The Meat Paradox Unravelled

Investigating the Role of Morality

in the Meat Paradox

MSc Thesis

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Abstract

Many consumers enjoy eating meat while they disapprove harming animals. The aim of the current study was to investigate this meat paradox with a focus on the role of morality. Based on existing literature, a model for the formation of an attitude towards meat consumption was developed to shed light upon the emergence of the meat paradox. A questionnaire was developed based on previous research and cross-sectional research was conducted among 289 respondents to validate the proposed model. To analyse the gathered data, (multiple) regression analyses as well as a multinomial logistic regression analysis were conducted. It appeared that the paradox exists of a conflict between the positive evaluation of the functional and sensory aspects of meat consumption and the negative evaluation of the moral impact of meat consumption. These positive and negative evaluations together form the attitude towards meat consumption, which in turn predicts meat consumption behaviour. The perceived importance of the moral impact of meat consumption appeared to be increased by the moral position that animals have in the mind of the consumer, as well as the degree of association between meat and its animal origin. Future research regarding the role of association between meat and animals in the meat paradox is recommended.

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Preface

This thesis is part of the Master's programme Management, Economics & Consumer Studies at Wageningen University & Research, and is written in the Marketing & Consumer Behaviour group. By writing this thesis, I have learned a lot about the topic of the meat paradox specifically as well as about conducting quantitative research in general. Throughout the five months of writing this thesis I have remained motivated and eager to learn, which made it a very valuable and rewarding part of my Master's programme. When starting to write my thesis I was guided by Prof.dr.ir. Hans van Trijp, and after I finalised my proposal Dr.ir. Arnout Fischer took over. I want to thank both of them for their valuable input and time, as well as Dr. Ynte van Dam for being the second reviewer. Furthermore, I would like to thank all respondents who took the time and effort to participate in my survey.

Introduction

It is common knowledge that the consumption of meat requires the slaughtering of animals. However, many consumers enjoy eating meat, while they disapprove harming animals. Research conducted by Holm & Møhl (2000), shows that consumers show concern for all stages of the production process, as well as un unease about eating dead animals in ethical terms. Regardless of this concern, only a fraction (4%) of the Dutch population refrains from eating meat (De Waart, 2018).

The internal conflict between the enjoyment of meat consumption on the one hand, and the concern and feeling of unease on the other, is often referred to as the meat paradox (Loughnan et al, 2010). This paradox exists because people may simultaneously have both positive and negative evaluations towards meat consumption (Berndsen & Van der Pligt, 2004).

Whereas the positive evaluations of meat consumption might be based on the evaluation of the perceived taste and nutritional value of meat (Berndsen & Van der Pligt, 2004), the negative evaluations might be caused by moral tension associated with eating animals (Loughnan et al, 2014). The concept of morality can be defined in many ways, but generally speaking it concerns the distinction between right or wrong behaviour (Oxford Dictionaries, 2018).

One method of coping with the meat paradox, is by changing consumption behaviour. Moral vegetarians do so by refraining from eating meat driven by moral concern for animals (Loughnan et al, 2014). However, the majority of the Dutch population does consume meat. How do they deal with the meat paradox? Research by Bilewicz et al (2011) and Loughnan et al (2010) suggests moral disengagement as a way to do so: by denying animals certain emotions and the capacity to suffer, the consumption of meat is not seen as an immoral act. As a result, the moral tension when consuming meat is reduced.

It appears that within the meat paradox, the positive and negative evaluations of meat consumption are in conflict. It remains however unclear how the different evaluations relate to each other and why the positive evaluations of meat consumption outweigh the negative evaluations for some people, while it is the other way around for others.

So far, most studies on the meat paradox have focused mainly on coping mechanisms to resolve the paradox. In the existing literature, the ethical aspect of the meat paradox is underexposed. The aim of the current study is to provide insight in the different evaluations of meat consumption and their relation to the meat paradox, with a focus on this ethical aspect. To do so, the aim is to answer the following research question:

How does the perception of meat consumption relate to the meat paradox in the mind of the consumer, and what is the role of morality?

This question will be answered by developing a model for the analysis of the meat paradox, based on existing literature. Furthermore, the proposed model will be validated and tested through cross-sectional quantitative research.

Theoretical Background

1 Attitude towards Meat Consumption

Different consumers have different attitudes towards meat consumption. Before investigating these differences, it is of importance to build a clear understanding of the formation of attitudes in general. To do so, a general model for the formation of an attitude will be discussed, before developing a model for the formation of an attitude towards meat consumption specifically.

Although many different definitions of attitudes are present in the literature, in general an attitude can be defined as a person's evaluation of the entity in question. This entity can be a certain target, action, context, time, or a combination of two or more of those elements (Ajzen & Fishbein, 1977). According to the Correspondence Principle suggested by Ajzen & Fishbein (1977), the relationship between behaviour and attitude is largely dependent on the degree of correspondence between attitudinal and behavioural entities. Within the present research, a model is therefore suggested for the formation of an attitude towards the *behaviour of meat consumption,* as this attitude is expected to be a predictor of actual meat consumption behaviour.

According to the Theory of Planned Behaviour (Ajzen, 1991), the relationship between attitude and behaviour is mediated by intention. Behaviour is predictable from attitude, only if there is a high correlation between intention and behaviour (Ajzen & Fishbein, 1977). However, as the focus of the present study is more on the formation of an attitude towards meat consumption than it is on the behaviour resulting from this, the mediating role of intention of (refraining from) meat consumption is beyond the scope of this research and will not be further investigated.

Behaviour is not only influenced by the attitude towards the behaviour, but also by the perceived behavioural control and subjective norm. Perceived behavioural control consists of an individual's confidence in their ability to perform the behaviour in question, and the subjective norm of the perceived social pressure to perform or not to perform the behaviour (Ajzen, 1991). Povey et al (2001) conducted research about those two factors regarding the decision to refrain from meat consumption. Perceived behavioural control was assessed and it appeared that perceived behavioural control can successfully predict intentions. The same study shows that the subjective norm is not a significant predictor of intentions to adopt a vegetarian diet (Povey et al, 2001).

Multiple studies suggest the inclusion of moral norm into the Theory of Planned Behaviour (Ajzen, 1991; Conner & Armitage, 1998; Godin & Kok, 1996; Raats et al, 1995). Moral norms are regarded as the individual's perception of correctness or incorrectness of performing a behaviour (Conner & Armitage, 1998). Based on the Norm Activation Model as proposed by Schwartz (1977), it is suggested that the moral norm is based on the perceived consequences of the behaviour. That is, as the individual's perception of correctness or incorrectness of the behaviour can only be determined if the individual is aware of the consequences of the behaviour (De Groot & Steg, 2009). According to De Groot & Steg (2009), the moral norm affects behaviour and intention. Research conducted by Raats et al (1995) shows that moral considerations do not only influence intention, but also have an independent predictive effect on attitudes. Within the present research, this predictive effect of moral norms on attitude is focused on. The subjective norm and perceived behavioural control are beyond the scope of this research and will therefore not be further elaborated on.

1.1 General Model

An attitude towards a behaviour consists of the summary evaluation of the entity in question. Within the present research, the entity in question is meat consumption behaviour. In the case of an attitude towards a behaviour, the evaluation is based on a consideration of gains and losses resulting from the considered behaviour (Janis & Mann, 1977). Within this research, these gains and losses resulting from the considered behaviour are referred to as the outcomes of the behaviour.

Apart from the sum of the evaluations of the outcomes, the weight of each of these evaluations needs to be considered. This weight is reflected by the perceived importance of each evaluation. Multiple models have been designed to predict consumer attitudes based on the function of importance (β) and evaluation (*e*) of different outcomes (Mazis et al, 1975). Building on those models, the following general model was formulated:

$$A_0 = \sum_{i=1}^{n} \beta_i e_i$$

In which:
A_0 = an individual's attitude towards a behaviour
β_i = importance of outcome i for the person
e_i = the individual's evaluation of the behaviour with regard to outcome i
n = number of outcomes

Based on this general model for the formation of an attitude towards a behaviour, a model for the formation of an attitude towards meat consumption will be developed.

1.2 Perception of Meat Consumption

To design a model for the formation of an attitude towards meat consumption, the different outcomes of meat consumption that are at play need to be identified. As there are many different outcomes of meat consumption that can be evaluated, the outcomes are summarised into three components that are suggested to form the attitude towards meat consumption: the utilitarian, hedonic, and moral component.

It has been widely recognised that consumer attitudes consist of distinct utilitarian and hedonic components (Batra & Ahtola, 1991). The utilitarian component consists of the perception of the usefulness or beneficiality of the behaviour, whereas the hedonic component is the experiential effect that is associated with the behaviour (Batra & Ahtola, 1991). Based on the suggestion by Raats et al (1995), that moral considerations have a predictive effect on attitudes, a third component is added to the model for the formation of an attitude towards meat consumption: the moral component. By adding this component, the role of morality in the perception of meat consumption can be investigated.

Within the current study, the utilitarian component is referred to as the perceived functional value (PFV) of meat consumption, the hedonic component as the perceived sensory value (PSV) of meat consumption, and the moral component as the perceived moral impact (PMI) of meat consumption.

Perceived Functional Value

The perceived functional value of meat consumption is the degree to which the consumer believes that meat consumption has a positive outcome in terms of functionality. This for instance contains the extent to which the consumer perceives meat consumption as necessary for gaining strength. A study conducted by Lea & Worsley (2001), shows that (especially for older consumers) the perceived healthiness and nutritional value of meat consumption is a main predictor for meat consumption behaviour.

Perceived Sensory Value

The perceived sensory value is the degree to which the consumer appreciates the sensory outcomes of meat consumption, being for instance pleasure that is experienced as a result from sensory aspects such as the taste and tenderness of meat (Grunert et al, 2004; Hirschman & Holbrook, 1982). From the study conducted by Worsley & Skrzypiec (1998), it appeared in the case of red meat this appreciation is a major positive attitude factor. Also Lea & Worsley (2003) report that enjoyment of eating meat is the primary motivation for meat consumption.

Perceived Moral Impact

Worsley & Skrzypiec (1998) refer to the appreciation factor and dietary factor as self-related factors. However, they also found an important nonself-related factor: animal welfare. This factor negatively influenced attitude towards red meat. Within the current research, this nonself-related factor is summarised into the perceived moral impact (PMI) of meat consumption, which is seen as the consumer's perception of the ethics and impact of meat consumption on animals. According to Holm & Møhl (2000), consumers show concern for the impact of all stages of the production process, as well as un unease about eating dead animals in ethical terms.

1.3 Model for Attitude towards Meat Consumption

Based on the categorisation of the perception of meat consumption into the evaluation of the three perceived outcomes, the following model for formation of an attitude towards meat consumption is suggested:

$$\hat{A}_{Meat\ Consumption} = \beta_1 PFV + \beta_2 PSV - \beta_3 PMI + \beta_0$$

β_1 = perceived importance of PFV
PFV = summary evaluation of the outcomes of perceived functional value
β_2 = perceived importance of PSV
PSV = summary evaluation of the outcomes of perceived sensory value
β_3 = perceived importance of PMI
PMI = summary evaluation of perceived moral impact
β_0 = arbitrary constant

Within this model, $\beta_3 PMI$ is noted as negative because it is expected that the relationship between PMI and attitude towards meat consumption is negative: a high perceived moral impact is expected to result in a low attitude score.

From this equation the model below (Figure 1) follows. PFV and PSV are expected to positively affect attitude, whereas PMI is expected to have a negative effect on attitude towards meat consumption. Within the model, the attitude towards meat consumption leads to the meat consumption behaviour, which is seen as the frequency of meat consumption. A higher (i.e. more positive) attitude towards meat consumption is hypothesised to result in a higher frequency of meat consumption.

Figure 1: Research Model H1-4

H1: There is a positive relationship between PFV and attitude towards meat consumption.
H2: There is a positive relationship between PSV and attitude towards meat consumption.
H3: There is a negative relationship between PMI and attitude towards meat consumption.
H4: There is a positive relationship between attitude towards meat consumption and meat consumption behaviour.

2 The Meat Paradox

The model provides a framework for the analysis of the formation of attitudes towards meat consumption. However, it does not yet provide insight in the meat paradox: enjoy eating meat while disapproving to harm animals (Loughnan et al, 2010). This internal conflict is elaborated on by investigating the paradox itself as well as ways of coping with it.

2.1 The Meat Paradox as a Social Dilemma

Within one attitude, there may be a conflict between positive and negative associations regarding the attitude object (Van Harreveld et al, 2015). Within the specific case of the meat paradox, the associations that are in conflict are related to different interests: short term self-interest and long-term collective interest.

Short term self-interest serves the consumption goals of the consumer, whereas long-term collective interest serves the sustainability goals (Van Dam & Van Trijp, 2016). Within the proposed model, PMI serves long-term collective interest, as it is about the impact on animals. PFV and PSV, on the other hand, serve short term self-interest, as nutritional and sensory value of meat consumption only has impact on the self within a limited amount of time.

The conflict between PFV and PSV on the one hand and PMI on the other can be seen as a specific case of a social dilemma. Within sociology, social dilemmas are broadly defined as 'the conflict between egoistic, self-serving desires and the common good' (Schroeder, 1995, p.1). In the suggested model, PFV and PSV are 'egoistic, self-serving desires' whereas PMI represents the 'the common good'.

$$\hat{A}_{Meat\ Consumption} = \beta_0 + \underbrace{\beta_1 PFV + \beta_2 PSV}_{\text{Short-term self-interest}} - \underbrace{\beta_3 PMI}_{\text{Long-term collective interest}}$$

Rozin (1996) also recognises this internal conflict regarding meat consumption: "High appeal to the human palate and excellent short-term nutritional value are pitted against concerns about (…) the immoral treatment of animals" (p.24). According to Liebrand et al (1992) "(…) we often assign higher priority to our own short-term interests than to the interests of others or to longer-term considerations" (p. vii). This explains the findings of Holm & Møhl (2000), which suggest that consumers who have ethical concerns about the production and consumption of meat, may still consume meat on a daily basis.

When referring to the proposed research model, the meat paradox thus takes place in the red circle as depicted in Figure 2.
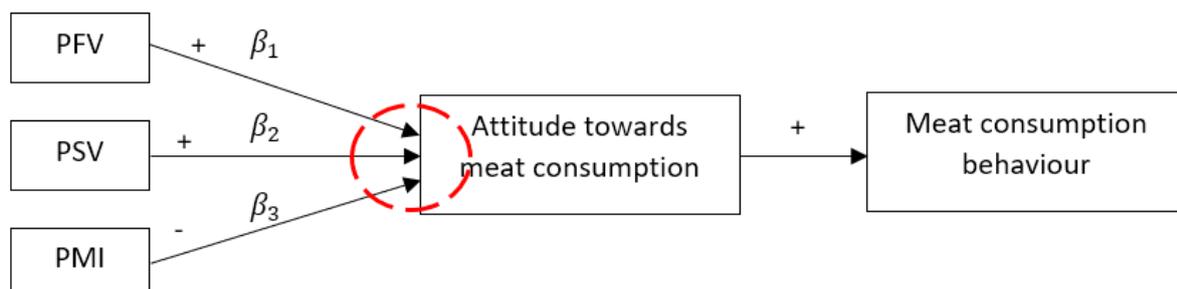
Figure 2: Research model depicting internal conflict

In the meat paradox, short-term self-interest does not undoubtedly outweigh long-term collective interest or vice versa: there is a conflict between the two interests. Within the equation below, the meat paradox is reflected. The left side of the equation represents short-term self-interest, whereas the right side represents collective interest.

$$\beta_1 PFV + \beta_2 PSV \approx \beta_3 PMI$$

The internal conflict of the meat paradox is not always subjectively experienced as a conflict (Loughnan et al, 2010). However, it may result in experienced ambivalence, as found by Berndsen & Van der Pligt (2004). Thus, the conflict as discussed within this section is in first instance implicit and does not necessarily result in experienced conflict.

3 Moderating Effects on Perceived Moral Impact

In the suggested model, the perceived importance of PMI relative to the importance of PFV and PSV may result in an internal conflict. To gain further insight in the meat paradox it is therefore of importance to identify how the perceived importance of PMI is affected.

To create a deeper understanding of the perceived importance of PMI regarding animals, individual differences in the perception of animals are zoomed in upon. It is suggested that the importance of the perceived moral impact of meat consumption is related to these individual differences.

3.1 Anthropomorphism

One of the factors that the importance of PMI is expected to be dependent upon, is the position that animals have in the mind of the consumer. This position is suggested to depend on the degree to which animals are perceived as similar to humans. Within the literature, the phenomenon of attribution of humanlike characteristics to nonhuman agents such as animals, is referred to as anthropomorphism (Waytz et al, 2010).

Research shows that secondary emotions such as shame and sorrow are perceived to be uniquely human, whereas primary emotions such as anger and fear are perceived to be non-uniquely human (Demoulin et al, 2004). Bilewicz et al (2011) build on these findings by comparing meat-eaters and non-meat-eaters in their ascription of primary and secondary emotions to humans and animals. It appears that non-meat-eaters ascribe more secondary emotions to animals than meat-eaters do, and that the latter make a sharper distinction between human and animalistic characteristics.

Loughnan et al (2010) also found different perceptions of animals in the minds of different consumers. In their research, participants' moral concern for animals was measured after eating either dried beef or nuts. It appeared that eating beef reduced moral concern for animals in general and the perceived moral status of the cow. Also, it indirectly reduced the ascription of mental states that are necessary to experience suffering (Loughnan et al, 2010).

Thus, it seems that meat-eaters and non-meat-eaters differ in the degree to which animals are perceived as similar to humans. This perceived similarity appears to be closely related to the moral position that the animal has in the mind of the consumer (Loughnan et al, 2010). To create a deeper understanding of the link between anthropomorphism and the moral position of animals in the mind of the consumer, the moral continuum is introduced.

3.1.1 The Moral Continuum

Within the current research, the perceived moral position of animals is seen as the degree to which animals' own interests matter for their own sake (Jaworska & Tannenbaum, 2013). This moral position is closely related to the perceived capability of animals to feel pain (Plous, 1993). It is that principle – the perceived ability to feel pain, or the *sentience* of the animal – that distinguishes moral from non-moral beings in the mind of humans. As Jeremy Bentham (1789/1823) stated: 'The question is not: can they *reason*? Nor: can they *talk?* But: can they *suffer?* (p. 311)'

However, the moral position of animals is more complex than merely the distinction between moral and non-moral beings. The moral value an animal has in the mind of the consumer, can vary from the ascription of solely instrumental value on the one hand to inherent dignity on the other. The four different moral positions should be regarded as positions on a continuum as presented in Figure 3, rather than as the only four options (Meijboom, 2012).
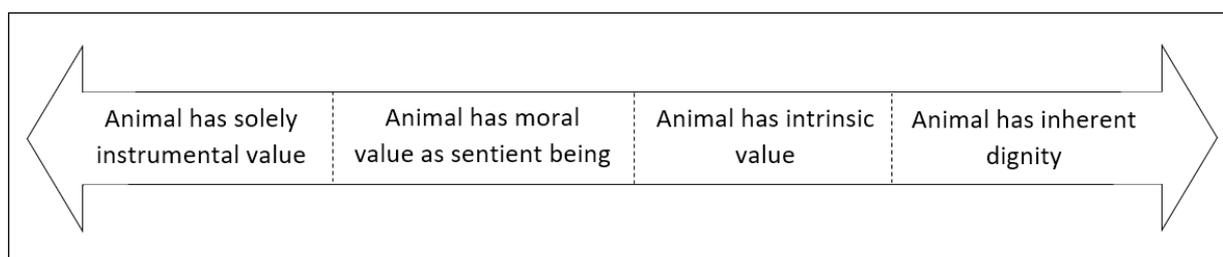
| Animal has solely instrumental value | Animal has moral value as sentient being | Animal has intrinsic value | Animal has inherent dignity |

Figure 3: Continuum of moral positions of animals

Convictions about animals are deeply rooted in the belief system of humans. However, most of the convictions about animals are ambiguous, as they do not apply to all animals, all the time. Furthermore, it should be recognised that there can be a difference between the theoretical form and practical form of the convictions. To create a better understanding of the theoretical point of departure of moral convictions regarding animals, the moral positions that animals can take in the mind of the consumer are linked to ethical theories within the present study (Cohen et al, 2009).

Instrumental Value

The position on the far left of the continuum, is the view that animals have solely instrumental value, and thus no moral value at all. Within this view, the animal is seen as a means rather than an end, and the only value it has is its practical value. Therefore, animal suffering only matters if it for instance has consequences for efficiency of production, and not if it only has consequences for the interests of the animal itself (Meijboom, 2012). This view builds on the ethical theory of *contractualism*. Within this theory, morality is seen as an imaginary contract between rational agents. Thus, morality is a human construction, which is created by humans (Carruthers, 1992). Animals are assumed to act solely on instinct and can therefore not hold any sort of potential to think rationally (Sanders, 2016) and are thus not seen as rational agents. Therefore, they are not granted direct moral status (Rowlands, 1997) or rights. That is, if the animals are not the object to sentimental interest of others. Animals that people care about, such as a pet cat or dog, will be protected because of the sentimental interest of people. For farm animals, however, no or little sentimental interest is present. As a result, the pain that those animals might feel is not seen as wrong, even though this pain may be real (Regan, 1987).

Moral Value as Sentient Being

The ascription of moral value as a sentient being to an animal, starts with the acknowledgement of the ability of an animal to consciously experience pain and pleasure. A person with this view acknowledges similarities in the central nervous system of humans and animals. Because of this notion, the value of animals is never reduced to the practical value they have for humans. Therefore, animals should be taken seriously as an end rather than a means and the value of their happiness should be maximised. This line of reasoning builds on the ethical theory of *utilitarianism*, in which the total happiness of all of those involved - both humans and animals - should be maximised. Within utilitarianism, nothing is rejected purely out of principle, but always as a result of a careful consideration of the maximisation of total happiness (Meijboom, 2012). In this careful consideration, the principle of equality applies: everyone's interests count, and similar interests have similar weights. The individual does not have value, but only the interest that the individual has, has value. The act that will result in the best balance between satisfaction and frustration for everyone affected by the outcome, is the act that one ought to do (Regan, 1987).

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Intrinsic Value

The ascription of intrinsic value to animals seems similar to the ascription of moral value as sentient being. In both views, the interests of the animal should be taken into account in ethical considerations. However, the main difference is the reason to do so: within the previous position, in the consideration only the value of the interest of the animal is taken into account. Within the position of intrinsic value, the animal itself has intrinsic moral value. In this view, not only animal welfare is important, but also respect for the integrity of the animal. Apart from similarities in the central nervous system, also conscience and awareness of the future are ascribed to animals in this view (Meijboom, 2012). This line of reasoning builds on the ethical theory of *deontology*. Deontology is a moral theory that guides and assesses what humans ought to do. This means that some choices are morally forbidden regardless of their morally good consequences. Within deontology, a choice is only right if it is according the moral norm (Alexander & Moore, 2007). Whereas the consideration made in the previously discussed utilitarian view is about maximising total happiness, the consideration made in deontology is a trade-off between different duties. Within this consideration, the weight of different duties at stake are assessed. When both options are seen as morally forbidden, the option of which the duty has the heaviest weight will be the outcome of this consideration. Contrary to the utilitarian view, within deontology this outcome is still seen as wrong in this case.

Inherent Dignity

On the far right of the continuum, inherent dignity is ascribed to animals. Within this view, animals are seen as the subject of their own life, and as morally equal to humans. It is within this context that the subject of animal rights is discussed: animals need rights to protect their inherent dignity (Meijboom, 2012). This line of reasoning also builds on deontology. However, within this view, the 'wrong' of treating animals as resources is more stringent due to the inherent dignity ascribed to animals. A consumer who ascribes inherent dignity to animals and is consistent in his behaviour, should follow a strictly vegan diet. According to Tom Regan, one of the first philosophers to apply deontology to animals (Davidson, 2017), it is morally wrong to treat animals as our resources in any situation (Regan, 1987). More specifically: "Being kind to animals is not enough. Avoiding cruelty is not enough. Housing animals in more comfortable, larger cages is not enough. Whether we exploit animals to eat, to wear, to entertain us, or to learn, the truth of animal rights requires empty cages, not larger cages. (Regan, 2004, p.10)".

3.1.2 The Moderating Effect of Anthropomorphism

From the moral continuum it follows that the moral position of animals is closely related to anthropomorphism: the more humanlike characteristics are attributed to animals, the higher their moral status. It is suggested that increased anthropomorphic convictions result in an increased perceived importance of moral impact of meat consumption of animals.

Within the suggested research model, anthropomorphism is thus expected to have a moderating effect on the relationship between PMI and attitude towards meat consumption (see Figure 4). This is a positive effect as an increase in anthropomorphism is suggested to result in an increase in β_3.
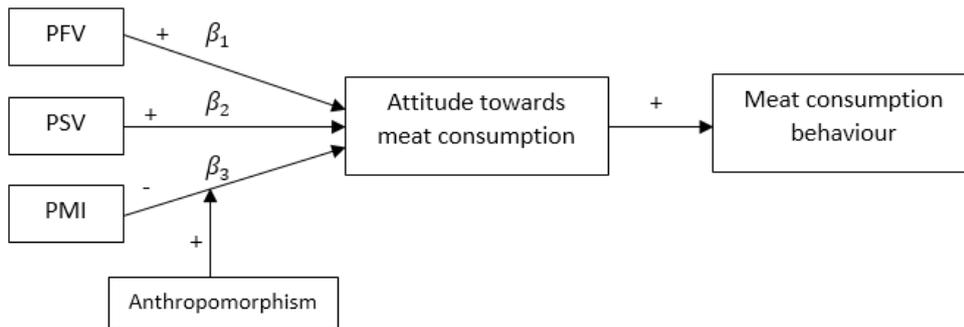
Figure 4: Research model including H5a

H5a: There is a positive relationship between anthropomorphism and perceived importance of PMI

3.2 Perceived Association between Meat and Animals

The moderating relationship hypothesised in H5a suggests that the perception of meat consumption is related to the perception of live animals. However, research shows that often meat is dissociated from its animal origin and that confronting consumers with the live animal in a meat advertisement reduces the willingness to eat meat (Kunst & Hohle, 2016). According to Plous (1993), many people have difficulties consuming meat that resembles the live animal.

Hoogland et al (2005) suggest that this view is accommodated by the fact that in our modern society, packaged meat in the supermarket does not necessarily remind us of the animal that it comes from. Furthermore, the dissociation between meat and the live animal is enhanced by the use of euphemistic language when talking about meat consumption (Bilewicz et al, 2011), such as the use of the word beef instead of cow. The study conducted by Kunst & Hohle (2016) even shows that replacing the word beef by cow on a menu increases disgust and reduces willingness to eat meat. Moreover, the production process of meat is kept out of sight through the remoteness of slaughterhouses and intensive farming operations from rural areas (Plous, 1993).

The study conducted by Kunst & Hohle (2016) shows that dissociating meat from its animal origin reduces empathy and ultimately increases meat consumption. It is therefore suggested that there is a positive relationship between association between meat and animals, and the perceived importance of the moral impact of meat consumption. Thus, the second factor upon which the importance of PMI is expected to be dependent, is the association between meat and animals (see Figure 5).
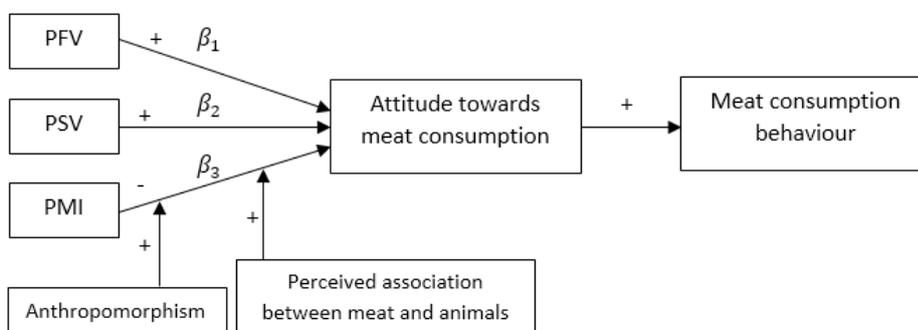

Figure 5: Research model including H5b

H5b: There is a positive relationship between association between meat and animals and perceived importance of PMI

4 Coping with the Meat Paradox

The meat paradox, thus the consumption of meat while being also concerned about animal welfare, is a specific case of cognitive dissonance (Loughnan, 2010): an unpleasant psychological state which is the result of a behaviour that is in conflict with a belief (Jonas et al, 2000).

Cognitive dissonance is present when someone decides to consume meat regardless of their moral concerns. More specifically, a consumer who values animal welfare may still consume meat because of its nutritional value or good taste. In this case, the behavioural decision was made based on short-term self-interest and was therefore not in line with beliefs about long-term collective interest.

Festinger (1962) states that cognitive dissonance is a motivating state of affairs, impelling a person to reduce the internal inconsistency. Dissonance can be alleviated by altering one of the inconsistent elements: the behaviour or the attitude (Festinger, 1962). Within the current research, both strategies for dissonance reduction are elaborated on.

As consumers may not always experience the meat paradox subjectively as a conflict (Loughnan et al, 2010), it is assumed that consumers are not engaged in coping with the paradox at all times. Furthermore, within the present study it is assumed that consumers experiencing the meat paradox may apply different coping mechanisms in different situations.

4.1 Altering Meat Consumption Behaviour

A way of alleviating dissonance with regard to meat consumption, is by altering the meat consumption behaviour. To fully eliminate the cognitive dissonance, some consumers totally refrain from eating meat. These consumers cope with the internal conflict by turning into moral vegetarians (Loughnan et al, 2014). The process that precedes this decision, is called moralisation. With moralisation, activities that used to be morally neutral, acquire a moral component. Through this process, preferences turn into values. In comparison to preferences, values are more central to the self and more internalised (Rozin et al, 1997).

Rozin et al (1997) state that through moralisation, meat consumption is turned from a liked into a disliked or even disgusting entity. Also Graça et al (2015) state that moralisation closely related to disgust, which is an emotional aversion against (the thought of) eating a certain food (Rozin & Fallon, 1987). Recruitment of disgust reduces temptation and promotes withdrawal from the food in this case (Rozin & Singh, 1999).

It can thus be stated that moralisation of meat consumption results in a highly negative attitude towards meat, in which PMI is the decisive factor. This is in line with H3, in which it is suggested that there is a negative relationship between PMI and attitude towards meat consumption. The result of moralisation of meat consumption is reflected in the equation below.

$$\beta_1 PFV + \beta_2 PSV < \beta_3 PMI$$

However, it is suggested that consumers may also alter they behaviour less radically in order to reduce dissonance, by adopting a flexitarian diet. Through a modest consumption of meat, and only from animals that have had good living conditions, an omnivorous diet can be seen as morally legitimate (Ursin, 2016). According to Ursin (2016), such a position can meet the ethical challenges involved in the meat paradox, as it is sensitive to the ethics of human-animal relations and the psychological conflict of eating meat. Within the current study, flexitarians are defined as consumers that make active decisions about reducing their meat consumption (Dagevos & Voordouw, 2013).

4.2 Altering Attitude: Moral Disengagement

Dissonance can also be reduced by altering the perspective of a situation, which can be done through moral disengagement. Moral disengagement is a process of cognitive restructuring of inhumane behaviour as morally acceptable (Bandura, 1999).

Bandura (1999) defines three factors that can be restructured in order to morally disengage: the behaviour itself, the effects of the behaviour, and the victims of the behaviour. Research conducted by Graça et al (2015) shows the different types of moral disengagement regarding meat consumption. Behaviour is reframed by claiming for instance that meat is necessary, and the effects of meat consumption are reframed by failing to acknowledge consequences of meat production on for example animal welfare. The last type of moral disengagement, reframing the victims of the behaviour, animals in this case, was also shown in the research. An example of this type of disengagement is the claim made by respondents: "Livestock animals serve the purpose of meat extraction. (Graça et al, 2015)"

The focus of the present study is on this last type of moral disengagement. Reframing the victims of the behaviour, the animals in this case, can be done through dehumanisation: dispossessing them from humanness, makes it easier to engage in inhumane behaviour against them (Bandura, 1999). Multiple studies suggest this form of moral disengagement as a dissonance reduction strategy with regard to meat consumption (Bilewicz et al, 2011; Loughnan et al, 2010; Graça et al, 2015).

Bilewicz et al (2011) suggest that meat-eaters engage in moral disengagement as they seek a justification for killing animals. Dehumanizing animals and perceiving them as primitive, makes it legitimate to kill them for human consumption. Loughnan et al (2010) provide a similar explanation: if the moral value of the animal is reduced, killing them is not a moral issue and therefore meat consumption is not problematic. Graça et al (2015) see this strategy as a way in which meat consumption can be justified and therefore endure.

Moral disengagement through dehumanisation of animals decreases the perceived similarity between humans and animals, and therefore decreases anthropomorphism. As increased anthropomorphism is assumed to increase the perceived importance of PMI, it can be stated that moral disengagement decreases the perceived importance of PMI. By denying moral status to animals, the consumption of meat does not involve any moral issue and it can therefore be stated that PMI decreases or even disappears from the model. As a result, cognitive dissonance does no longer exist as no social dilemma is present.

Another way in which the victims of meat consumption behaviour can be reframed, is by dissociating meat from its animal origin. Kunst & Hohle (2016) found that this form of moral disengagement is a powerful way to avoid cognitive dissonance resulting from the meat paradox. As increased association between meat and animals is suggested to increase the perceived importance of PMI, it can be stated that this form of moral disengagement also decreases the perceived importance of PMI.

Both ways of moral disengagement by reframing the victims of the behaviour, are suggested to decrease the weight of PMI and therefore result in the equation below.

$$\beta_1 PFV + \beta_2 PSV > \beta_3 PMI$$

Through moral disengagement, the internal conflict regarding meat consumption is avoided. Therefore, the following is suggested:

H6: There is a negative relationship between moral disengagement and internal conflict regarding meat consumption.

This moral disengagement may consist of a low level of anthropomorphism and/or a low level of association between meat and animals. Therefore, H6 is broken down into the following hypotheses:

H6a: There is a positive relationship between anthropomorphism and internal conflict regarding meat consumption

H6b: There is a positive relationship between association between meat and animals and internal conflict regarding meat consumption.

Furthermore, it is suggested that through moral disengagement, the attitude towards meat consumption can be kept high, and as a result meat consumption behaviour can endure (Graça et al, 2015). Therefore, the following hypothesis is formulated:

H7: There is a positive relationship between moral disengagement and attitude towards meat consumption

This moral disengagement may consist of a low level of anthropomorphism or a low level of association between meat and animals. Therefore, H6 is broken down into the following hypotheses:

H7a: There is a negative relationship between anthropomorphism and attitude towards meat consumption

H7b: There is a negative relationship between association between meat and animals and attitude towards meat consumption

The model including H7a and H7b is depicted in Figure 6.
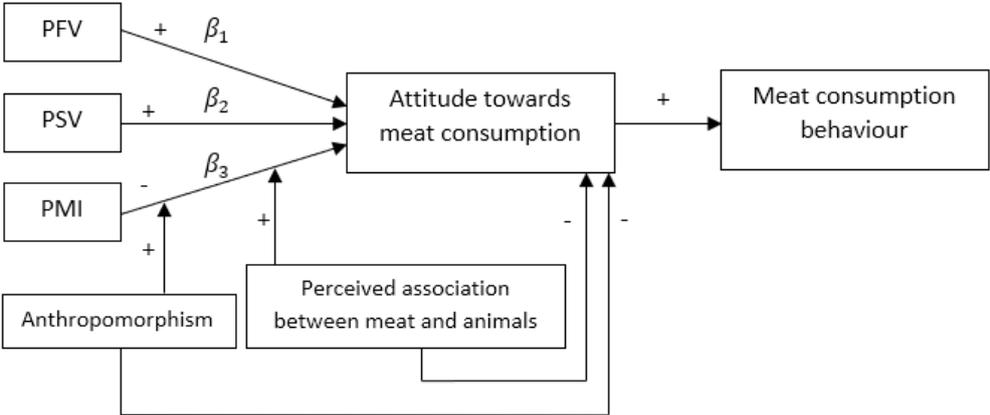
Figure 2: Research model including H7

4.3 Unconcerned Meat Consumers

Although the meat paradox is a widely held phenomenon within the study of consumer behaviour, it must be recognised that not every consumer experiences this paradox. It is assumed that there are also consumers that have a less conflicting attitude towards meat. For them, the importance of PFV and PSV outweigh that of PMI, meaning that for them the model is non-compensatory: it is not necessary to make a trade-off between different attributes (Foerster, 1979). According to Berndsen & van der Pligt (2004), these consumers generally hold a positive attitude towards meat. Research aimed at segmentation of meat consumers shows that these consumers, with a low concern for animal welfare and a high focus on attributes such as taste and quality, are the heaviest meat consumers (Vanhonacker et al, 2007; Meuwissen et al, 2007). Within the present research, these consumers are referred to as the unconcerned meat consumers. The equation below applies to these consumers.

$$\beta_1 PFV + \beta_2 PSV > \beta_3 PMI$$

Methodology

To validate the proposed model, cross-sectional research was conducted: the meat paradox was analysed by measuring perceptions, attitudes and behaviours regarding meat consumption at a specific point in time. By doing so, the proposed correlations were tested in order to be able to answer the following research question:

How does the perception of meat consumption relate to the meat paradox in the mind of the consumer, and what is the role of morality?

Population & Sample

The research population consists of Dutch consumers that make their own decision about meat consumption. Thus, Dutch consumers above the age of 18 were targeted for this research. As the aim of the research was to identify different thinking patterns rather than to draw conclusions about the population, it was not necessary to draw a representative sample of this population. For the present research, the target was to gather 30 respondents per hypothesis, thus 30*7 = at least 210 respondents.

The research was conducted through a questionnaire in the online Qualtrics tool. A purposive sampling method was used: on social media, different types of consumers were targeted by distributing the questionnaire in groups for vegans as well as groups for meat consumers.

Pre-test

A pre-test was conducted with 15 respondents that were known to have divergent consumption behaviours. They were be selected based on their consumption behaviour and asked to complete the questionnaire. The aim of this pre-test was to determine whether the values of the independent variables are sufficiently dispersed among the respondents with different consumption behaviours, as well as to test the understandability and flow of the questions.

Materials

In the questionnaire, multiple-choice questions were used to retrieve demographic information and information about meat consumption behaviour. The rest of the questionnaire consisted of questions to be answered on Likert scales or Semantic Differential scales. The scales used in the questionnaire were developed based on existing literature. For consistency throughout the questionnaire, all scales have been transformed into 9-point scales.

The questionnaire (in English) can be found in Appendix 1. For this research the questionnaire was held in Dutch, as only Dutch-speaking consumers were targeted. For the Dutch questionnaire, as distributed to the respondents, please refer to Appendix 2.

Measures

For each of the scales, Cronbach's α was calculated to assess their internal consistency. For the measures with sufficient internal consistency, a construct was created by calculating the mean of the items on the scale. The different measures and their Cronbach's α are discussed below.

Evaluations of Meat Consumption

Perceived functional value of meat consumption was measured on a 2-item 9-point Likert scale (1 = strongly disagree, 5=neutral, 9=strongly agree) regarding the perceived healthiness and nutritional

value of meat consumption, retrieved from Berndsen and Van der Pligt (2004), with a Cronbach's α of .81. Perceived sensory value was measured on a 2-item 9-point Likert scale regarding the perceived taste and enjoyment of meat consumption, combined from Berndsen and Van der Pligt (2004) and Lea & Worsley (2003). This scale has a Cronbach's α of .83. Perceived moral impact was measured on a 3-item 9-point Likert scale regarding the ethics and impact of meat consumption on animal welfare, retrieved from Berndsen and Van der Pligt (2004), with a Cronbach's α of .86.

In the proposed model, β_1 β_2 and β_3 are suggested to be determined by the perceived importance of each of the evaluations. Although the values of β_1 β_2 and β_3 were be calculated through multiple regression analysis, the perceived importance of each of the evaluations was included separately in the questionnaire as an extra measure. The 9-point Likert scales to measure this, were developed based on the scales used to measure the evaluations. The question started with "to what extent is it important that your food…", followed by two items regarding PFV (Cronbach's α = .77), two items regarding PSV (Cronbach's α = .84) and two items regarding PMI (Cronbach's α = .88).

Internal Conflict

The internal conflict between self-interest and collective interest, thus between PFV and PSV on the one side and PMI on the other, was measured by calculating implicit ambivalence as suggested by Kaplan (1972). This ambivalence index can be calculated through:

$$P + N - |P - N|$$

In this formula, P represents the positive component of the attitude, and N represents the negative component. For the internal conflict regarding meat consumption, the formula consists of a self-interest component ($\frac{PFV+PSV}{2}$) and a collective interest component (PMI). The following formula thus applies:

$$Implicit\ Conflict = \frac{PFV+PSV}{2} + PMI - |\frac{PFV+PSV}{2} - PMI|$$

Based on this calculation, the scale for implicit conflict ranges from 2 (minimum conflict) to 18 (maximum conflict). The conflict measured through Kaplan's ambivalence index is an implicit conflict, thus not necessarily subjectively experienced by the consumer. Additionally, experienced conflict was measured on a 2-item 9-point Semantic Differential scale retrieved from Priester and Petty (1996), consisting of the sentence "towards the issue of eating meat I feel…" which needed to be finished regarding conflict (no conflict at all - maximum conflict) and indecision (no indecision at all - maximum indecision). The Cronbach's α of this scale was .33. Due to this low internal consistency, it was decided not to create a construct for these items. Experienced conflict and experienced indecision are thus treated as two separate measures.

Attitude towards Meat Consumption

The attitude towards meat consumption was measured through a 5-item 9-point Semantic Differential scale. Respondents were asked to rate their attitude towards meat consumption on a 9-point scale on the following scales: 'bad–good', 'unpleasant–pleasant', 'against– for', 'unfavourable–favourable', 'negative–positive'. These five items have been retrieved from the study conducted by Berndsen and Van der Pligt (2004) and have a Cronbach's α of .97.

Anthropomorphism

Anthropomorphism was measured through a 4-item 9-point Likert scale retrieved from De Jonge and Van Trijp (2013). This scale consists of statements regarding the degree to which free will, emotion, individual temperament and a mind of their own are attributed to production animals. Additionally, an 8-item 9-point Likert scale has been created to measure the perceived moral position of animals. The 8 statements regarding moral positions have been developed based on the cited paper of Meijboom (2012). After data collection, all items were recoded into the same direction (high score represents high anthropomorphism), after which it was decided to omit the statement "If production animals have had a good life, I think it is okay for us to use them for consumption", as this statement was considered to be conceptually distinct from the other statements, and it decreased internal consistency of the scale. The remaining 11-item scale has a Cronbach's α of .88.

Perceived Association between Meat and Animals

The perceived association between meat and animals was measured on a 3-item 9-point Likert scale. Two statements to measure this variable have been developed based on the study conducted by Kunst & Hohle (2016): "The first thing I think about when confronted with meat, is the living animal it originates from" and "When I eat meat, I do not think about the life of the animal I am eating". This second statement was altered from the original statement "When I eat meat, I *try* not to think about the life of the animal I am eating". This alteration was made because the original statement appeared to be confusing in combination with the other statements during the pre-test. The third statement was retrieved from Rothgerber (2013): "I do not like to think about where the meat I eat comes from". One statement was added to measure the association between meat and animals in general: "I do not associate meat with living animals".

After data collection all items were recoded into the same direction (high score represents high association between meat and animals) after which it was decided to omit the statement "I do not like to think about where the meat I eat comes from", as this statement appeared to decrease the internal consistency of the scale. The Cronbach's α for the scale with the remaining three items was .67, which was considered sufficient as all three items appeared to be moderately positively correlated to each other (r varied between .41 and .55). Thus, a construct for association between meat and animals was created based on these three items.

During data collection, it appeared that the statement "When I eat meat, I do not think about the life of the animal I am eating" needed a "not applicable" option for respondents that do not consume meat. This option was added after 39 respondents had already completed the questionnaire. As a result, their answers to this statement were lost. For these 39 respondents, the score for association between meat and animals was based on the remaining two items.

Meat Consumption Behaviour

Meat consumption behaviour was measured through multiple choice questions. Respondents were asked how they categorise their meat consumption behaviour (vegan/vegetarian, flexitarian, meat consumer without restrictions). After each category, a brief explanation was provided. A control question has been added in which the respondent is asked for their average frequency of meat consumption per week.

Demographics

Demographic information was gathered through an open question regarding age and a multiple-choice question regarding gender.

Control Variables

Apart from moral reasons regarding animal welfare, consumers may also adopt a vegetarian diet because of environmental- or religious reasons (De Waart, 2018). Those two factors may thus affect attitude towards meat consumption but are not included within PFV, PSV and PMI as they are beyond the scope of this research. Therefore, perceived impact of meat consumption on the environment and religious convictions regarding meat consumption were added as control variables. The evaluation of perceived impact of meat consumption of the environment was tested through a single item 9-point Likert scale retrieved from Bernden & Van der Pligt (2004). Also, the impact of meat consumption on the environment has been added to the 9-point Likert scale testing the perceived importance of the evaluations. The evaluation of religious convictions regarding meat consumption was tested through a single item 9-point Likert scale measuring the degree to which religion forbids the consumption of (certain types of) meat. Also, the evaluation of religious convictions regarding meat consumption has been added to the 9-point Likert scale testing the perceived importance of the evaluations.

Data Analysis

Perception of meat consumption and attitude towards meat consumption were measured on 9-point scales and are regarded as continuous variables. Thus, the proportion of variance in attitude explained by PFV, PSV and PMI were be determined through multiple regression analysis. This way, H1, H2 and H3 were tested.

The dependent variable (DV), meat consumption behaviour, was measured through self-classification as vegan/vegetarian, flexitarian or unrestricted meat consumer. The DV is thus a categorical variable. The relationship between attitude and meat consumption behaviour (H4) was therefore analysed using multinomial logistic regression. The outcome variable has three categories (vegan/vegetarian, flexitarian, unrestricted meat consumer) and one predictor (attitude towards meat consumption). The reference category in this analysis was vegan/vegetarian as this category represents 0 meat consumption whereas the other two do represent some form of meat consumption. As a second check, regression analysis with attitude towards meat consumption as independent variable (IV) and frequency of meat consumption as DV was conducted.

As perceived importance of PMI was measured in two ways, H5 was tested in two ways. First, hierarchical multiple regression analysis was used by adding the interaction term PMI*anthropomorphism for H5a, and PMI*perceived association between meat and animals for H5b, to the model used for testing H1-3. Second, regression analysis was conducted to test the relation between anthropomorphism and perceived importance of PMI, and between association between meat and animals and perceived importance of PMI.

H6 and H7 were both tested through regression analysis. For H6a, anthropomorphism was used as IV and for H6b association between meat and animals was used as IV. For H6, two analyses were carried out per sub-hypothesis: one with implicit conflict as DV and one with explicit conflict as DV. For H7, attitude was used as DV and one analysis per sub-hypothesis was carried out: anthropomorphism was used as IV for H7a, and association between meat and animals for H7b.

For all regression analyses, the unstandardized B was reported as all conducted regression analyses test the relationship between variables that were measured on 9-point Likert or Semantic Differential scales. Thus, a 1-point increase in the IV can be compared to a similar increase/decrease in the DV.

Procedure

Respondents received a link to the questionnaire in the Qualtrics tool. When they clicked on the link, they first read an introduction that provided them with information such as the expected duration of the survey, the purpose for which the information will be used, and the fact that their data will be processed anonymously. Furthermore, they were be thanked for their time.

The survey started with the questions about demographics, as these questions are the most general and allowed the respondents to 'settle into' the survey. When looking at the proposed research model, the order of the questions asked was from left to right in the model. Thus, after the demographics, questions about PFV, PSV, PMI were asked. The questions about these three evaluations were all included in one scale. On the next page, the importance of the evaluations was asked for. On the next page, respondents were asked to rate their association between meat and animals, after which they arrived at the scale for anthropomorphism and perceived moral position of animals. On that page, respondents were informed that the animals they should keep in mind when answering these questions are production animals such as cows, pigs and chickens.

After the anthropomorphism scale, respondents were asked to give their opinion about meat consumption on the Semantic Differential scales, which were all presented on one page. Finally, respondents were asked about their meat consumption behaviour in terms of self-classification as vegan/vegetarian, flexitarian or meat consumer without restrictions, as well as in terms of frequency of meat consumption per week. Respondents finalised the survey by indicating whether they had any additional comments or questions (no/yes, namely: …) after which they arrived at the final page on which they were thanked for their participation.

This order of questions is chosen as it is of importance to gather responses on the separate evaluations that are as unbiased as possible. By starting with questions about the separate evaluations before asking about the actual meat consumption behaviour, respondents are expected to be least motivated to justify their indicated behaviour in the questions about their evaluations of meat consumption.

Results

Descriptive Statistics

Data were gathered between 12 and 22 June 2018. In total 396 persons participated in the survey. Only the data of respondents that completed more than 50% of the survey were used, which led to a sample of 297 respondents. After filtering out respondents with an age below 18, the sample consisted of 289 respondents of which 94 male, 192 female and 3 other/do not wish to share. The share of vegans/vegetarians, flexitarians and unrestricted meat consumers was somewhat equal (33.9%, 33.2%, 31.8% respectively). For the remaining descriptive statistics, see Table 1.

	Mean	Standard deviation
PFV	5.22	2.39
PSV	5.80	2.65
PMI	5.90	2.48
Implicit conflict	7.39	3.09
Experienced conflict	5.69	2.90
Attitude (N=286)	4.50	2.72
Anthropomorphism	6.65	1.47
Association	7.08	2.43
Frequency meat consumption per week	4.72	4.76

Table 1: Descriptive statistics of the sample (N=289)

For an overview of the correlations between all tested variables, see Table 2. Based on this table, it can be stated that it is likely that hypotheses 1-4 will be confirmed. Also, anthropomorphism and association between meat and animals show a strong correlation with the different types of conflict (H6) and attitude (H7), as well as with self-reported importance of perceived moral impact (H5a and H5b). Furthermore, it appears that there is no correlation between implicit and experienced conflict, while there is between implicit conflict and indecision. After this exploration of the correlations between variables, the hypotheses will be tested.

	PFV	PSV	PMI	Importance PFV	Importance PSV	Importance PMI	Attitude	Consumption	Anthropo-morphism	Association	Implicit conflict	Experienced conflict	Experienced indecision
PFV	1												
PSV	.78**	1											
PMI	-.79**	-.80**	1										
Importance PFV	-.20**	-.14*	.09	1									
Importance PSV	.00	.17**	-.07	.30**	1								
Importance PMI	-.43**	-.40**	.46**	.33**	.15*	1							
Attitude	.81**	.81**	-.88**	-.14*	.03	-.49**	1						
Consumption (freq.)	.70**	.71**	-.71**	-.15*	.04	-.43**	.81**	1					
Anthropomorphism	-.64**	-.63**	.71**	.16**	.03	.54**	-.76**	-.65**	1				
Association	-.55**	-.60**	.61**	.16**	.09	.50**	-.66**	-.59**	.66**	1			
Implicit conflict	.28**	.37**	.04	-.14*	-.12*	-.12*	.13*	.12*	-.15**	-.31**	1		
Experienced conflict	-.57**	-.55**	.66**	.16**	-.08	.40**	-.70**	-.59**	.59**	.46**	.08	1	
Experienced indecision	.12*	.23**	-.08	.01	-.09	-.05	.13*	.12*	-.10	-.29**	.46**	.20**	1

** = Correlation is significant at the .01 level (2-tailed)

* = Correlation is significant at the .05 level (2-tailed)

Table 2: Correlation Matrix – Pearson correlations between all variables

Hypotheses Testing

Hypotheses 1 – 3: Relations between Evaluations and Attitude

A multiple regression analysis was conducted to predict attitude towards meat consumption (DV) based on PFV, PSV and PMI (IV). A significant regression equation was found (F(3,282)=429.73, P<.001) with an R^2 of .82. Based on the analysis, the hypothesised positive relationship between PFV and attitude (t(282)=4.89, P<.001, β=0.25) and PSV and attitude (t(282)=4.70, P<.001, β=0.22) and the negative relationship between PMI and attitude (t(282)=-11.47, P<.001, β=-0.58) have been confirmed (see Table 3).

	β	95% Confidence Interval	
		Lower Bound	Upper Bound
PFV	0.25	0.15	0.35
PSV	0.22	0.13	0.31
PMI	-0.58	-0.68	-0.48

Table 3: Multiple Regression Analysis H1-3

H4: There is a positive relationship between attitude towards meat consumption and meat consumption behaviour

To test H4, a multinomial logistic regression analysis was conducted with attitude towards meat consumption as IV and self-classification of meat consumption behaviour as DV. This model appeared to be significant, and attitude thus appeared to be a significant predictor of meat consumption behaviour (χ^2(2)=379.05, P<.001, Nagelkerke Pseudo-R^2=.83).

The analysis showed, that compared to being a vegan/vegetarian, the chance of being a flexitarian increases 9.8 times and the chance of being an unconcerned meat consumer increases 23.7 times for each 1-unit increase in attitude towards meat consumption. Furthermore, the chance of being a meat-eater increases 2.4 times compared to being a flexitarian for every one-unit increase in attitude towards meat consumption. Thus, H4 is confirmed: a higher (i.e. more positive) attitude towards meat consumption is related to increased (self-classification of) meat consumption behaviour.

As a second test, the relationship between attitude (IV) and self-reported average frequency of meat consumption per week (DV) was tested through a regression analysis. It has been found that attitude is a significant predictor of frequency of meat consumption (F(1,284)=557.26, P<.001, R^2=.66). A significant positive relationship was found, with β=1.42: for every 1 point increase in attitude, frequency of meat consumption increases by 1.42 occasions per week. Thus, increased attitude towards meat consumption is related to increased frequency of meat consumption. This, again, confirms H4.

Hypotheses 5a and 5b: Effects on the Perceived Importance of PMI

The self-reported perceived importance of the three evaluations (PFV, PSV, PMI) were measured and the results (Table 4) show that the ratio between the means of these three variables is 1.00 : 1.02 : 1.01. It can thus be stated that the means of the self-reported importances are somewhat equal.

	Mean	Standard deviation	95% Confidence Interval	
			Lower Bound	Upper Bound
Importance PFV	7.58	1.13	7.45	7.72
Importance PSV	7.74	1.13	7.61	7.88
Importance PMI	7.68	1.56	7.50	7.86

Table 4: Importance of PFV, PSV, PMI

The perceived importance of each of the evaluations is suggested to be also depicted by the identified β_1, β_2 and β_3. These identified β's need to be compared to the self-reported perceived importance of the evaluations, to assess whether the relationships as suggested in H5a and H5a can be tested based on both measures. It seems that this is not the case, as the β's found for PFV, PSV and PMI in the multiple linear regression are 0.25, 0.22, and -0.58 respectively. As can be seen from the confidence intervals for these β's (Table 3), the absolute importance of PMI differs significantly from that of PFV and PSV.

However, multicollinearity appears to be present between PFV, PSV and PMI (VIF 3.2, 3.3, 3.4 respectively). When looking at the zero-order correlation of each of the evaluations with attitude towards meat consumption (Table 2), β's of 0.81, 0.81 and -0.88 are found for PFV, PSV and PMI respectively. The ratio between these β's is 1.00 : 1.00 : 1.09, which is comparable to that of the mean perceived importance of PFV, PSV and PMI.

Based on this comparability, H5a and H5b are tested in two ways. First, the moderating effect is tested by adding the interaction terms PMI*Anthropomorphism and PMI*Association to the model as discussed in H1-3 ("Test based on Interaction Terms"). Second, the relationship between anthropomorphism and association between meat and animals on the one hand and perceived importance of PMI on the other hand is tested ("Test based on Self-reported Perceived Importance").

Test based on Interaction Terms

Table 5 shows the results of the hierarchical multiple regression analysis was conducted, in which the interaction terms were added in the second step of the analysis (F_{Change}(4,278)=17.84, P<.001). Adding the interaction terms resulted in an R^2 change of .037. To minimise the risk of multicollinearity, the grand mean centering method was used. As the values of the interaction terms as well as the main effects were centered, the main effects of Anthropomorphism and Association are interpretable. These main effects will be further elaborated on in the results of H7.

	β	t	Significance (P-value)
PFV	0.18	3.82	.000
PSV	0.18	4.02	.000
PMI[1]	-0.48	-9.68	.000
PMI*Anthropomorphism[1]	-0.07	-2.82	.005
PMI*Association[1]	-0.01	-0.94	.347
Anthropomorphism[1]	-0.35	-4.99	.000
Association[1]	-0.07	-1.65	.101

[1] The grand mean centre of these values was used to minimise the risk of multicollinearity.

Table 5: Multiple regression including interaction terms

H5a: There is a positive relationship between anthropomorphism and perceived importance of PMI

The second step of the hierarchical multiple regression analysis showed a significant negative relationship (t(282)=-2.82, P=.005, β=-0.07) between the interaction term PMI*Anthropomorphism and attitude towards meat consumption (see Table 5).

The Johnson-Neyman technique was used to gain additional insight in the effect of anthropomorphism on the relationship between PMI and attitude (D'Alonzo, 2004). Three groups were distinguished based on the grand mean centre of level of anthropomorphism (low: -1.5, medium: -0.10, high: 1.7). It was shown that the relationship between PMI and attitude is significant for all three groups (P<.001). There is a difference between the three groups in the strength of the relationship, which is clearly represented in Graph 1. A higher level of anthropomorphism results in a stronger negative relation between PMI and Attitude. This negative relationship varies from β=-0.59 for low anthropomorphism to β=-0.94 for high anthropomorphism.

Thus, an increase in anthropomorphism strengthens the negative relationship between PMI and Attitude. Therefore, H5a is confirmed.
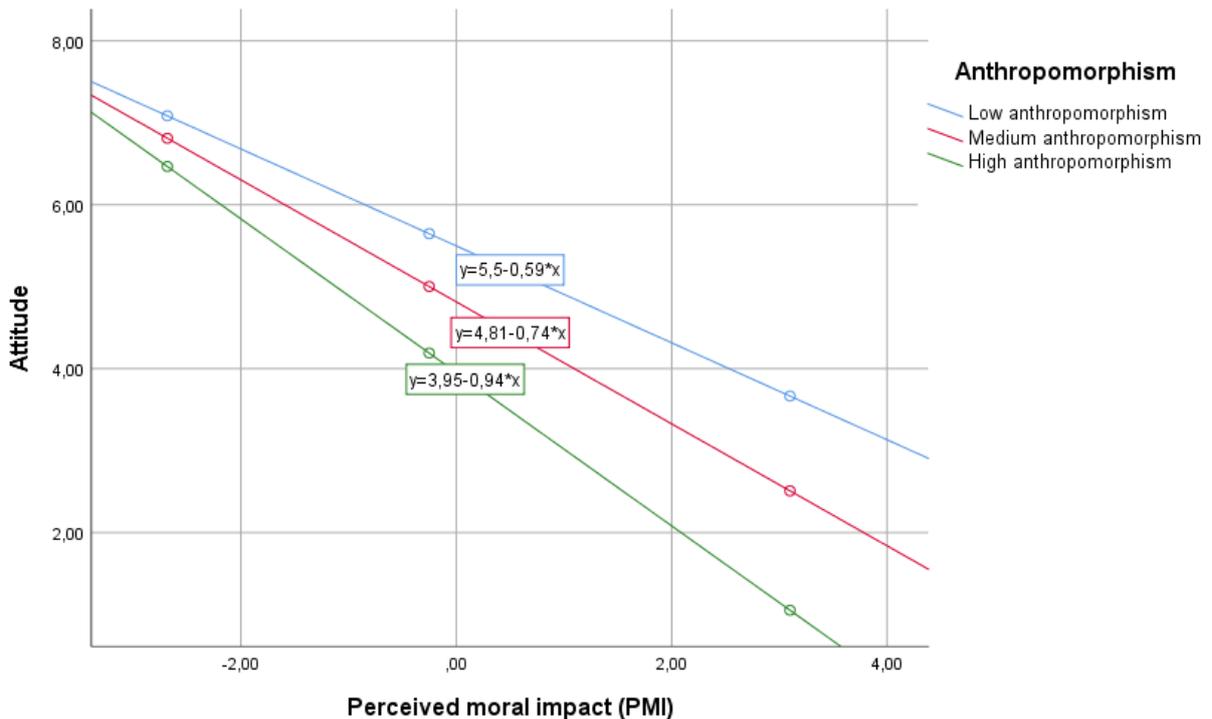
*Graph 1: Attitude * PMI per Anthropomorphism group*

H5b: There is a positive relationship between association between meat and animals and perceived importance of PMI

The analysis showed that no significant relationship is present between the interaction term PMI*Association and attitude towards meat consumption (Table 5: $t(282)=-0.94$, $P=.347$). Thus, the suggested moderating effect of association on the relationship between PMI and attitude towards meat consumption is not observable. H5b is not confirmed based on this analysis.

Test based on Self-reported Perceived Importance

H5a: There is a positive relationship between anthropomorphism and perceived importance of PMI

As a second test for H5a, the relationship between anthropomorphism (IV) and self-reported perceived importance of PMI (DV) was analysed ($F(1,287)=114.81$, $P<.001$). A significant positive relationship ($t(287)=10.72$, $P<.001$, $\beta=0.57$) between anthropomorphism and the perceived importance of PMI was found. Thus, anthropomorphism is a significant predictor of the perceived importance of the perceived moral impact of food. This again confirms H5a.

H5b: There is a positive relationship between association between meat and animals and perceived importance of PMI

As a second test for H5b, the relationship between association between meat and animals (IV) and self-reported perceived importance of PMI (DV) was analysed ($F(1,287)=96.91$, $P<.001$). There is a significant positive relationship ($t(287)=9.84$, $P<.001$, $\beta=0.32$) between the association between meat and animals and the perceived importance of PMI. Thus, association between meat and animals is a significant predictor of the perceived importance of the perceived moral impact of food.

Therefore, it can be stated that H5b is only partially confirmed: although the association between meat and animals does not have a significant moderating effect on the relationship between PMI and

attitude towards meat consumption, it does have a significant positive relationship with the perceived importance of PMI.

The findings of the analysis based on perceived importance are somewhat similar to those of the analysis based on interaction terms. In both tests, the effect of perceived association between meat and animals was much smaller than that of anthropomorphism. Overall, it can thus be stated that the relationship between anthropomorphism and the importance of perceived moral impact is stronger than that between perceived association between meat and animals and importance of perceived moral impact.

H6: There is a negative relationship between moral disengagement and internal conflict regarding meat consumption

To test H6, regression analyses with anthropomorphism and association between meat and animals as IV have been conducted. These analyses has been conducted with implicit conflict as DV and experienced conflict as DV.

H6a: There is a positive relationship between anthropomorphism and internal conflict regarding meat consumption

The analysis showed that anthropomorphism significantly predicts implicit conflict ($F(1,287)=6.84$, P=.009, R^2=.023), and that there is a negative relationship between anthropomorphism and implicit conflict ($t(287)=-2.62$, P=.009, β=-0.32). Thus, a decrease in anthropomorphism is related to an increase in implicit conflict. Therefore, H6a is not confirmed based on implicit conflict.

Anthropomorphism also significantly predicts experienced conflict ($F(1,287)=156.26$, P<.001, R^2=.35). Contrary to implicit conflict, there is a positive relationship between anthropomorphism and experienced conflict ($t(287)=12.50$, P<.001, β=1.18). Thus, a decrease in anthropomorphism is related to a decrease in experienced conflict. Therefore, H6a is confirmed based on experienced conflict.

There is no significant relationship between anthropomorphism and indecision (P=.092).

Thus, H6a was confirmed only for experienced conflict: there is a positive relationship between anthropomorphism and experienced internal conflict regarding meat consumption.

H6b: There is a positive relationship between association between meat and animals and internal conflict regarding meat consumption.

Association between meat and animals significantly predicts implicit conflict ($F(1,287)=30.68$, P<.001, R^2=.097). There is a negative relationship between association between meat and animals and implicit conflict ($t(287)=-5.54$, P<.001, β=-0.40). A decrease in association between meat and animals is thus related to an increase in implicit conflict. H6b is therefore not confirmed based on implicit conflict.

Association between meat and animals also significantly predicts experienced conflict ($F(1,287)=77.27$, P<.001, R^2=.21), however, this relation is positive ($t(287)=8.79$, P<.001, β=0.55). A decrease in association is thus related to a decrease in experienced conflict. Therefore, H6b is confirmed based on experienced conflict.

Furthermore, a negative relationship was found between association between meat and animals and indecision ($t(287)=-5.06$, P<.001, β=-0.28). Thus, an increase in association between meat and animals is related to a decrease in indecision regarding meat consumption.

Thus, H6 is confirmed only for experienced conflict. For implicit conflict and indecision the following applies: There is a <u>negative</u> relationship between moral disengagement and internal <u>implicit</u> conflict and <u>indecision</u> regarding meat consumption.

H7: There is a positive relationship between moral disengagement and attitude towards meat consumption

As moral disengagement is suggested to consist of a decrease in anthropomorphism and/or association between meat and animals, this hypothesis is tested through the multiple regression analysis with anthropomorphism and association between meat and animals as IV's, as discussed in the results for H5.

H7a: There is a negative relationship between anthropomorphism and attitude towards meat consumption

The multiple regression analysis shows a significant negative relationship between anthropomorphism and attitude towards meat consumption (t(282)=-4.99, P<.001, β=-0.35). As the values have been centered, this β is the effect of anthropomorphism on attitude, when association is at its mean. Based on this analysis, H7a is confirmed: decreased anthropomorphism is related to increased attitude towards meat consumption.

H7b: There is a negative relationship between association between meat and animals and attitude towards meat consumption

The multiple regression analysis (see Table 5) shows that there is no significant relationship between association between meat and animals and attitude towards meat consumption (t(282)=-1.65, P=.10). Thus, based on this analysis, H7b is not confirmed.

H7 is thus partially confirmed: although anthropomorphism is negatively related to attitude towards meat consumption, association between meat and animals is not.

Other Outcomes

Control Variables

Age and Gender

Adding age to the multiple regression analysis as discussed for H5, does not significantly improve the model (significance of F_{Change}=.12). Thus, age does not interfere with the tested relations. Gender was added to the model by creating dummy variables (0=male, 1=female). By doing so, 3 respondents that answered "other/do not wish to share" were omitted. Adding the dummy variable for gender to the model showed a significant improvement of the model (significance of F_{Change}=.008). A significant negative relationship was found between gender and attitude towards meat consumption (t(273)=-2.66, p=.008, β=-0.39). Thus, females generally have a lower attitude towards meat consumption than males.

Furthermore, age and gender were added to the multinomial logistic regression model as discussed in the results of H4. It is shown that age is not a significant predictor of meat consumption behaviour (χ^2(2)=0.64, P=.726) but gender is (χ^2(2)=7.90, P=.019). This is the case when comparing flexitarian to meat consumer (P=.004). It appears that the chance of being flexitarian rather than a meat consumer is 3.02 higher for females than for males. The relationship was not significant for the comparison between vegetarian/vegan and flexitarian (P=.576) and vegetarian/vegan and meat consumer (P=.497).

Environment and Religion

In the questionnaire, control questions were added regarding environment and religion. To test whether these factors may interfere with the previously discussed relationships, hierarchical multiple regression analysis was conducted in which they were added to the model as discussed in the results of H5. Adding the control variables to the model did not result in a significant improvement of the model (significance of F_{Change}=.14). Thus, the control variables do not interfere with the identified relationships.

Types of Conflict

Bivariate correlation analysis shows that there is no significant relation between experienced conflict and implicit conflict (P=.14). Bivariate correlation analysis shows that there is a significant positive relation between indecision and implicit conflict (P<.001, β=0.46) as well as between indecision and experienced conflict (P<.001, β=0.20).

Conflict & Attitude

Regression analyses were conducted to test the relationship between implicit conflict and attitude, experienced conflict and attitude, and indecision and attitude. It was shown that there is a significant positive relationship between implicit conflict and attitude (t(284)=2.15, P=.03, β=0.11) as well as between indecision and attitude (t(284)=2.16, P=.03, β=0.14). There is a significant negative relationship between experienced conflict and attitude (t(284)=-16.60, P<.001, β=-0.66).

Conflict & Consumption

Regression analyses were conducted to test the relationship between implicit conflict and frequency of meat consumption, experienced conflict and frequency of meat consumption, and indecision and frequency of meat consumption. It was shown that there is a significant positive relationship between implicit conflict and frequency of meat consumption ($t(284)=2.06$, $P=.04$, $\beta=0.19$), as well as between indecision and frequency of meat consumption ($t(284)=2.09$, $P=.04$, $\beta=0.24$). A significant negative relationship between experienced conflict and frequency of meat consumption was found ($t(284)=-12.23$, $P<.001$, $\beta=0.96$).

Discussion

Summary of Major Findings

The positive relationship between PFV and attitude and PSV and attitude, as well as the negative relationship between PMI and attitude have been confirmed. Also, the positive relationship between attitude towards meat consumption and meat consumption behaviour has been confirmed. Furthermore, it was shown that anthropomorphism predicts importance of PMI as well as attitude towards meat consumption. It was however not conclusively shown that perceived association between meat and animals moderated the relationship between PMI and attitude. Also, it was not shown that this perceived association affects attitude towards meat consumption. An overview of the identified relationships is depicted in Figure 7.
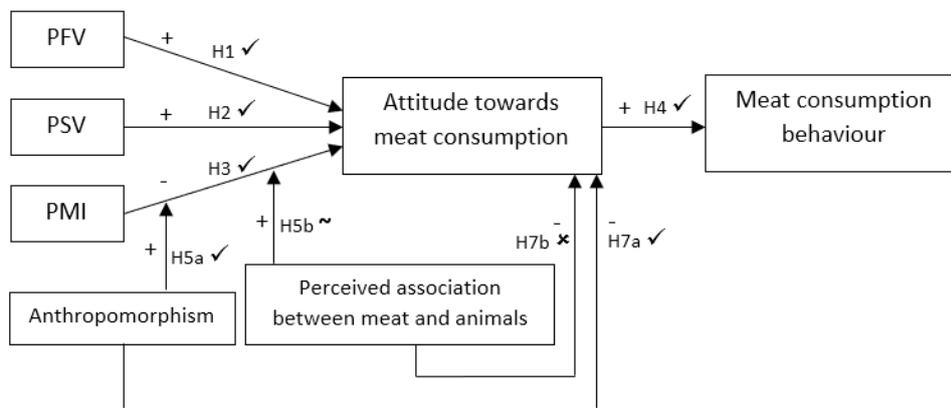
Figure 3: Outcomes of Hypotheses

Discussion of Results

Evaluation of Meat Consumption (H1-3)

Based on existing literature, it was hypothesised that the attitude towards meat consumption is formed by three evaluations: perceived functional value, perceived sensory value, and the perceived moral impact of meat consumption. As expected, an increase in perceived functional value and perceived sensory value leads to an increase in attitude towards meat consumption (H1, H2), whereas an increase in perceived moral impact of meat consumption leads to a decrease in attitude towards meat consumption (H3).

It appears that the negative effect of PMI on attitude is as least as strong as the positive effect of PFV and PSV on attitude. This is also the case for the effect on meat consumption frequency. This was unexpected as past research shows that enjoyment of meat is a major positive attitude factor (Worsley & Skrzypiec, 1998) or even the primary motivation for meat consumption (Lea & Worsley, 2003). Another study showed that perceived healthiness and nutritional value of meat is a main predictor for meat consumption behaviour (Lea & Worsley, 2001). These findings would suggest the perceived functional value or the perceived sensory value to be the primary predictors of attitude towards meat consumption, whereas the present study shows that perceived moral impact is as least equally important.

The strong effect of perceived moral impact of meat consumption on attitude and meat consumption behaviour is, however, in line with identified trends in The Netherlands. A recent report of the Dutch National Institute for Health and Environment ("Rijksinstituut voor Volksgezondheid en Milieu", RIVM),

shows that concern for animal welfare nowadays plays an increasing role in The Netherlands and Europe. In this report, it is even stated that resistance against breeding and raising animals only for their meat will increase, and that the increasing concern for the living conditions of animals will result in a decrease in meat consumption in The Netherlands (Zantinge et al, 2017). The current study depicts this increased concern. However, it should be taken into account that the share of vegans/vegetarians in the sample was much larger than in the population and that the effect of PMI on attitude, relative to that of PFV and PSV, is thus likely to be an overestimation of that of the population.

The Role of Anthropomorphism (H5a and H7a)

The study shows that anthropomorphism strengthens the negative relationship between perceived moral impact and attitude (H5a). If the animal has a higher moral position in the mind of the consumer, the perceived moral impact of meat consumption becomes more important in the evaluation of meat consumption. This relationship is in line with the recent findings of Niemyjska et al (2018). Their study shows that anthropomorphism enhances empathic concern for animals, which supported by the suggestion made by Waytz et al (2010), that empathy is a consequence of anthropomorphism. According to Niemyjska et al (2018), the increased empathic concern increases the importance that animal harm plays in dietary choices, leading to a decrease in meat consumption. These findings fit into the model as proposed in the current study, as an increased perceived importance of moral impact of meat consumption was shown to decrease the attitude towards meat consumption, which in turn decreases the actual meat consumption.

Furthermore, it appears that when animals have a low moral position in the mind of the consumer, this consumer generally has a positive attitude towards meat consumption (H7a). This can be clarified from an ethical perspective. When animals are ascribed solely instrumental value, they are not granted moral status (Rowlands, 1997). For consumers with this view, meat consumption therefore does not contain a moral issue. As a result, their attitude towards meat consumption is generally positive.

On the other hand, a high level of anthropomorphism leads to a decrease in attitude towards meat consumption. The highest moral position that can be ascribed to animals, that of inherent dignity, is linked to a stringent form of deontology. Within this view, it is wrong to treat animals as resources in any situation (Regan, 1987). It is thus in line with the expectations, that consumers with this view have a negative attitude towards the consumption of meat.

The Role of Association between Meat and Animals (H5b and H7b)

The relationship between association between meat and animals and the importance of PMI (H5b) was only partially confirmed: association between meat and animals did not significantly strengthen the negative relationship between PMI and association, but it did have a positive relationship with perceived importance of PMI: decreased association between meat and animals was related to decreased perceived importance of PMI. Thus, people that do not associate meat with live animals, perceive the moral impact of their consumption behaviour as less important than people that do associate meat with live animals. This may provide an explanation for the findings of Kunst & Hohle (2016), which show that association between meat and its animal origin decreases willingness to consume meat. It may be that this decreased willingness is due to the increased perceived importance of the moral impact of meat consumption.

However, the association between meat and animals seems to neither influence the effect of PMI on attitude, nor the attitude itself: the hypothesis regarding the relationship between association

between meat and animals and attitude towards meat consumption (H7b) has not been confirmed, as the relationship appeared to be insignificant.

The Internal Conflict (H6)

Within the current study, three types of conflict were measured: implicit conflict, experienced conflict, and indecision. The results show that there is no significant relationship between implicit and experienced conflict, but there is a significant positive relationship between implicit conflict and experienced indecision regarding meat consumption. In the study of Priester & Petty (1996), the measure of indecision was an indicator of the conative (or 'behavioural') basis of ambivalence, whereas the measure of experienced conflict was an indicator of the affective basis. Based on the current study is can thus be stated that implicit conflict regarding meat consumption results in indecisive behaviour, rather than in a feeling of conflict.

Implicit conflict as well as indecision appear to result in an increase in attitude and frequency of meat consumption. Within the present study, implicit conflict consists of a conflict between self-interest and collective interest. Van Dam & Van Trijp (2016) refer to this distinction as the distinction between consumption goals and sustainability goals, and state that consumers with an internal conflict between these types of goals tend to determine their choice on the consumption goals. In the case of the meat paradox, this means that consumers with an implicit conflict tend to determine their choice on the functional and sensory aspects of meat consumption, rather than on the moral impact. This results in increased attitude towards meat consumption as well as increased frequency of meat consumption. Consumers with a low implicit conflict, on the other hand, may have already resolved their implicit conflict, for instance by refraining from meat consumption, and as a result be less indecisive regarding meat consumption.

The results show that experienced conflict leads to a decrease in attitude towards meat consumption. This is in line with the findings of Berndsen & Van der Pligt (2004), which indicate that people with more experienced ambivalence towards meat consumption, hold a more negative attitude towards meat consumption.

Anthropomorphism and Conflict

Regarding the effect of anthropomorphism on conflict (H6a), the results highlight an interesting difference between implicit and experienced conflict: there is a positive relationship between anthropomorphism and experienced conflict, but a negative relationship between anthropomorphism and implicit conflict.

Based on the existing literature, it was expected that moral disengagement through dehumanization of animals was used as a dissonance reduction strategy, to decrease the internal conflict regarding meat consumption (Bilewicz et al, 2011; Loughnan et al, 2010; Graça et al, 2015). This is indeed the case for experienced conflict: it appears that a decrease in anthropomorphism results in a decrease in experienced conflict. Moral disengagement through dehumanization of animals helps reducing cognitive dissonance regarding meat consumption, and thus reduces the experienced conflict. This relationship can also be clarified when reasoning the other way around: and increase in anthropomorphism is related to an increase in experienced conflict. Thus, people in whose minds animals have a high moral position, state that they experience a conflict with regard to meat consumption.

For implicit conflict, however, the expectations were not met. It appears that a decrease in anthropomorphism leads to an increase in implicit conflict, whereas it was expected that this would lead to a decrease in conflict. However, when reasoning about this relationship the other way around, it can be clarified: consumers with strong anthropomorphic convictions, have a low implicit conflict score as they have already resolved this conflict. That is, as the perceived immorality of meat consumption clearly outweighs any functional or sensory benefits of meat consumption. This is supported by the idea of Rozin et al (1997), that the moralisation of meat consumption may result in a feeling of disgust towards meat. This helps solving the implicit conflict: the perceived sensory value is very low, while the perceived moral impact is very high. As a result, collective interest outweighs self-interest.

The discrepancy between implicit and experienced conflict is supported by the fact that the results show no significant relationship between implicit and experienced conflict.

Association between Meat and Animals and Conflict

The relationship between association between meat and animals and internal conflict (H6b) was similar to the discussed relationship between anthropomorphism and internal conflict: it was negative for implicit conflict and positive for experienced conflict. Additionally, a relationship was found between association between meat and animals and indecision.

The explanation for the difference in these relationships is therefore also similar. Increased association between meat and animals is related to decreased implicit conflict and decreased indecision, as people who strongly associate meat with animals have already solved their implicit conflict. As a result, they also experience less indecision regarding meat consumption. They do however acknowledge the existence of a conflict regarding meat consumption in general, which is reflected by the increase of experienced conflict.

Limitations and Implications for Future Research

Measurement of Implicit Conflict

Within the present study, implicit conflict was computed based on a distinction between self-interest and collective interest, rather than on a distinction between positive and negative evaluations as suggested by Kaplan (1972). The computation as used in the present study is assumed to be valid as ambivalence is suggested to come in many forms other than the distinction between solely positive and negative evaluations, such as conflicting cognitions, conflicting affective responses, conflicting affect and cognition, or conflicting goals (Van Harreveld et al, 2009). Within the present study, implicit ambivalence is measured based on conflicting goals, which is in line with the study conducted by Van Dam & Van Trijp (2016), which examines the internal conflict between consumption goals and sustainability goals. Within the present study, consumption goals are reflected by self-interest and sustainability goals by collective interest.

Implicit ambivalence as measured in the present study appears to capture indecision, which is the conative basis of ambivalence (Priester & Petty, 1996). It does, however not seem to capture the affective basis of ambivalence, being experienced conflict. Further research is necessary to investigate experienced conflict regarding meat consumption, which appears to differ substantially from implicit conflict as well as indecision. Furthermore, it would be highly interesting to investigate the implications of implicit conflict and indecision on consumption patterns in practice.

Equal Distribution of Consumer Types

By using a purposive sampling method, a fairly equal share of vegans/vegetarians, flexitarians and meat-eaters in the sample was assured. This equal distribution allowed for meaningful analyses of the relationships between evaluations, attitude and meat consumption behaviour. However, the sample was non-representative of the research population, as the share of consumers refraining from meat consumption is estimated to be only 4% within the population (De Waart, 2018). For future research in which the aim is to draw conclusions about the population it is thus recommended to use a random sampling method rather than a purposive sampling method, to assure a more realistic distribution of types of consumers.

Correlation between Attitude and Behaviour

From the regression analysis conducted to test the relation between attitude and frequency of meat consumption per week, it appeared that attitude towards meat consumption explains a major part of frequency of meat consumption per week. This positive relationship between attitude and behaviour is an interesting finding, as past research shows large variability in attitude-behaviour correlations (Ajzen, 2001). However, research also shows that attitudes held with confidence better predict behaviour than ambivalent attitudes (Glasman & Albarracín, 2006). As a major part of the sample of the current study consisted of consumers with a relatively low implicit conflict score, it can be argued that the correlation between attitude and meat consumption behaviour is due to the confidently held attitudes of that part of the sample. The actual relationship between attitude towards meat consumption and meat consumption behaviour might be weaker within the population, as the share of vegans/vegetarians lower within the population. This type of consumer generally has a low implicit conflict score.

It should also be noted that the self-reported frequency of meat consumption might be biased, as questions regarding attitude towards meat consumption were asked first. As a result, respondents might alter their reported meat consumption frequency in a way that it suits the attitude they have reported. Thus, the relation between attitude and behaviour might be overestimated in the present study.

For a more realistic estimation of the relation between attitude and behaviour, it is recommended to make use of a random sampling method in order to draw a sample that is representative of the population in terms of implicit conflict. Furthermore, it is recommended to filter out the bias of the self-reported frequency of meat consumption by providing half of the sample with a questionnaire with a different order of questions.

Brief Scales

Several variables were measured based on a single item scale (experienced conflict, indecision, control questions regarding environment and religion). Hoeppner et al (2011) state that single-item scales are more vulnerable to measurement errors and biases than multiple-item scales. Rossiter (2002), on the other hand, argues that single-item scales provide a valid measurement for doubly concrete constructs. These are constructs for which both the object of measurement and the attribute of measurement are clear and unambiguous for the respondents (Bergkvist & Rossiter, 2009). For the control questions regarding environment and religion, it is assumed that this is the case. For experienced conflict and indecision, however, it might be that the attribute is open to multiple

interpretations. For future research it is therefore recommended to measure experienced conflict and indecision on scales with at least 3 items.

Furthermore, several scales (PFV, PSV, perceived importance of PFV, PSV and PMI) consisted of only two items, and had a high Cronbach's α. Even though Cronbach's α is a widely used method for testing internal consistency of multiple-item scales (Eisinga et al, 2013), multiple researchers claim that Cronbach's α is meaningless for two-item scales (e.g. Cramer et al, 2006; O'Brien et al, 2008; Verhoef, 2003). That is, as both items on the scale are only compared to each other, rather than to the group of other items (Verhoef, 2003). However, based on the argument of Rossiter (2002), it is assumed that the scales are valid as the object of measurement as well as the attribute of measurement of these scales were clear and unambiguous.

Association between Meat and Animals

During data collection it appeared that the statements the statement for measuring association between meat and animals "When I eat meat, I do not think about the life of the animal I am eating" and "I do not like to think about where the meat I eat comes from" needed a "not applicable" option for respondents that do not consume meat. This "not applicable" option was added after data from 39 respondents had already been collected, which resulted in a data loss for these respondents for these two statements.

Two hypotheses regarding association between meat and animals appeared to be insignificant (part of H5b, and H7b). It may be this is due to the loss of data for the mentioned statements. However, this remains unclear. Additional research is thus necessary to investigate the role of association between meat and animals in the formation of an attitude towards meat consumption.

Theoretical Implications

The present study investigates the meat paradox by viewing it as a social dilemma, in which self-interest is in conflict with collective interest. This study adds to the existing literature as it links the area of consumer behaviour to the area of ethics, by providing insight in the moral aspect of the evaluation of meat consumption, with a focus on the position of animals in the mind of consumers. Contrary to what has been found in past research (Lea & Worsley 2001, 2003; Worsley & Skrzypiec, 1998), it appears that this moral aspect of meat consumption is as least as important as the functional and sensory aspect of meat consumption.

Several studies have been conducted to investigate ways of coping with the paradox (Bilewicz et al, 2011; Loughnan et al, 2010), and it was shown that different forms of moral disengagement may create conditions in which meat consumption can endure (Graça et al, 2015). The present study adds to these findings by investigating the effect of moral disengagement on internal conflict, by distinguishing between different types of internal conflict: experienced conflict, implicit conflict, and indecision. It was found that moral disengagement only decreases experienced conflict. It appeared that implicit conflict regarding meat consumption is closely related to indecision and that consumers that have solved their implicit conflict experience less indecision regarding meat consumption.

This study deepens the understanding of the meat paradox and opens up areas for further research. It is recommended to further investigate the different types of internal conflict regarding meat consumption and their implications on meat consumption behaviour, as well as the role of association between meat and its animal origin.

Conclusion

The aim of the current study was to answer the following research question:

How does the perception of meat consumption relate to the meat paradox in the mind of the consumer, and what is the role of morality?

The meat paradox consists of an internal conflict between self-interest and collective interest. This collective interest was defined as the perceived moral impact of meat consumption in terms animal welfare and ethics. It appears that the perceived moral impact of meat consumption decreases the attitude towards meat consumption. A decrease in attitude towards meat consumption is in turn related to decreased meat consumption behaviour.

The role of morality is highlighted by the perceived moral position of animals in the mind of consumers. The ascription of a high moral position to animals and thus a high level of anthropomorphism, strengthens the negative relationship between the perceived moral impact of meat consumption and attitude. This is in line with the findings of previous studies and it is suggested that the effect of anthropomorphism on perceived moral impact, is due to increased empathic concern for animals.

The association between meat and its animal origin also appears to be related to the perceived importance of moral impact. Consumers that strongly associate meat with its animal origin, generally find the impact of their consumption on animals more important.

This study sheds a new light upon the role of morality in the internal conflict regarding meat consumption, by distinguishing between three types of internal conflict: experienced conflict, implicit conflict, and indecision. It has been confirmed that consumers may reduce their experienced conflict by morally disengaging from animals. This is done by decreasing the moral value that is ascribed to animals or by dissociating meat from its animal origin. Contrary to what has been suggested by previous research, it appeared that the ascription of a high moral position to animals and a strong association between meat and animals, may help consumers in solving their implicit conflict. As a result, they experience less indecision regarding meat consumption, which results in a decrease in attitude towards meat consumption as well as frequency of meat consumption.

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Appendices

Appendix 1: Questionnaire set-up in English

1. Demographics

<u>What is your gender?</u>

- Male

- Female

- Other/I do not wish to share

<u>What is your age?</u>

…

2. Perceived Functional Value

<u>Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree</u>
(Berndsen & Van der Pligt, 2004)

	1	2	3	4	5	6	7	8	9
Meat consumption is bad for your health									
Meat contains nutrients that are important for the human body									

3. Perceived Sensory Value

<u>Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree</u>
(Statement 1: Berndsen & Van der Pligt, 2004. Statement 2: Lea & Worsley, 2003)

	1	2	3	4	5	6	7	8	9
Meat has a good taste									
I enjoy eating meat									

4. Perceived Moral Impact

<u>Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree</u>
(Berndsen & Van der Pligt, 2004)

	1	2	3	4	5	6	7	8	9
Killing animals for consumption is justified									
Eating meat is morally sound									
Meat consumption has negative effects on animal welfare									

5. Control variables

Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree

First statement: Berndsen & Van der Pligt (2004)

	1	2	3	4	5	6	7	8	9
Production and consumption of meat is harmful for the environment									
My religion forbids me to eat (certain types of) meat									

6. Perceived importance of the evaluations

To what extent is it important that food…
1=very unimportant, 9=very important

	1	2	3	4	5	6	7	8	9
…is not bad for your health									
…contains nutrients that are important for the human body									
…has a good taste									
…provides enjoyment									
…is produced in a way that is morally sound									
…is produced in a way that does not have negative effects on animal welfare									
…is produced in a way that is not harmful for the environment									
…is in line with what my religion prescribes									

7. Perceived Association between meat and animals

Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree
(First statement: Kunst & Hohle, 2016, last two statements: Rothgerber, 2013)

	1	2	3	4	5	6	7	8	9
I do not associate meat with live animals									
The first thing I think about when confronted with meat, is the living animal it originates from									
When I eat meat, I do not think about the life of the animal I am eating									
I do not like to think about where the meat I eat comes from.									

8. Perceived Anthropomorphism

The questions below are about production animals, i.e. animals that are used for human consumption. Animals that you should think of when answering the questions are cows, pigs and chickens.

Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree
(De Jonge & Van Trijp, 2013)

	1	2	3	4	5	6	7	8	9
Animals have emotions									
Animals have a mind of their own									
Animals have free will									
Animals have an individual temperament									

Please rate the following statements. 1 = strongly disagree, 5 = neutral, 9 = strongly agree
Developed based on Meijboom (2012).

	1	2	3	4	5	6	7	8	9
Animals are here as a resource for humans (Instr.V)									
Animals act solely on instinct (Instr.V)									
The central nervous system of animals is similar to that of humans (MV)									
Animals can experience pain and pleasure (MV)									
Animals have a consciousness (Intr.V)									
If animals have had a good life, I think it is okay for us to use them for consumption (MV/Intr.V)									
Animals are morally equal to humans (Inh.D)									
Animals should never be used for human consumption (Inh.D)									

9. Internal Conflict

Please rate the following statements:

(Priester & Petty, 1996)

Towards the issue of eating meat, I feel… 1=no conflict at all, 9=maximum conflict

1	2	3	4	5	6	7	8	9

Towards the issue of eating meat, I feel… 1=no indecision at all, 9=maximum indecision

1	2	3	4	5	6	7	8	9

10. Attitude towards meat consumption

Please rate your attitude towards meat consumption on the provided scales. 5 = neutral.

(Berndsen & Van der Pligt, 2004)

	1	2	3	4	5	6	7	8	9	
Bad										Good
Unpleasant										Pleasant
Against										For
Favourable										Unfavourable
Negative										Positive

11. Meat consumption behaviour

On average, how many times per week do you consume meat? This includes breakfast, lunch, dinner and snacks. If more than 14 times per week, please select 14.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Which of the following applies to you, with regard to the frequency of meat consumption?

- I am vegan/vegetarian (I do not consume meat)

- I am flexitarian (I deliberately decrease the frequency of my meat consumption)

- I am a meat consumer without restrictions

Appendix 2: Questionnaire as Distributed (Dutch)

Deze enquête wordt gehouden als onderdeel van een masterscriptie aan Wageningen University & Research, met als onderwerp vleesconsumptie onder Nederlandse consumenten.

Het doel van deze enquête is om meningen van consumenten te peilen, en er zijn dan ook geen goede of foute antwoorden. Wees dus eerlijk in het beantwoorden van de vragen. Je reacties worden volledig vertrouwelijk behandeld.

Het invullen van de enquête neemt slechts 5 tot 10 minuten van je tijd in beslag.

Bij voorbaat dank voor je input.

Wat is je geslacht?

- ◯ Man
- ◯ Vrouw
- ◯ Anders/wil ik niet zeggen

Wat is je leeftijd?

[   ]

Onderstaande uitspraken hebben betrekking op vleesconsumptie. Beoordeel deze uitspraken.

Zeer mee oneens				Neutraal			Zeer mee eens	
1	2	3	4	5	6	7	8	9

Vleesconsumptie is slecht voor je gezondheid

Vlees bevat voedingsstoffen die belangrijk zijn voor het menselijk lichaam

Vlees heeft een lekkere smaak

Ik geniet van het eten van vlees

Het doden van dieren voor menselijke consumptie is geoorloofd

Het eten van vlees is moreel acceptabel

Vleesconsumptie heeft negatieve effecten op dierenwelzijn

Productie en consumptie van vlees is schadelijk voor het milieu

Mijn religie weerhoudt me ervan (bepaalde soorten) vlees te eten

In hoeverre is het belangrijk voor je dat voedsel ...

Heel onbelangrijk   **Heel belangrijk**

1   2   3   4   5   6   7   8   9

... niet slecht is voor je gezondheid

... voedingsstoffen bevat die belangrijk zijn voor het menselijk lichaam

... een lekkere smaak heeft

... genot biedt

... geproduceerd is op een manier die moreel acceptabel is

... geproduceerd is op een manier die geen negatieve effecten heeft op dierenwelzijn

... geproduceerd is op een manier die niet schadelijk is voor het milieu

... in lijn is met wat je religie je voorschrijft

Beoordeel onderstaande uitspraken.

Zeer mee oneens				**Neutraal**			**Zeer mee eens**	
1	2	3	4	5	6	7	8	9

Ik associeer vlees niet met levende dieren

Hetgeen waar ik als eerste aan denk als ik met vlees word geconfronteerd, is het levende dier waarvan het vlees afkomstig is

Zeer mee oneens				**Neutraal**			**Zeer mee eens**	
1	2	3	4	5	6	7	8	9

Als ik vlees eet, denk ik niet aan het leven van het dier dat ik eet   ☐ n.v.t.

Ik vind het niet fijn om eraan te denken waar het vlees dat ik eet vandaan komt   ☐ n.v.t.

Onderstaande uitspraken hebben betrekking op productiedieren: dieren die gehouden worden voor de productie van dierlijke producten. Denk hierbij aan koeien, varkens en kippen. Beoordeel deze uitspraken intuïtief.

Zeer mee oneens				Neutraal			Zeer mee eens	
1	2	3	4	5	6	7	8	9

Dieren hebben emoties

Dieren hebben denkvermogen

Dieren hebben vrije wil

Dieren hebben individueel temperament

Dieren zijn op aarde als bron voor de mens

Dieren handelen uitsluitend op instinct

Het centraal zenuwstelsel van dieren lijkt op dat van mensen

Dieren kunnen pijn en plezier ervaren

Dieren hebben bewustzijn

Als dieren een goed leven hebben gehad, is het oké om ze te gebruiken voor menselijke consumptie

Dieren zijn moreel gelijk aan mensen

Dieren zouden nooit gebruikt moeten worden voor menselijke consumptie

Met betrekking tot vleesconsumptie, voel ik...

Totaal geen conflict							Maximaal conflict	
1	2	3	4	5	6	7	8	9

Totaal geen besluiteloosheid							Maximale besluiteloosheid	
1	2	3	4	5	6	7	8	9

Geef je mening over vleesconsumptie weer op onderstaande schalen.

Slecht								Goed
1	2	3	4	5	6	7	8	9

Onplezierig								Plezierig
1	2	3	4	5	6	7	8	9

Tegen								Voor
1	2	3	4	5	6	7	8	9

Nutteloos								Nuttig
1	2	3	4	5	6	7	8	9

Negatief								Positief
1	2	3	4	5	6	7	8	9

Onderstaande vragen hebben betrekking op je huidige vleesconsumptiegedrag.

Hoe vaak per week eet je gemiddeld vlees? Hierbij tellen ontbijt, lunch, diner en snacks mee. Indien je meer dan 14 keer per week vlees eet, selecteer dan de 14.

0	1	3	4	6	7	8	10	11	13	14

Ik ben...

○ Veganist/vegetariër (ik eet geen vlees)

○ Flexitariër (ik verminder bewust de frequentie van mijn vleesconsumptie)

○ Vleeseter (ik leg mezelf geen beperkingen op m.b.t. de frequentie van mijn vleesconsumptie)

Dit is het einde van de enquête. Heb je nog vragen/opmerkingen?

○ Nee

○ Ja, namelijk:

Hartelijk bedankt voor het deelnemen aan de enquête.
Je antwoord is geregistreerd.