

Review

Consumer Moral Dilemma in the Choice of Animal-Friendly Meat Products

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Abstract: More and more consumers, at least in Western developed countries, are attentive to the sustainability aspects of their food, one of which concerns animal welfare. The conflict of harming an animal for the joy of eating meat causes a moral dilemma, affecting consumers' reactions to, and choices of, animal-friendly products. This systematic review identified 86 studies from Scopus and Web of Science. The review outlines: (1) What are the personal antecedents among consumers regarding moral conflicts?; (2) In what situation do moral conflicts occur in consumer food choice?; (3) How do consumers emotionally experience the moral dilemma?; (4) How do consumers resolve moral conflicts over animal products? Researchers have studied personal factors and situational factors that arouse consumers' moral dilemma and how the dilemma is solved, during which emotions and dissonance come into play. When synthesizing these findings into a comprehensive model, we notice that the current research is lacking on how personal factors change and interact with situations, which limits the understanding of the real-life context of consumers' moral dilemma as well as their choices of animal-friendly products. More in-depth studies are needed to find situational factors that contribute to this complex psychological process.

Keywords: consumer behavior; moral dilemma; meat; animal-friendly products; systematic review

1. Introduction

In the last few decades, several studies have questioned the sustainability of meat production and consumption. Attention has been paid mostly to reports showing that current meat production systems are unsustainable in terms of the environmental impact of farmed animals [1] and increased risks of diabetes or heart disease associated with large-scale meat consumption; and the World Health Organization frequently advises the public to reduce the amount of meat consumption or replace meat with alternatives [2]. It is also argued that for ethical reasons, animal welfare contributes to (societal) sustainability [3] and aligns with some of the UN sustainability goals [4]. A proportion of consumers, at least in Western developed countries, have started to replace or reduce meat consumption not only because of personal health and worries about the environmental impact [5], but also because of ethical concerns for animal welfare [6].

The concern for the well-being of meat animals has become an important moral factor [7]. This morality perception is based on the recognition that animals are sentient beings, the purpose of which is not solely to serve human needs. Rather, animals have some kind of self-interest, that should be respected by humans [8]. Guided by such moral concerns, some consumers become strongly opposed to the consumption of meat or the killing of animals and become vegetarians or vegans, while others believe that eating a moderate amount of meat from animals that have lived and were slaughtered in a humane way (i.e., animal-friendly meat products) is not morally unsound [7]. Hence,

understanding how people consider the morality of meat consumption is important to assess the conditions under which they accept meat.

The majority of publications focusses on morality as a driver for vegetarianism. For vegetarians and vegans, the mere idea that meat production involves killing animals evokes negative responses such as anger, disgust, and emotional distress among many meat-eaters [9]. People with strong prosocial beliefs, who are more sympathetic toward animals and humans, are especially likely to have negative responses to the thought of eating meat [10], and hence more likely to be (come) flexitarians, vegetarians, or vegans [11]. Yet vegetarians and vegans remain a minority. In practice, although many people in Western developed countries show negative responses to killing animals, eating meat remains the default for the majority of people. This dichotomy is often called the *meat paradox*: most people object to killing animals but keep eating meat [12]. The meat paradox can be partially explained because meat eating is a habit that many consumers are so much accustomed to that they no longer think about what they eat. In addition, most consumers are exposed to meat-eating as a social default in their peer groups. Both habits and social defaults can cause consumers to cognitively dissociate the morality of killing animals. Successfully dissociating the morality concern allows consumers to continue eating meat without feeling guilty [13].

While the acknowledgment of the meat paradox may not be a sufficient reason for consumers to stop consuming meat, a potential way to understand and explore the meat paradox is the recognition that the emotional distress people experience about meat production is partially related to perceptions of animal well-being. While some consumers may decide to eliminate meat from their diet, other consumers compensate the emotional distress with the thought that animals are treated well before and during slaughtering. If sufficient meat products with a high level of animal welfare are present, the latter type of consumers will continue eating meat, while at the same time meeting their moral requirements. Evidence shows that, at least in the societal debate, morality about animal welfare is gaining influence [14]. The 2016 Eurobarometer survey showed that an absolute majority of Europeans (94%) reported it important to protect the welfare of farmed animals [15], suggesting that the moral concern about animal treatment has gained general acceptance, at least in Europe. Many countries have enacted and enforced animal welfare legislation to cope with market demands for high-welfare meat [16]. Animal welfare has increasingly become a subject of national and international policy discussions [17]. By 2020 this trend had, for example, culminated in the single-issue “party for the animals” (PvdD), holding five of one hundred and fifty seats (3.3%) in the lower house of the Dutch parliament and represented in the Senate of the Netherlands, in numerous local councils in the Netherlands as well as the European Parliament. The trend toward consuming meat with high animal-welfare standards is also observed among celebrity chefs catering for groups of elite gourmet clientele [18]. Following this trend, the current paper explores how consumers take morality about animal welfare into consideration when purchasing or consuming meat, allowing for the creation of a market for “high-welfare meat”.

Creating a market for high-welfare meat is not simple. Although ethical values underpin consumers’ purchases of animal-friendly products [19], fewer consumers select, purchase, and consume meat products with high attention to animal welfare than would be expected based on the stated importance of animal welfare [20]. This may be due to the effect of dissociating animal welfare concerns from meat-eating behavior induced by value conflicts, meaning that consumers may strongly favor meat as enjoyable and healthy (i.e., in line with hedonic and self-preservation values) and dissociate themselves from the awareness of animal suffering (i.e., opposed to altruistic and benevolence values) [21]. In such cases, producing meat with a high animal-welfare standard, that fits with all their values, may remove the moral conflict and allow consumers to eat meat without actively suppressing feelings of unease about the welfare of animals.

While numerous papers consider animal welfare as a sustainability attribute [22,23] and several articles and reviews consider the moral objection to killing animals [7,9], we have identified only a few papers that have placed the debate into the context of a moral dilemma about animal welfare. The aim

of the current paper is thus to study the relevance of moral dilemmas in meat consumption in the matter of animal welfare. We will do so by bringing together the available knowledge regarding consumer moral conflicts regarding meat products in a systematic literature review. Specifically, we address the following questions in our review: (1) What are the personal antecedents among consumers regarding moral conflicts?; (2) In what situation do moral conflicts occur in consumer food choice?; (3) How do consumers emotionally experience the moral dilemma?; (4) How do consumers resolve moral conflicts about animal products? The answers to above questions will be synthesized in a comprehensive model for high-welfare meat consumption.

2. Materials and Methods

2.1. Search and Selection of Relevant Studies

Two major general scientific databases were used to identify the relevant research: Web of Science and Scopus. We first conducted an exploratory search in Scopus by focussing on two key concepts: “consumer dilemma” and “animal”. The purpose of the exploratory literature search was to identify the most relevant keywords used to describe each of the concepts. Following this initial search, the final query was created (Table 1). This query retrieved papers addressing all relevant concepts, where each concept was operationalized by search terms consisting of a combination of keywords (e.g., moral). In addition to the concepts, the search was limited to the English language and research articles. The year of publication was not limited.

Table 1. Search strings in Scopus and Web of Science.

Concept	Search Strings
Consumer <i>And</i>	consum*
Morality <i>And</i>	ethic* or concern* or moral* or virtue* or bioethic* or legitima* percep* or willing* or wtp or ambi* or dut* or sustainab*or ((social or personal) and value*) or ((social or personal) and norm*)
Dilemma <i>And</i>	dilemma* or conflict* or contradict* or hazard or paradox or compromise or dissonance
Animal <i>And</i>	animal* or meat
Paper restriction	language: (English) and document types: (article)

Figure 1 shows the paper selection strategy of this systematic review (following the recommendation by Moher et al. [24]). Data search was first conducted in November and December 2017 and then updated in July 2019. The search in Web of Science and Scopus resulted in a total of 2107 (1524 identified—158 retained after screening—58 additional from references for 2017, 583—12 retained—6 additional in 2019) articles. After title screening (Table 2), 170 articles remained. After removing duplicates and one inaccessible article, the remaining 126 articles were screened in more depth, based on the inclusion and exclusion criteria, by reading the abstracts, resulting in a primary body of literature of 84 papers. The first author then checked the references of the more recent articles, i.e., those published starting in 2014, and added another 64 articles that met the inclusion and exclusion criteria. The content of these 148 articles was studied and coded in depth.

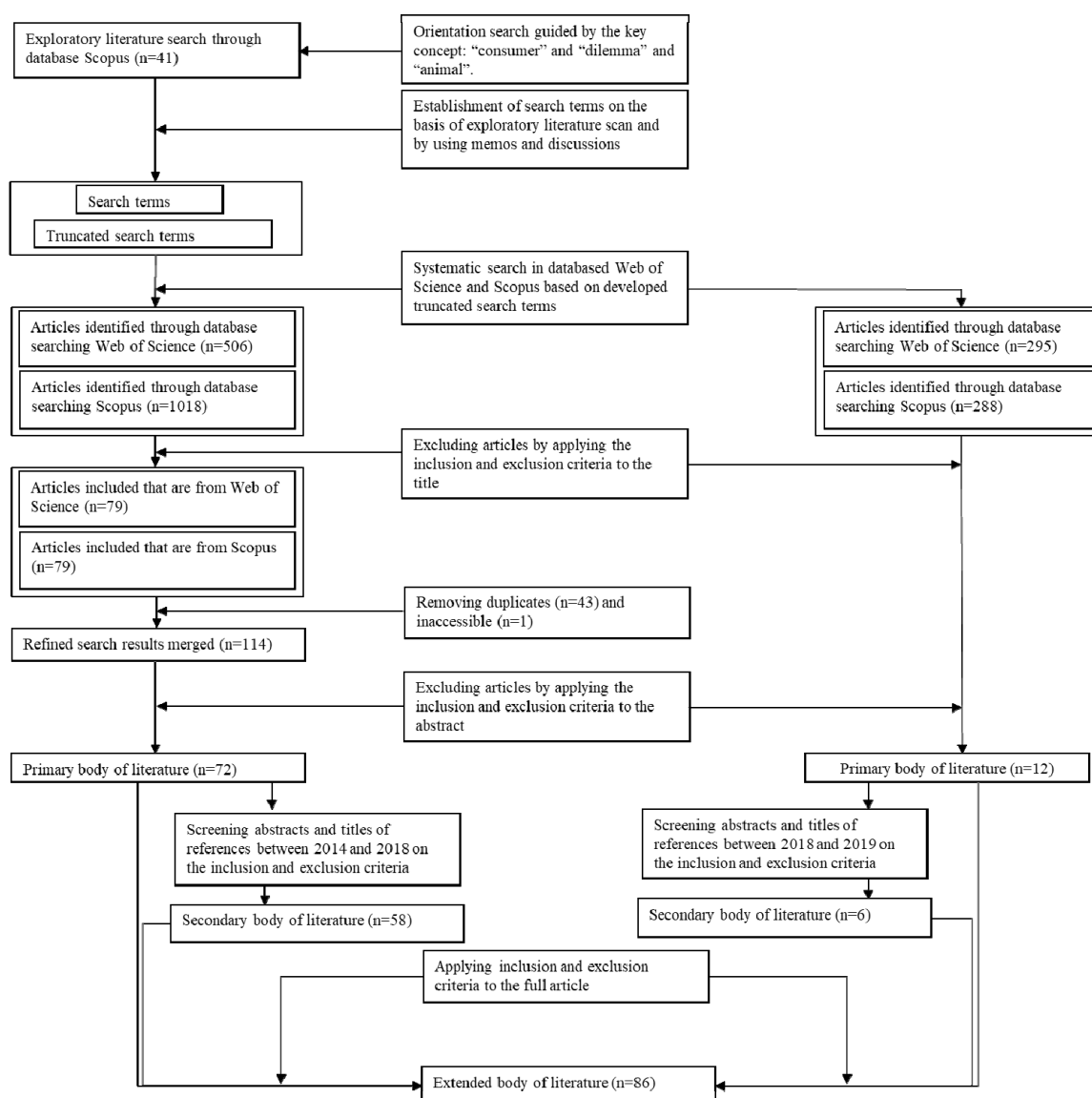


Figure 1. Flow chart for data collection process.

Table 2. Inclusion and exclusion criteria.

Inclusion Criteria
<ul style="list-style-type: none"> • Document type: Full-text papers published in peer-reviewed journals in the English language/Scientific articles (i.e., original research and reviews) from peer-reviewed journals • Topic: Focus on consumer moral dilemma and behaviors/Publications addressing the consumer moral dilemma • Setting: Publications that address meat consumption at the consumer level instead of industrial-/institutional- level
Exclusion Criteria
<ul style="list-style-type: none"> • Document type: Book chapters, conference papers and abstracts, publications that are not scientific articles (i.e., that do not concern original research and reviews) from peer-reviewed journals • Topic: Not related to consumer behavior (e.g., Farm animal welfare research; stakeholder analysis; regulation/policy of animal treatments) • Studies on technology, chemical consumption, biological analysis • Studies on consumers' perception of food safety and quality without taking into consideration consumer morality/ethics or food-related lifestyle instruments • Setting: Publications that do not address animal friendly/welfare at consumer level

2.2. Data Collection and Analysis

The selected articles (148 articles) were uploaded in ATLAS.ti 8 for systematic analysis. The analysis of the database involved two phases: a general exploration and a more in-depth analysis. In the general exploration, 148 articles were identified based on the abstracts. General information was extracted during this phase, including the research focus, methods, country of study, and year of data collection.

The in-depth analyses identified factors potentially related to consumer moral conflicts and included a series of steps to ensure the appropriate process in the systematic review. The first step was a read-through of the introduction and conclusion by the first author. For quantitative studies, this step focussed on identifying the research question, antecedents, mediators, moderators, and results. For qualitative studies, the major topic was identified, and codes to describe the contents of the findings were created. After coding, 86 papers contained sufficiently specific information to allow further analysis. Based on codes from both types of papers, an initial list of factors related to consumer moral conflicts was generated. The coding and factor schemes were then discussed with the second author, leading to the establishment of superordinate themes and the assignment of outcomes to different themes.

3. Results

3.1. Overview

Among the remaining 86 studies, about two thirds were quantitative studies ($n = 57$). Fourteen studies were theoretical studies. Of the remaining 15 articles, 12 were qualitative studies (interviews/focus group methods) and three applied mixed methods, with both qualitative and quantitative methods. A graphical depiction of the number and the publication year of theoretical, empirical (qualitative, quantitative, mixed-method) publications that focus on consumer moral conflicts is presented in Figure 2. The earliest publication was a study conducted by Rozin and colleagues about consumer moral conflicts in meat-eating [25]. The study focussed on emotions (i.e., disgust) associated with (im)moral eating. Following that initial paper, about 1–2 publications per year studied the morality of meat-eating. A steep increase of 33 studies mentioning the topic of meat paradox was observed between 2014 and 2016, which was shortly after the “meat-eating justification” scale was developed [26]. At the same time, there were ongoing philosophical debates about the moral standing of animals [27].

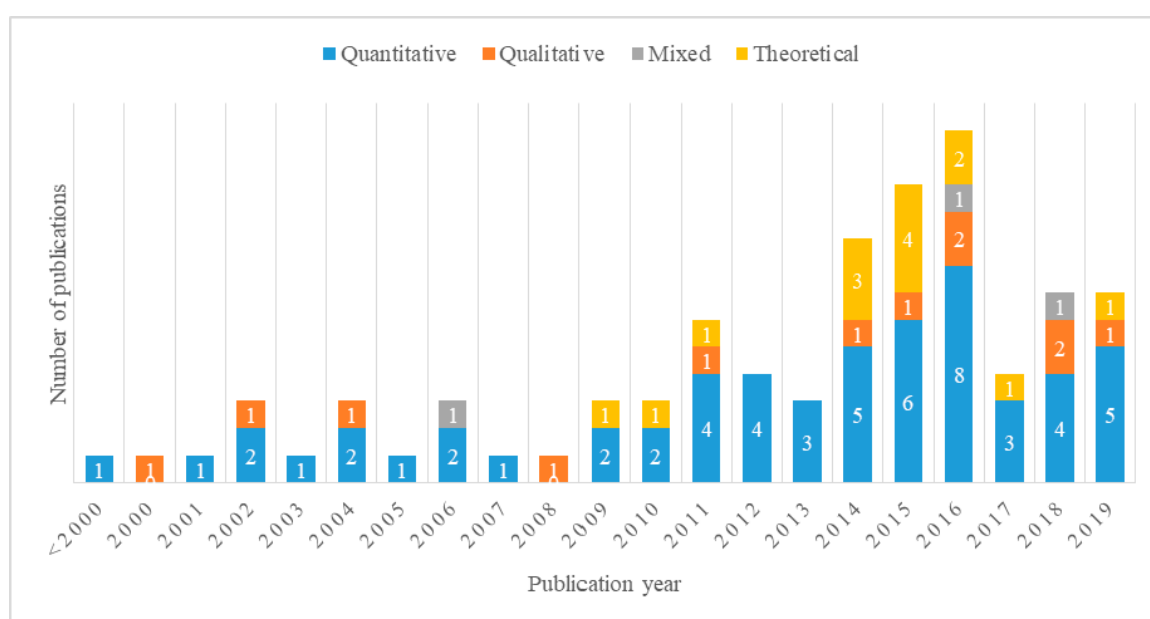


Figure 2. Publications by year and by type.

Of the 72 empirical papers (quantitative, qualitative, and mixed methods), 27 were conducted in Western Europe (37.5%), suggesting this is the region where the topic received the most interest. After that, most interesting papers were from North America (United States: 19 studies; Canada: 6) (34.7%). Thirteen papers reported data from multiple regions. Of the remaining studies, five were conducted in Australia, one in Eastern Europe, and one in Eurasia.

3.2. Terms and Measures of Consumer Moral Conflicts

Consumer moral conflicts in meat consumption are referred to by different terms. The most commonly used term is “meat paradox” (e.g., [12]). Other terms such as “ambivalence” (e.g., [21,28–30]), “hazard” (e.g., [31]), “ambiguity” (e.g., [32]), “incongruity” [33], “ethical disruption” [31], and “dissonance” [34,35] were also found.

Despite the use of different wording, researchers show consensus in their description of moral conflicts in meat consumption. All studies stress a psychological situation where a conflicting experience is caused by the dilemma between enjoying eating meat and caring for animals. It is the belief that animals should not be harmed, associated with caring for animals, which creates the psychological tension between moral thinking and culinary behavior among meat-eaters.

Surprisingly few studies included specific measures for moral conflicts (or meat paradox) induced by meat consumption. Instead, most studies started with the assumption that the meat paradox exists and is of relevance. The topics actually studied then focussed on, for example, attitudes toward animals/meat or the emotions related to moral concerns. The studies that measured moral conflicts were Bratanova et al.’s, in which the authors measured “moral concern” [36] and the studies by Berndsen and Bryman [37], Buttlar and Walther [38], and Sparks et al. [30], who measured “ambivalence”. The measurement method for moral conflicts also differs across studies. Berndsen and Bryman used self-report as a subjective way to measure the paradox [37]. Buttlar and Walther tracked the movement of computer mouse-cursors in an experimental setting as a way to trace assumedly more objective spontaneous responses, devoid of social desirability [38]. As both types of methods have their own strengths and weaknesses, drawing general conclusions is challenging. The use of these concurrent methods suggests that it may be worthwhile to develop a measurement that combines both types of data for the “meat paradox”.

After the description of the terms and measures in use, the next sections provide an overview of the major themes related to moral conflicts. Regardless of the exact phrasing in the specific papers, to be consistent in the report, we follow the majority of papers and use the term “meat paradox” for moral conflicts.

3.3. Personal Antecedents

3.3.1. Socio-Demographic Variables

There is a consistent understanding about the impact of gender in the emergence of moral conflicts relevant to meat-eating (e.g., [39,40]). Women hold more negative attitudes toward animal use [41]; Rousset et al. argued that “men feel hedonic pleasure in seeing and eating red meat while women experience discomfort” ([42] p. 609). Compared to men, women feel more disgusted at the thought of eating and treatment of meat-animals [43,44]. Gender, the attitude to meat, the perception of masculinity [26,45], and morality concerns are correlated to each other. Ruby and Heine investigated how meat-eating reflected the perceptions of consumers by contrasting people’s general perceptions toward omnivores and vegetarians [46]. They found that vegetarian men were perceived as less masculine than omnivorous men by the general public, but perceptions toward female vegetarians and omnivores did not differ.

Meat-eating, like most food consumption behaviors, is a social practice where people show group belonging and the endorsement of social values [47]. Therefore, the cultural background also affects the experience and perceptions of meat-eating. One study compared the differences between Chinese and

French consumers regarding the cognitive dissonance arising from the meat paradox. Results show that Chinese participants seemed less affected by recipes with animal/dish images compared to mere textual descriptions in associating meat with animals than the French [48]. Similarly, consumers' attribution of psychological traits to animals was more prominent in Canada/US than in Hong Kong/India [43]. Country differences were also found in people's perception toward vegetarians. For example, American and Brazilian women showed some admiration for vegetarians, while French women (and men) had negative attitudes toward vegetarians [46]. Besides gender and cultural background, higher income, education level, and social class are socio-demographic variables that impact one's understanding in relation to ethical eating [49].

3.3.2. Intrinsic Motivations and Values

Motivation plays a major role in food choice [50], including the choice of meat. Intrinsic motivations refer to carrying out an activity for its inherent satisfaction, requiring no external rewards to incite a person to action [51]. For omnivores, intrinsic hedonistic motivations such as loving the "taste of meat" or health—and nutritional—motivations, are a major reason hindering the decrease of their meat consumption [5]. For vegetarians, the motivations tend to be rather complex and diverse [52]. To interpret the complexity of vegetarians' motivations, Fox and Ward grouped vegetarians into "health" and "ethical" vegetarians [53]. The complexity of diet motivations is also seen by the fact that half of the vegetarians do not consider themselves to be animal activists (and nearly half the animal activists eat meat) [40]. The "ethical" vegetarians, compared to "health" vegetarians, made more sudden changes in their lifestyle to support beliefs regarding animal welfare. These lifestyle changes tend to be triggered by specific events in their life course [53].

A number of papers explore the relationship between individuals' beliefs about animals and moral concern toward meat consumption [5,54]. When considering attitudinal differences in diet choices, vegetarians in general show more compassion for animals [5]. In addition, individuals who endorse right-wing ideology and hold values such as submissive dimensions, cultural traditionalism, group-based dominance, and inequality among groups are more likely to view animals as subjects for human benefits and to self-identify as meat-eaters [55,56].

Several researchers propose that moral concern about meat consumption relates to one's perception of animals' similarity to humans [43]. Human-animal dominance ideologies, or the extent to which an individual considers whether humans either share commonalities or are superior to animals, plays a role in meat consumption behavior [45,57,58]. The study by Rothgerber and Mican evidenced that childhood pet ownership increased the perceptions of human-animal similarities [35]. Common companion animals (such as dogs and cats) are regularly tabooed as food in Western societies [59], which may be due to a similar perception of these animals being closer to humans. Further consequences of perceiving animals as similar to humans are that people tend to ascribe higher cognitive abilities to animals that they perceive to be similar to themselves [43]. The induced perception of similarity has similar effects, as shown in an experiment where participants were first asked to compare animals to humans, after which the participants showed more moral concern about the animal's well-being [10].

3.3.3. The Philosophical Point of View

The ongoing philosophical debate about killing and eating animals focusses on whether to include animals in the principle of justice [60,61]. Much of this debate has centered around animal sentience and cognition, and how such sentience and cognition relate to animals' intrinsic moral rights and moral standing. In his article "In defence of eating meat", Hsiao argues that experiencing pain by animals is in itself not sufficient to make the killing and eating of animals a moral problem and neither is sentience sufficient to confer moral standing [27]. He argues that to qualify for moral status, a creature should instead possess a fairly high degree of rationality [62]. As animals assumedly lack the "capacity for rational agency", they should not be granted moral status. Therefore, if humans want to eat animals, they have the right to do so. In response, Bruers and others have lodged a number of objections

against Hsiao's argument [63,64] by claiming that the sentience and well-being of creatures are in fact sufficient for moral standing and thus that all sentient beings deserve to be free from harm [65]. The debate continues among philosophers, without a conclusion (e.g., [62,66]). From a consumer point of view, many consumers recognize that animals' minds make them similar to humans in a morally important way. For meat-eaters the recognition that animals that have minds are killed for food can create a moral conflict [10]. Another argument in favor of killing animals can be made in which animal morality is not denied per se, but is placed in the context of the needs or interests of humans for food. This might resolve conflicting feelings, as Emmerman suggests that "...if the (human) interest really is that important, it should override animals' interests." ([67] p. 79).

3.4. Situational Antecedents

While abstract thoughts of meat and eating animals can induce a meat paradox in general [68], the context of buying, preparing, and consuming meat arouses the experience of the meat paradox and requires concrete behavioral actions to cope with it [13]. That the decision to consume conventionally, or in an animal-friendly way, or no meat at all is made at a particular moment suggests that situational factors as extrinsic antecedents can influence one's behavior or intention to behave. Prior to deciding to eat meat, proximal "disruptive" events, such as meat-related media coverage, may lead to moral considerations [31]. Even simply reading about vegetarians can trigger a sense of guilt and tension in some meat-eaters [69], leading to reduced meat consumption or a shift to higher welfare meat. The reaction to such disruptive moments tends to be short-lived and end shortly after the situation is no longer relevant [39]. Continuous exposure to multiple disruptions, however, may result in a stronger and more lasting change in people's mind-sets [31,70].

Researchers show that the presence of (living) animals at the moment of meat consumption decision affects the preferences of consumers. Exposure to live animals, their death, or their carcasses are strong elicitors of cognitive dissonance [44,48]. For example, cooked pieces of chicken in a soup were seen as tasty, while a raw chicken carcass was disgusting to look at [47]. In a research setting, researchers found that people experienced distress when seeing animal parts such as heads, limbs, or blood [71,72]. Besides the exposure to disgusting animals' bodies, animals that are perceived as cute (e.g., dogs, cats) also lead to disgust responses when people are reminded that these cute animals could be eaten [43,73].

The distinction between these situational and the previously discussed personal factors is not complete. For example, the moral response to the situational confrontation with animal "cuteness" [74] is influenced by empathy, a morality-related emotion which differs between consumers [73]. From the situational studies, we conclude that situational cues play an important role by triggering morality-related emotions (such as guilt, disgust, and empathy) which, in combination with the stage of life and personal values, affect the way people deal with the meat paradox.

3.5. Emotions

The importance of emotions in moral judgments has long been of interest in behavioral studies [40]. Eating animals is associated with several morality-related emotions [75], such as shame, guilt [13], empathy [76], disgust, and repulsion [77]. The affective connection toward meat plays a role in people's moral reasoning [57]. For example, empathy with animals is believed to be the major factor in differentiating vegetarians from omnivores. Zickfeld et al. found that cuteness, in particular, generated empathy toward animals and influenced meat consumption [73]. Neuroimaging research showed that "ethical" vegetarians had different empathy-related brain responses to the image of animal suffering compared to omnivores [78].

Disgust is the most commonly discussed negative emotion in meat-eating. Disgust is an emotion that originated to avoid eating spoiled or unsafe food. Disgust became, with the process of civilization, related to avoiding immoral behavior, including eating meat [79]. Regarding the relationship between moral stances and emotions, one may assume that moral vegetarians first adopt a reasoned position

and later transferred the reasoning into automatic feelings of disgust when confronted with meat [25]. Fessler and colleagues proposed the opposite hypothesis, according to which spontaneous disgust results in, rather than from, a justified moral stance. However, Fessler and colleagues did not find evidence for this hypothesis and reverted to the conclusion that moral deliberation is indeed more likely to cause disgust than the other way around [80]. Once the moral rationale is associated with disgust, this disgust is then recruited when making morality-based choices [10].

Generally speaking, people are motivated to protect themselves from negative emotions and attempt to reduce them. Loughnan's study suggested that psychological emotion regulation can reduce the moral dilemma, at least partially [81]. In his study, participants were told to expect to consume either meat or fruit before entering the laboratory. Those who anticipated eating meat reported less negative emotional arousal at the time of consuming meat and ascribed less mentality to animals than the group expecting to eat fruit. This suggests that empathy toward animals had been proactively downplayed and hence the moral dilemma had been solved.

3.6. Resolving the Meat Paradox

Meat-eating behavior can be viewed as a specific case of cognitive dissonance where behavior and a belief are in conflict, creating an unpleasant situation where people are propelled to resolve the dissonance. Loughnan et al. suggested two ways to resolve cognitive dissonances: one is to change behaviors—for example, to become a vegetarian so that one's behavior is aligned with one's moral ideals and beliefs; the second way is to change moral ideals and beliefs by aligning one's beliefs with one's behavior [81].

3.6.1. Behavior Change

Early research on the subject of meat-eating behavior has often drawn on expectancy-value models such as the Theory of Planned Behavior (TPB) and the Theory of Reasoned Action (TRA) to understand consumer behavior. These models emphasize that behavioral intentions and subsequent behavior are driven by attitudes, perceived behavioral control, and subjective norms that in turn consist of social and moral norms. These models thus predict that one's behavior will be consistent with the moral intention. However, the predictive power of moral intentions on actual consumption behavior is challenged because there is little evidence of a relevant change in moral consumption behavior [82].

Regulatory Focus theory, a stream of motivation theories, is applied to explain goal regulation for consumer food behavior [83,84]. Regulatory Focus theory distinguishes two motivational orientations: promotion-focus and prevention-focus. Promotion-focussed individuals target positive goals that could be achieved, while prevention-focussed individuals tend to look at negative consequences that should be avoided. For meat-eating behavior, De Boer et al. reasoned that supporting the welfare of animals can be a goal that should be achieved (promotion-focus) or a responsibility, the lack of which should be avoided (prevention-focussed) [85,86]. These two types of motivations could explain different strategies: people with a promotion focus would proactively approach the opportunity to eat meat with higher animal welfare or become vegetarians, while those with prevention focus would avoid conventional meat by eating animal-friendly meat products or becoming vegetarian to avoid the thought of hurting animals.

The experience of moral conflicts can have a direct influence on meat-eating behavior. Studies support that the experience of moral conflicts increases consumers' willingness to pay [87], willingness to eat [73], and shifts to purchase meat products that are produced in an animal-friendly manner [37]. Alternatively, the experience can also lead to choices in favor of vegetarian/flexitarian diets [88]. Experiences of moral conflict appear to be particularly influential in a family setting. Parents experience dissonance answering the question "where does meat come from" from their children and explaining the lives and deaths of animals for human usage [89]. Urban parents were more likely to reveal that they were conflicted about eating meat and showed more empathy toward children who want to stop eating meat compared to rural parents [90].

In spite of the indication that behaviors may change, the mere fact that meat remains part of the diet for the majority of the world's population, and the global annual meat consumption is stable or even increasing, suggests that reducing meat consumption or becoming vegetarian is not yet the dominant way people choose to deal with the meat paradox [57,79]. In fact, it appears that changing moral attitudes rather than behavior is the more commonly adopted strategy to deal with cognitive dissonance [91].

3.6.2. Rationalization

Dissonance theory helps explain why the simple act of eating meat results in the change toward a more pro-meat attitude [81]. Bastian and Loughnan subsequently developed a model highlighting that the process of dissonance reduction is needed to facilitate effective behavior [9]. In their model, emotions motivate people to resolve the dissonance. These emotions, in a more general overview of cognitive dissonance resolutions, trigger a moral disengagement mechanism [33], through which people selectively deactivate moral reflection to reduce dissonance when they start to consider the association of immorality with their own behavior [38,68,92,93].

In the section on philosophical points of view, the denial of animal mind was introduced as a strategy to reduce dissonance. The denial of animal mind is related to the belief in human supremacy over animals [55,94]. Consumers also deny animals other uniquely human characteristics, such as morality, secondary emotions [35], or values [60]. By denying the moral status or mental capacities of animals, such as the capacity for intelligence and sensation, people can reduce their concern for animal well-being [10,12,26], thus reducing dissonance. Bastian et al. [95] showed that especially when people themselves feel responsible for the harm caused to others, the denial strategy is likely to occur and be considered useful. Individuals' denial of animal suffering and the belief that animals are hierarchically inferior to humans coincided with more reported meat consumption [26,55].

Related to the denial strategy is the cognitive process of categorizing an animal as "food". Empirical evidence from Bratanova et al. revealed that categorizing animals as food shifts individuals' focus away from morally relevant attributes, such as the capacity to suffer [36]. In this line of thought, other researchers find that mentally dissociating meat from its animal origins serves as an important function to escape the dissonance [96]. Dissociation is effective because it may reduce the empathy for animals that were killed and reduce feelings of disgust. In a series of experiments, Kunst and Hohle presented participants with processed meat, beheaded pork, and living animals in advertisements, and then asked them to reflect on the psychological attributes of the animals [72]. If people were subsequently disrupted in their thoughts, the dissociation was less successful and people experienced higher levels of empathy and disgust. This suggests that dissociating oneself from animal morality takes some effort. The researchers conducted a comparative follow-up study in Ecuador and the U.S., showing a more potent use of the dissociation approach in the U.S. because American consumers are not used to unprocessed meat, thus being more sensitive to disrupted information linking meat to animals [79]. Modern ways of transforming living animals into unrecognizable meat ("de-animalize") and changes in the marketing of meat in this way assist consumers in dissociating the unpleasant link between food and animals [71,80,97]. The remaining dissonance can be further reduced by delegating responsibilities for ethical standards to the supply chain and the government [21].

Consumers tend to justify themselves by rationalizing their behavior when it comes under criticism. Through justification, consumers can maintain a positive image of themselves as good persons or continue a practice that they might feel guilty about. To be able to rationalize, people tend to search for arguments that support their viewpoints while overlooking challenging arguments. Piazza found that consumers frequently bring up the "4N"s in favor of meat, namely Natural, Normal, Necessary, and Nice, to defend their choice of eating meat [91]. Other studies show that consumers justify meat consumption by bringing up hedonistic, nutritional, evolutionary, or social arguments [47,91,98]. In addition, researchers have found another commonly used strategy, i.e., the ignorance strategy. An example of consumers ignoring challenging arguments is found in a study that investigated how

people dealt with the information that animals are more intelligent than they previously thought. In such cases, people do tend to ignore such information even if available in forming moral thoughts or judgments about animals, particularly those used as food [36,99]. Subsequently, by using ignorance strategies, individuals can enjoy meat without having concerns [100]. This explains why “animal-mind” interventions from TVs or the Internet fail, as people ignore information even when it is readily available.

The aforementioned strategies for moral belief change can be explained by motivation theories. The motivation to reduce dissonance explains how people respond to the mismatch between their behavior and values: by changing their attitudes and denying, strategically ignoring, or claiming human superiority (e.g., [55,56]). For example, the denial strategy is a motivational pathway people use to obscure moral responsibility and defend their meat-eating practices [10]. These resolution strategies fit the cognitive dissonance theory [101] and align with the interpretation of findings along the eight ways to reduce cognitive dissonance for the meat paradox listed by Rothgerber [69]: avoidance, dissociation, perceived behavioral change, denial of animal pain, denial of the animal mind, pro-eat justifications, reduction of perceived choice, and behavioral change. Noticeably, out of the eight ways to resolve dissonance that Rothgerber mentioned, seven resolve dissonance without changing behavior, once again indicating that a change of attitude about morality is probably easier than changing meat consumption.

4. Discussions

4.1. *An Integral Perspective to Resolving the Moral Dilemma Regarding the Choices of Animal Products*

Based on the systematic review, we conclude that the experience of moral dilemma consists of two elements: (1) negative emotions evoked by the thought of, or the confrontation with, eating meat; and (2) cognitive dissonance between eating meat and the belief that current meat production is immoral. Negative emotions can be seen as an experience of the moral dilemma, in line with theories on the psychology of morality [102,103]. The moral dilemma causes mostly negative emotions, such as guilt, disgust, empathy, etc. [102]. This is in line with Frijda’s arguments that emotions are elicited by events that are personally relevant and that negative emotions function as an indication that the situation is problematic [104]. The occurrence of negative emotions and cognitive dissonance is subject to two groups of determinants: (1) personal factors of individual consumers, such as values, motivations, life experience, demographics, and a philosophical point of view on animal eating; and (2) situational factors individuals are confronted with, such as eating meat in the situation of consuming a meal, reminded of, such as meat product attributes being associated with sentient beings, or confronted with, such as disruptive events like the media coverage of animal welfare issues.

4.1.1. Determinants of the Moral Dilemma: Personal Factors

Personal factors influence how individuals differ in their position regarding the morality of meat-eating. The first class of personal factors consists of demographics and life experience. These factors may influence negative emotions, e.g., women showing generally more disgust with eating unethical meat or wealthier consumers being more willing to spend money on animal-friendly products [49]. While demographics and life experience are relatively stable, some may change over time (e.g., age and life experience), while others may not (e.g., gender). Life experience may go through some moments of rapid change, for example when moving out of the parents’ home and going to college, or during a divorce, which may change the outlook on life and subsequent food choices [105].

The other two personal factors, i.e., motivations and values, are two sides of the same coin. Motivations make consumers behave in a way that fits with their goals and values. Values, in turn, are long-lasting general personal beliefs about something or someone [106]. Values explain what actions a person sees as fit in a social context. An individual has various values that are personally combined to form a value system. Both motivations and values play a role in the moral dilemma. Altruistic values toward animals or motivations to avoid animal suffering may readily lead to negative emotions about

eating meat. Values in themselves can already lead to a moral dilemma when people have conflicting values relevant to meat consumption (e.g., values geared toward hedonic experience may favor eating meat, while environmental values may oppose it). The moral dilemma can thus be a value conflict.

A different personal philosophical point of view, such as a pragmatic, intellectual, or humane attitude, leads to different views on the meat dilemma [107]. Pragmatic philosophy emphasizes the utility of actions by comparing input and output, which may lead to a dilemma about eating meat associated with animal suffering. If the trade-off between enjoying meat and feeling bad about animal mistreatment is negative, we feel a dilemma when asked to eat meat from products of low animal welfare. On the other hand, if this trade-off is positive we do not feel such a dilemma even if we are aware animals are suffering. Intellectual philosophy typically refers to the logic in making decisions. People relying on intellectual philosophy cite laws, principles, facts, and information to make decisions; when animal suffering goes beyond such laws and principles, these people may feel a dilemma, but as long as meat production is within the agreed-upon limits, they will accept animal suffering without experiencing a dilemma. In the humane operating philosophy, the life and relationships of all creatures are important, making animal welfare potentially more important. Within this philosophical approach, consumers will likely experience a meat dilemma when confronted with animal suffering. Pet ownership during childhood increases perceived human-animal similarity [35], and, as a consequence, the philosophy of humanism might be more prevalent among pet owners. This might explain why the meat paradox is more frequent among people who owned pets in childhood. Personal philosophical points of view relate to personal motivations and values, explaining the value set of consumers and how they behave to align their thoughts, beliefs, motivations, values, and actions. Therefore, it links values to behavior [107]. Nevertheless, while personal philosophies guide a prioritization of values and the relation of values to motivations, the exact outcomes are not as clear-cut, since “. . . philosophy in general has never quite known what to do with animals. . . ” [108], which means that the philosophical point of view regarding the meat dilemma is open to interpretation [28]. In addition, the philosophical point of view relates to socio-demographic aspects. For example, Kovach shows that females had a predominantly humanistic philosophical orientation [109].

4.1.2. Determinants of the Moral Dilemma: Situational Factors

Situational factors are the second important element that may trigger a moral dilemma. Meat-eating is a momentary experience [81]. It is at that moment, in that certain situation—when one is eating or intending to eat or buy—that one has to deal with the moral dilemma. At that particular moment, individuals need to align their values, motivation, and philosophies with their behavior [110]. Imagine a conference dinner hosted in a mainstream steak-restaurant where animal welfare is ignored. Attendants are then temporarily confronted with overwhelming social pressure and a prior commitment (as they registered for the dinner) to consuming meat. If one of the attendants has a strong personal position in favor of animal welfare, this situation may easily induce a moral dilemma, negative emotions, and/or cognitive dissonance. Product attributes are another straightforward situational factor. Grocery shoppers in the modern supermarket rarely see recognizable animals or animal parts, such as bloody animal limbs. Retailers seek to defuse the meat dilemma for consumers, aware that the less recognizable the meat of once-living-animals, the lower the moral dilemma [73]. The emotion of empathy is influenced by the degree to which raw chicken meat is processed (whole chicken: more empathy; chicken parts, or minced chicken: less empathy [72]). Another situation that may trigger a social dilemma is that of parents having to explain questions such as “where meat comes from” to their children [90]. Disrupting events such as media attention to the culling of herds to contain diseases may also provide a situation that increases the moral dilemma about animal welfare and meat production.

4.1.3. Resolving the Moral Dilemma

The most prominent expressions of the moral dilemma can occur when different personal factors (e.g., values) enter into conflict, or when consumers are put in a situation which conflicts with their

values, motivations, philosophical point of view, or behaviors related to their socio-demographic profile and lifestyle. As the experience of the moral dilemma exhibits itself through negative emotions and cognitive dissonance, people will be motivated to resolve the dilemma and mitigate these negative feelings. The dilemma can be dealt with by adjusting the meaning of one's values to fit one's behavior or by changing one's behavior to fit one's values.

From the perspective of animal welfare, it would be better if the moral dilemma instigated behavioral changes. That is, one would start choosing only animal-friendly products, or avoiding situations where the default behaviors are against his/her personal values and motivations about animal welfare. However, in practice, situations related to less animal-friendly behavior cannot always be easily avoided. To reduce dissonance, in most cases, consumers do not change their behavior to follow their moral values, but change their beliefs to match their behavior [111]. Changing beliefs also solves the meat dilemma, as there is no longer a conflict between the behavior and personal values. Re-evaluating and prioritizing values may resolve dissonance, for example, through licensing counter-value behavior. "I made a big donation to an animal welfare organization, so now I am entitled to eat whatever meat I want", or re-evaluating, for example, hedonic motivations associated with the behavior "I do not eat meat, as I did not like it after all". Rationalization is another common way to legitimize beliefs about the eating of animals as being part of human heritage. Arguments such as "animals do not feel pain the same way humans do" are often found to justify consuming meat without considering animal welfare, and hence avoiding negative emotions [26]. More subtle reasons about how people justify behavior can be found in pragmatic philosophy, where the sacrifice of animal well-being is considered acceptable as animals' sacrifice is weighed against the benefits for many people [107]. Thus, people can resolve the meat dilemma by changing their behavior (moving toward high-animal-welfare meat), but ironically also by changing their beliefs (re-evaluating their position toward animal-friendly meat products in a way that may lead, in the long term, to less consumption of animal-friendly meat products). For the study and prediction of these issues, both elements should be taken into account in the context of animal welfare in meat production (Figure 3).

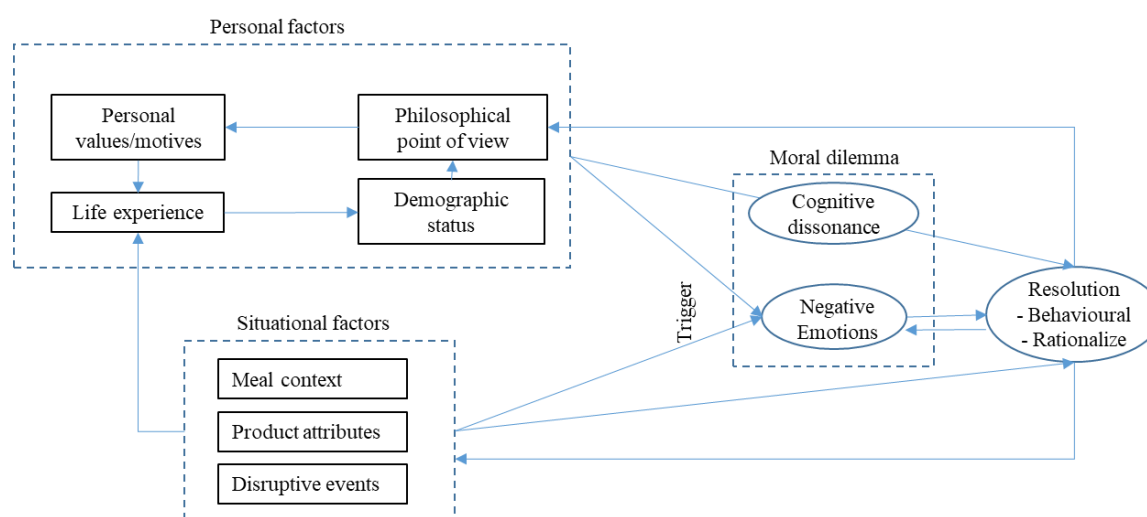


Figure 3. An integrative perspective.

4.2. Future Research and the Application of the Conceptual Overview

Meat-eating differs from many types of food behavior in that the material comes from a once-living creature that was kept, cared for, but also killed for human consumption. This makes meat consumption a relevant moral choice for consumers. A comprehensive overview and synthesis of the literature of the consumers' moral dilemma relevant to animal welfare issues in meat consumption was provided based on a systematic literature analysis. As the synthesis is based on a configurative review, the direction of causal and effect relationship cannot be claimed; nevertheless personal factors, situational factors, a

moral dilemma containing emotions and cognitive dissonances, and ways to resolve the dilemma could be organized in a structured way to help researchers organize their reflection on morality conflicts in meat-animals.

The review highlights an integrated perspective which combines both personal and situational factors. The combination of both factors may cause a moral conflict to occur. It is important, in this context, to realize that not all consumers have a dilemma. Consumers who have fully accepted meat as a commodity rather than part of a once-living being will experience no dilemma, but neither will vegans, who have long ago moved away from eating meat or using any other animal product. It is in the group between those extremes that a moral dilemma is most likely to occur, when a situation calls for a specific action that does not align with important values and/or motivations. Since what is at stake is the combination of the situational and personal characteristics, different situations may lead to different moral dilemmas for different people. Moral dilemmas relate to negative emotions and cognitive dissonance, and these negative experiences require a solution. Many papers adopt a cognitive approach to the moral dilemma, in line with the rational actor model. Against this, findings in moral psychology argue for the central role of emotions (e.g., [102]). For instance, Kollmuss and Agyeman concluded that “the stronger a person’s emotional reaction, the more likely that person will engage in a new behaviour” ([112], p. 254). In light of the strong emotional attachment many individuals have to animals, we agree with this position and argue that it is essential to give morality-related emotions a central role in meat choices, alongside the rational or motivational issues prevalent in the literature.

This review has important practical implications. For campaigns to reduce meat consumption, capitalizing on the moral dilemma, i.e., criticizing consumers’ behavior for being misaligned with their moral beliefs and values, may be counterproductive. Especially if consumers are in a situation where refraining from eating meat is not obvious, the emphasized moral dilemma may lead to a change in beliefs and motivation rather than to a change of behavior—and, if prolonged, it may even lead to a change in values and philosophical stance toward a lasting justification of eating meat. To deal with the moral dilemma, it will thus be essential to consider both the impact of moral values on behavior and, vice versa, the effect of behavior on moral values.

By focussing on emotions and cognition, observing discourses which indicate strong emotional responses and cognitive dissonance during animal welfare debates may function as “canaries in a coal mine”: early indicators that either behaviors or values are likely to start shifting. If low-animal-welfare meat remains the default in such situations, the values may lastingly shift away from animal welfare. To promote behavior change, the industry and retail sectors may simplify consumers’ change of behavior. In terms of social marketing, this would mean providing sufficient opportunity and ability to make the choice [113]. Changing the situation may be achieved by making the higher animal-welfare choice the obvious choice (in line with the currently popular nudging approaches) [114]. In addition to the active choice of products of low animal welfare, consumers’ choice for low-animal-welfare meats could be made much more difficult by the meat production chain. For example, the mainstream Dutch supermarkets are now setting a minimum level of animal welfare for all their meat, making it hard for consumers to buy meat with lower animal-welfare levels.

5. Conclusions

The current review shows inroads to understand why people continue eating low-animal-welfare meat in spite of the personal belief that animals should be treated well. A limitation is that most of the studies in the review were from Western developed countries, and animal welfare tends to be seen as important in most developed countries [115], where meat consumption volumes are high and processed meats are dominant in retail. Public awareness of ethical meat production is gradually increasing in emerging and developing countries as well [116], but this may follow different patterns than those studied to date. To generalize our findings we need to examine situational factors in other countries, especially in countries where food culture has the strong endorsement of collectivism (such as China and India), or where cultural taboos about eating meat make vegetarian diets generally accepted (as

in India). Nevertheless, we are confident that our proposed organization of the meat dilemma as depending on personal and situational factors, leading to emotions and cognitive dissonance, which in turn lead to resolutions by adjusting one's behavior and/or values, provides a generic scheme for research on the meat dilemma in the context of animal welfare.

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