that when consumers perceive the features and characteristics of cultured meat similar to traditional meat or meat substitutes, find sufficient overlap and place it in the same symbolic boundary, this will result in assimilation of cultured meat with the traditional meat or meat substitute category. However, when consumers do not perceive cultured meat to be similar, do not find any overlap between cultured meat and the existing category, and do not place it in the same symbolic boundary, this will result in contrast. Accordingly, the following is hypothesised:

H2a: *When cultured meat is perceived similar to traditional meat this will more likely lead to assimilation and categorisation of cultured meat with traditional meat, then when cultured meat is perceived to be not similar to traditional meat and contrasted with this category.*

H2b: *When cultured meat is perceived similar to meat substitutes this will more likely lead to assimilation and categorisation of cultured meat with meat substitutes, then when cultured meat is perceived to be not similar to meat substitutes and contrasted with this category.*

2.5 Inferences

A fundamental reason why categorisation and category information is useful to consumers is that it is used to make judgements about new category members (e.g. Loken, 2006; Loken et al., 2008). Consumers do this by making inferences. Inferences are the formation of judgements and expectations based on prior knowledge rather than information from the direct observation or situation (e.g. Kardes

et al., 2004; Loken 2006; Loken et al., 2008). Thus, the judgements are based on knowledge from the existing category (traditional meat or meat substitute). However, consumers do not use all available knowledge but rather use a selective subset of knowledge available about a specific category (Kardes et al., 2004). The knowledge individuals use is based on the accessibility and relevance of the information (either from memory or situational) in achieving specific goals. (Dick, Chakravarti & Biehal, 1990). For example, when a consumer is looking for the best Burger in town, he or she examines and evaluates some burgers in multiple burger restaurants based upon their salient set of attributes. Later, in another burger restaurant there is a waiter who tells and explains the consumer about important features that are not previously considered. Now, the consumer has obtained complete external available information on most burgers in town, however some information must be retrieved and may not be readily accessible in memory. Moreover, for some kinds of burgers there was never information collected and therefore missing (Dick et al., 1990). In this example it is clear that a consumer can only use the accessible and relevant information from their memory and from the external situation (the waiter) to achieve their goal. In addition, it is necessary to take into account that information about new category members may influence and affect the existing category beliefs or attitudes and consequently change the existing category (Loken 2006; Loken et al., 2008).

In relation to cultured meat, this inference making may thus be based on the knowledge and associations obtained from the categories of either traditional meat or meat substitutes. Accordingly, the following is hypothesised:

H3a: *Assimilation of cultured meat into the traditional meat category will lead to more inferences of cultured meat as traditional meat then when it is contrasted.*

H3b: *Assimilation of cultured meat into the meat substitute category will lead to more inferences of cultured meat as a meat substitute then when it is contrasted.*

2.6 Consumer goals

Within the categorisation process, products can be categorised together on different levels: *taxonomic level*, where products are grouped on the similarity of product attributes or at *goal derived level* where products are grouped on the similarity of the function of the product (e.g. Felcher, Malaviya & McGill, 2001). Thus, besides the perception of the features related to the taxonomic categorisation, consumer goals appear to be quite important, since they bring up different similarities in products (Ratneshwar et al., 2001). The goals will highlight features and characteristics in products based on the extend they will contribute to accomplishing a specific goal. Within consumer goals Ratneshwar et al. (2001) distinguishes two categories: personal and situational goals. Personal goals are related to the personal interests of the consumer and are therefore relatively stable (e.g. health). Situational goals on the other hand may be goals triggered by a specific situation and are therefore of a more temporary

nature (e.g. convenience) (e.g. Ratneshwar et al., 2001). Thus, consumers perceive and consequently categorise products differently based on consumer goals since different features and characteristics are salient at a particular time or in a particular context. However, Ratneshwar et al. (2001) argues that the situational consumer goals could have stronger effect than personal goals. This could be explained by the fact that personal goals are constantly present but situational goals are often salient in a specific situation overruling the personal goal. For example, a consumer has the personal goal to lose weight. When he goes out and has dinner in a restaurant he chooses the extra-large T-bone steak because his situational goal is to enjoy this meal. This indicates that situational goals are essential to examine in order to understand consumer decision-making (Ratneshwar et al., 2001). In addition, Herr and Kardes (1989) and Meyers-Levy and Sternthal (1993) suggest that exposure to contextual cues activate associations that influence people's thoughts and judgements of a product. This also indicates that different situational goals lead to different perceptions, activate different associations and consequently result in different inferences. In line with this, this current research acknowledges the importance personal goals but will focus on the situational goals to understand consumer perception and categorisation of cultured meat.

However, to really understand what the influence is of situational consumer goals on the decision-making process of consumers, situational consumer goals have to be dissected in more detail. Numerous scholars studied consumer situational goals and context specific motivations in relation to food choices (e.g. Grunert, Hieke & Wills, 2014; Zanolini & Naspetti, 2002). A common finding is that consumers choose their food based to either satisfy hunger, thirst, cravings and the ingestion of nutritional values; to experience pleasure and great taste; to socialize and interact; or even because they have the habit of eating something. All these different goals may differ in different situations and circumstances. Moreover, there is a difference between single salient goals or specific goals (i.e. when consumers have one specific goal) and ambiguous goals (i.e. when consumers lack a specific goal) (Ratneshwar et al., 1996). Single salient consumer goals influenced by a particular situation lead to perceiving cues and characteristics relating to the category that may achieve this goal. For example, someone could have a salient goal of experiencing the taste of meat. Ambiguous goals on the other hand, causes consumers to perceive various different cues and features linked to multiple categories. For example, a consumer might be hungry but could have an ambiguous goal since he or she does not crave for a particular food.

Accordingly, it could be argued that salient situational consumer goals influence the perception of specific products. In the case of cultured meat some salient situational consumer goals may be achieved by eating meat substitutes, such as the satisfaction of eating and the ingestion of nutritional values. This will highlight the meat substitute features in cultured meat. While other goals may only be achieved by the consumption of meat, such as the obtainment of the luxury status by the consumer will highlight the traditional features. Adding this to the assumption that the presentation of cultured meat (to be meat, a meat substitute or both) influences the sensory perception (e.g. Ganzach

& Karsahi, 1995; Krishna, 2012) of a product to be either a specific product or a hybrid product (Gregan-Paxton et al., 2005). This indicates that the combination of a presentation of cultured meat and a specific salient consumer goal could influence the hybridity perception of cultured meat. It could be argued that the consumer perception of cultured meat to be hybrid could thus be enhanced or made less extreme by a salient situational goal. For example, if cultured meat is presented to have similar characteristics to meat and the consumer has a salient consumer goal for meat consumption, this would likely strengthen the perception of cultured meat to be meat. This would be similar in the case of the presentation of cultured meat to correspond with the salient consumer goal to consume meat substitutes, strengthening the perception of cultured meat to be a meat substitute. However, when the presentation is contrasted with the goal of a consumer this might lead to a less extreme perception of cultured meat to be a single category product and even highlight the other characteristics of the product indicating it to be a hybrid product. Thus, the context and its related salient situational consumer goals might strengthen or weaken the perception of cultured meat to be a being a single category or a hybrid product. Accordingly, the following is hypothesised:

***H4:** When specific situational consumer goals correspond with the presentation of cultured meat this will more likely result in the perception of cultured meat as a single category product than as a hybrid product.*

2.7 Attitude

As previously stated, prior category knowledge and its resulting inferences influence and generate evaluations and belief (Gregan-Paxton & John, 1997; Moreau, Markman & Lehmann, 2001). This indicates that the inferences associated to the category to which cultured meat is assigned lead to specific evaluations and expectations, or in others words, the attitude. Attitudes in general may be defined in various ways, but this study will follow the definition by Ajzen (2001). He sees attitude as a summary evaluation of an object (e.g. behaviours, products) based on behavioural beliefs. Where behavioural beliefs are beliefs or expectations we have about the results of specific behaviour (Ajzen & Fishbein, 2000; Eagly & Chaiken, 2007). Attitude thus may be regarded as a positive or negative evaluation of an attitude object (Ajzen & Fishbein, 2000; Eagly & Chaiken, 2007). Therefore, attitude tailored to cultured meat may be seen as the evaluation based on the beliefs and expectation linked to the inferences made from the assigned category (either traditional meat or meat substitutes). According to this reasoning the following is hypothesised:

***H5:** The more cultured meat has inferences based on traditional meat the more the attitude is similar to that of traditional meat.*

3. Method

To answer these hypotheses two studies were conducted. The first study, an interview, is done to gather information on three different aspects. First, information is gathered on the specific situational consumer goals triggering the consumption of meat or the replacement meat. Secondly, the focus lies on the characteristics of meat and meat substitutes. Finally, the level of hybridity perception of cultured meat is assessed. The outcomes of the first study are used in the second study, to create a survey. Within this survey the presentation of cultured meat and the situational consumer goals are manipulated to get insight in the effects of this on the categorisation process and consequently the attitude of cultured meat.

3.1 Study 1 - Interviews

3.1.1 Participants and procedure

After a pilot, 10 interviews with an average duration of 10 minutes were conducted. The participants were all recruited on the Wageningen University in the Forum building. The demographic characteristics are summarized in Table 1. After the pilot interview some minor changes were made (i.e. the amount of products in the last part were limited to only hybrid products and the parts 2 and 3 were switched). The first two interviews were conducted with a more open scope and focused on the definition and perception of hybrid products of the participants. The outcomes of the first two interviews were used in the other 8 interviews to get more specific answers on hybrid products. The interviews were divided into four parts (Table 2). The interview started with a short introduction emphasizing the value of their personal opinions, the assurance of anonymity and socio-demographic questions. The second part of the interview was aimed at understanding when and why respondents replace (or not) meat within their meals. The third stage of the interview concerned the typicality of the characteristics for meals including meat, meat substitutes or neither. This also focused on what characteristics and features the participants find typical for meat and meat substitutes. Finally, the last focus of the interview was to get insights into the perception of hybrid food products. In this phase the participants were encouraged to indicate which food products had characteristics of multiple food categories and were asked to explain why this is the case. To ensure that all participants understand the concept of cultured meat, the participants were asked to read the following information based on previous research (Bekker, et al., 2017b; Post, 2012): *‘Cultured meat is meat produced from animal stem cells using tissue-engineering techniques. The resulting cells from this procedure are boneless and can be consumed as processed meat e.g. hamburgers, chicken nuggets and sausages. This new technique provides a way to produce an almost endless supply of sustainable meat without the necessity to kill animals’*. Consequently they were asked to indicate among which category this product would fall and if it could be the case that it is such a multiple category food product. After this question the interview was wrapped up and the participants were thanked and explained the aim of the research.

Table 1: Demographic characteristics of participants

Characteristic	Number	Percentage
Gender		
Male	5	50%
Female	5	50%
Age		
19 - 21	7	70%
22 -23	3	30%

Table 2: Interview topics and content

Part	Content
<i>Part 1: Welcome</i>	Welcoming participant and introduction Socio-demographic questions: - Age - Residence
<i>Part 2: Goals for eating meat and replacing meat</i>	Do you eat meat? (how often?) Do you sometimes not include meat for dinner? Do you replace this with something? Why do you/ don't you replace this with something? When do you do this? When do you find it important to eat meat? Why? When do you find it important to eat a meat replacement? Why?
<i>Part 3: Typicality characteristics of food products</i>	What, in your opinion, are typical characteristics for meat in a meal? (taste, texture, smell) What, in your opinion, are typical characteristics for meat substitutes in a meal? (taste, texture, smell) What, in your opinion, are typical characteristics for leaving out of meat and meat substitutes in a meal?
<i>Part 4: Perception hybridity of food products</i>	Take a food product in mind. Under what category would you place this? Can you think of a product that may be placed in multiple categories? Products: Sweet potato chips; tangelo; Ice cream cake; pizza burger; cronut; steak shake; quiche; sausage roll. What kind of purpose do these products have? Under what term would you group the products? Why? Read the information on cultured meat; under what term would you group it? Why?
<i>Wrap up</i>	Explanation of the research aim and context and thanking the participants.

3.1.2. Data analysis en results

The semi-structured interviews were all audio-recorded and transcribed. The transcripts are included in Appendix 1. The interviews were analysed and coded, which were used to identify themes and noteworthy aspects. All codes and characteristics may be found in Appendix 2 and in table 3 where the most common answers (i.e. named more than 2 times or where the respondents attached great importance to) are summarized.

The first part of the interview, on the specific situational consumer goals of eating meat and replacing meat, showed some consistent answers. The reasons to replace meat one of the main motives appeared to be related to social situations. This was mostly the case when they had to cook for people with specific norms and values towards less or no meat consumption and therefore a conscious act. For example one of the respondents pointed out: *‘When for example somebody is a vegetarian or vegan then it is not necessary for me to eat meat ... because for me it is not that important to eat meat, and the other person may have a belief which is important for him or her’*. One third of the respondents acknowledged that they sometimes consciously replaced meat in their meals because of the environmental and animal welfare problems it causes: *‘...I like meat too much meat to stop eating it all. But it is good for the animals and the ecological footprint to reduce’*. On the other hand, another cause to replace meat appeared to be that people sometimes forget meat when it is not part of a recipe or when they are shopping, in other words an unconscious act.

With regard to the reasons of eating meat, the majority (60%) of the participants indicated that it was mainly a habit and felt like they were missing something in their meal when they left this out or replaced it with something else. *‘Actually, it has become a little standard for me, I do not think about it anymore.... I just grew up with it’*. This was in most instances linked to the taste of meat. Half of the respondents indicated that one of the major reasons they eat meat is because they enjoy the taste or feel like it really contributes to the overall taste in the meal. *‘Well, I eat it because I just like it...’* Finally, 20 per cent of the respondents pointed out that special social situations, such as Christmas or a BBQ ask for the consumption of meat: *‘Yes for example with special occasions such as Christmas or something then it would feel like there is something missing’*.

Looking at the characteristics of meat and meat replacements the respondents were somewhat consentient. This is shown in table 3, where the most common characteristics (i.e. the characteristics that are named more then 2 times and/or where the respondents attached great importance to) that are included in the survey, are summarized. The 16 characteristics that are included in the survey, were exclusively mentioned in either one of the categories (not named for both meat or meat substitutes) and not contradictory with characteristics within the same category.

Half of respondents recognized the described hybrid products to be multifunctional and one third did not see it different from ‘normal’ products. On the function and category of cultured meat the respondents were somewhat divided. Half of the participants placed it among meat, one third among meat replacements and the remaining 20% indicated that it must be a new category since it was not

really meat and not really a meat replacer either. Respondents indicated it belongs to the meat category argued that it originates from animal cells and expect the taste and the texture to be similar to that of meat: ‘... meat, because it's an animal product’. Respondents suggesting it is more like meat substitutes often explained this with the fact that there are no animals killed during the process and it was not a ‘real’ animal but just lab grown cells. ‘In other words it is a meat substitute to me because it is not real, it seems like meat and it is produced from meat but it is not real meat since it was no real animal’. Interesting is that the majority of the respondents (70%) indicated that other people might view this differently and thus could also be categorised or seen as the other category. This might indicate that 70% of the respondents could view this product as both meat and meat replacement, or in other words, a hybrid product.

Table 3: Most important interview themes and codes

Part	Content
<i>Goals for eating meat and replacing meat</i>	<u>Eating meat</u> Habit to eat meat (6) Taste experience (5) Gives a saturated feeling (2) Social events (2) <u>Replacing meat</u> Social reasons (5) Environmental and animal welfare reasons (3) Part of the meal (3) No meat appetite (3)
<i>Typicality characteristics of food products</i>	<u>Meat</u> Brown (6) Red (4) Saturated feeling (4) More/ Strong flavour (4) Soft (3) Tender (3) Juicy (3) <u>Meat substitutes</u> Dry (4) Counterfeit meat (3) Not juicy (3) Less saturated feeling (2) Crispy (2)
<i>Perception hybridity of food products</i>	- Term: Multi-functional products (5) - Culture meat is meat (5); meat replacer (3); own category (2); could be both (7)

3.2 Study 2 – Survey

3.2.1 Participants and design

An online survey was used as the method of data collection for the second study. The study is build up as a 3 (information presentation: similar to traditional meat; similar to meat substitutes; similar to both (hybrid)) X 2 (situational consumer goal scenario: festive scenario; casual scenario) design. The participants were recruited by flyers targeting international and Dutch students on Wageningen University and through Facebook. In total 246 respondents completed the survey (table 3). The survey was created with the means of Qualtrics and consisted of 28 questions (Appendix 3). The first page provided information and an introduction about the survey, including the estimated time, the number of questions and the assurance of anonymity and privacy.

3.2.2. Stimuli

Situational consumer goals

After the introduction part the survey continued with a scenario aimed to manipulate situational consumer goals¹ (Box 1). The two different scenarios were randomly assigned to the respondents. Moreover, the scenarios are an indirect manipulation of the consumer goals, by either focussing on a festive dinner situation triggering meat consumption or on a casual dinner situation triggering meat to be replaced. These scenarios were created with the use of the outcomes of the interviews. At the end of the survey the relevant scenario was repeated with the question: ‘*What would you include in this dinner?*’. Respondents could indicate which product they would use: cultured meat (‘yes-no’), meat (‘yes-no’), and meat substitute (‘yes-no’). Here multiple products could be chosen if respondents chose yes for more then one product, but also none of the products could be chosen when respondents chose no for all products.

Information presentation of cultured meat

These situational consumer goal scenarios were followed by different presentations of cultured meat², resembling cultured to traditional meat, meat replacers or both. This was done with the use of three different information texts (Box 2), which again were randomly assigned to the respondents. The three presentations were based on the characteristics of meat, meat substitutes and hybrid products that were obtained during the interviews, and the studies of Bekker et al. (2017b) and Hoek et al. (2017).

¹ The situational consumer goals manipulation contains two conditions, where the festive situation was coded one and the casual situation was coded zero.

² The features of cultured meat manipulation contained three conditions, these were recoded into one variable where the meat condition was coded zero, the hybrid condition one and the meat substitute condition coded two.

Box 1. Situational consumer goal scenarios

Festive dinner situation: This year, Christmas will be celebrated at your place. Besides a wonderfully decorated Christmas tree and some presents, your family and friends expect you to prepare an extensive dinner. There are no budget restrictions and no special dietary wishes. Everyone values high quality meals with great taste experiences, especially for a dinner like this. Some of your family members are not easily saturated and really like a big meal. Since you prepare the dinner all by yourself it would preferably contain a single main ingredient to build a dinner around. For you the evening is successful when everyone has a good time and the dinner is memorable.

Casual dinner situation: Some of your friends are coming over for dinner on Friday. They do not expect a fancy dinner, you do not have a lot of money and you have to prepare the dinner by yourself before the guests arrive. Some of your friends have special dietary wishes since they strongly value animal welfare and their environmental footprint. All of your friends appreciate dishes and food products with high nutritional values. However, some do not have a great appetite, since they have a work related drink before they come over. For you the evening is successful when everyone likes the food and has a good time.

Box 2. Information presentations of cultured meat

The information presentations have the basis however, the underlined sentences are from the meat presentation and the italic sentences from the meat substitute presentation, these are merged to create a hybrid presentation.

Hybrid condition: Today you went shopping to prepare for this dinner and saw a new product: Cultured meat. Cultured meat is one of the latest developments in the food industry. It is produced from animal stem cells using tissue-engineering techniques. The resulting cells from this procedure are the same muscle tissues that may be found in animals. This muscle tissue is boneless and can be consumed as processed meat e.g. *burgers, steak tartar and sausages*. Cultured meat has a similar taste and texture to that of traditional meat and could replace the nutritional values from meat. *This new technique provides a way to produce an almost endless supply of sustainable and ecological responsible products without the necessity to kill or hurt animals*. It would be produced without the risk of diseases spreading from animal to human, and without animal welfare issues. *In addition, for the production of cultured meat little antibiotics are required.*

3.2.3. Measures

Perceptions of cultured meat to be meat, meat substitute and hybrid

Consumer perceptions of cultured meat to be similar to meat or meat substitutes were each measured with 1 self-constructed 7-point item³ based on the outcomes study 1.

The hybridity of cultured meat was measured in two ways, indirectly and directly. First, it was measured indirectly, based on the implicit ambivalence exhibited in the score on the items on perception of meat or meat substitute. This variable was created with the use of the formula Kaplan (1972) developed to create a measure for ambivalence concepts. This formula presupposes a separate assessment of two evaluations for which he uses attitude (Jonas, Broemer and Diehl, 2011).

$$Y = A+B - |A-B|^4.$$

In this way, when a respondent values cultured meat as both like meat and meat substitutes, then at least some objective ambivalence is present. Consequently, the higher a respondent's value on the computed value the more he or she sees cultured meat as a hybrid product. The lower a respondent's value the more he or she sees it as a single category product, either meat or meat substitute. Secondly, the perceived hybridity of cultured meat was measured directly, with a single 7-point item⁵.

Categorisation

The categorisation of cultured meat was measured based on the study of Moreau et al. (2001). Participants were given a layout of a hypothetical supermarket and asked to indicate where they would look for cultured meat with the question: '*When looking for cultured meat in the supermarket, what is the first place you would go to find the product?*'.

Inferences

The inferences of consumers were measured with 16, yes-no items based on the outcomes of the study 1 and enriched with the results of Bekker et al. (2017b)⁶. Nine of the items were product characteristics of traditional meat and seven of meat substitutes. The 'yes' checked meat characteristics were coded 1, and 'no' checked coded -1. For the meat substitute characteristics this was done in the opposite way, where 'yes' was coded -1 and 'no' was coded 1. In this was a scale could be created ranging from -16 to +16. Finally, based on this scale, three groups could be created:

3 Completely different from meat - completely like meat; Completely different from meat substitutes - completely like meat substitutes; Only similar to either meat or meat substitutes but not both – similar to both meat and meat substitutes.

⁴ Perception = 'cultured meat is like meat' + 'cultured meat is like a meat substitute' - | 'cultured meat is like meat' - 'cultured meat is like a meat substitute'|.

⁵ anchored with (1) = only similar to either meat or meat substitute but not both and (7) Similar to both meat and meat substitutes.

⁶ The inferences added based on the research of Bekker et al., (2017b) for meat are: 'contains protein'; 'comes from (parts of) animals'; 'contains fat'. For meat substitutes the added inference is 'man made'.

meat substitute (-10 – 1), hybrid (1-5) and meat (5 – 14). This item was constructed in order to analyse whether this is in line with the categorisation. Both the scale and the group item are used within the analyses.

Attitude

The attitude towards cultured meat was measured with 3, 7 point semantic differential scales where participants were asked to give their opinion about cultured meat, meat and meat substitutes in terms of a positive or negative evaluation⁷. These scales are based on the attitude measurement of Armitage and Conner (1999) who based this on the definition of Ajzen (2001), and are frequently used in food-related attitude studies, and on the study of Honkanen, Olsen and Verplanken (2005). The average of these scores was used to measure the overall attitude towards cultured meat.

To work with this construct the three different items of each of the three different product attitude measures are expected to measure the same general attitude of either cultured meat, meat and meat substitutes. All factor analyses, principal axis factoring⁸, for the attitude measures confirmed this expectation and all showed one component with an eigenvalue higher than 1, explaining 91.773% (cultured meat), 90.812% (meat) and 90.101 % (cultured meat) of the variance. The reliability analysis showed that all Cronbach's alpha's are higher than .945, which indicates a excellent consistency (Bland & Altman, 1997). Consequently, general attitude variable for cultured meat, meat and meat substitutes were created by taking the mean of the three attitude items.

Additional measures

Finally participants were asked for their personality traits regarding food habits and socio-demographic characteristics. First of all, it is valuable to know if the participants are food neophobic and would be biased against cultured meat based on their hesitation towards new food products (Martins & Pliner, 2005). The respondents answered ten statements from the food neophobia scale created by Pliner & Hobden (1992)⁹. A factor analysis, principal axis factoring¹⁰, and the reliability analysis indeed showed that these items could be computed into a scale. The factor analysis showed one component with an eigenvalue higher than 1 and the reliability analysis had a Cronbach's alpha of .858, which indicated a good internal consistency (Bland & Altman, 1997). Consequently, the mean of the 10 items was taken to compute the general measure of neophobia.

⁷ Overall, the thought of eating cultured meat / meat / meat substitutes makes me feel... 'good- bad'; 'satisfying-unsatisfying'; 'pleasant- unpleasant'.

⁸ Principal axis factoring is chosen since we follow a conceptual approach instead of, for example, solely data reduction (Principal component).

⁹ The participants answered these statements on a 7-point Likert scale varying between 'strongly disagree (1)' to 'strongly agree (7)'.

¹⁰ Principal axis factoring is chosen, since we follow a conceptual approach instead of, for example, solely data reduction (Principal component).

Secondly, a question on the familiarity with cultured meat based on Bekker et al. (2017b) was included, since this might lead to possible biases from previously obtained information. After this the food habits in terms of consuming meat or being a vegan/vegetarian and how often they consume meat per week. Moreover, the respondents were asked to indicate if they have food allergies, since this might increase the perceived risk of products (van Putten et al., 2006). Finally, personal values towards the environment and animal welfare were assessed with the questions: *‘When buying meat products, how important is the production process of the product with regard to the environment (or animal welfare) to you?’*. These were included to check whether these norms/ values might influence the attitude towards cultured meat (e.g. Ajzen, 1991; Tarkiainen & Sundqvist, 2005).

Regarding the socio-demographic characteristics of the respondents: gender, age, place of residence and most important daytime activity¹¹ were asked. If the answer to this latter question was being a student, a question on which university they attend followed. The survey was concluded with the question: *‘On which device did you fill out this survey?’* to control for any possible biases of the supermarket layout in the categorisation task. There was no effect found of device on the categorisation ($\chi^2(2)=2.513, p=.285$), indicating that there was no difference in categorisation between the respondents filling out the survey on their mobile phone or computer.

3.2.4. Survey procedure

The survey was presented to the respondents in English in order to include Dutch as well as non-Dutch respondents and consisted of six parts (Table 4; Appendix 3). The first two parts of the questionnaire contained the manipulation scenarios: the situation manipulation (festive scenario or the casual scenario) and the information presentation manipulation (similar to meat, meat substitutes or both). This was followed by the questions on perception, categorisation and inferences. The fifth part focussed on the attitude of the consumers towards meat, meat substitutes and cultured meat. The final part asked the personality traits, the situational goal question on the product and social demographic questions.

¹¹ Since most respondents (71.1%) are students there is a distinction made between students (1) and non-students (0).

Table 4: Survey topics and content

Part	Measure and content
<i>Welcome</i>	Welcome screen with a short introduction.
<i>Part 1: Consumer goals</i>	One of the two scenarios, festive or casual dinner scenario, concerning the <i>situational consumer goals</i> is presented to the respondents.
<i>Part 2: Features cultured meat</i>	One of the three <i>information presentations</i> with regard to the features of cultured meat is presented to the respondents.
<i>Part 3: Perception of cultured meat as hybrid</i>	The two randomized texts were followed by a question on the <i>perception of cultured meat</i> .
<i>Part 4: Categorisation and inference properties</i>	The <i>category of cultured meat</i> is directly measured with the use of a supermarket layout. Moreover, 18 characteristics of meat and meat substitutes are listed to measure the <i>inferences</i> .
<i>Part 5: Attitude towards cultured meat</i>	The overall <i>attitude towards cultured meat</i> , meat and meat substitutes in terms of a positive or negative evaluation is assessed.
<i>Part 6: Additional questions</i>	<i>Personality traits</i> such as neophobia, food lifestyles and frequency of meat consumption are asked. Followed by the relevant situational goal scenario and the question which product they would use. Finally, <i>socio-demographic characteristics</i> including age, gender, place of residence and most important daytime activity were asked.
<i>End of questionnaire</i>	Additional remarks, comments and questions and thanking the participants.

4. Results

4.1 Sample description.

Overall, 253 participants took part in the questionnaire, and 246 participants completed it at full. From the 7 excluded participants, 2 had some missing answers and the remaining five had technical randomization errors. From the number of participants included in this research 60.6% is female (N=149) and 39.4% is male (N=97) with an average age of 25.9 (SD=8.67) (Table 5). The majority of the participants had heard something about cultured meat in some way 67.1% (N=165). With regard to dietary habits, the majority 87% (N=213) of the respondents are meat consumers. Since vegetarian and vegan participants may reject meat-based products based on their beliefs and meal practices (Tan, van den Berg & Stiegler, 2016) and are not relevant to test the initial hypotheses, they are excluded in the main analysis. Therefore the valid number of participants included in the analysis of this study is 213. The syntax of all analyses may be found in appendix 5.

Table 5: Demographic characteristics of participants

Characteristic	Total sample (N=246)		Sample meat consumers (N=213)	
	Number	Percent	Number	Percent
Gender				
Male	97	39.4%	91	42.7%
Female	149	60.6%	122	57.3%
Age				
15 – 18	11	4.5%	11	5.2%
19 – 22	82	33.3%	65	30.5%
23 – 26	97	39.4%	86	40.4%
27 – 30	21	8.5%	20	9.4%
30 >	35	14.2%	31	4.6%

4.2 Manipulation check

To check whether the manipulation of the situational goal scenarios was successful a manipulation check was conducted. This was done with the use of the control item on the food choice¹² in relation to the assigned situational consumer goal scenarios. There should be noted that respondents could choose more than one product, but could also choose neither. Therefore the frequencies of the choices are first explored. Within the festive dinner scenario, 83.5% of the respondents would choose to prepare meat, 49.6% would choose to prepare cultured meat, and 39.4% would choose meat substitutes. Showing that participants choose meat over meat substitutes in this scenario. For the casual dinner scenario, 25.2% of the respondents would choose to prepare meat, 31.7% would choose meat substitutes and

¹² The 6 items on product choice are merged into three items showing the choice for cultured meat in both situations (1= not chosen, 2= is chosen) the choice for meat in both situations (1= not chosen, 2= is chosen) and the choice for meat substitutes in both situations (1= not chosen, 2= is chosen). Moreover, the situational consumer goal variable is computed into a variables taking into account both conditions to ensure both groups are included in the analysis.

26% would choose cultured meat. This shows that meat is not as important in this situation, and that people are substituting meat with other food sources than the listed products.

To compare the effect of the goal scenarios on the product decision-making a Pearson chi square analysis¹³ is conducted. The analyses showed that there were no significant difference in choosing meat ($\chi^2(1)=0.068$, $p=.794$) or cultured meat ($\chi^2(1)=0.059$, $p=.808$) between the different situational consumer goal scenarios. However, for the meat substitute choice there is a significant difference found for the different situational consumer goal scenarios ($\chi^2(1)=2.703$, $p=.100$). Where, 53.3% chose the meat substitute in the casual dinner situation and 42.9% chose the meat substitutes in the festive dinner situation.

All in all, this suggests that the respondents did not make a difference in their choice on meat or cultured meat but did chose meat substitutes more often in the meat substitute scenario. It could be assumed that the situational consumer goal scenarios were successful and had the intended influence of the product choice as expected.

4.3 Analytical strategy

To test all hypotheses this study will conduct various analyses, which are explained in more depth in the coming sections. The formulated hypotheses expect the effects to be in one particular direction rather than an effect as such. To provide more power to detect an effect in the expected direction, the hypotheses are tested one-sided where applicable (Field, 2013). Nevertheless, this is not done for the control variables, since there are no one-sided expectations for the control variables. To ensure that all analyses are done with the same level of explanatory power and probability distribution (Field, 2013), a selection of control variables was used for all subsequent analysis. Within the control variable residence, 58 of the respondents only indicated the country of origin and not a city, which makes it not possible to convert these into 2 meaningful groups and thus created an excess of missing's¹⁴. Therefore, this variable is not included in the main analyses. All other remaining socio-demographic characteristics may have an effect on the dependent variables and are included in the main analyses: gender, age, most important daytime activity, familiarity with cultured meat, food allergies, frequency of eating meat and neophobia. The control variables directly linked to the attitude, the importance of animal welfare and importance of environment, are only included in the analyses regarding the attitude towards cultured meat. Finally, in all the applicable analyses possible multicollinearity problems were checked with VIF measures¹⁵.

¹³ Since the sample is large enough (N=180), not more than 20% of the expected frequencies are lower than 5 and all expected values are above 1 indicating the chi square test can be used (Field, 2013).

¹⁴ Since there are too many different countries of origin (e.g. Asia, Europe, the US, Afrika) it would be meaningless to compute a variable of Dutch vs Other citizens.

¹⁵ As a rule of thumb, VIF's greater than 10 indicate that variables could be considered as a linear combination of other independent variables (Myers, 1990).

4.4 Main analyses

4.4.1. Perception

Hypothesis 1 predicts that when cultured meat is presented as traditional meat and meat substitutes, it is more likely to be perceived as a hybrid product than when it is presented as either one of these products. This was tested with an univariate variance analysis or ANOVA. The results of the model showed no significant effect of the presentation of cultured meat on the implicit ambivalent measure of perception of cultured meat as a hybrid product ($F(2, 200)=0.606, p=.546, \eta^2=.078$). This indicates that the different presentations of cultured meat (i.e. similar to meat, meat substitutes or both) do not lead to a different hybrid perception of cultured meat. This shows that there is no support found for hypothesis 1 in the data. For the effect of the situational consumer goals on the perception of cultured meat as a hybrid product, there was also no significant effect ($F(1, 200)=1.167, p=.281, \eta^2=.078$). This suggests that the different situational consumer goals (i.e. festive dinner situation and casual dinner situation) do not lead to a different hybrid perception of cultured meat. However, the moderating effect of the situational consumer goals on the implicit ambivalent measure of perception demonstrated to have a effect ($F(2, 200)=3.206, p=.006, \eta^2=.078$). Showing that hypothesis 4, expecting that the influence of the presentation of cultured meat on perception to be hybrid is moderated by the situational consumer goals, was supported by the data. Figure 2 and table 6 show the effect of the different situational consumer goals and presentations on the perception of cultured meat. Presenting cultured meat as meat showed no difference between the different dinner situations. Presenting cultured meat as a hybrid product showed to have higher hybridity perceptions for the casual situational consumer goal, indicating that this combination highlights both characteristics. Presenting cultured meat as a meat substitute showed the biggest differences between the situational consumer goal scenarios, where the casual dinner led to a substantial lower perception of hybridity then the festive dinner.

Figure 2. *The effect of presentation and consumer goals on the perception of cultured meat.*

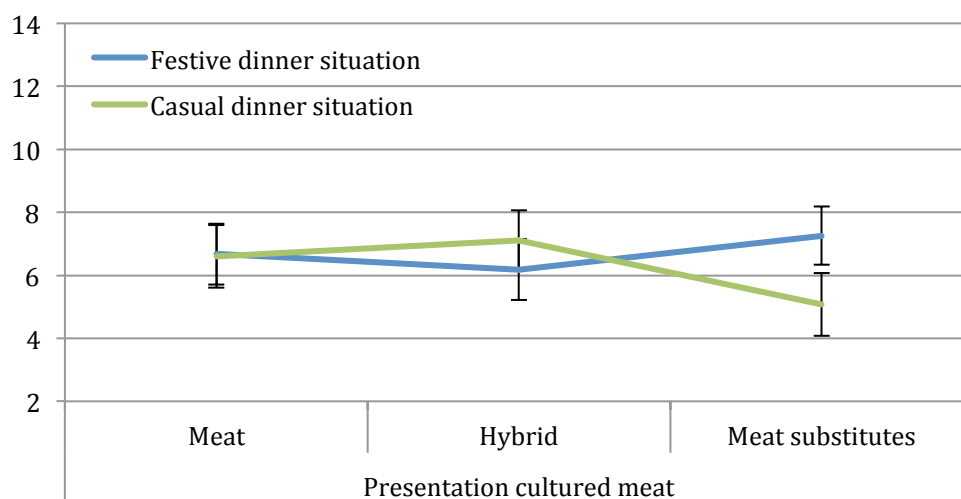


Table 6. *The effect of presentation and consumer goals on the perception of cultured meat (estimated marginal means).*

Presentation	Goal	CI 95% Lower bound	Perception	CI 95% Upper bound
Meat	Festive dinner situation	5.690	6.676	7.663
	Casual dinner situation	5.616	6.609	7.601
Hybrid product	Festive dinner situation	5.188	6.178	7.167
	Casual dinner situation	6.150	7.108	8.066
Meat substitute	Festive dinner situation	6.325	7.258	8.191
	Casual dinner situation	4.062	5.071	6.081

With regard to the control variables, there was no significant effect found for most important daytime activity ($F(1, 200)=0.159, p=.691, \eta^2=.078$), food allergies ($F(1, 200)=0.000, p=.987, \eta^2=.078$), frequency of eating meat ($F(1, 200)=0.010, p=.921, \eta^2=.078$), familiarity ($F(1, 200)=1.851, p=.175, \eta^2=.078$), neophobia ($F(1, 200)=0.362, p=.548, \eta^2=.078$), age ($F(1, 200)=0.588, p=.444, \eta^2=.078$) and gender ($F(1, 200)=0.016, p=.899, \eta^2=.078$). Showing that neither of these items had an influence on the hybridity perception of cultured meat.

The analysis is also done for the direct question of perception. This analysis also showed no significant results for the effect of the presentation of cultured meat ($F(2, 200)=1.120, p=.328, \eta^2=.052$) and for the effect of the situational consumer goals ($F(1, 200)=0.148, p=.700, \eta^2=.052$)(table 7). For the interaction effect of the presentation of cultured meat and the situational consumer goals which showed to have an effect on the implicit ambivalent measure, did not show a significant effect on the direct measure ($F(2, 200)=2.271, p=.106, \eta^2=.052$). Nevertheless, the profile plots showed the same patterns (table 8). Similarly to the findings of the implicit ambivalent measure, the control variables did not demonstrate to have a significant effect on the direct measure for hybridity: for most important daytime activity ($F(1, 200)=0.828, p=.364, \eta^2=.052$), food allergies ($F(1, 200)=0.283, p=.596, \eta^2=.052$), frequency of eating meat ($F(1, 200)=0.109, p=.741, \eta^2=.052$), familiarity ($F(1, 200)=0.004, p=.947, \eta^2=.052$), neophobia ($F(1, 200)=0.481, p=.489, \eta^2=.052$), age ($F(1, 200)=0.660, p=.417, \eta^2=.052$) and gender ($F(1, 200)=0.001, p=.963, \eta^2=.052$). Again, showing that neither of these items had an influence on the hybridity perception of cultured meat.

Table 7. *The effect of presentation and consumer goals on the control item for perception of cultured meat (estimated marginal means).*

Presentation	Goal	CI 95% Lower bound	Perception	CI 95% Upper bound
Meat	Festive dinner situation	3.553	4.091	4.629
	Casual dinner situation	3.873	4.415	4.956
Meat substitute	Festive dinner situation	3.198	3.737	4.277
	Casual dinner situation	3.718	4.240	4.763
Hybrid product	Festive dinner situation	3.627	4.136	4.645
	Casual dinner situation	3.016	3.567	4.118

4.4.2. Categorisation

Within the categorisation task, most respondents, 52.6 %, categorised cultured meat with meat substitutes, 39.4 % categorised it with meat (fresh meat or meat preserves) and 8 % placed it somewhere else (e.g. fresh fish, dairy products). To predict, explain and see if the perception has an influence on this categorisation as hypothesised, a multinomial logistic regression, to which all assumptions are met¹⁶, is conducted. A multinomial logistic regression is chosen in order to test the hypotheses, since this analysis is able to predict the probability of category membership based on a dependent variable that has more than two nominal categories (Madhu, Ashokk & Balasubramanian, 2014).

The model with the reference category of meat, including the perception variable of cultured meat to be like meat, the perception variable of cultured meat to be like meat substitutes and the control variables was statistically significant ($\chi^2(18)=45.908$, $p<.001$). This indicates that both the perception and control variables as a set, reliably distinguished between the category of meat and the other 2 categories with an overall prediction success of 61.0% (76.8% for the meat substitutes category, 50.0% for the meat category and 11.8% for the other category). In other words, this model is a suitable predictor for the categorisation of cultured meat, based on the perception.

The first part of the model looked at the category ‘meat substitute’ relative to the category ‘meat’. The effect of the perception of cultured meat to be like meat was significant ($b=-0.322$, $p=.001$)(table 8). This suggests that the probability of choosing the meat substitute category relative to the meat category decreases, when the perception of cultured meat to be like meat becomes higher. The effect of the perception of cultured meat to be like meat substitutes was also found to be significant ($b=0.252$, $p=0.004$). Indicating the probability of choosing the meat substitute category relative to the meat category increases, when the perception of cultured meat to be like meat substitutes becomes higher. With regard to the control variables, age demonstrated to have a

¹⁶ Each independent variable has a single value for each case; the categories of the dependent variable (meat category variable) are mutually exclusive and exhaustive; the independent variables are continuous (Mertler & Vannatta, 2002).; Madhu, Ashokk & Balasubramanian, 2014).

significant effect ($b=-0.297$, $p=.084$), indicating that the probability of choosing the meat substitute category relative to the meat category decreases, when the age becomes higher. All other control variables did not show to have a significant effect (table 8). Suggesting that there is no difference in the probability of choosing the meat or meat substitute category based on gender ($b=0.335$, $p=0.326$), neophobia ($b=-0.108$, $p=0.471$), most important daytime activity ($b=-0.373$, $p=0.361$), food allergies ($b=-0.638$, $p=0.222$), frequency of eating meat ($b=0.155$, $p=0.406$) or familiarity with cultured meat ($b=-0.169$, $p=0.227$).

The second part of the model looked at the category ‘other’ (i.e. fresh fish, vegetables and fruit, dairy products, oriental food, non-food, baking products, coffee, tea, drinks) relative to the category ‘meat’. For this category there is also significant effect found for the perception of cultured meat to be like meat ($b=-0.316$, $p=.047$)(table 8). Suggesting that the probability of choosing the other category relative to the meat category decreases, when the perception of cultured meat to be like meat becomes higher. The effect of the perception of cultured meat to be like meat substitutes was also found to be significant ($b=0.417$, $p=0.010$). Indicating the probability of choosing the other category relative to the meat category decreases, when the perception of cultured meat to be like meat substitutes becomes higher. The control variables: most important daytime activity ($b=-1.162$, $p=0.081$), age ($b=-0.578$, $p=0.061$), neophobia ($b=-0.567$, $p=0.034$) and familiarity with cultured meat ($b=0.478$, $p=0.076$) showed to have a significant effect (table 8). Indicating that the probability of choosing the other category relative to the meat category decreases, when the level of neophobia rises. This is as expected according to the scale created by Pliner and Hobden (1992), stating that the more neophobic someone is the less likely he or she will try new food products and thus might assimilate it with meat since this is a known category. This decrease is also visible when the most important daytime activity is to be a student and the higher the age becomes. Both these findings might be explained by the research of Fessler, Arguello, Mekdara and Macias (2003), who state that when the age increases the meat consumption and the disgust sensitivity decreases. This could mean that with the increase of age people are less disgusted towards cultured meat and therefore see the similarities with. On the other hand, the probability of choosing the other category relative to the meat category increases, when the familiarity with cultured meat is higher. Gender ($b=-0.714$, $p=0.258$), frequency of meat consumption ($b=-.294$, $p=0.257$) and food allergies ($b=0.523$, $p=0.494$) did not show to have a significant effect.

Table 8. Results multinomial logistic regression analysis of the effects on categorisation, with the meat category as the reference category.

	Meat substitute category		Other category	
	B	SE (B)	B	SE (B)
Perception cultured meat is like meat	-0.322***	0.103	-0.316*	0.188
Perception cultured meat is like meat substitutes	0.252**	0.93	0.417**	0.179
Gender	0.335	0.344	-0.714	0.631
Most important daytime activity	-0.373	0.408	-1.162†	0.667
Food allergies	-0.638	0.522	0.523	0.494
Frequency of eating meat	-0.115	0.139	-0.294	0.259
Neophobia	-0.108	0.150	-0.567*	0.267
Age	-0.297†	0.172	-0.578†	0.309
Familiarity	-0.169	0.140	0.478†	0.269
Constant	3.860		3.308	
Nagelkerke R²	.232		.232	
N	213		213	

† $p=.10$, * $p=.05$, ** $p=0.01$, *** $p=0.001$

The analysis was also done for the implicit ambivalent measure of perception for hybridity and the direct measure for hybridity instead of the two separate perception items. This was done in order to see if the level of hybridity influences the categorisation. First, the analysis with the implicit ambivalent measure of perception was conducted ($\chi^2(16)=27.066$, $p=.041$). For the ‘meat substitute’ category relative to the ‘meat’ category, the implicit ambivalent measure of perception showed to have no effect ($b=0.012$, $p=.412$). Suggesting that there is no difference in the probability of choosing the meat or meat substitute category based on the level of hybridity perception. However, this could also occur because higher levels of hybridity might lead to difficulties in categorising cultured meat since this indicates it could be assigned to both categories. Therefore, this could also suggest that respondents categorise cultured meat to both meat and meat substitutes when it this ambiguity occurs. Looking at the ‘other’ category relative to the ‘meat’ category, the implicit ambivalent measure of perception did show to have an effect ($b=0.142$, $p=.063$). Indicating the probability of choosing the

other category relative to the meat category increases, when the perception of cultured meat to be a hybrid product increases.

Secondly, the analysis with the direct measure of perception was conducted ($\chi^2(16)=26.943$, $p=.042$). For both the meat substitute category ($b=-0.037$, $p=.348$) and the ‘other’ category ($b=0.227$, $p=.103$) the direct measure of perception showed to have no effect relative to the meat category. Suggesting that there is no difference in the probability of choosing the meat or meat substitute category based on the level of hybridity perception. Again, this could also suggest that respondents categorise cultured meat to both meat and meat substitutes when cultured meat is perceived to be ambiguous.

All in all, the results indicate that both the hypotheses 2a and 2b are supported by the data. The outcomes showed that the perception of cultured meat to be similar to traditional meat will more likely lead to the categorisation and assimilation of cultured meat with the traditional meat category. This also holds for the meat substitute category, the perception of cultured meat to be similar to meat substitutes will more likely lead to the categorisation and assimilation of cultured meat with the meat substitute category.

4.4.3. Inferences

To test if there is an effect of the categorisation of cultured meat on the inferences, a Person’s chi-square test is used¹⁷. The results showed a significant association between the categorisation of cultured meat and the inferences of cultured meat $\chi^2(4)= 22.604$ $p<.001$. Looking at the contingency table (table 9) it is visible that from the respondents who categorised cultured meat within the meat category the majority, 64.3%, also had inferences with meat. Whereas, 25% had inferences with meat substitutes and 10.7% with both. This shows, that the majority of the respondents who assimilated cultured meat with the meat category had meat inferences. For the meat substitute and the other category the inferences are more scattered (Table 9). This suggests that for these two groups, the inferences related to meat, meat substitutes and both (hybrid inferences) are more equally distributed, but the selection of inferences directly and only related to the assigned category are not significant. This may indicate that for these two groups the inferences were not immediately associated with the assigned category.

¹⁷ Since the sample is large enough ($N=180$), not more than 20% of the expected frequencies are lower than 5 and all expected values are above 1 indicating the chi square test can be used (Field, 2013).

Table 9. Percentages of the inferences following from the categorisation.

<u>Inferences</u>	<u>Categories</u>		
	Meat substitute	Meat	Other
Meat substitute	38.4%	25.0%	32.4%
Hybrid	24.1%	10.7%	20.7%
Meat	37.5%	64.3%	23.5%

To determine the relationship between the categorisation on the inferences, a hierarchical multiple regression was conducted. The first model including the control variables was found to be significant ($R^2=0.085$, $F(7,205)=2.731$, $p=.010$). Within this model, familiarity with cultured meat showed to have a positive significant positive effect ($b=1.029$, $t=3.231$, $p=.001$)(table 10). This suggests that the more familiar someone is with cultured meat, the more meat inferences there are made. This might be explained by the information provided on cultured meat present by the media, presenting it as a new meat product to replace traditional meat (Goodwin & Shoulders, 2013). The other control variables: gender ($b=1.135$, $t=1.424$, $p=.156$), most important daytime activity ($b=0.130$, $t=0.140$, $p=.889$), food allergies ($b=-0.287$, $t=-0.243$, $p=.808$), frequency of meat consumption ($b=-0.316$, $t=-0.972$, $p=.332$), neophobia ($b=0.453$, $t=1.330$, $p=.185$) and age ($b=-0.012$, $t=-0.029$, $p=.977$), did not show to have a significant effect (table 10).

The second model adding the categories meat and meat substitutes was also found to be significant ($R^2=0.139$, $F(9,203)=3.637$, $p<.001$). Within this model, the effect of assimilating cultured meat within the meat category is significant ($b=1.472$, $t=2.080$, $p=.019$)(table 10). This indicates that there is a positive effect of assimilating cultured meat to the traditional meat category on having traditional meat inference with cultured meat. For the effect of assigning cultured meat to the meat substitute category on the inferences there is no significant effect found ($b=0.370$, $t=0.265$, $p=.396$). Indicating that the assimilation with the meat substitute category does not lead to more meat substitute inferences. Moreover, familiarity with cultured meat showed to still have a positive significant positive effect ($b=0.935$, $t=2.959$, $p=.003$).

All in all, this indicates that hypothesis 3a, stating that assimilation of cultured meat into the traditional meat category will lead to more inferences of cultured meat as traditional meat then when it is contrasted is supported by the data. While on the other hand, there is no support found for hypothesis 3b, stating that assimilation of cultured meat into the meat substitute category will lead to more inferences of cultured meat as a meat substitute then when it is contrasted.

Table 10. Results hierarchical multiple regression analysis of the effects on inferences.

Inferences cultured meat				
Model 1			Model 2	
	B	SE (B)	B	SE (B)
Gender	1.135	0.797	1.256	0.783
Most important daytime activity	0.130	0.929	-0.132	0.911
Food allergies	-0.287	1.179	-0.504	1.160
Frequency of meat consumption	-0.316	0.325	-0.390	0.318
Neophobia	0.453	0.340	0.328	0.355
Age	-0.012	0.397	-0.183	0.391
Familiarity with cultured meat	1.029***	0.319	0.935**	0.316
Categorisation meat			1.472*	0.708
Categorisation cultured meat			0.370	1.394
Constant	-2.049		-1.902	
R²	.085		.139	
N	213		213	

† $p=.10$, * $p=.05$, ** $p=0.01$, *** $p=0.001$

4.4.4. Attitude

The last hypothesis focuses on what the effects are of the inferences on attitude, which was assessed with the use of a hierarchical multiple regression analysis.

The first model includes the socio-demographic control variables and the control items on animal welfare and environmental values. This model showed to be significant ($R^2=0.165$, $F(9, 203)=4.448$, $p<.001$). Within the model, gender demonstrated to have a significant effect on the attitude towards cultured meat ($b=0.448$, $t=1.900$, $p=.059$) (table 11). This indicates that women have a more positive attitude towards cultured meat than men. This could be explained by the difference in justification strategies to eat meat between men and women. Where eating meat is linked to masculinity, consuming meat makes them feel like real men (Rothgerber, 2013). The level of neophobia showed to have a significant negative effect on the attitude towards cultured meat ($b=-0.377$, $t=-3.713$, $p<.001$). This indicates that the more neophobic someone is the lower the attitude towards cultured meat becomes. This is as expected according to the scale created by Pliner and Hobden (1992), stating that the more neophobic someone is the less likely he or she will try new food products. Familiarity with cultured meat also showed to have a significant effect on the attitude

towards cultured meat ($b=-0.277$, $t=-2.877$, $p=.004$). Suggesting that the more familiar someone becomes with cultured meat the less positive the attitude towards cultured meat becomes. This could be explained by the findings of Goodwin and Shoulders (2013) who state that the current media also includes scepticism towards cultured meat and the “yuck” factor, which might lead to a negative attitude when being familiar. Finally, the frequency of meat consumption also proved to have a significant effect on the attitude towards cultured meat ($b=-0.205$, $t=-2.137$, $p=.034$). Indicating that the more meat someone consumes the less positive the attitude towards cultured meat becomes. This might be explained with the study of Verbeke et al. (2015a), who found that meat consumer initial reaction were underpinned by feeling of disgust and unnaturalness. This could lead to a less positive attitude towards cultured meat. The remaining control variables did not prove to have any effect on the attitude towards cultured meat: most important daytime activity ($b=0.067$, $t=0.247$, $p=.805$), food allergies ($b=-0.184$, $t=-0.531$, $p=.596$) and age ($b=0.178$, $t=1.514$, $p=.132$)(table 11). Moreover, the additionally added control variables on animal welfare ($b=-0.016$, $t=-0.115$, $p=.908$) and environmental ($b=0.050$, $t=0.361$, $p=.719$) values did not prove to have any effect on the attitude towards cultured meat.

The second model, adding the attitude towards meat and meat substitutes, and the inferences was also significant ($R^2=0.372$, $F(12, 200)=9.884$, $p<.001$). Within this model, the attitude towards meat had a significant effect on the attitude towards cultured meat ($b=0.135$, $t=1.712$, $p=.044$)(table 11). This indicates that when there is a more positive attitude towards meat, this leads to a more positive attitude towards cultured meat. There was also a positive significant effect found for the attitude of meat substitutes ($b=0.390$, $t=6.187$, $p<.001$). This also indicates that a more positive attitude towards meat substitutes leads to a more positive attitude towards cultured meat. For the effect of inferences on the attitude of cultured meat there is also a significant effect found ($b=-0.069$, $t=-3.783$, $p<.001$). Indicating that when inferences are more in the direction of meat substitute and less in the direction of meat, this will lead to a more positive attitude towards cultured meat. Gender ($b=0.511$, $t=2.457$, $p=.015$), frequency of meat consumption ($b=-0.257$, $t=-2.895$, $p=.004$) and neophobia ($b=-0.202$, $t=-2.203$, $p=.029$) still proved to be significant, where familiarity ($b=-0.081$, $t=-0.920$, $p=.359$) did not show a significant effect. Peculiar is that age is also significant within this model ($b=0.207$, $t=2.014$, $p=.045$). Suggesting that the higher the age the more positive the attitude towards cultured meat becomes. This could be explained by the study of Verbeke and Viaene (2000) showing that young meat consumers do not attach much importance towards hormone and harmful substances free meat compared to older meat consumers. Since this was explicitly mentioned in two of the three presentation scenarios which could have led to older meat consumers being more positive towards cultured meat.

The third and last model, adds the interaction effects of the attitude of meat with inferences and the attitude of meat substitutes with inferences and was also found to be significant ($R^2=0.398$, $F(14, 198)=9.338$, $p<.001$). Within this model, the interaction effect of the inferences and the attitude

towards meat demonstrated to have a positive significant effect ($b=0.029$ $t=2.172$, $p=.031$)(table 11). This indicates that the attitude towards cultured meat is more positive when there are more meat inferences, implying that the attitude towards meat has more effect when cultured meat is regarded to be meat. On the other hand, for the second interaction effect of the inferences and the attitude towards meat substitutes there was no significant effect found ($b=-0.014$, $t=-1.250$, $p=.213$). Gender ($b=0.509$, $t=2.483$, $p=.014$), frequency of meat consumption ($b=-0.234$, $t=-2.654$, $p=.009$), age ($b=0.220$, $t=2.171$, $p=.031$) and neophobia ($b=-0.182$, $t=-1.994$, $p=.048$) still proved to be significant. Also the attitude towards meat ($b=0.146$, $t=1.875$, $p=.031$), attitude towards meat substitutes ($b=0.374$, $t=5.956$, $p<.001$) and inferences ($b=-0.053$ $t=-2.780$ $p=.006$) still showed a significant effect.

All in all, this indicates that hypothesis five stating that the more cultured meat is categorised and has inferences based on traditional meat the more the attitude is similar to that of traditional meat, is supported by the data.

Table 11. Results of the hierarchical multiple regression analysis on the effects on the attitude towards cultured meat.

Categorisation meat						
	Model 1		Model 2		Model 3	
	B	SE (B)	B	SE (B)	B	SE (B)
Gender	0.448†	0.236	0.511*	0.208	0.509*	0.205
Most important daytime activity	0.067	0.273	0.271	0.241	0.309	0.238
Food allergies	-0.184	0.347	-0.111	0.304	-0.080	0.300
Frequency of consumer meat	-0.205*	0.096	-0.257**	0.089	-0.234**	0.088
Neophobia	-0.377***	0.101	-0.202*	0.092	-0.182*	0.091
Age	0.178	0.118	0.207*	0.103	0.220*	0.101
Familiarity	-0.277 **	0.096	-0.081	0.088	-0.096	0.088
Importance animal welfare	-0.016	0.142	-0.002	0.125	-0.024	0.123
Importance environment	0.050	0.139	-0.019	0.122	-0.006	0.120
Attitude towards meat			0.135*	0.079	0.146*	0.078
Attitude towards meat substitutes			0.390***	0.063	0.374***	0.063
Inferences			-0.069***	0.018	-0.053**	0.019
Attitude towards meat * inferences					0.029*	0.013
Attitude towards meat substitutes * inferences					-0.014	0.011
Constant	6.522		3.699		3.346	
R²	.165		.372		.398	
N	213		213		213	

† $p=.10$, * $p=.05$, ** $p=0.01$, *** $p=0.001$

4.5 Additional analyses

4.5.1. Including vegetarian and vegan respondents

To see whether there are differences in the results when including non-meat consumers the main analyses will be repeated including vegetarian and vegan respondents. The inclusion of these respondents lead to the exclusion of variable measuring frequency of meat consumption. The extended description of these analyses are found in Appendix 5.

First, the ANOVA on perception of cultured meat and the presentation combined with consumer goals showed that controlling for dietary has a significant effect ($F(1, 233)=12.041$ $p<.001$, $\eta^2=.113$). This implies that when you do not eat meat you are more likely to perceive cultured meat as a hybrid product then when you do eat meat.

Regarding the second analysis, there were no substantial differences found in the main analysis when including vegetarians and vegan, and controlling for dietary habits on the effect of perception on categorisation. However, the effect of the perception of cultured meat to be like meat substitutes was found to be positive for the other category ($b=0.548$, $p<.001$) relative to the meat category. Where in the initial analysis this showed to be a negative effect. This indicates that when including the non-meat consumers the probability of choosing the other category relative to the meat category increases, when the perception of cultured meat to be like meat substitutes becomes higher. And the direct measure for the hybridity perception also showed a significant effect for the other category relative to the meat category ($b=0.305$, $p=0.027$), where this was not significant in the initial analysis. Indicating the probability of choosing the other category relative to the meat category increases, when the perception of cultured meat to be a hybrid product increases.

The third analysis regarding the inferences, showed that over the inferences were higher for all different categories, indicating that non-meat consumers have more meat inferences with regard to cultured meat then non-meat consumers.

The last analysis focusing on what the effects are the inferences on attitude did not show any differences in the main outcomes when including the vegetarian and vegan participants in the analysis. Indicating that non-meat consumers and meat consumers do not differ significantly in their attitude towards cultured meat.

Overall this suggests that non-meat consumers are more likely to relate cultured meat to traditional meat then meat consumers.

4.5.2. Moderation effect of consumer goals on the information presentation and attitude towards cultured meat

Since there was a moderating effect found for consumer goals on the presentation of cultured (meat to be meat, meat substitutes or both) and the perception of cultured meat it might be interesting to test whether the situational consumer goal moderate the relationship between the presentation of cultured meat and attitude towards cultured meat. To test this a hierarchical multiple regression analysis was

conducted. For this analysis all respondents are included, leading to the exclusion of variable measuring frequency of meat consumption.

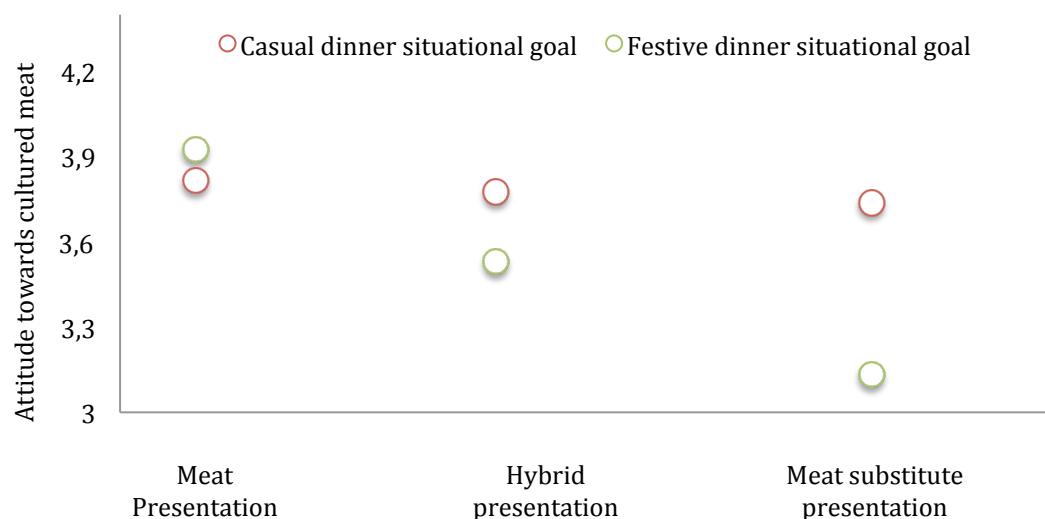
The first step included the control variables and again showed to be significant ($R^2=0.101$, $F(8, 237)=4.441$, $p<.001$). Within the model, gender ($b=0.467$, $t=2.087$, $p=.038$), neophobia ($b=-0.340$, $t=-3.455$, $p=.001$) and familiarity ($b=-0.315$, $t=-3.451$, $p=.001$) demonstrated to have a significant effect on the attitude towards cultured meat.

The second step, adding the presentation of cultured meat and situational consumer goals accounts for a significant amount of variance in attitude towards cultured meat ($R^2=0.111$, $F(10,235)=5.036$, $p<.001$). The presentation of cultured meat showed to have a negative significant effect ($b=-0.229$, $t=-1.797$, $p=.074$), whereas the situational consumer goals do not show to have any effect ($b=-0.242$, $t=-1.164$, $p=.246$).

In the third step the interaction term was added to the model ($R^2= 0.155$, $F(11,234)=3.888$, $p<.001$). This interaction term did not significantly increase the variation in attitude that could be explained by the variables ($\Delta R^2= 0.007$, $F(1,234)=2.009$, $p=.158$). Indicating that there is no significant moderation between the presentation and consumer situational goals on the attitude for cultured meat ($b=-0.360$, $t=-1.417$, $p=.158$).

Even though the moderation is not significant the Hayes process test might provide some more detailed information on the interaction term. The analysis shows that there is indeed no significant moderation between the presentation and consumer situational goals on the attitude for cultured meat. However, when looking at figure 3, it shows that the attitude is higher for both situational goals when the presentation of cultured meat is similar to meat. Moreover, the attitude towards cultured meat lies higher for the casual dinner situation for both the hybrid and the meat substitute presentations of cultured meat. Nevertheless, since these differences are not significant, these results should be seen as only explorative and interpreted with great caution.

Figure 3. *Effects presentation of cultured meat and situational consumer goals on the attitude towards cultured meat (attitude ranging from 1-7).*



4.5.3. *Effect of hybrid inferences on the attitude towards cultured meat*

Assimilation with the meat substitute category did not prove to result in more meat substitute inferences, but also to meat and hybrid inferences. Therefore it also useful to examine what the influence is of hybrid inferences on the attitude. To test this, the attitude towards cultured meat is computed into 3 categories (negative attitude, neutral attitude and positive attitude) and the inferences are computed into two categories (hybrid inferences, single category product inferences). A Pearson chi square analysis¹⁸ was used to see if there is an influence of the hybrid inferences on the attitude towards cultured meat. The analysis showed that there is significant difference in attitude based on hybrid inferences compared to the single category product inferences ($\chi^2(2)=7.638, p=.022$). Where, hybrid inferences resulted in 39.2% cases in a negative attitude towards cultured meat, 50.4% in a neutral attitude towards cultured meat and 10.4% in a positive attitude towards cultured meat. This indicates that the categorisation of cultured meat within the meat substitute category will most likely lead to a neutral or negative attitude towards cultured meat.

¹⁸ Since the sample is large enough (N=180), not more than 20% of the expected frequencies are lower than 5 and all expected values are above 1 indicating the chi square test can be used (Field, 2013).

5. Conclusion and Discussion

5.1 Conclusion

The aim of this study was to get insights in and to contribute to a deeper understanding on consumer categorisation of cultured meat as a hybrid product and the effect of this categorisation on the attitude by answering the research question: *How do consumer perceptions of cultured meat influenced by the presentation of cultured meat and the present situational goals, influence the categorisation process and consequently the attitude towards cultured meat?*

Both studies supported the expectation that consumers perceive cultured meat as potentially both meat and meat substitute, and could thus be viewed as a hybrid product. Where, on its own the presentation of cultured meat did not show to have an effect on this hybridity perception (H1). However, together with the situational consumer goal, presentation did demonstrated to influence the hybridity perception (H4). In general the festive dinner situational goal scenario led to a lower hybridity perception then casual dinner situational goal scenario, regardless of the presentation. On the presentation of cultured meat to be similar meat, the situational consumer goals did not have any effect. Consequently, these different perceptions of cultured meat showed to have an effect on the categorisation of cultured meat to either the meat or the meat substitute category. Where a higher perception of cultured meat to be similar to meat is more likely to lead to assimilation of cultured meat to the meat category (H2a), and a higher perception of cultured meat to be similar to meat substitutes is more likely to lead to assimilation with the meat category (H2b). The level of perceived hybridity did not show to influence the categorisation of cultured meat possibly due to difficulties in the categorisation of cultured meat since it could be assigned to both categories. Hence, when cultured meat is assimilated and categorised with the meat category, this will more likely lead to meat inferences (H3a). While on the other hand, there is no support found for the inferences made when cultured meat is assimilated to the meat substitute category (H3b). Finally, the categorisation process and consequently its inferences showed to influence the attitude of cultured meat (H5). Where, the attitude towards cultured meat is more positive when there are more meat substitute inferences, when the attitude towards meat and/or meat substitutes is positive and when there are more meat inferences in combination with a positive attitude towards meat.

5.2 Theoretical contributions

The outcomes of this study revealed that the attitude towards cultured meat may thus be influenced by the inferences resulting from the categorisation process. This contributes to the knowledge on consumer evaluation research of new meat substitutes (e.g. Elzerman et al., 2015; Hoek et al., 2015) and the attitude (formation) towards cultured meat (Verbeke, Sans & Van Loo, 2015b; Hoek et al., 2011), which is necessary for acceptance and eventually adoption (e.g. Cook et al., 2002; Patch et al., 2005). When solely looking at the influence of inferences on the attitude of cultured meat, the attitude will be more positive when the inferences are more in the direction of meat substitutes and less in the

direction of meat. However, categorising cultured meat to the meat substitute category does not result in more meat substitute inferences, but also result in meat and hybrid inferences. This indicates that future research should focus on what triggers and influences meat substitute inferences in cultured meat in order to achieve a positive attitude. Moreover, meat inferences have a positive effect on the attitude towards cultured meat when they are combined with a positive attitude towards meat. This implies that when meat consumers with a positive attitude towards meat, categorise and assimilate cultured meat within the meat category and thus have inferences with meat, this might lead to a positive attitude towards cultured meat. In light of this, the inferences are of great importance in the attitude formation towards cultured meat. The inferences originating from the meat category proved associated to meat. Therefore this study contributes to the research on inferences and resulting attitude (Ghosh Chowdhury, Murshed & Khare, 2017; Loken, 2006), which might not be straightforward in relation to cultured meat.

This study also adds to the prior work on the effects of new ambiguous products and its categorisation process (Gragon-Paxton et al., 2005; Rajagopal & Burnkrant, 2008; Noseworthy & Goode, 2011), since this study shows that the level of hybridity may be influenced by the combination of situational consumer goals and the presentation of cultured meat to be either meat, meat substitutes or both. The results of the situational consumer goal scenarios demonstrated to have the expected influence, where the festive dinner situation influenced the respondents to choose meat over meat substitutes and the casual dinner situation influenced them to choose less meat and more meat substitutes. Therefore, it could be assumed that these scenarios are influencing the situational consumer goals of consuming meat and substituting meat. Showing that a combination of the meat substitute presentation and the goal to consumer meat led to the most hybrid perception of cultured meat. However, the level of hybridity did not show to influence the categorisation process, which could occur since a perception of hybridity might lead to difficulties in categorising cultured meat, suggesting that respondents categorise cultured meat to both meat and meat substitutes when it this ambiguity occurs. Due to this finding, future research should investigate how consumers choose a category when this ambiguity occurs.

The presentation of cultured meat on the hybridity perception moderated by the situational consumer goals also provided another insight. The combination led to the perception of cultured meat to be more similar to traditional meat than the meat substitute goals, regardless of the presentation. This is a useful finding since various researched acknowledge the importance of familiarity with meat in order to be successful (e.g. Sadler, 2004; Hoek et al., 2011).

5.3 Practical implications

The findings of this study suggest that when presenting and introducing cultured meat to the food market the presentation of cultured meat should be the main focus while taking consumer situational goals into account. The combination of the presentation and consumer situational goals proved to be

important since this might indirectly influence the attitude towards cultured meat through the categorisation process. This combination showed to influence the perception of cultured meat, which proved to the categorisation resulting in inferences and finally leading to an attitude towards cultured meat. This study made the first steps in mapping the specific situational consumer goals with regard to eating meat and meat substitutes. The specific situational consumer goals of replacing meat showed to be divided into conscious (e.g. deliberately leaving out meat for social reasons) and unconscious (e.g. forgetting meat) behaviour. The specific situational consumer goals of consuming meat focussed around the habit of consuming meat (e.g. used to have meat on special social occasions) and the taste experience. Since these results are based on a small sample, future research might want to focus on these specific situational consumer goals in a larger study. However, businesses might still want to act on this finding and alter the presentation of cultured meat in order to create the optimal perception. According to this study, the optimal perception of cultured meat is similar to meat since this will lead to assimilation with the meat category and result in meat inferences, which positively influence the attitude when there is a positive attitude towards meat (which most of the meat consumers proved to have). In this way, businesses could influence the attitude towards cultured meat of consumers with a positive attitude towards meat. This is in line with findings of previous research (Elzerman et al., 2015; Sadler, 2004) showing that cultured meat should be presented as being similar to traditional meat. Additionally, since familiarity proved to have a negative effect on the attitude towards cultured meat, governments, businesses and consumer organisations could provide information on cultured meat to educate consumers and make the familiarity less negative (e.g. Fuller, 2016; Ross, 1979).

5.4 Limitations and future research

The presentation of cultured meat did not show to influence the hybrid perception of cultured meat directly. This contributes to the current research on cultured meat and the influence of information and presentation (e.g. Verbeke, Sans & Van Loo, 2015b), which proved to have no influence on consumer perceptions and eventually expectations. The lack of evidence of this hypothesis could also be a result of the information presentation in this study. Within this research there was chosen for textual information, however, various research within consumer behaviour show that visual information may also lead to different perceptions and consumer behaviour (e.g. Artacho-Ramirez, Diego-Mas & Alcaide-Marzal, 2008; Holbrook & Moore, 1981; Lurie & Mason, 2007). Therefore, this study could be repeated with visual information instead of textual information to see if this will lead to different results. Moreover, this study solely focussed on product attribute information inherent to the product to present cultured meat, and left out extrinsic product information such as price, packaging and brand information. However, the extrinsic information might also influence the consumer perception and categorisation of cultured meat in a substantial way (Dodds, Monroe & Grewal, 1991; Teas & Agarwal, 2000). Additionally, the presentation of cultured meat might also cause the lack of evidence for the moderating effect of situational consumer goals on the relation of the presentation of cultured

meat on the attitude towards meat. These results of the different presentations could be more distinctive when the extrinsic product information is also added. Therefore, future research is recommended to focus on how the consumer perception towards cultured meat could potentially be changed with the use of information, presentation and framing of cultured meat.

Within this study there is chosen to focus solely on the situational consumer goals. However, both the situational and personal consumer goals influence the perception of similarities between products based on the function of the product (Ratneshwar et al., 2001). Due to the finding that situational consumer goals have an influence in combination with presentation on perception, future research could also look into the personal consumer goals and the influence of this on the perception of cultured meat and the categorisation process.

As acknowledged in the beginning of this study the categorisation process could, naturally, be measured and studied in various ways. The items that were included in this study are not exhaustive or generalizable to all kinds of categorisation processes or attitudes since this study only captures one of the many parts. Future research on categorisation could build on the findings of this research and focus on other aspects of categorisation such as the emotions (e.g. disgust, fear, pride) in relation to cultured meat (e.g. Holbrook & Batra, 1987).

Finally, the samples used in this study may not be a perfectly good representation of the population of meat consumers since half of the respondents were students and younger than the general population. As a result, it is not certain whether similar results will be found for older possibly full time working consumers. Future research, might want to check if the results found in this study could be generalizable for the entire population.

In the 1930's Winston Churchill was one of the first predictors of growing meat without needing to kill or even keep the actual animals (Churchill, 1932). His prediction that this would be achieved in 50 years was somewhat enthusiastic, however, this might become reality in the near future. This study contributes to his prediction by showing how the attitude towards cultured meat could be influenced by the categorisation and its resulting inferences. This could potentially be used to create a positive attitude towards cultured meat in order to encourage the adoption, with the use of presentation and marketing strategies. Therefore, this research is an important steppingstone towards understanding and influencing the categorisation process of the hybrid product: cultured meat.

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Appendix 1 – Interviews

Interview 1

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *22*
- Waar woon je? *Wageningen*
- Wat studeer je? *Biotechnologie*
- Heb je een baan? *Nee – Student- assistent*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

‘Ik eet 3 tot 4 keer vlees per week, 3 - 4 keer’.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

‘Ja, tofu of extra groente, ik vervang het vooral in de avond en als ik alleen eet want vlees is duur. Ik eet geen rood vlees meer, omdat dit niet lekker viel op de maag, heavy en vol’.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘Tussen de middag, kip op brood vindt ik lekker, voelt vullend. S’avond hoeft vlees niet per se’.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘In de avond dan ja, in de ochtend eet ik helemaal geen vlees. Ik vervang een om de kosten en twee, ik vind het zwaar op de maag vallen, en lekkerder.

Niet belangrijker voor gasten vlees. Wel als mensen vegetariër zijn hou ik daar wel rekening mee’.

Typicallity

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

‘Vullend, denk niet per se aan kip maar echt aan een stuk biefstuk, ik vind het wel echt een soort hoofdding van je eten waar je de rest omheen bouwt, het is vooral heel erg vullend. Taai, als ik denk aan lasagne ofzo, ja het is altijd bruin he’.

Wat zijn volgens jou, typische karakter eigenschappen voor vlees-vervangers in je maaltijd?

‘Minder vullend, voel me beter als ik geen vlees eet mentaal en fysiek omdat er geen animals are killed today, vooral minder zwaar op de maag, minder taai’.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

‘Heel groen en heel veel kaas, denk ik dat ik dat dan zou eten. Want als vleesvervangers zie je dan echt kaassnitzel en tofu en vales. Maar die vind ik ook niet zo heel erg zwaar op de maag vallen. Want als je echt het verschil tussen een gewone schnitzel en een schnitzel van zo ’n vlees vervanger dan merk je echt het verschil vind ik zelf. Natuurlijk heeft zo ’n vleesschnitzel wel iets meer smaak maar ik vind wel dat ze het tegenwoordig echt heel goed doen, want ook die is lekker knapperig en je voelt gewoon als je vlees hebt gegeten aan je lichaam. Tenminste ik’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Kipcordobleu, kip’.

Waaronder zou je bijvoorbeeld kaas scharen?

‘Vegetarisch, als je vegetarisch bent dan zou ik veel vlees eten’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen? Welke? Waarom?

‘Groenteburger want die is een vleesvervanger want het is een burger maar het is groente en ik weet dat ze heel veel soorten hebben ze hebben bijvoorbeeld ook een kaasburger. Maar je hebt tegenwoordig ook bijvoorbeeld courgettini dat is pasta en groente. Je hebt ook die zoete aardappel frietjes dat is natuurlijk ook frietjes en groente. En voor de rest ja, je hebt ook die vegetarische spekjes. Die zijn ook heel lekker, die zijn ook vlees en geen vlees’.

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

‘Mensen stimuleren om ze na te denken over en ze een optie te geven om tussen wel vlees en niet vlees. Hebben veel mensen denk ik wel dat ze hier over nadenken. Was vandaag ook op de radio dat 20% minder vlees gegeten wordt’.

Voorbeelden (hier niet op focussen maar ter loops ter sprake brengen):

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten? Onder wat voor term zou je deze producten scharen? Waarom?

‘Dat mensen niet meer hoeven te kiezen tussen ijs en taart, dat mensen niet meer hoeven te kiezen. Voor de rest weet ik niet’.

Lees de informatie:

Kweekvlees is een product geproduceerd uit dierlijke stamcellen met behulp van weefseltechniek. De cellen die uit deze procedure ontstaan zijn zonder bot en kunnen als verwerkt vlees worden gebruikt, b.v. in hamburgers, kipnuggets en worstjes. Deze nieuwe techniek biedt een manier om een bijna eindeloos aanbod van duurzaam vlees te produceren zonder de noodzaak om dieren te hiervoor te doden.

Onder welke term of noemer zou je dit product scharen? Waarom?

‘Vlees, want het zijn dierlijke cellen’.

Zou het ook onder een andere term kunnen vallen? Waarom?

‘Voor mij is dat dus niet vegetarisch want ze echt wel dierlijke cellen hebben, maar ik weet dat op het moment dat het echt geproduceerd wordt dat mensen die vegetarisch zijn het dan ook wel eten, dus zou ook wel onder vegetarisch kunnen’.

Interview 2

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *23*
- Waar woon je? *Utrecht*
- Wat studeer je? *MME*
- Heb je een baan? *Ja, in de horeca*
- Ben je vegetariër? *Nee, zeker niet*

Eating meat

Eet je vlees? (hoe vaak?)

'Ik denk, ja goeie vraag, gister niet dus dat was goed, nou laten we zeggen 5 keer per week, ja zoiets'.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

'Vaak doe ik dan iets extra's qua groente of iets, gisteren had ik bijvoorbeeld met kikkererwten en kaas, is een goeie vervanger vult ook gewoon goed. Dus iets dat goed vult eigenlijk, het is niet dat ik de smaak van vlees mis maar meer de voedingsstoffen'.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Ja, goeie vraag, ik doe het echt puur omdat ik het lekker vind echt puur voor de smaak. Het is niet zo dat ik denk als ik geen vlees eet krijg ik geen voedingsstoffen binnen. Het is echt puur van ja ik hou er van, lekker kip of wat dan ook. Maar ik moet toegeven het is ook een beetje gemak. In de zin van het is logisch van als je iets gaat eten wil ik iets met kip wil ik iets met ja of dat denk ik wel vaak van welk vlees is daar lekker bij. Als er mensen komen eten, ja van een paar mensen weet ik dat ze vegetarisch zijn, en dat geeft me dan meteen weer een soort van druk. Dan denk ik shit, dan moet ik meteen weer iets gaan bedenken, want ik vind het best moeilijk om lekker vegetarisch te koken. En als ik snel ergens heen moet dan wil ik ook nog wel eens soep doen ofzo dan hoeft daar ook geen vlees bij, met brood. Brood is ook een goeie vervanger voor vlees. Ik maak niet echt onderscheidt tussen het weekend en door de weeks dat boeit met niet, het is voor mij hetzelfde. Maar in de weekenden ben ik vaak thuis, en mijn moeder kookt vaker vegetarisch dan ik, maar dat is misschien niet interessant voor je onderzoek. Maar dan eet ik in principe wel minder vlees.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘Ja, het moet puur in me opkomen. Het is meer van als ik zin heb in vlees dan koop ik het gewoon, dan denk ik niet. Nee geen vlees want dit en dit. Maar als het me niet zoveel boeit dan denk ik mwa dan kan het beter ook een keer geen vlees, of dan zoek ik recepten op die geen vlees bevatten, want vaak kan ik daar wel inspiratie uit halen. En ik woon natuurlijk samen dus ik heb het niet altijd in eigen hand.

Typicality

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

‘Qua structuur? Of wat ik er lekker aan vindt? Alles? Oké, ja ik denk dat het veel met de bereiding en met de kruiden te maken heeft. In de zin van, bijvoorbeeld zoals ik net vertelde dat toen ik naar het BBQ restaurant was geweest, dan krijg je echt puur vlees, daar is echt niks mee gedaan. En als je dat bakt of in dit geval op de BBQ legt dan doet het niet zo veel met mij, want dan denk ik, dan kan ik net zo goed broccoli eten want dat heeft nog meer smaak. Dus het is vooral de bereiding en de manier waarop het gekruid wordt die het voor mij lekker maakt. En niet perse de structuur die ik zou missen’.

Want wat voor structuur heeft vlees? *‘Ja, hoe omschrijf je dat, ja de structuur kan een beetje draderig zijn het kan vet bevatten in de zin van kippendijen die hebben meer vet en spek. En wat dunder vlees is vaak wat zachter’.* En als je denkt aan hoe het eruit ziet? *‘Als ik dan aan de kip denk, kip is bruin of wit en ja het is belangrijk dat het goed doorbakken is en beef is het liefst nog een beetje rood van binnen en wat hebben we nog meer. Varken is een beetje rosé. Maar kip moet niet rosé zijn’.*

Wat zijn volgens jou, typische karakter eigenschappen voor vleesvervangers in je maaltijd?

‘Vlees vervangers zoals die er nu bestaan? Dan zie je vaak dat, dat al voorbewerkt is, dus al voorgegaard, dat heb je ook met vlees bijvoorbeeld met van die kant en klare gehakt balletjes. Dus dan zie ik het meer als een product dat meer alleen nog even opgewarmd hoeft te worden in plaats van dat het echt nog moet garen. En qua structuur ben ik niet zo fan van de structuur het is gewoon ja alsof je op droog, karton is misschien niet het juiste woord maar daar moet ik toch aan denken, droog karton, droog vaak, het is niet echt sappig. Maar ook ja wel prima te eten, ze worden steeds beter’.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

‘Uh ja meer groente, vooral waarschijnlijk meer van alles, dan wat je normaal zou eten en meer koolhydraten in een grotere portie in de zin van meer niet verschillende soorten. Ik denk dat de portie die je opschept misschien groter wordt, en ja vooral meer groente. En het zou misschien wel beter zijn’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?) ‘*Winegums, snoep*’. Ken je ook een product dat onder meerdere van deze noemers zou vallen? Welke? Waarom?

‘Ja je zou kunnen zeggen bijvoorbeeld van een kaas achtige schnitzel dan zou je bijvoorbeeld kunnen zeggen zuivel en vleesvervanger. En als je gaat kijken naar van de tomaatjes van die tom tom, of hoe heten die. Die cherry tomaatjes, die zou je als snack kunnen zien of als groente of als avond eten.

Voorbeelden (hier niet op focussen maar ter loops ter sprake stellen):

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

‘Het zou als doel kunnen hebben vanuit business perspectief dat je het voor verschillen doelgroepen en doeleinde zou kunnen gebruiken. Dus meneer van de snoeptomaten, het kan voor he avond eten en ook voor tussendoortje dan heb ik meer omzet. Dit kan ook voor zoete aardappel, maar of je dit nu zegt dat het voor groente is of als aardappel, weet niet of dat verschil maakt. Misschien ook wel als jet het als groente ziet of dat ze het als frietje maken om extra klanten te krijgen. Maar in het geval van die tomaatjes wel.’

Onder wat voor term zou je deze producten scharen? Waarom?

‘Multi-purpose foods. I don’t know. Zoiets. Ja omdat, wat ik zei, omdat het misschien op verschillende momenten op de dag kunnen consumeren en misschien ook het feit dat ze het snoep tomaatjes noemen maakt het aantrekkelijker voor mensen die hier in eerste instantie niet aan dachten.’

Lees de informatie:

Kweekvlees is een product geproduceerd uit dierlijke stamcellen met behulp van weefseltechniek. De cellen die uit deze procedure ontstaan zijn zonder bot en kunnen als verwerkt vlees worden gebruikt, b.v. in hamburgers, kipnuggets en worstjes. Deze nieuwe techniek biedt een manier om een bijna eindeloos aanbod van duurzaam vlees te produceren zonder de noodzaak om dieren te hiervoor te doden.

Onder welke term of noemer zou je dit product scharen? Waarom? Zou het ook onder een andere term kunnen vallen?

‘Onder welke term, ik zou dit verstaan onder. Ja ik zou gewoon kweekvlees zeggen, omdat ik dat net heb gelezen en ik denk dat het wel duidelijk moet zijn voor de consument welk proces hierachter ligt.

Ik vind niet dat je het onder vlees kan scharen, het is wel vlees maar het is heel moeilijk omdat het wel een proces is dat misschien nog een beetje controversieel is en ik denk dat de consument hier wel over ingelicht moet worden zodat de consument weet dat het wel vlees dat niet van een dier komt zoals het nu is en daarom zou er een aparte categorie voor zou moeten komen. En stel je zou het onder de vleesvervangers scharen dat zou al beter zijn denk ik, maar ja het is niet een vegetarisch product. Nou even denken hoe denkt een vegetariër. Nou ja binnen het vegetariër zijn heb je natuurlijk twee type mensen, of 2 type, je zou er waarschijnlijk wel meer hebben maar twee typen of misschien wel drie waar eentje het echt niet lekker vindt en de ander het milieu in z'n algemeen in gedachte houdt en dierenwelzijn zou het ook wel oké vinden. Want het weefsel wordt wel afgetapt maar daar hebben ze helemaal geen last van. Nou dan is dat top voor de vegetariërs. Ik ben geen vegetariër dus ik weet niet of hoe zij denken. Maar ik denk dat als ik me in hun zou verplaatsen ik het wel zou eten. Dus onder de vleesvervangers alhoewel het wel echt vlees is natuurlijk. Maar ik neig hier dus meer naartoe dan dat ik denk dat het echt vlees is.

Participant 3

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *21*
- Waar woon je? *Amsterdam*
- Wat studeer je? *Voeding en gezondheid*
- Heb je een baan? *Horeca*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

'Drie avonden'.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

'Vooral met tofu. Ik ben zelf niet vegetarisch maar mijn twee zussen zijn wel vegetarisch dus we proberen wel zo te eten thuis. We koken gezamenlijk'. Eet je ook wel eens vegetarisch als je niet met je zussen bent? 'Nee niet echt'.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Ik denk wel in de winter als je meer energie nodig hebt. En als er mensen langskomen is het natuurlijk afhankelijk van wat voor mensen en komen, als ze wel of geen vlees eten. Maar ik vind het niet heel erg om gewoon vegetarisch te eten'.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Ligt ook weer aan de mensen natuurlijk'.

Typicality

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

'Ja vooral smaak, ja gewoon de smaak van het vlees afhankelijk van de vleessoort. Ik vind de textuur ook heel belangrijk en dit hangt ook af van de het soort vlees dat je eet. Het is niet zoals groente het is wat minder ruw. Hoe het eruit ziet vind ik niet zo heel erg belangrijk, maar het zijn kleine stukjes

meestal. Het is heel weinig bewerkt'. En als je denkt aan specifieke soorten vlees dan hoe ziet dat eruit? 'Als ik denk aan kip dan denk ik aan kippenbout, dan denk ik aan glad, en de huid zit er meestal nog op, redelijk wit, haartjes eraan, de onderkant van het bot is eraf gesneden dus je ziet ook nog wat bot eraan. En als ik denk aan varkensvlees, dan denk ik aan kleine stukjes. Vaak ook meer bewerkt, meer gekookt, veel kruiden ook, veel knoflook. En qua textuur is het gladder dan kip. We eten thuis geen rundvlees'.

Wat zijn volgens jou, typische karakter eigenschappen voor vleesvervangers in je maaltijd?

'Geur van tofu, bonen, veel bonen, gefrituurd want we frituren meestal de tofu, glad, wit, de geur van ook het gerecht dat we dan maken'.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

'Veel groentes, veel vruchten, veel granen'.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

'Groente, broccoli'.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

'Bonen misschien, omdat je het onder bonen kan zetten maar ook als vervangers van vlees, het is gewoon heel erg flexibel'.

Voorbeelden (altijd noemen en dit meer focussen) :

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgettini: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van 'normale' producten?

Onder wat voor term zou je deze producten scharen? Waarom?

'Nee, dat denk ik eigenlijk niet, geen ander doel. Weet ik niet zo een twee drie hoe je dit kan noemen'.

Lees de informatie:

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Onder welke term of noemer zou je dit product scharen? Waarom? Zou het ook onder een andere term kunnen vallen?

‘Vlees, het heeft structuur van vlees en waarschijnlijk ook de smaak van vlees. Maar tegelijk is het ook geen vlees dus kan je het ook onder vleesvervanger zetten. Het is niet echt vlees omdat het niet van een dier af komt’.

Participant 4

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *19*
- Waar woon je? *Wageningen*
- Wat studeer je? *Voeding en gezondheid*
- Heb je een baan? *Nee*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

'Rood vlees of doet kip ook mee? Beide, o dan 5 keer denk ik'.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

'Ja, meestal wel. Bijvoorbeeld met falafel of als ik friet eet met bittervallen of zo. Ik leer nu ook op mijn studie dat het goed is om te minderen maar ik hou te veel van vlees om er helemaal mee te stoppen. Maar wel goed voor de dieren en de ecologische footprint om te minderen'.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Heel plat gezien als ik honger heb. Vegetarisch is toch meestal minder vullend, vooral als je geen vervanger erbij gebruikt. Ja bijvoorbeeld met speciale gelegenheden zoals met kerst of zo dan voelt het toch alsof er iets zou missen'.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Niet op specifiek bij iets, maar meer in het algemeen gewoon voor mijn ecologische footprint'.

Typicallity

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

'De structuur, het geeft iets om op te kauwen. Ja het hangt er vanaf hoe je het klaarmaakt maar het kan redelijk taai zijn. Het zorgt ervoor dat je iets hebt om op te kauwen wat voor een verzadigd gevoel kan zorgen. En als je denkt aan hoe het eruit ziet? Bijvoorbeeld kip. 'Ja het ruikt altijd wel lekker,

zeker in ons Hollandse patroon met aardappel vlees en groente hoort het gewoon op je bord te liggen’. Bijvoorbeeld rundvlees? ‘Dan heb ik gewoon meteen een gehaktbal of hamburger in mijn hoofd en dan rood/ bruin’.

Wat zijn volgens jou, typische karakter eigenschappen voor vleesvervangers in je maaltijd?

‘Ik vind het meestal iets droger en korreliger van structuur en iets minder sterke geur vergeleken nou niet met kip maar wel met ja. Dus minder sterke geur’.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

‘Dan denk ik meteen aan vis, dat eet ik trouwens ook als ik geen vlees eet natuurlijk daar heb ik helemaal niet aan gedacht, naast mijn bitterballen en mijn falafel. Maar meestal voller of zo, dan heb je bijvoorbeeld een vegetarische salade die voller is, een voller bord omdat het minder vult’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Groente, rucola’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

‘Bijvoorbeeld kant en klare lasagne daar zit van alles in, groente koolhydraten en vlees’.

Voorbeelden (altijd noemen en dit meer focussen):

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgettini: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

‘Oja, de Alberta Heijn had ook iets van bloemkoolrijst’.

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

Onder wat voor term zou je deze producten scharen? Waarom?

‘Dat is lastig, dan kom ik meteen uit op iets heel breed als voedingsmiddel ofzo’.

Lees de informatie:

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Onder welke term of noemer zou je dit product scharen? Waarom? Zou het ook onder een andere term kunnen vallen?

‘Vlees toch gewoon?, Ja het maakt niet per se uit of het uit een slacht koe wordt gehaald of dat het zo zelf wordt gemaakt. Daarom zou ik het niet als iets anders adverteren want dan hebben mensen er meteen andere associaties mee, dus dan denk ik toch gewoon vlees. Het zou misschien wel onder iets anders kunnen vallen is heel subjectief natuurlijk maar voor mij zou het gewoon onder vlees vallen’.

Participant 5

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *21*
- Waar woon je? *Wageningen*
- Wat studeer je? *BBC*
- Heb je een (bij)baan? *Nee*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

'Ik denk wel 6 keer ofzo, ik woon met mannen in huis dus dan is het wel een soort iets dat moet'.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

'Nee, meestal is het dan gewoon, he het zit er niet in. Het is niet dat ik echt van die vegatersiche vervangers koop ofzo. Meestal is het als ik ergens ga eten en dan realiseer je het je helemaal niet als je het aan het eten bent. Of ik sta in de supermarkt en vergeet het gewoon. Ik maak best wel vaak risotto ofzo en dan vergeet ik dat er ook nog vlees doorheen moet. Bij aardappels, vlees en groente vergeet je het niet zo snel maar bij dit soort gerechten wel. Het hoeft ook niet per se'.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Als ik iets eet wat echt bestaat uit aardappels, vlees en groente dan eet ik liever niet alleen aardappels en groente. Maar denk vooral op dat soort momenten dat het een groot component is in je maaltijd. Denk dat het wel meevalt qua wanneer het anders is of ik met mensen eet of alleen'.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Sinds ik in Wageningen woon ben ik er wel bewuster van dat het slecht is. Ik heb ook een clubgenootje die vegetarisch is en als je meer mensen die vegetarisch zijn in je omgeving hebt dan leer je ook hoe je het op een makkelijke en lekkere manier kan vervangen. Vroeger had ik bijvoorbeeld alleen van tofu gehoord en dat leek me niet lekker, dus dan ging ik dat niet kopen'.

Typicality

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

‘Eigenschappen als in hartig, en het ruikt naar vlees. De textuur verschilt per vleessoort. Meestal eet ik dan gehakt en dat is bruin en krullerig. En het is wel echt iets extra hartigs in je eten’. Bijvoorbeeld kip? ‘Witte blokjes, het is niet heel zacht en niet heel hard. Een beetje daar tussenin maar wel meer zacht dan hard’. Bijvoorbeeld rundvlees? ‘Ja rundergehakt denk ik dan aan, wat ik dan eet. Als ik vlees eet dan eet ik meestal kip of gehakt. Geen grote lappen biefstukken ofzo. Grote rode plak, vind ik beetje extreem en groot. Vind ik zonde want dat eet ik toch niet op omdat ik dan vol zit ofzo’.

Wat zijn volgens jou, typische karakter eigenschappen voor vlees-verters in je maaltijd?

‘Ik heb een keer een vleesverter gegeten voor gehakt en dat ware hele rare korrels. Vond ik ook echt niet lekker. En voor de rest van die burgers met van die laagjes eromheen van die krokante laagjes enzo, die zie ik meestal liggen van die viverra enzo’.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesverters in je maaltijd?

‘Ja vooral heel erg groenterig’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Fruit, appel’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

‘Misschien eerder iets van crackers, dat dat tussen ontbijt en avondeten valt. Dat het onder hartige snacks en zoet zoets. Beetje multifunctioneel’.

Voorbeelden (altijd noemen en dit meer focussen):

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgette: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

Onder wat voor term zou je deze producten scharen? Waarom?

‘Jawel, ze zijn gewoon multi inzetbaar. Want wel gewoon handig is, omdat bijvoorbeeld bij de zoete aardappel dan kan je de ene keer het gebruiken als het ene component en de andere keer als de andere component. Ja dan kom ik vooral op multifunctionele voeding omdat het dus meerdere functies kan hebben in bijvoorbeeld je avond eten’.

Lees de informatie:

Kweekvlees is een product geproduceerd uit dierlijke stamcellen met behulp van weefseltechniek. De cellen die uit deze procedure ontstaan zijn zonder bot en kunnen als verwerkt vlees worden gebruikt, b.v. in hamburgers, kipnuggets en worstjes. Deze nieuwe techniek biedt een manier om een bijna eindeloos aanbod van duurzaam vlees te produceren zonder de noodzaak om dieren te hiervoor te doden.

Onder welke term of noemer zou je dit product scharen? Waarom?

‘Wel gewoon onder vlees, omdat het is een dierlijk product. Tenminste dat begreep ik eruit, dus als het dierlijk is dan zou ik het wel onder vlees doen, want dan gaat het niet onder groente’.

Zou het ook onder een andere term kunnen vallen? *‘Ja het zou ook beter vlees of sustainable vlees of gekweekt vlees kunnen noemen dat je weet dat er niet echt leed bij was’.*

Participant 6

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? 23
- Waar woon je? *Wageningen*
- Wat studeer je? *MME*
- Heb je een (bij)baan? *Ja, bij een groenteboer salades maken*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

‘Ja, ik denk 4 a 5 keer, meestal’.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

‘Ja soms wel soms niet. Als ik voor mezelf kook vaak niet en als we met een groep eten dan vaak wel. Dat is denk ik het meeste ja’. **Waarom?** *‘Het is meer denk ik dat als ik met mezelf eet heb ik toch dat ik het vaak wel prima vind, en als we met een groep eten dan is het vaak toch dat je even iets anders hebben dat dan wel ja, iets met noten ofzo’.*

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘Nou, ik vind het ook wel gewoon lekker, daarom eet ik het ook gewoon wel. Dat is eigenlijk de vormelijkste reden dat ik het gewoon eet. In een hoofdgerecht vind ik gewoon dat het erbij hoort, en ja waarom nog meer. Eigenlijk het feit dat ik het best wel graag eet’. En als je denkt aan de context of als je met mensen eet, als je alleen eet of een specifiek moment? *‘En nou het is meer dat als ik bij mijn ouders ben die eten gewoon vlees, dan eet ik dat gewoon mee. Maar als ik voor mezelf kook dan eet ik eigenlijk altijd zonder, dus vegetarisch, ik weet niet, stukje omdat ik denk dat ik het per se nodig vind. Bewuste keuze? ‘Ja’.*

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘Ook gewoon qua voedingsstoffen binnenkrijgen, heel logisch gedacht ook, als je alleen groente met aardappels zit te eten, je moet nog wel gewoon iets meer ook van eiwitten enzo. Heel wagenings maar

je moet even een stapje verder daarin denken dat je wel ook gewoon bepaalde voedingsstoffen nodig hebt'.

Typicality

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd? Hoe het eruit ziet?

Textuur?

'Ik heb wel vaak dat als het door zo 'n mengeltje zit dan heb ik liever, dan zie ik het nut er niet eens van in, soms wel met spaghetti, dan wel weer wel. Maar met zo 'n klutsje eten dan denk ik ja, het was ook prima geweest zonder. Maar ik kook ook niet altijd zelf natuurlijk, dat scheelt natuurlijk ook wel veel. Dan heb ik er ook niet altijd invloed op, het is vaak ook wat er in huis gebeurt. Ik woon dus ook wel met een vegetariër samen, dat heeft er denk ik ook wel invloed op. Of we doen het apart of het zit er niet in. Dus dat is ook wel een reden dat je vaker zonder eet. Want als ze dan meeet dan denk je ook vaker, en iedereen vind het ook prima zo'. Maar als ik bijvoorbeeld zeg kip, waar denk je dan aan? 'Nou ik sport zelf heel veel dus dan denk ik meteen o daar zitten veel eiwitten in, dat is de eerste gedachte. Maar dat wel, dat is meer de invloed van de mensen met wie ik woon die studeren levensmiddelen technologie en die weten dan een beetje hoe het zit met het plofkip verhaal en die zijn hier dan niet zo enthousiast over. Dat beïnvloed je wel, dan denk je wel ja oke'. Maar als je dan echt denkt aan hoe het eruitziet? 'Ik vind het er rauw echt smerig uitzien. Maar als het in een gerecht vind ik het wel prima, wel lekker eigenlijk. Maar het is niet dat als ik rauwe kip in de supermarkt zie dat ik dan denk nou he, laten we vanavond even lekker een kippetje eten'. En als het nou gebakken is? 'Ja dan vind ik het wel heel lekker. En de textuur? De textuur van kip is niet bijzonder smakelijk. Andere stukjes vlees zien er lekkerder uit'. Welk vlees dan? 'Ja, bijvoorbeeld gewoon een lekker stukje hamburger, verse hamburger vind ik er veel lekkerder uitzien dan zo 'n stukje kip'. Waar denk je aan dan bij een hamburger? Qua textuur? 'Dat het er verser uitziet bij kip kan ik niet zo goed inschatten of het vers is, hoelang het er al ligt, je ruikt het natuurlijk wel. Ik denk dat dat wel ja, dat het er vers en smakelijk uitziet zeg maar'.

Wat zijn volgens jou, typische karakter eigenschappen voor vlees-verters in je maaltijd?

'Wat ik graag zelf eet? Ik eet echt nooit van die vega dingen dat niet, maar eigenlijk altijd noten dat is dan de standaard vleesverters die ik gebruik'. Maar als je dan wel meer aan van die standaard vleesverters denkt die je niet per se eet zelf, waar denk je dan aan? 'Nou voor mijn gevoel, ik eet ze nooit dus ik kan het niet zo goed zeggen voor mijn gevoel, maar als ik daaraan denk maar voor mijn gevoel is het een beetje nep, als ik ze in de supermarkt zie liggen dan denk ik altijd het is een beetje een namaaksel van. Dan denk ik ja, weet niet of dat met hele verse producten in elkaar is gezet, volgens mij niet maar'.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

‘Uhm, het is vaak een beetje een mengseltje als je echt je aardappel, groente dan mis je het vlees, Maar als je beetje gewoon groente met kikkererwten en kruiden ofzo, dan mis ik het niet zo’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Groente, broccoli’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

‘Je hebt toch vaak met eieren, dat er veel eiwitten in zitten dus dat het vlees vervangend kan werken, maar als ik aan een ei denk dan denk ik niet per se aan een vleesvervanger’. Waar dan wel aan? ‘Ja waar valt het onder, ik weet het niet eens, ik kan het niet zeggen. Maar ik bedoel ik denk niet meteen aan vleesvervanger als je het zegt’.

Voorbeelden (altijd noemen en dit meer focussen) :

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgettini: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

‘Nee, ja weet ik niet, ja zo’n courgettini is meer voor de gezonde, ik denk dat zo’n gezondheidshype zulke dingen ook motiveert, beetje stimuleert zeg maar dat het meer in de picture komt. Maar zo’n mineola dat maakt echt niet zo veel uit voor mijn gevoel’. Onder wat voor term zou je deze producten scharen? Waarom? ‘Ja, iets dubbel, ja het zijn verschillende dingen, ja een product met dubbele functie’.

Lees de informatie:

Kweekvlees is een product geproduceerd uit dierlijke stamcellen met behulp van weefseltechniek. De cellen die uit deze procedure ontstaan zijn zonder bot en kunnen als verwerkt vlees worden gebruikt, b.v. in hamburgers, kipnuggets en worstjes. Deze nieuwe techniek biedt een manier om een bijna eindeloos aanbod van duurzaam vlees te produceren zonder de noodzaak om dieren te hiervoor te doden.

Onder welke term of noemer zou je dit product scharen? Waarom?

'Ik denk dat het een categorie op zich moet zijn, want het is geen vlees. Maar ja het is ook weer wel, als ik aan vlees denk, dan denk ik aan een dier, dat klinkt heel heftig. Maar de vleesvervanger is het ook niet, het zit er eigenlijk tussen in. Want er zit wel weer een beetje vlees in natuurlijk. Ik denk echt dat het een beetje ja, ik denk dat als het uiteindelijk op de markt komt dat het dan wel als vleesvervanger wordt gezien, maar voor mijn gevoel is het wel iets meer ertussen in zeg maar, een beetje 50% vlees 50% vleesvervanger. Zo'n soort product zou het dan denken dat het wordt. Ja het is eigenlijk allebei niet voor mijn gevoel'.

Participant 7

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *20*
- Waar woon je? *Ede*
- Wat studeer je? *BBC*
- Heb je een (bij)baan? *Ja, bij de Jumbo*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

‘Wat zal het zijn, 5 keer, zoiets’.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

‘Ja soms met vis, en anders gewoon een maaltijd zonder vlees’ Wanneer doe je dit? ‘Niet specifiek, maar tijdens het avond eten’. En als je bijvoorbeeld denkt of het uitmaakt dat je alleen eet of met je huisgenoten? ‘Als ik thuis eet is het meestal vaker zonder vlees, mijn moeder is nog wel van het gevarieerder ook zonder vlees in maaltijden. Mijn huisgenootjes doen over het algemeen wel overal vlees in, dat is wat minder’.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘Vind het niet zo zeer belangrijk soms maakt het een maaltijd gewoon lekkerder, ja misschien daardoor’. En als je bijvoorbeeld denkt of het uitmaakt dat je alleen eet of met je huisgenoten? *‘Nee maakt denk ik niet zo veel uit’.*

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

‘Ook niet op een specifiek moment ofzo, het is net hoe het uitkomt, als er geen vlees in zit of wel is het ook prima. Ligt niet echt aan normen en waarden ofzo, ik vind het wel beter om geen vlees te eten is wel beter voor het milieu. Het hoeft niet per se altijd iets met vlees te zijn ofzo’. Want als je het vervangt wat eet je dan? *‘Ja extra groente of pasta ofzo’.*

Typicallity

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

‘Uhm sappig. Ja, vullend dat je wel gevuld raakt daardoor’. Als je denkt aan de textuur bijvoorbeeld?

‘Wat zachter niet krokant, weet niet hoe je dat noemt zeg maar’. Of als je denkt hoe het eruit ziet?

‘Bruinig en soms zorgt het ook voor smaak in de maaltijd en voor een bepaalde geur’.

Wat zijn volgens jou, typische karakter eigenschappen voor vlees-verters in je maaltijd?

‘Knapperiger misschien’. Als je denkt aan bijvoorbeeld die groenteburgers? *‘Ja die neem ik dus vaak niet, tenminste als we geen vlees hebben dan heb ik vaak een maaltijd gewoon zonder’.*

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesverters in je maaltijd?

- niet gevraagd omdat hij dit al beschreef bij de bovengenoemde vraag.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsen?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Koolhydraten, pasta’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kenmerken heeft, van meerdere producten)? Welke? Waarom? *‘Rijst, ik weet het niet, patat of aardappels omdat die misschien ook wel onder de koolhydraten vallen en onder avondeten’.*

Voorbeelden (altijd noemen en dit meer focussen) :

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgette: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

‘Ja denk het wel, om te overbruggen misschien. Om op te vangen dat je van de ene naar de andere categorie stapt’. Onder wat voor term zou je deze producten scharen? Waarom?

‘Overbruggende producten, omdat het dan toch wel lijkt op een bepaalde categorie is maar ook op een andere dus dat het een soort van tussenweg is’.

Lees de informatie:

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Onder welke term of noemer zou je dit product scharen? Waarom?

'Ik denk nog steeds vlees, omdat het wel nog neer komt op vlees. Het is wel op een andere dan manier verkregen maar nog steeds wel vlees'.

Zou het ook onder een andere term kunnen vallen?

'Vleesvervangers, omdat het toch een soort alternatief is voor vlees'.

Participant 8

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *21*
- Waar woon je? *Wageningen*
- Wat studeer je? *BBC*
- Heb je een (bij)baan? *Nee, niet meer*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

'Ik denk elke dag wel, met uitzondering van een of twee dagen per week. Dit verschilt per week, maar elke dag met wat uitzonderingen'.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

'Vindt jij vis als vlees tellen? Want ik eet af en toe vis'. Wanneer vervang je het dan voor vis? 'Als ik denk van ik heb deze week wel genoeg gehakt of kip of iets anders gegeten dan kies ik voor vis'.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Eigenlijk is het een beetje standaard voor mij geworden, ik denk er niet meer bij na. Het is beetje standaard voor mij dat je vlees eet, zo ben er mee opgegroeid ook eigenlijk'.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'In ieder geval als ik kook voor mensen die, ik kook eigenlijk nooit voor mensen die vegetarisch zijn. Maar stel ik zou voor zulke mensen koken, dan zou ik er natuurlijk wel voor kiezen. Ja uit mezelf eigenlijk nee, niet veel'.

Typicallity

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

'Aller eerst moet er een lekkere smaak aan zitten, moet niet taai zijn'. Is vlees wel eens taai? 'niet als ik het klaar maak'. Maar zou je in het algemeen zeggen dat vlees taai is? 'Nee in het algemeen niet'.

Nog meer? *‘Beetje smeug, niet heel droog, makkelijk door te snijden’*. En als je denkt aan hoe het er bijvoorbeeld uitziet? *‘Natuurlijke kleur, dus niet kleurrijk, het is bruin of wit’*.

Wat zijn volgens jou, typische karakter eigenschappen voor vleesvervangers in je maaltijd?

‘Dat het veel op echt vlees lijkt, en vis als je dat als vleesvervanger rekent dan moet het natuurlijk ook een beetje op vis lijken’. En als je aan de vlees vervangende burgers denkt, waar denk je dan aan?

‘Dan denk ik meteen aan een soort hamburger ofzo, zie niet echt een andere vorm daarin’. En als je aan de smaak denkt? Of aan de kleur? *‘Hoe ik denk dat het zou zijn? Dan denk ik dat het redelijk lijkt op echt vlees, maar iets droger en taaier, en dat er meer stukjes in zitten’*.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

‘Geen vlees en geen vlees vervanger, uuh, dat is moeilijk te bedenken. Geen vlees en geen vlees vervanger, ik weet niet dan heb je gewoon ene maaltijd zonder vlees. Dan eet je denk ik gewoon pasta met groente gewoon zonder vlees, wat prima kan’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Een voedselproduct? Buitenlandse, het is in ieder geval geen vlees en geen groente. Ojee ik heb het mezelf wel moeilijk gemaakt. Het is rijst, maar dat is gewoon al een categorie. Moet ik nog een ander in gedachte nemen?’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

‘Ja denk het wel’. Kan je een voorbeeld noemen? *‘Moet ik even goed over nadenken hoor’*. Neem je tijd, we hebben geen haast. *‘Nee misschien kan het niet, of ik kom er gewoon niet op’*. Zal ik er een paar verklappen dan. *‘Zuivel zeker, zuivel en nog een, zat ik ook te denken’*.

Voorbeelden (altijd noemen en dit meer focussen) :

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgettini: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

‘Ik denk dat omdat je ze in meerdere categorieën kan verdelen dat je ze ook vaker kan gebruiken, dat mensen eerder bereid zijn die producten te gebruiken’. Onder wat voor term zou je deze producten scharen? Waarom? ‘Multi-producten. Multi want meerdere, je kan er meerdere kanten mee op. Ze behoren tot meerdere categorieën, op die manier’.

Lees de informatie:

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Onder welke term of noemer zou je dit product scharen? Waarom? Zou het ook onder een andere term kunnen vallen?

‘Vleesvervangers. Omdat het geen echt vlees is, oja het is wel echt vlees het wordt echt gekweekt. Duurzaam vlees ofzo, in iedere geval een nieuwe categorie waarbij geen dieren geslacht worden. Is best wel lastig. Misschien gewoon een categorie kweekvlees’.

Participant 9

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *21*
- Waar woon je? *Wageningen*
- Wat studeer je? *BBC*
- Heb je een (bij)baan? *Nee, niet vast, havens werk kan ik ieder weekend werken*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

'7 keer, iedere dag. Het kan een keer worden veranderd voor vis'.

Eet je ook weleens geen vlees bij je avondeten? Vervang je dit dan met iets? Wanneer? Waarom?

'Het kan een keer worden veranderd voor vis. Als mijn moeder of toevallig een keer vis heeft gekocht of als ik een keer geen zin heb in vlees, maar dat komt niet zo vaak voor. Goh er ligt een stuk zalm of tongetjes of paling'.

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Altijd. Weet niet ja het hoort erbij. Is al vanaf kinds af aan, wordt je groot en sterk van'.

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

-

Typicality

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

'Het moet mals zijn sowieso, je wilt geen taai stuk leer. Rood, mag beetje bloederig wezen soms, bij biefstuk enzo. Toch ook wel pittig, nou ja niet pittig maar er mag wel smaak aan zitten. Voor de rest, dat is wel mijn idee van vlees. Ja gebakken of gebraden. Iets in die richting'.

Wat zijn volgens jou, typische karakter eigenschappen voor vleesvervangers in je maaltijd?

‘Nou toch wel vrij droog, niet de aller meest aantrekkelijke kleuren die ik tenminste gezien heb eigenlijk. Lijkt op vlees, maar het is niet het mooie sappige vlees maar meer droog doorgepakt hapje. Je ziet in ieder geval goed dat het niet van een beest is’.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

‘Dan is het maar een halve maaltijd vind ik, dat telt niet. Dan ben je de dag niet goed doorgekomen’.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

(Voorbeeld, waar in de supermarkt vind je dit product?)

‘Ijsthee valt onder frisdrank’.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

‘Product dat onder meerdere categorieën kan vallen. Nou vlees kan je niet drinken dus dat lijkt me sterk, maar hoe bedoel je dat dan precies?’.

Voorbeelden (altijd noemen en dit meer focussen) :

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgettini: Groente en pasta
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

‘Ja daar kan ik zo snel niet op komen’.

Welk doel hebben deze producten? Is dat anders dan van ‘normale’ producten?

‘Na ze hebben allemaal hetzelfde doel, om opgegeten te worden en mensen voldoen in mensen hun behoefte. Dus ik denk dat ze hetzelfde doel hebben’. Onder wat voor term zou je deze producten scharen? Waarom? *‘Nee ik vind het gewoon normale producten’.*

Lees de informatie:

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eindeloos aanbod van duurzaam vlees te produceren zonder de noodzaak om dieren te hiervoor te doden.

‘Dat ken ik wel hoor’.

Onder welke term of noemer zou je dit product scharen? Waarom? Zou het ook onder een andere term kunnen vallen?

‘Niet onder vlees in ieder geval, wel onder eten. En echt onder dat ja die nepburger dat soort dingen dat valt er toch wel, daar valt het wel echt onder. Het is gekweekt vlees, ik heb het wel eens gezien bij de keuringsdienst van waarden of wat was het, maar ik vond het er niet echt lekker uitzien, het kwam ook echt uit zo’n bakje. Ja het kan een hamburger wezen maar ik zou het toch niet zo opeten. Dus dan is het eerder een vleesvervanger? ‘Ja, een vleesvervanger ja’.

Participant 10

Welkom, fijn dat je er bent en alvast heel erg bedankt voor het meedoen. Het interview wordt afgenomen voor mijn master thesis hier op de WUR en duurt ongeveer 10 minuten. Er zijn geen goede of foute antwoorden en ik zal het ook opnemen zodat ik de antwoorden later kan uittypen en niks vergeet. Je antwoorden worden anoniem behandeld en je naam zal nergens genoemd worden. Heb je nog vragen voor mij voordat we beginnen?

- Hoe oud ben je? *21*
- Waar woon je? *Wageningen*
- Wat studeer je? *BBC*
- Heb je een (bij)baan? *Ja, bij de uni werk ik voor meeloopdagen en opendagen.*
- Ben je vegetariër? *Nee*

Eating meat

Eet je vlees? (hoe vaak?)

'Ja eigenlijk gewoon wel iedere dag'.

Eet je ook weleens geen vlees bij je avondeten? *'Ja dan is het vis, maar eigenlijk komt het zelden voor er zit altijd wel iets van vlees bij'* Vervang je dit dan met iets? Wanneer? Waarom? *Nee dan hoort het gewoon bij het gerecht, als je bijvoorbeeld ene keer een quiche hebt en er zitten geen spekjes in of je hebt bijvoorbeeld iets met kaas dan is dat het maar voornamelijk zit er wel iets van vlees bij. Ik vervang het niet specifiek'.*

Wanneer vind je het belangrijk om vlees te eten? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Zeg maar wanneer ik het specifiek belangrijk vind is niet dat ik het echt belangrijk vind dat het echt nodig is. Maar als ik moet opnoemen wanneer ik het echt belangrijk vind ik zit bij het bourgondisch dispuut en daar is vlees wel, ja daar is het wel gewoon een van die dingen waar het daar een beetje om draait. Dan is het eigenlijk voornamelijk gewoon de BBQ. Dat zijn wel van die momenten dat vlees echt belangrijk is en voor de rest is het in principe niet echt belangrijk.'

Wanneer vind je het belangrijk om vlees te vervangen? Waarom? (alleen, haast, tijd zat, met mensen, voor mensen)

'Ik vind wel dat als bijvoorbeeld iemand vegetarisch of veganistisch is dat het dan wel gewoon op zo'n moment kijk voor mij is het niet nodig om echt vlees te eten maar als zo iemand er dan bij is dan heb wel zoiets van dan eten we met zijn alle even totaal iets anders want vlees ik vind het zelf hartstikke lekker maar er zijn zoveel andere dingen waarmee gewoon kan variëren dat ook gewoon lekker is, en

dat vind ik wel gewoon belangrijk om juist voor die persoon ja geen vlees te eten. Want ja die heeft wel gewoon een overtuiging wat voor hem en haar belangrijk is. Voor mij is het niet belangrijk behalve met bourgondisch dispuut en als zij er dan bij zitten dan kunnen we daar wel rekening mee houden. En dat is eigenlijk ook wel gewoon goed, het is ook gewoon slecht voor milieu en is gewoon niet diervriendelijk. Alhoewel daar ben ik het niet mee eens. Het is gewoon slecht voor het milieu en ja weet je het is niet altijd nodig om zoveel vlees te eten. Maar ja als de manier van slachten gewoon goed is. Het is ook wel, ja af en toe vind ik het ook wel het is dieronvriendelijk maar ja aan de andere kant is het wel zo van als de dieren gewoon op een normale manier kunnen leven en dat ze leven het gewoon naar hun zin hebben. Ja een plof kip is niet goed te praten, maar bijvoorbeeld als je een biologische kip hebt of runderen die in de lente de wei in mogen. Die beesten zijn hartstikke gelukkig en die weten niet dat ze er zijn voor de slacht. Maar aan de andere kant als de vlees industrie er niet was waren die beesten er ook niet, en hadden ze ook nooit dat geluksmoment kunnen hebben voor zichzelf eigenlijk. Maar dan moet dat wel goed zitten want bijvoorbeeld een plof kip of mega varkensstallen in Oost-Europa dat is niet goed'.

Typicality

Wat zijn volgens jou, typische karakter eigenschappen voor vlees in je maaltijd?

'Ja het is wel gewoon, wat het toetje na de maaltijd is, is zeg maar vlees het toetje bij het hoofdgerecht. Het is wel zeg maar het gene wat het specifiek lekkerder maakt of gewoon wel echt een toevoeging is want als je alleen groente of aardappeltjes hebt. Vlees is wel gewoon het lekkerste gedeelte in je maaltijd'. Als je dan aan vlees denkt, bijvoorbeeld aan de kleur of textuur of hoe het smaakt waar denk je dan aan? 'Ja beetje mals beetje sappig, gewoon smaakvol en gewoon het moet wel gewoon niet hele rauwe biefstuk hebben. Dat moet je niet hebben, maar gewoon lekker mals lekker gewoon dat het gewoon goed smaakt. En van textuur ja het moet zeg maar, op het moment dat je echt bijvoorbeeld kippenpootjes aan het eten bent dan vind ik het moet als er gewoon bot bij zit, dat is minder'.

Wat zijn volgens jou, typische karakter eigenschappen voor vleesvervangers in je maaltijd?

'Bedoel je dan echt karakter eigenschappen in de vorm van producten? Ja ik heb hier zelf ook onderzoek naar gedaan, ik weet hier best veel van. Dan denk ik voornamelijk gewoon aan bonen en aan zeewier bijvoorbeeld dat wordt later echt een ding. Ja algen heb je nog en je hebt nog allemaal een beetje chemische ik weet niet meer hoe dat heet, ja ook zo'n product. Ja champions en heel veel andere groenten zou je toch in een bepaalde textuur maar voornamelijk bonen zou je als vleesvervanger kunnen gebruiken. Maar ook gewoon als je vlees anders vervangt dan lijkt het heel erg op vlees, maar bijvoorbeeld kaas voor vegetariërs dan niet voor veganisten zou een hele goeie zijn om vlees in een maaltijd te vervangen'. Ja, want als je al deze vleesvervangers in algemene termen moest beschrijven wat voor karakter eigenschappen hebben ze dan? 'Ja, dat het wel gewoon in smaak

verschilt met echt vlees, als je dan echt aan een vlees vervanger denkt. Je kan het ook anders in een maaltijd vervangen, bijvoorbeeld zeewier heeft wel gewoon alle voedingsstoffen die het nodig heeft van vlees maar het lijkt er verre weg niet op. Maar het is ook wat ik dan zelf te weten is het voor vegetariërs en veganisten totaal niet belangrijk dat het lijkt op vlees maar dat de voedingsstoffen hetzelfde zijn en extra soort smaak dingetje is bij je maaltijd'.

Wat zijn volgens jou, typische karakter eigenschappen voor het weglaten van vlees en vleesvervangers in je maaltijd?

'Ja, niet per se eigenlijk, je eet gewoon wat de pot schaft dus als je dan gewoon zin hebt in een bepaald iets en als er dan geen vlees in zit. Je gebruikt gewoon andere producten, want ja dan doe je het met een eitje of iets anders maar voornamelijk meer groente ja'.

Hybrid food

Neem een voedingsproduct in gedachten, onder welke noemer of term zou je dit plaatsten?

'En hoe bedoel je die categorie? Ik zit nu in mijn hoofd bij al die vleesvervangers, ik zal wel even iets anders bedenken dat is misschien voor jou ook wel leuk. Ja ik doe wel gewoon wat ik had, het valt dan wel onder de categorie van vleesvervangers of groente. Zeewier'.

Ken je ook een product dat onder meerdere van deze noemers zou vallen (dat meerdere eigenschappen of kernmerken heeft, van meerdere producten)? Welke? Waarom?

'Ja je kan het onder groente, onder vleesvervangers, onder zeevruchten onder vis is misschien wel iets te groot ervoor, maar onder vitamine vervangers eventueel kunnen doen. Ja ik vind dat ook het interessante aan dit product er is zoveel van en daar zou je echt heel veel nieuwe dingen mee kunnen doen. Dat gaat het echt wel worden later'. Zou je er nog meer weten? 'Ja je kan het als tussendoortje gebruiken, je kan het als ontbijt gebruiken je kan het gebruiken als vitamine gebruiken, je het gebruiken als oppepper kan je het gebruiken, ja het is een banaan'.

Voorbeelden (altijd noemen en dit meer focussen) :

- Zoete aardappel: groente en aardappelen
- Mineola: sinasappel en mandarijn
- Courgettini: Groente en pasta (bloemkoolrijst)
- Quiche: Taart en hartig/groente
- Groente chips: Groente en snack of Groente en Chips

Welk doel hebben deze producten? Is dat anders dan van 'normale' producten?

'Ja, weet je het is zeg maar gewoon elk product de ene keer kan het product met dat doel en de andere keer met dat doel. Als je bijvoorbeeld naar Azië toe gaat dan hebben ze gewoon gebakken

banaan als avond eten, en hier gebruik ik het als bijvoorbeeld tussendoortje terwijl mijn moeder het bijvoorbeeld gebruikt als ontbijt. Zo is het, het hangt gewoon puur van het moment af en wanneer je het koopt en wanneer je het gaat gebruiken. Dus ja een product kan je voor heel veel verschillende doelen en ideeën gebruiken. Hetzelfde is bijvoorbeeld dat je bladerdeeg kan gebruiken om frikandelbroodjes kan maken wat een ongezond tussendoortje is of je kan het weer om een gezonde quiche van te maken waar je weer heel veel groente bijstopt'. Onder wat voor term zou je deze producten scharen? Waarom? 'Veelzijdige producten'.

Lees de informatie:

Kweekvlees is een product geproduceerd uit dierlijke stamcellen met behulp van weefseltechniek. De cellen die uit deze procedure ontstaan zijn zonder bot en kunnen als verwerkt vlees worden gebruikt, b.v. in hamburgers, kipnuggets en worstjes. Deze nieuwe techniek biedt een manier om een bijna eindeloos aanbod van duurzaam vlees te produceren zonder de noodzaak om dieren te hiervoor te doden.

'O, daar heb ik ook heel veel over gelezen'.

Onder welke term of noemer zou je dit product scharen? Waarom? Zou het ook onder een andere term kunnen vallen?

'Hangt er van af, maar ik zou het zelf persoonlijk onder de categorie van vleesvervangers plaatsen, omdat zeg maar in mijn optiek is het duurzaam en het voorkomt heel veel dierenleed. Of te wel het is voor mij een vleesvervanger want het is niet echt, het lijkt heel erg op echt vlees en daar wordt het ook uit geproduceerd maar het is geen echt vlees want het is geen echt dier geweest. Alleen als je bijvoorbeeld, hier heb ik ook onderzoek naar gedaan, als je veganistisch bent of vegetarisch dan blijven vele mensen het vlees vinden omdat het uit dierlijke stamcellen is ontstaan daar komt het uit voort en uiteindelijk komt het uit een dier en daarom is het voor hun vlees. Maar voor mij persoonlijk is het een vleesvervanger, maar dat komt omdat ik er heel anders naar kijk dan bijvoorbeeld die andere mensen'.

Appendix 2 – Analysis interviews

Table 10: Interview themes and codes

Part	Content
<i>Goals for eating meat and replacing meat</i>	<u>Eating meat</u> Habit to eat meat (6) Taste experience (5) Gives a saturated feeling (2) Social events (2) Gives energy (1) <u>Replacing meat</u> Social reasons (5) Environmental and animal welfare reasons (3) Part of the meal (3) No meat appetite (3) Meat is expensive (1) Meat is heavy (1) The nutritional values may be replaced easily (1) No time (1)
<i>Typicality characteristics of food products</i>	<u>Meat</u> Brown (6) Red (4) White (4) Saturated feeling (4) More/ Strong flavour (4) Soft (3) Tender (3) Juicy (3) Originates from animals (3) Contains fat (2) Contains protein (2) Main ingredient in meal (2) Chewy (2) Bone (2) Little pieces (2) Stringy (1) Little modified (1) Rose (1) Smooth (1) Skin (1) Savoury (1) Curly (1) Fresh (1) Not chewy (1) Creamy (1) Natural colour (1) Bloody (1) <u>Meat substitutes</u> Dry (4) Counterfeit meat (3)

	Not juicy (3)
	Less saturated feeling (2)
	Chewy (2)
	Crispy (2)
	Modified / Man made (1)
	Precooked (1)
	Layers (1)
	Granular (1)
	White (1)
	Smooth (1)
	Less strong smell (1)
	Less chewy (1)
<i>Perception hybridity of food products</i>	- Term: Multi-functional products (5) - Goals: no other goal (3) - producers sell more (2) - People do not have to choose anymore (2) - Culture meat is meat (5); meat replacer (3); own category (2); could be both (7)

Appendix 3 - Survey

Q1 _Welcome Welcome to this research!

Dear participant,

Thank you for taking time to participate in the current study. This questionnaire is designed as a part of my Master's Thesis for the Wageningen University. It takes approximately 10 minutes to complete this questionnaire. You are not obliged, but kindly asked to fill in this questionnaire at full.

Please note that your answers will be handled completely confidentially and anonymously. This means that your name will not appear and that your answers will never be linked to your name. You can stop the survey at any time, however your answers will not be valuable for this research anymore.

Click on [>>](#) at the bottom of the page to start the survey.

Q2_goal_meat

Please read the following information:

This year, Christmas will be celebrated at your place. Besides a wonderfully decorated Christmas tree and some presents, your family and friends expect you to prepare an extensive dinner. There are no budget restrictions and no special dietary wishes. Everyone values high quality meals with great taste experiences, especially for a dinner like this. Some of your family members are not easily saturated and really like a big meal. Since you prepare the dinner all by yourself it would preferably contain a single main ingredient to build a dinner around. For you the evening is successful when everyone has a good time and the dinner is memorable.

Click on [>>](#) at the bottom of the page to continue the survey.

Q3_goal_meatsub

Please read the following information:

Some of your friends are coming over for dinner on Friday. They do not expect a fancy dinner, you do not have a lot of money and you have to prepare the dinner by yourself before the guests arrive. Some of your friends have special dietary wishes since they strongly value animal welfare and their environmental footprint. All of your friends appreciate dishes and food products with high nutritional values. However, some do not have a great appetite, since they have a work related drink before they come over. For you the evening is successful when everyone likes the food and has a good time.

Click on [>>](#) at the bottom of the page to continue the survey.

Q4_CM_M

Please read the following information:

Today you went shopping to prepare for this dinner and saw a new product: Cultured meat. Cultured meat is one of the latest developments in the food industry. It is produced from animal stem cells using tissue-engineering techniques. The resulting cells from this procedure are the same muscle tissues that may be found in animals. These resulting cells are boneless and can be consumed as processed meat e.g. steak tartare and sausages. Cultured meat has a similar taste and texture to that of traditional meat. Cultured meat would be produced without the risk of diseases spreading from animal to human.

Click on [>>](#) at the bottom of the page to continue the survey.

Q5_CM_MS

Please read the following information:

Today you went shopping to prepare for this dinner and saw a new product: Cultured meat. Cultured meat is produced from animal stem cells using tissue-engineering techniques. The resulting muscle tissue from this procedure is boneless and can be consumed as processed meat e.g., burgers. Moreover, it could replace the nutritional values from meat. This new technique provides a way to produce an almost endless supply of sustainable and ecological responsible products without the necessity to kill or hurt animals. It would be produced without the risk of diseases spreading from animal to human, and without animal welfare issues. In addition, for the production of cultured meat little antibiotics are required.

Click on [>>](#) at the bottom of the page to continue the survey.

Q6_CM_M+MS

Please read the following information:

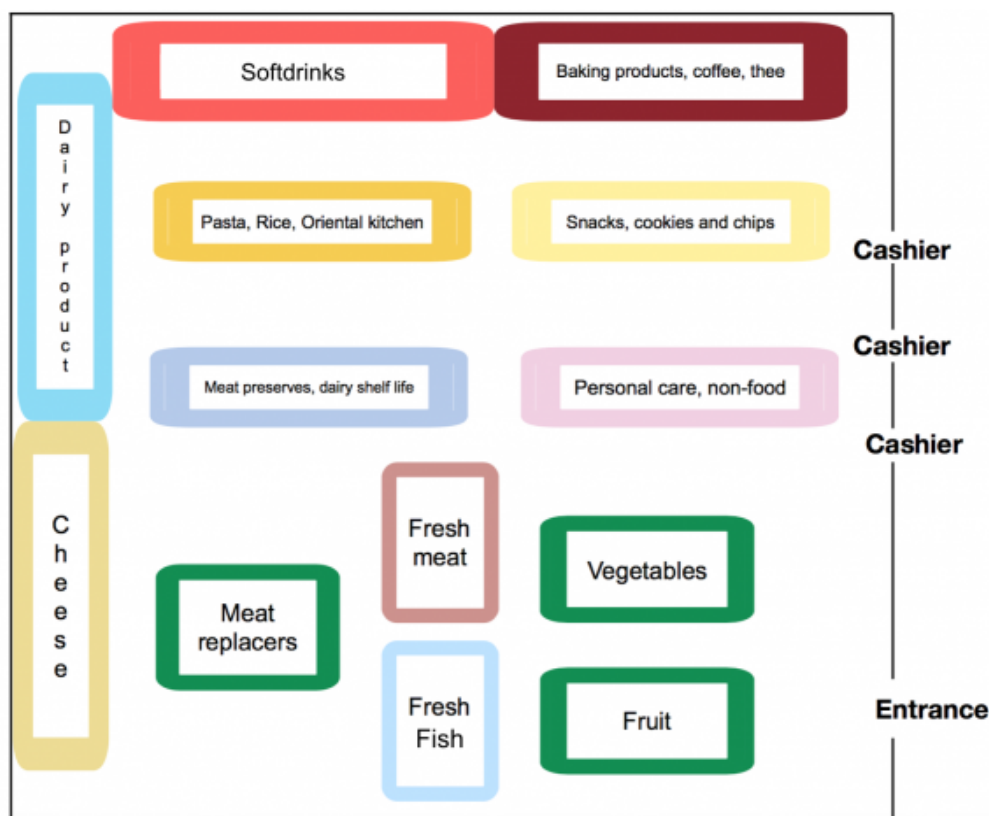
Today you went shopping to prepare for this dinner and saw a new product: Cultured meat. Cultured meat is one of the latest developments in the food industry. It is produced from animal stem cells using tissue-engineering techniques. The resulting cells from this procedure are the same muscle tissues that may be found in animals. This muscle tissue is boneless and can be consumed as processed meat e.g. burgers, steak tartare and sausages. Cultured meat has a similar taste and texture to that of traditional meat and could replace the nutritional values from meat. This new technique provides a way to produce an almost endless supply of sustainable and ecological responsible products without the necessity to kill or hurt animals. It would be produced without the risk of diseases spreading from animal to human, and without animal welfare issues. In addition, for the production of cultured meat little antibiotics are required.

Click on [>>](#) at the bottom of the page to continue the survey.

Q7_perception I think cultured meat is...

	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)	
Completely different from meat (1)	☐	☐	☐	☐	☐	☐	Completely like meat
Completely different from meat substitutes (2)	☐	☐	☐	☐	☐	☐	Completely like meat substitutes
Only similar to either meat or meat substitutes but not both (3)	☐	☐	☐	☐	☐	☐	Similar to both meat and meat substitutes

Q8_categorisation When looking for cultured meat in the supermarket, what is the first place you would go to find the product? Please indicate this in the picture below.





Q9_inferences What do you think are characteristics of cultured meat?

	Yes (1)	No (2)
Is soft (1)	☐	☐
Has a strong flavor (2)	☐	☐
Gives a saturated feeling (3)	☐	☐
Is tender (4)	☐	☐
Is dry (6)	☐	☐
Is counterfeit/fake meat (7)	☐	☐
Contains protein (8)	☐	☐
Is made up of layers (9)	☐	☐
Is crispy (10)	☐	☐
Has a red color (11)	☐	☐
Is granular/ falling apart (12)	☐	☐
Is precooked (13)	☐	☐
Comes from (parts of) animals (15)	☐	☐
Contains fat (16)	☐	☐
Man made (17)	☐	☐
Is juicy (19)	☐	☐

Q10_attitude_CM

Overall, the thought of eating cultured meat makes me feel...

	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)	
good (1)	☐	☐	☐	☐	☐	☐	bad
satisfied (2)	☐	☐	☐	☐	☐	☐	unsatisfied
pleasant (3)	☐	☐	☐	☐	☐	☐	unpleasant

Q11_attitude_meat Overall, the thought of eating meat makes me feel...

	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)	
good (1)	☐	☐	☐	☐	☐	☐	bad
satisfied (2)	☐	☐	☐	☐	☐	☐	unsatisfied
pleasant (3)	☐	☐	☐	☐	☐	☐	unpleasant

Q12_attitude_MS Overall, the thought of eating meat replacements makes me feel...

	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)	
good (1)	☐	☐	☐	☐	☐	☐	bad
satisfied (2)	☐	☐	☐	☐	☐	☐	unsatisfied
pleasant (3)	☐	☐	☐	☐	☐	☐	unpleasant

Q13_neophobia

Please indicate for the following statement whether you agree or not.

	Not agree at all (1)	2	3	4	5	6	Totally agree (7)
--	----------------------	---	---	---	---	---	-------------------

I am constantly sampling new and different foods. (1)	☐	☐	☐	☐	☐	☐	☐
If I don't know what is in the food, I won't try it. (2)	☐	☐	☐	☐	☐	☐	☐
At dinner parties I will try a new food. (3)	☐	☐	☐	☐	☐	☐	☐
I don't trust new foods. (4)	☐	☐	☐	☐	☐	☐	☐
Ethnic food looks too weird to eat. (5)	☐	☐	☐	☐	☐	☐	☐
I am afraid to eat things I have never had before. (6)	☐	☐	☐	☐	☐	☐	☐
I am very particular about the foods I will eat. (7)	☐	☐	☐	☐	☐	☐	☐
I will eat almost anything. (8)	☐	☐	☐	☐	☐	☐	☐
I like to try new ethnic restaurants. (9)	☐	☐	☐	☐	☐	☐	☐
I like foods from different countries. (10)	☐	☐	☐	☐	☐	☐	☐

Q14_familiarity Prior to this questionnaire, to what extent were you familiar with cultured meat?

- ☐ Never heard about it before (1)
 - ☐ I've heard about it, but do not know what it exactly is (2)
 - ☐ I've heard about it, and have some sort idea what it is (3)
 - ☐ I've heard about it, and have a idea what it is (4)
 - ☐ I've heard a lot about it, and know exactly what it is (5)
-

Q15_dietary_habits Do you have special dietary habits or beliefs with regard to meat?

- ☐ No (1)
- ☐ Yes, I'm a vegetarian (2)
- ☐ Yes, I'm a vegan (3)
- ☐ Other (4) _____

Skip To: Q17_animal_welfare If Q15_dietary_habits = Yes, I'm a vegetarian

Skip To: Q17_animal_welfare If Q15_dietary_habits = Yes, I'm a vegan

Q16_eating_meat How often do you eat meat?

- ☐ Everyday (1)
 - ☐ Almost everyday, 5 to 6 days a week (2)
 - ☐ Half of the time, 3 to 4 times a week (3)
 - ☐ A few times, 1 to 2 times a week (4)
 - ☐ Few times per month, 1 to 2 times a month (5)
 - ☐ Fewer then once time a month (6)
-

Q17_animal_welfare When buying meat products, how important is the production process with regard to the animal welfare to you?

- ☐ Extremely important (1)
 - ☐ Very important (2)
 - ☐ Moderately important (3)
 - ☐ Slightly important (4)
 - ☐ Not at all important (5)
-

Q18_environment When buying meat products, how important is the production process with regard to the environment to you?

- ☐ Extremely important (1)
 - ☐ Very important (2)
 - ☐ Moderately important (3)
 - ☐ Slightly important (4)
 - ☐ Not at all important (5)
-

Q19_food_allergies Do you have any food allergies?

- ☐ No (1)
 - ☐ Yes, namely (2) _____
-

*Display This Question:**If Q2_goal_meat Is Displayed*

Q20_vraag_M Please read the following information: This year, Christmas will be celebrated at your place. Besides a wonderfully decorated Christmas tree and some presents, your family and friends expect you to prepare an extensive dinner. There are no budget restrictions and no special dietary wishes. Everyone values high quality meals with great taste experiences, especially for a dinner like this. Some of your family members are not easily saturated and really like a big meal. Since you prepare the dinner all by yourself it would preferably contain a single main ingredient to build a dinner around. For you the evening is successful when everyone has a good time and the dinner is memorable. What would you include in this dinner?

	Yes (1)	No (2)
Cultured meat (1)	☐	☐
Meat (2)	☐	☐
Meat substitutes (3)	☐	☐

*Display This Question:**If Q3_goal_meatsub Is Displayed*

Q21_vraag_MS Please read the following information: Some of your friends are coming over for dinner on Friday. They do not expect a fancy dinner, you do not have a lot of money and you have to prepare the dinner by yourself before the guests arrive. Some of your friends have special dietary wishes since they strongly value animal welfare and their environmental footprint. All of your friends appreciate dishes and food products with high nutritional values. However, some do not have a great appetite, since they have a work related drink before they come over. For you the evening is successful when everyone likes the food and has a good time. What would you include in this dinner?

	Yes (1)	No (2)
Cultured meat (1)	☐	☐
Meat (2)	☐	☐
Meat substitutes (3)	☐	☐

Q22_gender

What is your gender?

- ☐ Male (1)
 - ☐ Female (2)
 - ☐ Other (3)
-

Q23_age

What is your age in years?

Q24_residence What is your place of residence?

- ☐ Wageningen (1)
 - ☐ Utrecht (2)
 - ☐ Amsterdam (3)
 - ☐ Rotterdam (4)
 - ☐ Ede (5)
 - ☐ Arnhem (6)
 - ☐ Nijmegen (7)
 - ☐ Other, namely (8) _____
-

Q25_employment What is your most important daytime activity?

- ☐ Employed for full time (40 hours a week) (1)
- ☐ Employed for part time (up to 39 hours a week) (2)
- ☐ Student (3)
- ☐ Retired (4)
- ☐ Unemployed (5)
- ☐ Stay at home parent (6)
- ☐ Self-employed (7)

Display This Question:

If Q25_employment = Student

Q26_University Which university do you attend?

- ☐ Wageningen University & Research Centre (1)
- ☐ Utrecht University (2)
- ☐ University of Amsterdam (3)
- ☐ Vrije University Amsterdam (4)
- ☐ Erasmus University Rotterdam (5)
- ☐ Other, namely (6) _____

Q27_device On what device did you fill out this survey? (e.g. computer, phone, tablet)

Q26_remarks Do you have any additional remarks, questions or comments based on this survey?
Please leave them below.

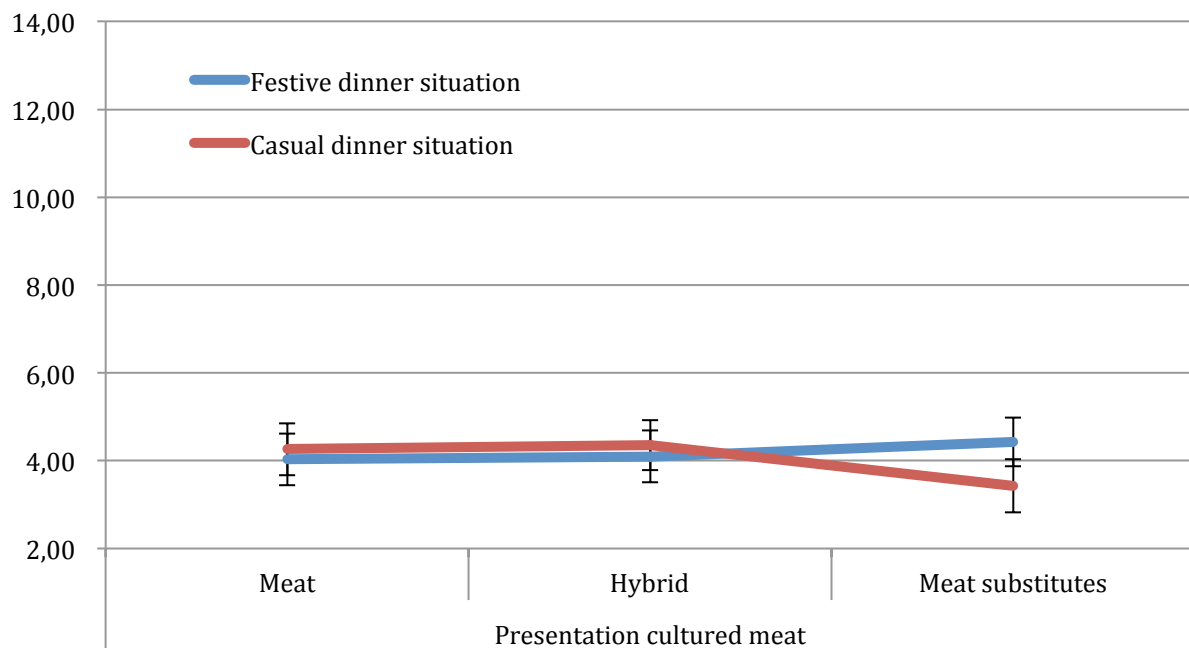
End of Block: End of Questionnaire

Appendix 4 – Extended outcomes additional analysis

Analysis 1:

The results of the ANOVA showed no significant main effect of the hybrid presentation of cultured meat ($F(1, 233)=0.619, p=.432, \eta^2=.113$) and consumer situational goals ($F(1, 233)=0.748, p=.475, \eta^2=.113$), but did have a significant effect of the interaction effect of the consumer goals and presentation ($F(2, 233)=6.324, p=.002, \eta^2=.113$). Still none of the control variables showed to have an effect: gender ($F(1, 233)=0.015, p=.903, \eta^2=.113$), familiarity ($F(1, 233)=0.784, p=.377, \eta^2=.113$), neophobia ($F(1, 233)=0.705, p=.402, \eta^2=.113$). However controlling for dietary habits demonstrated to have a significant effect ($F(1, 233)=12.041, p<.001, \eta^2=.113$). This suggests that when you do not eat meat you are more likely to perceive it as a hybrid product then when you do eat meat. Also with regard to the profile plots of the estimates marginal means, there are the same patterns visible (Figure 4).

Figure 4. *The effect of presentation and consumer goals on the perception of cultured meat controlling for non-meat consumers.*



Analyse 2:

The model with the reference category of meat, including the perception variable of cultured meat to be like meat, the perception variable of cultured meat to be like meat substitutes and the control variables was still statistically significant when controlling for non-meat consumers ($\chi^2(18)=53.369$, $p<.001$). With an overall prediction success of 61.4% (78.5% for the meat substitutes category, 49.0% for the meat category and 10.0% for the other category). Indicating that the model is still a suitable predictor for the categorisation of cultured meat.

The first part of the model looked at the category ‘meat substitute’ relative to the category ‘meat’. The effect of the perception of cultured meat to be like meat was still significant ($b=-0.300$, $p<.001$)(table 12). The effect of the perception of cultured meat to be like meat substitutes was also found to be significant ($b=0.285$, $p<.001$). Again, the control variables did not show a significant effect (table 12). Finally the dietary habits did not demonstrated a significant effect ($b=0.628$, $p=.182$). The second part of the model looking at the category ‘other’ relative to the category ‘meat’ also still demonstrated a significant effect for the perception of cultured meat to be like meat ($b=-0.312$, $p=.031$). The effect of the perception of cultured meat to be like meat substitutes was also found to be significant ($b=0.571$, $p<.001$). Peculiar is that this is a positive effect where in the initial analysis this showed to be a negative effect. This indicates that when including the non-meat consumers the probability of choosing the other category relative to the meat category increases, when the perception of cultured meat to be like meat substitutes becomes higher. The same control variables that showed a significant effect in the initial analysis also showed a significant effect for this analysis, neophobia ($b=-0.572$, $p=0.024$) and familiarity with cultured meat ($b=0.504$, $p=0.043$)(table 12). Additionally, age ($b=-0.490$, $p=0.093$) and most important daytime activity ($b=-1.246$, $p=0.047$) showed to have a significant effect.

The analysis for the implicit ambivalent measure of perception for hybridity ($b=0.044$, $p=.186$) and the direct measure for hybridity ($b=-0.010$, $p=.909$) still did not show a significant effect for the meat substitute category relative to the meat category. Accordingly, the analysis for the implicit ambivalent measure of perception for hybridity ($b=0.207$, $p=.008$) still did show a significant effect for the other category relative to the meat category. Whereas the direct measure for the hybridity perception ($b=0.305$, $p=0.027$) also showed a significant effect for the other category relative to the meat category. Indicating the probability of choosing the other category relative to the meat category increases, when the perception of cultured meat to be a hybrid product increases.

Table 12. Results multinomial logistic regression analysis of the effects on categorisation, with the meat category as the reference category.

	Meat substitute category		Other category	
	B	SE (B)	B	SE (B)
Perception cultured meat is like meat	-0.300***	0.094	-0.312*	0.167
Perception cultured meat is like meat substitutes	0.285***	0.087	0.571***	0.164
Gender	0.491	0.314	-0.561	0.578
Most important daytime activity	-0.390	0.391	-1.246*	0.628
Food allergies	-0.381	0.489	0.446	0.744
Neophobia	-0.091	0.140	-0.5728	0.253
Age	-0.180	0.161	-0.490†	0.292
Familiarity	-0.150	0.129	-0.504*	0.249
Dietary habits	0.628	0.470	1.037	0.841
Constant	1.561		-0.217	
Nagelkerke R²	.206		.206	
N	246		246	

† $p=.10$, * $p=.05$, ** $p=0.01$, *** $p=0.001$

Analyse 3:

The results of the Pearson chi square test again showed a significant association between the categorisation of cultured meat and the inferences of cultured meat $\chi^2(4) = 24.858, p < .001$. Looking at the inferences resulting from the categorisation, the meat inferences are higher for all different categories. Indicating that non-meat consumers have more meat inferences with regard to cultured meat than meat consumers (table 13).

Table 13. Percentages of the inferences following from the categorisation.

<u>Inferences</u>	<u>Categories</u>		
	Meat substitute	Meat	Other
Meat substitute	36.9%	21.9%	30.1%
Hybrid	21.5%	10.4%	45.0%
Meat	41.5%	67.7%	30.0%

The results of the regression analysis showed that the first model is still significant ($R^2=0.122$, $F(7,238)=4.707, p < .001$). With regard to the familiarity of cultured meat, there is also still a significant positive effect found ($b=1.131, t=3.952, p < .001$). Additionally, gender showed to have a significant effect as well ($b=1.306, t=1.826, p=.069$). Indicating that when including non-meat consumers, women have more meat inferences with cultured meat than men. Finally, dietary habits did not show to have a significant effect ($b=1.505, t=1.487, p=.138$). This suggests that when people are non-meat consumers they have more meat inferences with cultured meat than when people do consume meat. Similar to the initial analysis the other control variables: most important daytime activity ($b=0.666, t=0.777, p=.438$), food allergies ($b=-0.667, t=-0.615, p=.539$), neophobia ($b=0.371, t=1.194, p=.234$) and age ($b=0.071, t=0.193, p=.847$) did not show to have a significant effect.

The second part of the model, is also still significant ($R^2=0.170, F(9,236)=5.388, p < .001$). Within this model, the effect of assimilation cultured meat within the meat category is still significant ($b=1.344, t=2.118, p=.018$) and assigning it to the meat substitute category is still not significant ($b=0.218, t=0.174, p=.431$).

Analyse 4:

The first model includes the control variables and showed to be significant ($R^2=0.108$, $F(7, 238)=5.227$, $p<.001$). Similar to the initial model, within this model there was a significant effect for gender ($b=0.453$, $t=2.037$ $p=.043$), neophobia ($b=-0.351$, $t=-3.628$ $p<.001$) and familiarity ($b=-0.315$, $t=-3.535$ $p=.005$) found (table 14). The additional measure of dietary habits does not prove to have any effect on the attitude towards cultured meat ($b=0.421$, $t=1.336$, $p=.183$).

The second model, adding the attitude towards meat and meat substitutes, and the inferences was also still significant ($R^2=0.295$, $F(10, 235)=11.272$, $p<.001$). Within this model, again a significant effect for the attitude of meat ($b=0.286$, $t=3.939$ $p<.001$), meat substitutes ($b=0.393$, $t=6.262$, $p<.001$) and inferences ($b=-0.058$ $t=-3.132$, $p<.001$) was found (table 14).

The third and last model, adds the interaction effects of the attitude of meat with inferences and the attitude of meat substitutes with inferences and was also found to be significant ($R^2=0.309$, $F(12, 232)=10.125$, $p<.001$). The interaction effect of the inferences and the attitude towards meat also demonstrated to have a positive significant effect when including non-meat consumers ($b=0.023$ $t=2.118$, $p=.035$). This again indicates that the attitude towards meat is more positive when there are more meat inferences with regard to cultured meat, implying that the attitude towards meat has more effect when cultured meat is regarded to be meat. On the other hand, for the second interaction effect of the inferences and the attitude towards meat substitutes there was still no significant effect found ($b=-0.007$ $t=-0.636$, $p=.525$) (table 14).

Table 14. Hierarchical multiple regression analysis of the effects on attitude towards cultured meat.

Categorisation meat						
	Model 1		Model 2		Model 3	
	B	SE (B)	B	SE (B)	B	SE (B)
Gender	0.453*	0.227	0.495**	0.202	0.498*	0.200
Most important daytime activity	0.042	0.267	0.306	0.239	0.301	0.237
Food allergies	-0.246	0.338	-0.146	0.301	-0.082	0.300
Neophobia	-0.351***	0.097	-0.164*	0.089	-0.147	0.089
Age	0.070	0.114	0.131*	0.101	0.138*	0.100
Familiarity	-0.315***	0.089	-0.120	0.084	-0.137	0.084
Dietary habits	0.421	0.315	-0.026	0.364	-0.199	0.367
Attitude towards meat			0.286***	0.073	0.275***	0.072
Attitude towards meat substitutes			0.393***	0.063	0.383***	0.063
Inferences			-0.058***	0.018	-0.056***	0.018
Attitude towards meat * inferences					0.023*	0.11
Attitude towards meat substitutes * inferences					-0.007	0.11
Constant	5.372		1.920		1.741	
R²	.108		.295		.309	
N	246		246		246	

† $p=.10$, * $p=.05$, ** $p=0.01$, *** $p=0.001$

5 – Syntax

* Master thesis (year 2017-2018)
 * Author: Lisa van der Meulen (930708561120)
 * Supervisor: A. Fischer.

```
***GETFILE='/Users/LisavanderMeulen/Documents/Universiteit/Wageningen/Thesis/Data-
SPSS/Thesis_checked_data, 2017_06.12.sav'
DATASET ACTIVATE DataSet1.
```

***** 1. Dependent variables *****

**** A. Perception.

```
FREQUENCIES VARIABLES=Q7_perception_1 Q7_perception_2 Q7_perception_3
/ORDER=ANALYSIS.
```

*In order to measure the perception of cultured meat as a hybrid product it is necessary to compute a new variable which shows the total of the perception of cultured meat as meat and substitutes.
 *When this new variable (perception_hybrid) is low this indicates that it is not viewed to be either and when it is high (8 or above) it indicates it could be seen as both).

```
COMPUTE Perception_1_2=(Q7_perception_1+Q7_perception_2) - ABS(Q7_perception_1-
Q7_perception_2).
EXECUTE.
```

```
FREQUENCIES VARIABLES=Perception_1_2
/BARCHART FREQ
/ORDER=ANALYSIS.
```

**** B. Categorization.

```
FREQUENCIES VARIABLES=Q8_categorization_1_x Q8_categorization_1_y
Q8_categorization_Fresh_fish
    Q8_categorization_Vegetables_and_Fruit Q8_categorization_Meat_replacers
    Q8_categorization_Fresh_meat Q8_categorization_Meat_preserves__dairy_shelf_life
    Q8_categorization_Cheese Q8_categorization_Dairy_products
    Q8_categorization_Pasta__Rice__Oriental_Kitchen
Q8_categorization_Snacks__cookies_and_chips
    Q8_categorization_Personal_care__non_food Q8_categorization_Softdrinks
    Q8_categorization_Baking_products__coffee Q8_categorization_Other
/ORDER=ANALYSIS.
```

*Missings are already taken into account, there are no missings.
 *Recoding the category variables in order to compute one category variable.

```
RECODE Q8_categorization_fresh_meat (1.00=1.00) (SYSMIS=0.00) INTO Category_fresh_meat.
VARIABLE LABELS Category_fresh_meat.
EXECUTE.
```

```
RECODE Q8_categorization_Meat_replacers (1.00=1.00) (SYSMIS=0.00) INTO
Category_Meat_Replacers.
VARIABLE LABELS Category_Meat_Replacers 'Category meat replacers'.
EXECUTE.
```

```
RECODE Q8_categorization_Meat_preserves__dairy_shelf_life (1.00=1.00) (SYSMIS=0.00) INTO
Category_Meat_Preserves.
VARIABLE LABELS Category_Meat_Preserves 'Category Meat Preserves'.
EXECUTE.
```

```
RECODE Q8_categorization_Fresh_fish Q8_categorization_Vegatables_and_Fruit
Q8_categorization_Cheese
Q8_categorization_Dairy_products Q8_categorization_Pasta__Rice__Oriental_Kitchen
Q8_categorization_Snacks__cookies_and_chips Q8_categorization_Personal_care__non_food
Q8_categorization_Other Q8_categorization_Baking_products__coffee
Q8_categorization_Softdrinks
(1.00=1.00) (SYSMIS=0.00) INTO Cat_FreshFish Cat_Fruit_Veg Cat_Cheese Cat_Dairy
Cat_Pasta_Rice_Oriental Cat_snacks Cat_Nonfood Cat_Other Cat_BakingCoffeeTea
Cat_Softdrinks.
VARIABLE LABELS Cat_FreshFish 'Category Fresh Fish' /Cat_Fruit_Veg 'Category Fruit and
Vegetables'
/Cat_Cheese 'Category Cheese' /Cat_Dairy 'Category Dairy' /Cat_Pasta_Rice_Oriental 'Category '+'
'Pasta, Rice and Oriental' /Cat_snacks 'Category snacks, cookies and chocolate' /Cat_Nonfood
'Category personal care and non-food' /Cat_Other 'Category Other' /Cat_BakingCoffeeTea
'Category '+'
'Baking products, Coffee and Tea' /Cat_Softdrinks 'Category Softdrinks'.
EXECUTE.
```

```
COMPUTE Category_Other=Cat_Fruit_Veg + Cat_Cheese + Cat_Dairy + Cat_Pasta_Rice_Oriental +
Cat_snacks + Cat_Nonfood + Cat_Other + Cat_BakingCoffeeTea + Cat_Softdrinks +
Cat_FreshFish.
EXECUTE.
```

```
COMPUTE Category_Meat= Category_fresh_meat + Category_meat_preserves.
EXECUTE.
```

```
FREQUENCIES VARIABLES = Category_Meat Category_Other Category_Meat_replacers
/ORDER=ANALYSIS.
```

```
RECODE Category_Meat (1=2).
RECODE Category_Other (1=3).
EXECUTE.
COMPUTE category_group=Category_Other + Category_Meat + Category_Meat_Replacers.
EXECUTE.
```

```
FREQUENCIES VARIABLES = Category_group
/ORDER=ANALYSIS.
```

***** C. Inferences.

```
FREQUENCIES VARIABLES=Q9_inferences_1 Q9_inferences_2 Q9_inferences_3
Q9_inferences_4
Q9_inferences_6 Q9_inferences_7 Q9_inferences_8 Q9_inferences_9 Q9_inferences_10
Q9_inferences_11
Q9_inferences_12 Q9_inferences_13 Q9_inferences_15 Q9_inferences_16 Q9_inferences_17
Q9_inferences_19
/ORDER=ANALYSIS.
```

*Missings are already taken into account, there are no missings.

*Recoding the inference variables in order to compute one inference variable ranging from -16 (meat-substitutes), 0 (hybrid product), 16 traditional meat).

```
RECODE Q9_inferences_1 (1.00=1.00) (2.00=-1.00) INTO Soft.
VARIABLE LABELS Soft 'Soft (meat)'.
EXECUTE.
RECODE Q9_inferences_2 (1.00=1.00) (2.00=-1.00) INTO Strong_flavor.
VARIABLE LABELS Strong_flavor 'Strong flavor (meat)'.
EXECUTE.
RECODE Q9_inferences_3 (1.00=1.00) (2.00=-1.00) INTO Saturated_feeling.
VARIABLE LABELS Saturated_feeling 'Saturated (both)'.
EXECUTE.
RECODE Q9_inferences_4 (1.00=1.00) (2.00=-1.00) INTO Tender.
VARIABLE LABELS Tender 'Tender (meat)'.
EXECUTE.
RECODE Q9_inferences_6 (1.00=-1.00) (2.00=1.00) INTO Dry.
VARIABLE LABELS Dry 'Dry (sub)'.
EXECUTE.
RECODE Q9_inferences_7 (1.00=-1.00) (2.00=1.00) INTO Fake.
VARIABLE LABELS Fake 'Fake (sub)'.
EXECUTE.
RECODE Q9_inferences_8 (1.00=1.00) (2.00=-1.00) INTO Protein.
VARIABLE LABELS Protein 'Protein (meat)'.
EXECUTE.
RECODE Q9_inferences_9 (1.00=-1.00) (2.00=1.00) INTO Layers.
VARIABLE LABELS Layers 'Layers (sub)'.
EXECUTE.
RECODE Q9_inferences_10 (1.00=-1.00) (2.00=1.00) INTO Crispy.
VARIABLE LABELS Crispy 'Crispy (sub)'.
EXECUTE.
RECODE Q9_inferences_11 (1.00=1.00) (2.00=-1.00) INTO Red.
VARIABLE LABELS Red 'Red (meat)'.
EXECUTE.
RECODE Q9_inferences_12 (1.00=-1.00) (2.00=1.00) INTO Granular.
VARIABLE LABELS Granular 'Granular (sub)'.
EXECUTE.
RECODE Q9_inferences_13 (1.00=-1.00) (2.00=1.00) INTO Precooked.
```

```
VARIABLE LABELS Precooked 'Precooked (sub)'.
EXECUTE.
RECODE Q9_inferences_15 (1.00=1.00) (2.00=-1.00) INTO Parts_of_animals.
VARIABLE LABELS Parts_of_animals 'Parts of animals (meat)'.
EXECUTE.
RECODE Q9_inferences_16 (1.00=1.00) (2.00=-1.00) INTO Fat.
VARIABLE LABELS Fat 'Fat (meat)'.
EXECUTE.
RECODE Q9_inferences_17 (1.00=-1.00) (2.00=1.00) INTO Man_made.
VARIABLE LABELS Man_made 'Man made (sub)'.
EXECUTE.
RECODE Q9_inferences_19 (1.00=1.00) (2.00=-1.00) INTO Juicy.
VARIABLE LABELS Juicy 'Juicy (meat)'.
EXECUTE.
COMPUTE Inferences=Soft + Strong_flavor + Saturated_feeling + Tender + Dry + Fake + Protein +
  Layers + Crispy + Granular + Precooked + Man_made + Red + Parts_of_animals + Fat + Juicy.
VARIABLE LABELS Inferences 'High=meat_Low=sub'.
EXECUTE.
FREQUENCIES VARIABLES=Inferences
  /ORDER=ANALYSIS.
```

```
RECODE Inferences(Lo THRU 1 = 0)(1 THRU 5 = 1) (5 THRU HI = 2) INTO Inferences3group.
EXECUTE.
FREQUENCIES Variables=Inferences3group.
```

**** D Attitude.

```
FREQUENCIES VARIABLES=Q10_attitude_CM_1 Q10_attitude_CM_2 Q10_attitude_CM_3
Q11_attitude_meat_1
  Q11_attitude_meat_2 Q11_attitude_meat_3 Q12_attitude_MS_1 Q12_attitude_MS_2
Q12_attitude_MS_3
  /ORDER=ANALYSIS.
```

* Missings are already taken into account.

* Factor analysis, principal axis factoring on the above items to see if there is one dimension.

```
FACTOR
  /VARIABLES Q10_attitude_CM_1 Q10_attitude_CM_2 Q10_attitude_CM_3
  /MISSING LISTWISE
  /ANALYSIS Q10_attitude_CM_1 Q10_attitude_CM_2 Q10_attitude_CM_3
  /PRINT INITIAL EXTRACTION
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PAF
  /CRITERIA ITERATE(25)
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

- * The factor analysis, principal axis factoring shows the items are explained by one factor.
- * Now a reliability analysis is conducted to look at the internal consistency of the items.

RELIABILITY

```
/VARIABLES=Q10_attitude_CM_1 Q10_attitude_CM_2 Q10_attitude_CM_3  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE CORR COV  
/SUMMARY=TOTAL MEANS.
```

- * Cronbach's alpha of .955
- * Now, a scale of these items by adding them can be computed.

```
COMPUTE Attitude_CM=MEAN(Q10_attitude_CM_1, Q10_attitude_CM_2, Q10_attitude_CM_3).  
EXECUTE.
```

- * For the second attitude measure meat, a factor analysis, principal axis factoring to see if there is one dimension.

FACTOR

```
/VARIABLES Q11_attitude_meat_1 Q11_attitude_meat_2 Q11_attitude_meat_3  
/MISSING LISTWISE  
/ANALYSIS Q11_attitude_meat_1 Q11_attitude_meat_2 Q11_attitude_meat_3  
/PRINT INITIAL EXTRACTION  
/PLOT EIGEN  
/CRITERIA MINEIGEN(1) ITERATE(25)  
/EXTRACTION PAF  
/CRITERIA ITERATE(25)  
/ROTATION NOROTATE  
/METHOD=CORRELATION.
```

- * The factor analysis, principal axis factoring shows the items are explained by one factor.
- * Now a reliability analysis is conducted to look at the internal consistency of the items.

RELIABILITY

```
/VARIABLES=Q11_attitude_meat_1 Q11_attitude_meat_2 Q11_attitude_meat_3  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE CORR COV  
/SUMMARY=TOTAL MEANS.
```

- * Cronbach's alpha of .949 with all three items and a alpha of .951 when the item Q11_attitude_meat_1 is deleted however since this is such a small increase and the alpha has such high internal consistency I decided to leave the variable in.
- * Now, a scale of these items by adding them can be computed.

```
COMPUTE Attitude_M=MEAN(Q11_attitude_meat_1, Q11_attitude_meat_2, Q11_attitude_meat_3).
EXECUTE.
```

* Also for the third attitude measure for meat-substitutes, a factor analysis, principal axis factoring to see if there is one dimension.

FACTOR

```
/VARIABLES Q12_attitude_MS_1 Q12_attitude_MS_2 Q12_attitude_MS_3
/MISSING LISTWISE
/ANALYSIS Q12_attitude_MS_1 Q12_attitude_MS_2 Q12_attitude_MS_3
/PRINT INITIAL EXTRACTION
/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PAF
/CRITERIA ITERATE(25)
/ROTATION NOROTATE
/METHOD=CORRELATION.
```

* The factor analysis, principal axis factoring shows the items are explained by one factor.

* Now a reliability analysis is conducted to look at the internal consistency of the items.

RELIABILITY

```
/VARIABLES=Q12_attitude_MS_1 Q12_attitude_MS_2 Q12_attitude_MS_3
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE CORR COV
/SUMMARY=TOTAL MEANS.
```

* Cronbach's alpha of .945 with all three items and a alpha of .948 when the item Q12_attitude_MS_1 is deleted however since this is such a small increase and the alpha has such high internal consistency I decided to leave the variable in.

* Now, a scale of these items by adding them can be computed.

```
COMPUTE Attitude_MS= MEAN(Q12_attitude_MS_1, Q12_attitude_MS_2, Q12_attitude_MS_3).
EXECUTE.
```

```
FREQUENCIES VARIABLES=Q10_attitude_CM_1 Q10_attitude_CM_2 Q10_attitude_CM_3
Attitude_MS Attitude_M Attitude_CM
/ORDER=ANALYSIS.
```

***** 2. Independent variables/ Manipulated conditions ***** .

**** A. Features of cultured meat

```
FREQUENCIES VARIABLES=Block2_DO_Q3_goal_meat sub Block2_DO_Q2_goal_meat
/ORDER=ANALYSIS.
```

*Missings are already taken into account, there are no missings.

*In order to see the differences between the hybrid condition and the one product condition, the three different conditions are recoded and merged into one dummy variable where hybrid is 1,00 and non-hybrid is 0,00.

```
RECODE Block1_DO_Q6_CM_M_MS (1.00=1.00) (SYSMIS=0.00) INTO
Condition_features_hybrid.
VARIABLE LABELS Condition_features_hybrid 'Condition features cultured meat'.
EXECUTE.
```

```
RECODE Block1_DO_Q5_CM_MS (1.00=2.00) INTO Condition_features_hybrid.
VARIABLE LABELS Condition_features_hybrid 'Condition features cultured meat'.
EXECUTE.
```

```
FREQUENCIES VARIABLES=Condition_features_hybrid
/ORDER=ANALYSIS.
```

```
RECODE Block1_DO_Q5_CM_MS (1.00=1.00) (SYSMIS=0.00) INTO Cond_MS.
EXECUTE.
RECODE Block1_DO_Q4_CM_M (1.00=1.00) (SYSMIS=0.00) INTO Cond_M.
EXECUTE.
RECODE Block1_DO_Q6_CM_M_MS (1.00=1.00) (SYSMIS=0.00) INTO Cond_hybrid.
EXECUTE.
```

```
FREQUENCIES VARIABLES= Cond_hybrid Cond_M Cond_MS
/ORDER=ANALYSIS.
```

***** B. Consumer goals

```
FREQUENCIES VARIABLES=Block1_DO_Q5_CM_MS Block1_DO_Q6_CM_M_MS
Block1_DO_Q4_CM_M
/ORDER=ANALYSIS.
```

*Missings are already taken into account, there are no missings.

*In order to work with the conditions, the two different conditions are recoded and merged into one dummy variable.

```
RECODE Block2_DO_Q2_goal_meat (1.00=1.00) (SYSMIS=0.00) INTO Condition_Goal.
VARIABLE LABELS Condition_Goal 'Condition goal meat vs. meat substitute'.
EXECUTE.
FREQUENCIES VARIABLES=Condition_Goal
/ORDER=ANALYSIS.
```

***** 3. Controle variables *****

```
FREQUENCIES VARIABLES=Q22_gender Q23_age Q24_residence Q24_residence_8_TEXT
Q25_employment
Q26_University Q26_University_6_TEXT Q27_device Q24_residence___Topics
/ORDER=ANALYSIS.
```

```
FREQUENCIES VARIABLES=Q13_neophobia_1_1 Q13_neophobia_1_2 Q13_neophobia_1_3
Q13_neophobia_1_4
Q13_neophobia_1_5 Q13_neophobia_1_6 Q13_neophobia_1_7 Q13_neophobia_1_8
Q13_neophobia_1_9
Q13_neophobia_1_10
/ORDER=ANALYSIS.
```

* To work with the variable of residence, this needs to be computed into a dummy variable of living in the city or living on the countryside.

```
FREQUENCIES VARIABLES= Q24_residence_8_TEXT Q24_residence
/ORDER=ANALYSIS.
```

*There are 58 respondents who only indicated their country of origin but did not indicate their in current city or village.

*Since there are too many different countries of origin (e.g. Asia, Europe, the US, Afrika) it would be meaningless to compute a variable of Dutch vs Other citizens.

```
FREQUENCIES VARIABLES= City_2 City_1
/ORDER=ANALYSIS.
```

*Missings are already taken into account, there are no missings.

*To help myself in the analysis I need to recode the variable gender into different numbers.

```
RECODE Q22_gender (1.00=0.00) (2.00=1.00) INTO Gender.
VARIABLE LABELS Gender 'Gender'.
EXECUTE.
```

*To help myself in the analysis I need to recode the variable age into groups.

```
RECODE Q23_age (Lowest thru 18.00=1.00) (18.01 thru 22.00=2.00) (22.01 thru 26.00=3.00) (26.01
thru
30.00=4.00) (30.01 thru Highest=5.00) INTO Age.
VARIABLE LABELS Age 'Age'.
EXECUTE.
```

* Since the variable device has different items with the same meaning I need to recode this.

* However since the categories tablet is really small and the questionnaire has the same layout on a tablet as on a mobile phone,

* I decided to add these to the phone category in order to say something about this control item for the category task.

* Additionally since there is only 1 person in the nothing category, i decided to exclude this respondent from the control analysis.

```
RECODE Q27_device ('Cellphone'=1.00) ('Iphone'=1.00) ('iPhone'=1.00) ('IPhone'=1.00)
('Mobiel'=1.00) ('Smartphone'=1.00) ('Phone Facebook'=1.00) ('Phone'=1.00) ('phone'=1.00)
('mobile os'=1.00) ('computer'=2.00) ('Computer'=2.00) ('Desktop'=2.00) ('imac'=2.00)
('laptop'=2.00) ('Laptop'=2.00) ('MacBook Pro'=2.00) ('PC'=2.00) ('pc'=2.00) ('Tablet'=1.00)
('nothing'=SYSMIS) INTO Device.
VARIABLE LABELS Device 'Device'.
EXECUTE.
```

```
FREQUENCIES VARIABLES= Device
/ORDER=ANALYSIS.
```

*To check whether device has an influence on the categorisation task a X2 test was done.

```
CROSSTABS
/TABLES=Device BY category_group
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ PHI LAMBDA CORR
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL RESID SRESID
/COUNT ROUND CELL
/BARCHART.
```

*The frequency of eating meat needs to be converted into 1=low meat consumption 7=high meat consumption

```
RECODE Q16_eating_meat (1.00=7.00) (2.00=6.00) (3.00=5.00) (4.00=4.00) (5.00=3.00)
(6.00=2.00)
(7.00=1.00) INTO Freqmeat.
VARIABLE LABELS Freqmeat 'Frequency meat consumption'.
EXECUTE.
```

```
FREQUENCIES VARIABLES=Freqmeat
/ORDER=ANALYSIS.
```

*To compute a measure of neophobia all variables should be in the same direction, therefore some of the neophobia items are recoded.

```
RECODE Q13_neophobia_1_2 Q13_neophobia_1_4 Q13_neophobia_1_5 Q13_neophobia_1_6
Q13_neophobia_1_7
(1.00=7.00) (2.00=6.00) (3.00=5.00) (4.00=4.00) (5.00=3.00) (6.00=2.00) (7.00=1.00) INTO
Neophobia_2_omgedraaid Neophobia_4_omgedraaid Neophobia_5_omgedraaid
Neophobia_6_omgedraaid
Neophobia_7_omgedraaid.
VARIABLE LABELS Neophobia_2_omgedraaid 'omgedraaid' /Neophobia_4_omgedraaid
'omgedraaid'
/Neophobia_5_omgedraaid 'Omgedraaid' /Neophobia_6_omgedraaid 'Omgedraaid'
```

```
/Neophobia_7_omgedraaid 'Omgedraaid'.  
EXECUTE.
```

```
FREQUENCIES VARIABLES=Q13_neophobia_1_1 Q13_neophobia_1_3 Q13_neophobia_1_8  
Q13_neophobia_1_9  
Q13_neophobia_1_10 Neophobia_2_omgedraaid Neophobia_4_omgedraaid  
Neophobia_5_omgedraaid  
Neophobia_6_omgedraaid Neophobia_7_omgedraaid  
/ORDER=ANALYSIS.
```

*Now all neophobia items are in the same direction and one neophobia scale can be computed.

```
FACTOR  
/VARIABLES Q13_neophobia_1_1 Q13_neophobia_1_3 Q13_neophobia_1_8 Q13_neophobia_1_9  
Q13_neophobia_1_10 Neophobia_2_omgedraaid Neophobia_4_omgedraaid  
Neophobia_5_omgedraaid  
Neophobia_6_omgedraaid Neophobia_7_omgedraaid  
/MISSING LISTWISE  
/ANALYSIS Q13_neophobia_1_1 Q13_neophobia_1_3 Q13_neophobia_1_8 Q13_neophobia_1_9  
Q13_neophobia_1_10 Neophobia_2_omgedraaid Neophobia_4_omgedraaid  
Neophobia_5_omgedraaid  
Neophobia_6_omgedraaid Neophobia_7_omgedraaid  
/PRINT INITIAL EXTRACTION  
/PLOT EIGEN  
/CRITERIA MINEIGEN(1) ITERATE(25)  
/EXTRACTION PAF  
/CRITERIA ITERATE(25)  
/ROTATION NOROTATE  
/METHOD=CORRELATION.
```

* The factor analysis, principal axis factoring shows the items are explained by one factor.

* Now a reliability analysis is conducted to look at the internal consistency of the items.

```
RELIABILITY  
/VARIABLES=Q13_neophobia_1_1 Q13_neophobia_1_3 Q13_neophobia_1_8  
Q13_neophobia_1_9  
Q13_neophobia_1_10 Neophobia_2_omgedraaid Neophobia_4_omgedraaid  
Neophobia_5_omgedraaid  
Neophobia_6_omgedraaid Neophobia_7_omgedraaid  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE CORR COV  
/SUMMARY=TOTAL MEANS.
```

* Cronbach's alpha of .953

* Now, a scale of these items by adding them can be computed.

```
COMPUTE Neophobia = MEAN(Q13_neophobia_1_1, Q13_neophobia_1_3, Q13_neophobia_1_8,
Q13_neophobia_1_9,
  Q13_neophobia_1_10, Neophobia_2_omgedraaid, Neophobia_4_omgedraaid,
Neophobia_5_omgedraaid,
  Neophobia_6_omgedraaid, Neophobia_7_omgedraaid).
```

*The last control variable that needed to be computed is the most important daytime activity.

*Since almost 70% of the respondents is student, it is most usefull to see wether there is a difference between students and non-students.

```
RECODE Q25_employment (3.00=1.00) (ELSE=0.00) INTO Student.
VARIABLE LABELS Student 'Student vs. Non student'.
EXECUTE.
```

```
FREQUENCIES VARIABLES= Neophobia Device Gender Student
/ORDER=ANALYSIS.
```

```
FREQUENCIES VARIABLES=Q19_food_allergies Q16_eating_meat
/ORDER=ANALYSIS.
```

*To check whether the allergies has an influence on the attitude towards cultured meat a regression was done.

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Attitude_CM
/METHOD=BACKWARD Q19_food_allergies Q16_eating_meat .
```

```
FREQUENCIES VARIABLES=Q17_animal_welfare Q18_environment
/ORDER=ANALYSIS.
```

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Attitude_CM
/METHOD=BACKWARD Q17_animal_welfare Q18_environment .
```

***** 4. ANALYSIS *****

*** Manipulation check - situation scenarios ****

* To work whit the items controlling the goal scenarios they must be recoded into dummy variables.

* Where 1, 2 and 3 are choosing the product and 0 not choosing this product.

```
RECODE Q20_vraag_M_1 (1.00=1.00) (2.00=0.00) INTO Q20_Kerst_CM.
EXECUTE.
RECODE Q20_vraag_M_2 (1.00=2.00) (2.00=0.00) INTO Q20_Kerst_M.
EXECUTE.
RECODE Q20_vraag_M_3 (1.00=3.00) (2.00=0.00) INTO Q20_Kerst_MS.
EXECUTE.
```

```
FREQUENCIES VARIABLES=Q20_Kerst_CM Q20_Kerst_M Q20_Kerst_MS Q20_vraag_M_1
Q20_vraag_M_2
Q20_vraag_M_3
/ORDER=ANALYSIS.
```

```
RECODE Q21_vraag_MS_1 (1.00=1.00) (2.00=0.00) INTO Q21_Friday_CM.
EXECUTE.
RECODE Q21_vraag_MS_2 (1.00=2.00) (2.00=0.00) INTO Q21_Friday_M.
EXECUTE.
RECODE Q21_vraag_MS_3 (1.00=3.00) (2.00=0.00) INTO Q21_Friday_MS.
EXECUTE.
```

```
FREQUENCIES VARIABLES=Q21_Friday_M Q21_Friday_MS Q21_Friday_CM
Q21_vraag_MS_1 Q21_vraag_MS_2 Q21_vraag_MS_3
/ORDER=ANALYSIS.
```

*In excel the variables are merged to compute four variables and see the differences in choice between the situational consumer goals .

*Now the four variables are added to the data set: .

*Q20_21_CM: The choice for cultured meat in both situational consumer goal .

*Q20_21_M: The choice for meat in both situational consumer goal .

*Q20_21_MS: The choice for meat substitutes in both situational consumer goal .

*Cond_goa: The situational consumer goal variable is now computed into a variable taking into account both conditions to ensure both groups are included.

```
FREQUENCIES VARIABLES=Q20_21_CM Q20_21_M Q20_21_MS Cond_goa
/ORDER=ANALYSIS.
```

*To see which consumer goals in combination with the presentation condition lead to the choice of products a X2 is conducted.

```
CROSSTABS
/TABLES=Q20_21_CM Q20_21_M Q20_21_MS BY Cond_goa
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.
```

* The first thing to consider is filtering vegetarians and vegans out of the main analysis.

FREQUENCIES VARIABLES=Q15_dietary_habits
/ORDER=ANALYSIS.

- * The written answers are checked for answer 4: other. One of the answers indicated that someone does not eat meat, this answer is added to the vegetarian group.
- * The remaining answers did not indicate that someone does not eat meat.
- * Therefore this answer category will be included with the group which does not have special dietary habits.

RECODE Q15_dietary_habits (1.00=1.00) (2.00=2.00) (3.00=2.00) (4.00=1.00).
EXECUTE.

*Now a filter can be computed and used for all main analysis.

USE ALL.
COMPUTE filter_\$(Q15_dietary_habits = 1.00).
VARIABLE LABELS filter_\$ 'Q15_dietary_habits = 1.00 (FILTER)'.
VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_\$ (f1.0).
FILTER BY filter_\$.
EXECUTE.

FILTER off.
EXECUTE.

*****HYPOTHESES TESTING*****

*Hypothesis 1 en 4: .

*First the non meat consumers have to be filtered out of the analyses.

USE ALL.
COMPUTE filter_\$(Q15_dietary_habits = 1.00).
VARIABLE LABELS filter_\$ 'Q15_dietary_habits = 1.00 (FILTER)'.
VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_\$ (f1.0).
FILTER BY filter_\$.
EXECUTE.

FREQUENCIES Perception_1_2.

*A unianova is done .

UNIANOVA Perception_1_2 BY Condition_features_hybrid Condition_Goal WITH Gender student
Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/INTERCEPT=INCLUDE
/PLOT=PROFILE(Condition_features_hybrid Condition_features_hybrid*Condition_Goal
Condition_Goal*Condition_features_hybrid)
/EMMEANS=TABLES(OVERALL)

```
/EMMEANS=TABLES(Condition_features_hybrid*Condition_Goal )
/EMMEANS=TABLES(Condition_features_hybrid) COMPARE ADJ(LSD)
/CRITERIA=ALPHA(.05)
/DESIGN= Condition_features_hybrid Condition_Goal Condition_features_hybrid*Condition_Goal
Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity .
```

```
UNIANOVA Q7_perception_3 BY Condition_features_hybrid Condition_Goal WITH Gender student
Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/PLOT=PROFILE(Condition_features_hybrid Condition_features_hybrid*Condition_Goal
Condition_Goal*Condition_features_hybrid)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(Condition_features_hybrid*Condition_Goal )
/EMMEANS=TABLES(Condition_features_hybrid) COMPARE ADJ(LSD)
/CRITERIA=ALPHA(.05)
/DESIGN= Condition_features_hybrid Condition_Goal Condition_features_hybrid*Condition_Goal
Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity .
```

```
UNIANOVA Q7_perception_1 BY Condition_features_hybrid Condition_Goal WITH Gender student
Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/PLOT=PROFILE(Condition_features_hybrid Condition_features_hybrid*Condition_Goal
Condition_Goal*Condition_features_hybrid)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(Condition_features_hybrid*Condition_Goal )
/EMMEANS=TABLES(Condition_features_hybrid) COMPARE ADJ(LSD)
/CRITERIA=ALPHA(.05)
/DESIGN= Condition_features_hybrid Condition_Goal Condition_features_hybrid*Condition_Goal
Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity .
```

```
UNIANOVA Q7_perception_2 BY Condition_features_hybrid Condition_Goal WITH Gender student
Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/PLOT=PROFILE(Condition_features_hybrid Condition_features_hybrid*Condition_Goal
Condition_Goal*Condition_features_hybrid)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(Condition_features_hybrid*Condition_Goal )
/EMMEANS=TABLES(Condition_features_hybrid) COMPARE ADJ(LSD)
/CRITERIA=ALPHA(.05)
/DESIGN= Condition_features_hybrid Condition_Goal Condition_features_hybrid*Condition_Goal
Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity .
```

```
FILTER off.
EXECUTE.
```


*Hypothesis 2:

*Again a filter is necessary.

```
USE ALL.
COMPUTE filter_$(Q15_dietary_habits = 1.00).
VARIABLE LABELS filter_$ 'Q15_dietary_habits = 1.00 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

```
FREQUENCIES VARIABLES=Q8_categorization_Fresh_meat Category_meat Category_group
/ BARCHART FREQ
/ ORDER=ANALYSIS.
```

*A X2 test is done to test whether whether meat categorisation is dependent from perception to be like meat or meat substitutes.

```
CROSSTABS
/ TABLES=Category_group BY Q7_perception_1
/ FORMAT=AVALUE TABLES
/ STATISTICS=CHISQ PHI LAMBDA CORR
/ CELLS=COUNT EXPECTED ROW COLUMN TOTAL RESID SRESID
/ COUNT ROUND CELL
/ BARCHART.
```

```
CROSSTABS
/ TABLES=Category_group BY Q7_perception_2
/ FORMAT=AVALUE TABLES
/ STATISTICS=CHISQ PHI LAMBDA CORR
/ CELLS=COUNT EXPECTED ROW COLUMN TOTAL RESID SRESID
/ COUNT ROUND CELL
/ BARCHART.
```

*A multinomial logistic regression is done to test the second hypotheses a and b, and see if the perception has an influence on this categorisation.

*A multinomial logistic regression is chosen since this analysis is able to predict the probability of category membership based on a dependent variable that has more than two nominal categories.

```
NOMREG category_group (BASE=2 ORDER=ASCENDING) WITH Q7_perception_1
Q7_perception_2 Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/ CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
SINGULAR(0.00000001)
/ MODEL
/ STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
```

```
/INTERCEPT=INCLUDE
/PRINT=CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI.
```

*In order to see if the level of hybridity has an effect on the categorisation the multinomial logistic regression is repeated with the .

*implicit ambivalent and direct measures of perception.

```
NOMREG category_group (BASE=2 ORDER=ASCENDING) WITH perception_1_2 Gender
student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
SINGULAR(0.00000001)
/MODEL
/STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT=INCLUDE
/PRINT=CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI.
```

```
NOMREG category_group (BASE=2 ORDER=ASCENDING) WITH Q7_perception_3 Gender
student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
SINGULAR(0.00000001)
/MODEL
/STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT=INCLUDE
/PRINT=CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI.
```

```
FILTER off.
EXECUTE.
```

*Hypothesis 3:

*Again a filter is needed.

```
USE ALL.
COMPUTE filter_$=(Q15_dietary_habits = 1.00).
VARIABLE LABELS filter_$ 'Q15_dietary_habits = 1.00 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

*A X2 test is done to test whether (meat) inferences are dependent from categorisation as meat and meat substitutes .

CROSSTABS

```
/TABLES=Inferences3group BY Category_group
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ CC PHI LAMBDA
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL SRESID BPROP
/COUNT ROUND CELL
/METHOD=EXACT TIMER(5).
```

* A regression analysis is done to test if inferences are dependent on the categorisation as meat and meat substitutes .

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Inferences
/METHOD=ENTER Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
/METHOD=ENTER Category_Meat Category_Meat_Replacers.
```

FILTER off.

EXECUTE.

*Hypothesis 5:

* I will include an interaction effect of attitude towards meat and the inferences .

* Before doing so, both variables need to be centered in order to meet the criteria of multicollinearity.

DESCRIPTIVES inferences Attitude_M

/STATISTICS=MEAN STDDEV VARIANCE MIN MAX SEMEAN .

Aggregate

```
/Attitude_M_mean = MEAN(Attitude_M)
/Attitude_MS_mean = MEAN(Attitude_MS)
/Inferences_mean = MEAN(Inferences).
EXECUTE.
```

COMPUTE Attitude_M_cent = Attitude_M - Attitude_M_mean.

COMPUTE Attitude_MS_cent = Attitude_MS - Attitude_MS_mean.

COMPUTE Inferences_Cent = Inferences - Inferences_mean.

*Since the variables are now centred, they can be computed into the interaction effects.

COMPUTE Meat_inf_inter_Cent = Attitude_M_Cent*Inferences_Cent.

COMPUTE MeatSub_inf_inter_Cent = Attitude_MS_Cent*Inferences_Cent.

EXECUTE.

**** The filter for non-meat consumers is needed.

```
USE ALL.
COMPUTE filter_$=(Q15_dietary_habits = 1.00).
VARIABLE LABELS filter_$ 'Q15_dietary_habits = 1.00 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

* A regression is done to test if the attitude towards cultured meat is dependent from the attitude towards meat, meat substitutes and inferences.

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Attitude_CM
/METHOD=ENTER Gender student Q19_food_allergies Freqmeat Neophobia Age Q14_familiarity
Q17_animal_welfare Q18_environment
/METHOD=ENTER Attitude_M Attitude_MS Inferences
/METHOD=ENTER Meat_inf_inter_Cent MeatSub_inf_inter_Cent.
```

```
FILTER off.
EXECUTE.
```

***** ADDITIONAL ANALYSES *****

*****NON-MEAT CONSUMERS INCLUDED*****

All main analyses are repeated but now including vegetarians and vegans.

* Hypothesis 1 en 4:

```
UNIANOVA Perception_1_2 BY Condition_features_hybrid Condition_Goal WITH Gender student
Q19_food_allergies Neophobia Age Q14_familiarity Q15_dietary_habits
/INTERCEPT=INCLUDE
/PLOT=PROFILE(Condition_features_hybrid Condition_features_hybrid*Condition_Goal
Condition_Goal*Condition_features_hybrid)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(Condition_features_hybrid*Condition_Goal )
/EMMEANS=TABLES(Condition_features_hybrid) COMPARE ADJ(LSD)
/CRITERIA=ALPHA(.05)
/DESIGN= Condition_Goal Condition_features_hybrid Condition_features_hybrid*Condition_Goal
Gender student Q19_food_allergies Neophobia Age Q14_familiarity Q15_dietary_habits .
```

*Hypothesis 2:

CROSSTABS

```
/TABLES=Category_Meat BY Q7_perception_1
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ PHI LAMBDA CORR
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL RESID SRESID
/COUNT ROUND CELL
/BARCHART.
```

```
NOMREG category_group (BASE=2 ORDER=ASCENDING) WITH Q7_perception_1
Q7_perception_2 gender Gender student Q19_food_allergies Neophobia Age Q14_familiarity
Q15_dietary_habits
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
SINGULAR(0.00000001)
/MODEL
/STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT=INCLUDE
/PRINT=CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI.
```

```
NOMREG category_group (BASE=2 ORDER=ASCENDING) WITH perception_1_2 gender Gender
student Q19_food_allergies Neophobia Age Q14_familiarity Q15_dietary_habits
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
SINGULAR(0.00000001)
/MODEL
/STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT=INCLUDE
/PRINT=CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI.
```

```
NOMREG category_group (BASE=2 ORDER=ASCENDING) WITH Q7_perception_3 Gender
student Q19_food_allergies Neophobia Age Q14_familiarity Q15_dietary_habits
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
SINGULAR(0.00000001)
/MODEL
/STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT=INCLUDE
/PRINT=CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI.
```

*Hypothesis 3:

CROSSTABS

```
/TABLES=Inferences3group BY Category_group  
/FORMAT=AVALUE TABLES  
/STATISTICS=CHISQ CC PHI LAMBDA  
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL SRESID BPROP  
/COUNT ROUND CELL  
/METHOD=EXACT TIMER(5).
```

REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT Inferences  
/METHOD=ENTER Gender student Q19_food_allergies Neophobia Age Q14_familiarity  
Q15_dietary_habits  
/METHOD=ENTER Category_Meat Category_Meat_Replacers .
```

*Hypothesis 5:

```
SORT CASES BY Inferences3group.  
SPLIT FILE LAYERED BY Inferences3group.
```

CORRELATIONS

```
/VARIABLES=Attitude_CM Attitude_M Attitude_MS  
/PRINT=TWOTAIL NOSIG  
/MISSING=PAIRWISE.
```

```
SPLIT FILE OFF.  
EXECUTE.
```

REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT Attitude_CM  
/METHOD=ENTER Gender student Q19_food_allergies Neophobia Age Q14_familiarity  
Q15_dietary_habits  
/METHOD=ENTER Attitude_M Attitude_MS Inferences  
/METHOD=ENTER Meat_inf_inter_Cent MeatSub_inf_inter_Cent.
```

*****ADDITION MODERATION*****

**Additional moderating effect of the experimental factors (goals and presentation) on the attitude of cultured meat.

* I will include the interaction effect used in the analysis of the first and fourth hypothesis : goals * presentation.

* However to work with the Hayes Process it is necessary that all variables names are shorter than 8 characters, therefore the included variables need to be recoded.

```
RECODE Condition_features_hybrid (1.00=1.00) (0.00=0.00) (2.00=2.00) INTO Con_ft.  
VARIABLE LABELS Con_ft 'Condition features hybrid'.  
EXECUTE.
```

```
RECODE Condition_Goal (1.00=1.00) (0.00=0.00) INTO Con_goal.  
VARIABLE LABELS Con_goal 'Condition consumer goals'.  
EXECUTE.
```

```
COMPUTE Att_CM=MEAN(Q10_attitude_CM_1, Q10_attitude_CM_2, Q10_attitude_CM_3).  
EXECUTE.
```

```
FREQUENCIES VARIABLES=Con_goal Con_ft Att_CM  
/ORDER=ANALYSIS.
```

*Moreover, because it concerns categorical data we need to compute an interaction term.

```
COMPUTE ftxgoal= Condition_Goal * Condition_features_hybrid.  
EXECUTE.
```

*Now a Hayes Process regression may be done (since this does not paste to syntax, the output of this test may be found in appendix 6).

* I will do the test without vegetarians since

```
REGRESSION  
/MISSING LISTWISE  
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT Attitude_CM  
/METHOD=ENTER Gender student Q19_food_allergies Neophobia Age Q14_familiarity  
Q17_animal_welfare Q18_environment  
/METHOD=ENTER Condition_features_hybrid Condition_Goal  
/METHOD=ENTER ftxgoal.
```

*****A Hayes process test is runned*****.

DATA LIST FREE/

Con_ft Con_goal Att_CM .
BEGIN DATA.

-,9919	-,5122	3,8162
,0081	-,5122	3,7765
1,0081	-,5122	3,7368
-,9919	,4878	3,9252
,0081	,4878	3,5297
1,0081	,4878	3,1342

END DATA.

GRAPH/SCATTERPLOT=

Con_ft WITH Att_CM BY Con_goal .

*****ADDITIONAL inferences * att group *****

RECODE Attitude_CM = (Lowest thru 2.4 =1.00) (2.5 thru 5.5=2.00) (5.6 thru Highest=3.00) INTO
Att_group_CM.
EXECUTE.

RECODE Inferences3group (1.00=1.00) (2.00=2.00) (3.00=1.00) INTO Inferences2group.
VARIABLE LABELS Inferences2group 'Inferences hybrid vs single product'.
EXECUTE.

CROSSTABS

/TABLES=Att_group_CM BY Inferences2group
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ CC PHI LAMBDA
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL SRESID BPROP
/COUNT ROUND CELL .