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RESEARCH

Beyond Natural, Normal, Necessary, Nice: Introducing "Neglectable" as a Distinct Coping Strategy for the Dairy Paradox

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Abstract
Dairy is the second largest greenhouse gas emitter in animal agriculture and requires the killing of animals. Most people wish to avoid harming animals and the climate but also consume meat. Consumers subconsciously use coping strategies to reduce cognitive dissonance caused by this meat paradox. But is there also a dairy paradox? For this exploratory study, we used focus groups to investigate cognitive dissonance and coping strategies related to dairy consumption and compared these to coping strategies around meat. We found that dairy is framed much more positively than meat. However, the types of dairy-related coping strategies strongly overlap with those for meat. We conclude that dairy-related cognitive dissonance occurs, identify the dairy paradox, and three dairy-specific coping strategies: dairy is indirect, overwhelming, and, in summary, neglectable. We suggest adding a fifth N to the Ns of justification of meat consumption: natural, normal, necessary, nice; specifically for dairy: neglectable.

Keywords Milk · Cheese · Vegetarian · Vegan · Cognitive dissonance · Coping strategies · Framing · Meat paradox · 4Ns · Neglectable

This article sums up the results of the Master's thesis of Sarah Kunze (main author) and large text segments from the thesis are reproduced in this article. While the thesis itself is not published in any journal, it is in its original form available from the repository of Wageningen University (Kunze, 2022).

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Introduction

The food and agriculture sector is responsible for 26% of total global greenhouse gas (GHG) emissions (FAO 2017). Around 14,5% out of these 26% are caused by animal agriculture systems (Twine 2021). At the same time, global food consumption keeps increasing. There is an ongoing debate within academics as to what extent animal-sourced food (hereafter referred to as ASF) needs to be reduced to not exceed planetary boundaries. Especially Western diets strongly rely on ASF even though animal agriculture is very inefficient (Aiking and de Boer 2020) compared to the direct human consumption of plant-based foods. To combat this inefficiency in livestock farming, many authors suggest that a transition from animal protein to alternative proteins can contribute to a more sustainable food system (Aiking and de Boer 2020; Godfray et al. 2010; Helms 2004). This so-called protein transition implies a reduction of ASF to decrease the alarmingly high emissions of the sector and the expected increase in demand (FAO 2017). Contrarily, it has been argued that a moderate use of livestock can reduce land use since animals can convert biomass inedible to humans, like grass and waste products, into food. At the same time, it is acknowledged that livestock leads to more methane emissions leading to a higher climate impact than plant-based foods in terms of emissions (Van Zanten et al. 2018).

These harmful environmental effects do not just pertain to meat alone, but also to dairy. Reducing meat as a dominant source of protein and a strategy to make diets more sustainable has already entered the societal discourse. However, the dairy sector alone is responsible for up to 4% of the total anthropogenic GHG emissions (Hagemann et al. 2012). Global meat consumption has almost tripled while dairy consumption has doubled since the 1970s (FAO 2017). The production and consumption of some dairy products such as cheese (2.79 kg CO_2e /100 g) is associated with even higher carbon dioxide equivalents (CO_2e) (e) than pork (2.4 kg CO_2e/100 g) or chicken (1.82 kg CO_2e/100 g) (Poore and Nemecek 2018). North America and Europe have the highest dairy consumption (FAO 2017) compared to the rest of the world. Yet, there are many more publications questioning meat consumption than dairy consumption. Dairy seems to lack attention while both animal-sourced foods share similar issues related to animal welfare, potential negative human health effects, risk of pandemics, a variety of emissions (CO_2e, methane, nitrogen, etc.), land use, water use, and water pollution (FAO 2017; Holzhauer and Wennink 2023).

Likewise, societal discourse and academic literature seem to be mostly focused on meat and do not problematize dairy in the same way. That animals are killed for meat seems to be common knowledge. For dairy and eggs, many people assume that this is not the case, since only the animal product is consumed and not the animal itself. Yet, if you drink milk or eat an egg, you share the responsibility for killing animals (de Boer 2022). For both dairy and eggs, animals need to be bred. Cows do not give milk unless they have a calve. This means a 50% chance that a male calf is born every time. Male calves biologically cannot produce milk which means they will be slaughtered straight away or transported to a meat producer to be killed within a year. There are ongoing studies on gendered insemination (female sexed semen) to prevent the male calves as byproducts. However, this is still more expensive than slaughtering male calves and not standard practice yet (Balzani et al. 2021). Most calves are separated from their mothers shortly after birth, which raises several welfare concerns (Meagher et al. 2019; Thompson 2023). In the egg industry male chicks also do not lay eggs which means they are slaughtered at one day old (Gremmen et al. 2018).

Generally, there are animal welfare concerns about the living conditions and further suffering of the animals' lives in captivity. Most livestock kept for meat, dairy and eggs frequently face welfare issues due to their, often cramped, living conditions and interventions, such as dehorning. A recent study suggests that animal welfare in dairy production systems may be worse for animal welfare than in conventional beef farms (Mandel et al. 2022).

This exploratory study investigated young consumers' views on the (un)acceptability and (un)sustainability of dairy compared to meat. We were particularly interested in how young consumers deal with tensions arising from contestations, as well as from alleged discrepancies between their views and their own dietary practices. The Netherlands is globally known as a dairy nation – for both its consumption and production of dairy (Kwakman 2021). This makes a study into Dutch attitudes towards dairy especially interesting. A recent study on the attitude of Dutch people towards the protein transition ($n = 8500$) found that most people in the Netherlands are omnivores, closely followed by flexitarians, 7% consider themselves vegetarian and 1.4% vegan (ProVeg 2022). At the same time, almost 75% of respondents agree with the statement that *the use of animal products has to decline in the Netherlands*. Participants were motivated to reduce their meat intake for the following reasons: animal suffering (86%), food security (81%), pandemic avoidance (80%), climate change (79%), and human health (79%) (ProVeg 2022). The relatively low number of vegetarians and vegans in the Netherlands indicates a large gap between attitude and action: Dutch consumers see a need for change in animal agriculture and do not agree with the current system based on intensive animal husbandry. Their diets, however, do not reflect this.

With rising awareness of the issues related to foods from animal agriculture comes discomfort because people are challenged to question their behavior. Most people wish to avoid harming animals but also consume meat (Gradidge et al. 2021). This inconsistency between beliefs and behavior has been extensively studied in the context of meat consumption ('meat paradox', Loughnan 2012), where a range of coping strategies (CS) have been identified to manage cognitive dissonance (Nijland 2016). More recently, similar dynamics have been explored among vegetarians, notably through the concept of the 'cheese paradox' (Docherty & Jasper, 2023), highlighting how non-meat animal products also trigger ambivalence. Building on this emerging body of research, we extend the inquiry to dairy consumption by comparing meat- and dairy-related CS among young Dutch consumers, aiming to assess how deeply a comparable paradox may exist for dairy. Our specific interest in this exploratory study was on how meat- and dairy-related CS compare, to better understand how far a similar paradox exists for dairy as has been shown to exist for meat. This research sought to answer the following two research questions (RQ):

RQ1: How do Dutch consumers frame dairy as opposed to meat?
RQ2: Which coping strategies are used for dairy compared to meat?

Conceptual Framework

This section introduces key concepts and theories informing our inquiry that form two conceptual lenses. The first explores how consumers think about consuming animal-based products (cognitive framing), leading to the question of how consuming animal-based products may produce inner tensions (cognitive dissonance), especially regarding meat (meat

paradox). The second analytical lens extends this by focusing on how consumers try to alleviate those tensions (CS and justifications). Table 1 shows the different conceptual lenses we employed, the coding approaches we followed, and the analytical foci that guided each step.

Cognitive Framing and Dissonance

Framing is a concept that is concerned with how people view reality and make sense of the world around them. According to cognitive framing theory, people develop knowledge structures based on their experiences that help them organize new information and guide action (Dewulf et al. 2009). Framing is essentially a way of viewing a phenomenon such as meat consumption: during the process of framing, we select certain aspects of a reality and make them salient (Entman 1993, p. 52). Typically, frames involve a description of a problem, a cause, an evaluation or judgment, and a solution (Entman 1993). For example, meat consumption has been found to be framed in polarized ways in media of anglo-saxon countries, e.g., about whether red meat consumption should be reduced or not, who is to blame for excessive meat consumption, or what solutions could be (Sievert et al. 2022). Similarly, for dairy farming, divergent framings were found for both animals and farmers in a UK study, foregrounding conflict, and distrust in farmers' authentic care for animal welfare (Jackson et al. 2022). Surprisingly, we have not encountered research that has explored consumers' framings of dairy vs. meat in a comparative way.

Ample research has shown that the human brain does not like to be exposed to internal tensions. Discomfort can occur when there is a gap between what we believe is right and our actions (Loughnan et al. 2014). Ethical protein consumption often is promoted by depicting the injustices within the livestock sector and highlighting its negative aspects (e.g., harm to animal welfare, emissions, human health problems, or pandemics). This can result in psychological tension within consumers, called cognitive dissonance, which can cause feelings of uncertainty, discomfort, or even anxiety. In the case of meat consumption, this phenomenon has been labelled the 'meat paradox', which refers to the paradox that "many people wish to avoid harming animals, yet most people also consume meat" (Graddidge et al. 2021, p.1). The meat paradox is a form of cognitive dissonance (Khara et al. 2021). Examining this paradox helps to understand the underlying mechanisms that make people act in a way that is different from what they believe. One way to deal with this feeling is to use CS, which aim to prevent or reduce this uncomfortable feeling by justifying behaviors instead of changing them.

Table 1 Conceptual framework and study design by section

Section 'Title' Reference to RQ	'Cognitive framing and dissonance' Responds to RQ1	'Coping strategies and justifications' Responds to RQ2		
Conceptual lenses	Cognitive Framing	CS (Nijland)	CS (Rothgerber & Rosenfeld)	4 Ns of justification for meat consumption
Coding Approach	Inductive coding	Half-open (deductive)	Half-open (deductive)	Half-open (deductive)
Analytical Focus	Compare Meat <> Dairy	Compare Meat > Dairy	Compare Meat > Dairy	Compare Meat > Dairy
Section 'Title' Findings	'Framing of dairy as opposed to meat'	'Comparing coping strategies for meat and dairy'		

Coping Strategies and Justifications

Coping strategies (CS) are pieces of framing that are brought forward "to feel good – or less bad – about contradicting aspects of a certain decision" (Nijland 2016, p.177). They mostly occur on a subconscious level. CS are not inherently negative; rather, they help people deal with contradictions they face. On the other hand, when used extensively, they subconsciously help to avoid difficult decisions, ultimately preventing change. CS could be regarded as ways to excuse the continuation of behavior about which one is ambivalent. For example, some meat eaters argue that nature is cruel and therefore it is actually in the interest of animals to be farmed by us (Nijland 2016). CS provide tools to ease a triggered tension in one's mind – a tension occurring when one's actions are not reflected by one's beliefs (Nijland 2016). These CS have recently started to gain attention also in studies focusing on vegetarians. Docherty and Jasper (2023) coined the term 'cheese paradox' in their analysis of how vegetarians justify consuming non-meat animal products. In this research, we wanted to expand on this by studying cognitive dissonance and CS for dairy consumption more broadly.

By expanding the knowledge of meat- or dairy-related CS one can talk about them and start to question them. CS have been extensively studied in the domain of meat consumption. For example, Nijland (2016) differentiates between 10 different CS for eating meat based on previous research and her own findings (Table 2): four CS work to reduce dissonance; four CS to oppress dissonant cognitions; and two CS to accept dissonance:

Rothgerber and Rosenfeld (2021) differentiate two different groups of mechanisms to deal with meat-related cognitive dissonance (MRCD): mechanisms to prevent and mechanisms to reduce meat-related cognitive dissonance (Table 3).

A related taxonomy of CS to reduce cognitive dissonance is the four Ns of justifying meat consumption that emphasize that meat is natural, necessary, normal and nice. Three Ns have originally been proposed by Joy (2010) and later extended with a fourth N by Piazza et al. (2015). The four Ns also appear as meat-based reduction of dissonance strategies in the Table 2 based on Rothgerber and Rosenfeld (2021) and are used as CS by consumers to "diffuse any guilt they might otherwise experience as a consequence of consuming animal products" (Piazza et al. 2015, p.115). The original three Ns describe eating meat as *natural*, *normal*, and *necessary*. The N that has been added later describes meat eating as *nice* (Table 4).

Each of these taxonomies serves as authoritative guidelines for this research. We chose not to merge them and note that they are not mutually exclusive and show overlap, for example regarding third-party blame (Rothgerber and Rosenfeld 2021) and shifting responsibility (Nijland 2016). A comprehensive inventory of CS and their definitions is provided in the appendices together with several dairy-related example quotes from this research. Since these mechanisms for justifying meat consumption in society and the underlying CS have

Table 2 Meat-related coping strategies (CS) (based on Nijland 2016)

CS to reduce dissonance	CS to oppress dissonance	CS to accept dissonance
Adding consonants to behavior	Misinterpreting	Admitting dissonance
Eliminating dissonance	Shifting responsibility	Embracing dissonance
Amplifying consonants	Detachment	
Trivializing dissonance	Concealment	

Table 3 Coping strategies for MRCD (based on Rothgerber and Rosenfeld 2021)

	Mechanisms to reduce MRCD		
Mechanisms to prevent MRCD	Indirect strategies	Direct strategies	
		Animal -based reduction	Meat-based reduction
Avoidance Willful Ignorance Dissociation	Perceived behavioral change Self-definition as humane meat-eater Do-gooder derogation Third-party blame Moral outrage	Denying animal mind Dichotomization	Meat is natural Meat is normal Meat is nice Meat is necessary

Table 4 The four Ns of justification for meat consumption (based on Piazza et al. 2015)

Category	Definition
Natural	Appeals to biology, biological hierarchy, natural selection, human evolution, or the naturalness of eating meat.
Necessary	Appeals to the necessity of meat for survival, strength, development, health, animal population control, or economic stability.
Normal	Appeals to dominant societal norms, normative behavior, historical human behavior, or socially constructed food pyramids.
Nice	Appeals to the tastiness of meat, or that it is fulfilling or satisfying.

been elaborately described in the past (Nijland 2016; Rothgerber and Rosenfeld 2021) the question arises, why other ASF such as dairy and eggs, have not been explored. This study explores for the first time dairy-related CS since dairy is the second largest emitter in animal agriculture (FAO 2010).

Methods and Study Design

The study employed an exploratory and interpretative approach to investigate how Dutch consumers frame dairy compared to meat and which CS they use. We were interested in investigating consumers' perceptions and meaning-making through their language use and initial reactions to dairy-related triggers. We used focus groups to collect qualitative data on participants' framing of dairy and their use of CS. Focus groups provide a social setting that gives valuable insights into the interaction of the participants with each other on a topic (O.Nyumba et al. 2018). CS also are likely to arise when people confront each other with different values or beliefs. The group sessions are therefore more suited for the data collection of this study than to one-on-one interviews.

Participants

As our aim was to explore the way consumers frame dairy and which CS they use compared to meat, it was important to include participants with a variety of diets, reaching from omnivores to vegans. To ensure that participants did not feel uncomfortable or limited in sharing their views, we applied measures to reduce social desirability and group pressure and to create a pleasant and safe group dynamic. The reason why we have chosen participants with diverse dietary habits is that such a setting is particularly suited for drawing out CS, as participants are confronted with others who think differently and therefore subconsciously employ CS to justify their dietary choices. Furthermore, we chose to purposefully conduct this exploratory study in the Netherlands and with students from different study programs within Wageningen University and Research (WUR). In total, three focus groups were conducted with six participants each, resulting in a total sample size of $n=18$ participants. We opted for a group size slightly below averages found in review studies to ensure that the conversations could happen in a comfortable setting where participants are most likely to speak freely and openly and where all participants are encouraged to speak (Skovdal and Cornish 2015).

Moreover, as this was an exploratory study our aim was not to give a representative account of how people frame diary and what CS are generally used in the Dutch population. Rather, our aim was to find out to whether CS were used at all in the case of dairy consumption, to compare these to meat related CS, and address the question of how the CS related to the way dairy is framed in the Netherlands. For this purpose, a small sample size is sufficient, and saturation of data collection is not necessary. For the group dynamic, the shared university background was a positive condition. The choice for WUR students was also based on the strong sustainability focus of the university and a variety of study programs related to agriculture. Students at WUR can therefore be seen as part of a green "bubble" within Dutch society. We expect a higher chance for the occurrence of cognitive dissonance within WUR than in other Dutch universities (or the general population) because of the high sustainability focus and agricultural faculties. WUR students are therefore constantly exposed to different academic positions on ASF, especially since there is high variation within the sustainability discourse within WUR (Van Dinther 2020). This makes the sample especially interesting to explore and highlights the variation within the different academic fields connected to sustainability. In 2021, WUR won the prize for the most sustainable university for the fifth year in a row (GreenMetric 2022). Recruiting WUR students therefore allowed us to assume some familiarity with the sustainability transition discourse, yet from different disciplinary perspectives.

All participants ($n=18$) were between 20 and 28 years old and had lived in the Netherlands for more than 10 years. To include diverse academic backgrounds, students were recruited from a variety of study programs at Wageningen University. Our sample reflects this diversity, with approximately half of the participants coming from the life sciences (e.g., animal sciences, plant sciences, food technology) and the other half from the social sciences (e.g., international development, economy and policy). Most of the participants identified as flexitarian ($n=8$), followed by vegetarian ($n=6$). Only two participants described themselves as omnivores, one indicated almost vegan in the comments of the survey, and one was strictly vegan. Compared to a nationwide study (Proveg 2022) this sample contained significantly more vegetarians and vegans. This difference aligns with what was expected

in a sample of Wageningen students who tend to be more involved in topics around sustainability transitions and agriculture. Two of the participants grew up on a farm, one of them on a dairy farm. Further, the sample was slightly female dominated, eleven participants identified as female, and the other seven as male. The study from ProVeg (2022) across the Netherlands found that among females there are twice as many vegans and vegetarians as among males. Because of the small sample size gender will not be considered further in the analysis and gender-neutral pronouns they/them are used. Furthermore, all quotes are labeled with the participant number (P1-18), Diet abbreviation (Abbr. O-VV); Focus group number (F1-3), and line in the transcript (Table 5).

The dietary preferences varied across the sample, as well as the participants' motivations regarding food choices. Eight of the eighteen participants indicated flexitarian as their dietary preference which is very similar to the national average of 46% flexitarians (ProVeg 2022). Although the term flexitarian was not further specified in the questionnaire, the term refers to consciously reducing ASF in one's diet.

Data collection

Before the focus group sessions, the participants were asked to fill in a short questionnaire on their gender, age, study program, and diet (omnivore, flexitarian, vegetarian, vegan, or other). Then the main source of data gathering consisted of three separate guided focus group discussions. We invited six participants at a time to attend one of three, 90-minute focus group discussions in person on the WUR campus. The questions used for the moderation guide for the focus group discussions were based on previous meat-related research (Nijland 2016). The guide was organized in three main parts: (1) general questions on food (systems); (2) animal protein and dairy-specific questions; and (3) a thought experiment on dairy, dairy packaging, and in vitro dairy (Table 6). The focus group guide was designed

Table 5 Participant overview per FG (Focus Group)

FG	#	Gender	Age	Diet	Abbr.	Study Program
1	P1	Female	24	Flexitarian	F	Social & Environmental Sciences
	P2	Female	20	Flexitarian	F	Animal Sciences
	P3	Female	24	Flexitarian	F	Social Sciences
	P4	Male	25	Flexitarian	F	Biobased Sciences
	P5	Female	21	Flexitarian	F	Social Sciences
	P6	Female	21	Vegetarian	V	Economy and Policy
2	P7	Male	23	Omnivore	O	Molecular Life Sciences
	P8	Female	21	Vegetarian	V	International Development
	P9	Male	26	Vegetarian	V	Plant Sciences
	P10	Male	22	Almost vegan	V+	AgroTechnology
	P11	Female	23	Vegan	VV	Social Sciences
	P12	Male	24	Flexitarian	F	Food Technology
3	P13	Male	25	Omnivore	O	Geo-information Science
	P14	Female	24	Vegetarian	V	Social & Environmental Sciences
	P15	Female	24	Flexitarian	F	Food Technology
	P16	Female	24	Vegetarian	V	Environmental Sciences
	P17	Female	27	Vegetarian	V	Social Sciences
	P18	Male	28	Flexitarian	F	Geo-information Science

to engage in conversation about both meat and dairy. The topic was first introduced more broadly. Further into the session it became more specific about dairy. This allowed us to investigate how Dutch students framed dairy as opposed to meat, as well as which CS were used for dairy compared to meat.

The discussions were held in June 2022 in Wageningen, the Netherlands. The first two sessions were moderated by an external, experienced moderator. The third session was run by the first author, after observing and learning from the process in the first two sessions. The focus group sessions were audio-recorded and transcribed. During this period of data collection, the Dutch government passed a law that requires a substantive reduction in nitrogen to tackle the nitrogen crisis in the Netherlands. This requires a reduction of almost 70% in areas close to nature reserves. For some farms, this will mean a radical change, either towards organic farming, moving to another area, or fully giving up livestock farming. As a sign of rebellion, Dutch flags were hung upside down all over the country. Following this, many farmers started protesting on the streets. At the end of June this, amongst other actions, led to the blocking of an entire highway with tractors close to Wageningen. These political events have potentially influenced data collection and were mentioned by participants in the sessions.

Table 6 Summary focus group guide (full version in Appendix 4, translated from Dutch)

#	Questions addressed
1	**Introduction** What do you have for breakfast most days? Which factors have encouraged you to study at Wageningen University? Did you ever think about where your food comes from? If you could change something about the food system what would that be?
2	**What do you think about animal protein?** Which animal products do you eat in your daily life? Is there a difference between what you are served by others and what you buy yourself? Which animal products would you eat on special occasions, buy yourself, or order? What are your associations with eating dairy? What do you associate with the production of dairy? Where does your knowledge come from? How is your knowledge limited? Would you ideally know more? Would you like to know more? Would you like to change something in the dairy industry, if yes, what and how? How does this topic make you feel/ what are your thinking? How do you deal with these feelings? Are there aspects you rather not think about? Which topics influence your choice (not) to eat dairy the most? And how? What are the decisive points for you; the tipping point(s)?
3	**Further associations** *Thought experiment*: If you were a dairy farmer, which steps would you need for a glass of milk? *Advisement stimulation*: What do you think about these milk packages? (Picture in Appendix) *Novel food technologies*: What do you think about cultivated milk? (provided explanation on 'Precision fermentation dairy')

Data analysis

The data was analyzed using a thematic content analysis (TA) approach (Braun and Clarke 2006). This suggests six main phases: from familiarizing with the data, to generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Braun and Clarke (2019) emphasize the importance of open-mindedness throughout this process. Theoretical lenses informing the research perspective can be kept in mind but should not dominate the analysis and allow room for new findings. This approach was used to generate data-derived dominant themes inductively for dairy. TA acknowledges the researcher's reflexivity in the analysis and takes into consideration that interpretations are inevitably affected by context and worldview of the one(s) conducting this analysis. Rather than reducing or eliminating the subjectivity of the researcher, it is used productively to enhance a more in-depth interpretation and analysis of the data.

Braun and Clarke's approach to TA emphasizes open and reflexive engagement with the data. Therefore, we started the analysis with an interpretative approach using only inductive coding to surface general trends we observed in the data (Sect. 4.1; Appendix 1). Specifically, we explored the framing of dairy vs. meat. Later, we used a codebook for deductive half-open coding (Appendix 5) with meat-related CS to compare them to what we found for dairy. Data was analyzed by two coders who shared and discussed their interpretations with each other following a consensual coding approach. Reflexivity was further built into this TA approach by keeping and using research journals, intercoder sessions, disclosure and transparency of dietary preferences among the researchers involved, as well as peer and supervisor discussions throughout the process and separately on preliminary findings.

Framing of dairy as opposed to meat

The findings of this research are structured in two sections. First, in the section 'Framing dairy as opposed to meat', we outline how dairy is framed compared to meat, elaborating each framing separately before reporting the results of the analysis comparing the two. In the section 'Comparing coping strategies for meat and dairy', we present the findings on dairy- compared to meat-related CS and cognitive dissonance. The framing of dairy and the CS that are used relate to each other in two distinct ways: (1) The way consumers think about the consumption of animal-based products (cognitive framing) can lead to tensions (cognitive dissonance), giving rise to the use of CS. (2) A positive framing of dairy can be used to strengthen certain CS. The data analysis for the framing of dairy was carried out inductively: we had no prior framework to compare the participants' comments to, and remained open to what would come out of the discussions. The data analysis of the CS and justifications was carried out in a half-open way, deductively comparing the participants' comments to the taxonomies of CS, but remaining open to additional CS that would surface.

Framing of meat

All participants shared awareness of various problematic aspects of the meat industry. Most participants had made or were altering their diet by stopping or minimizing their meat intake. Furthermore, we found the following tendencies in the framing of meat: One

participant highly valued the addition of meat for taste in their food and only consumed vegetarian meals when eating with others who chose to be vegetarian. Several participants did not consider their individual choice as impactful (enough) to reduce or stop consuming meat. Among all participants, there was a shared awareness of various problematic aspects of the meat industry, yet many still argue in favor of meat, reasoning with the convenience in preparation, habit, and taste.

> *I usually buy vegetarian (...) but when I go out for dinner*, *I always choose the meat option to treat myself* (P12, F; F2-142).

One participant justified their occasional meat consumption because they "choose for vegetarian in many other moments" (P5, F; F1-102). One vegetarian in the sample did consume fish from time to time for health reasons in moments when their body really craved a "fatty fish" (P17, V; F3-143). The other seven vegetarians did not seem to make these exceptions when it comes to meat or fish.

Participants most frequently expressed social settings as an argument to consume animal-sourced foods that they try to avoid when cooking for themselves. Here, the argument for preventing food waste and a lower level of responsibility for what is already cooked/prepared was mentioned several times. Several participants, however, did not make this exception when it comes to meat, although they do make an exception for dairy.

Framing of dairy

Throughout all focus groups, dairy was repeatedly described in a more positive light than meat. In the sessions where participants were more outspoken about the problematic aspects of dairy, they mentioned the times when they used to consume it in large amounts and the healthy conception of dairy they were taught by their parents and dairy advertising when growing up. This health connection also dominated across the sample, associating sports, strength, and an important source of protein with (the consumption of) dairy products.

Several participants mentioned a variety of dairy products (with a great love for cheese), health aspects, happy cows on meadows, and typical Dutch landscapes when asked about their associations with dairy. Other participants showed a more critical stance, highlighting that dairy is a crucial part of current production systems, an ideology that constructs milk as very important for one's health and former campaigns initiated by the Dutch government and dairy companies, for example, *Joris Driepinter* "the little milkman" (P8, V; F2-221; Fig. 1) – a cartoon character from the 1960s drawn as a small boy promoting the consumption of three "pints" of milk per day for good health.

When asking about the perceptions of dairy, a famous Dutch gymnast *Epke Zonderland* (P18, F; F3-184; Fig. 2) was mentioned in connection to dairy, farms, cows, and notions of Dutch identity and the importance of dairy for the Dutch nation and that they did not "immediately have a negative word" (P18, F; F3-188) when thinking about dairy.

All three focus groups mentioned the biggest Dutch dairy company "Friesland Campina" as one of their first associations with dairy. This could be connected to the cooperative's research facilities being located on the Campus of WUR.

The question *What do you associate with the production of dairy?* triggered a more critical view of the dairy industry in all three focus groups. Participants referred to the practicali-

Fig. 1 Milk advertisement featuring the cartoon character Joris Driepinter

Fig. 2 Epke Zonderland starring in a Campina dairy advertisement

Table 7 Shortened table of Appendix 2

CS by Nijland (2016)	Findings for dairy
Eliminate dissonance bringing forward cognitions that decrease or eliminate the negativity of the decision	*We do this already for thousands of years, I mean they (cows) are domesticated for our consumption.* (P17, F; F3-237)
Oppress dissonance creating emotional distance between oneself and the possibly negatively affected party	(After someone mentioned that it was strange that we drank cow's milk but not dog milk) *The comparison with dog milk seems unfair to me.* (P17, V; F3-235) *No, I don't even like the taste of cow's milk. Quark I do like a lot, but milk? (*P13, O; F3-488) *I value my taste above my feeling of guilt.* (P7, O; F2-155)
Accept dissonance Acknowledging that there is discomfort, instead of trying to hide it	(After being confronted by an animal activist) *I told the guy: I just really like the taste of certain (animal sourced) products. And he was like: "Yes, but what is more important; That you like the taste of something or that the animal has a good life?" – And well, he really had a good point there. It is tricky.* (P13, O; F3-498) *I don't really feel any tension. If I think I buy oat milk now I think well done. If I don't do it, I think okay. I just leave it at that. It doesn't seem hypocritical to me, valuing the one choice over the other.* (P1, F; F1-174)

Table 8 Shorted table of Appendix 3

CS by Rothgerber and Rosenfeld (2021)	Findings for dairy
Prevent Cognitive Dissonance	*It is a product of the animal not the animal itself… that makes a very, very big difference to me.* (P15, F; F3-280)
Reduce Cognitive Dissonance	**compared to meat* I have less issues with it, because for dairy, it seems easier to me to get it organic or even biodynamic, and it is easier to get local dairy.* (P17, V; F3-260)
Behavioral change	*I don't eat any animal-sourced foods*. (P11, VV; F2-139) *Reason number one is animal welfare, because I just don't think we can treat animals in this way. Number two is sustainability, because if we want to continue living on this planet for a few more years, we need to radically change our food system.* (P11, VV; F2-536)

ties that go into the processing of milk, criticized the amount of money that is behind this industry, the ethically questionable aspects of cow-calf separation.

They also mention the instrumentalization of the cow, intensive farming methods, and inefficient resource use. Two groups only touched upon knowledge regarding the calves' role in dairy when specifically asked about it by the moderator. In one group, the role of the calf immediately came up when asked about the production process. This was contrasted by a neutral or "pretty romantic image" (P18, F; F3-215) shared by other participants. One person described their mental image of a dairy farm as a positive place with happy animals and "with music" (P15, F; F3-216) added as an afterthought. Another participant claimed that the cow would experience more suffering if the farmers would stop milking her from one day to the next. A vegetarian suggested stopping to impregnate the cows as a possible solution while highlighting the role of the male calves as a "byproduct" (P17, V; F3-218). Furthermore, the participants often linked the term dairy to liquid dairy products like plain milk, (drink)yogurt, or quark. Cheese seemed to come in as a later association:

> *I honestly have to say that I have never been such a fan of milk. Growing up I always thought it was disgusting. (…) I like a bowl of yogurt from time to time, but not that often. (…) You can make me happier with other things than milk.*

When asked about cheese.

> *Cheese yes, that for sure*. (P7, O; F2-251)

Dairy products stood out as a crucial part of most of the participants' diets. There is only one vegan in the sample who fully avoids the consumption of dairy and four participants who try to reduce their dairy consumption. Seven participants mention problematic aspects of dairy (consumption). However, the participants who show critical reflection on animal production systems, still make (small) exceptions for consuming it, for example in social settings or for personal enjoyment, like tasty foods including cheese or cakes made with butter. Participants also mentioned that they specifically see a big difference between meat and

dairy products, framing meat as generally negative, implying suffering and "kill(ing)" (P15, F; F3-280), while dairy was framed more positively and "romantic(ally)" (P18, F; F3-216).

Framing of meat and dairy compared

The comparative analysis showed that participants had different perceptions of dairy in terms of climate impact, health, and animal welfare compared to meat. Taste and price played a crucial role. Meat carried a negative image, but the participants who consumed it mention a variety of arguments for why they can allow themselves a piece of it. Of the 18 participants who mention problematic aspects, two-thirds do consume meat.

> *Dairy still sounds pretty romantic to me.* (P18; F3-216)

Dairy continued to carry a more positive image: Several participants had a critical stance towards dairy and actively tried to reduce their consumption of it. Among these participants, exceptions were made. The reasons for these exceptions varied. Some were out of necessity when e.g., no other food was available or when trying to prevent food waste. Others were regarding certain taste cravings connected to dairy products:

> *I love cheese so much.* (P5, F; F1-102)

The majority of the participants consumed dairy regularly, with most of their diets consuming dairy as a staple food item in their everyday breakfast. However, about half the participants in the sample showed tendencies that highlight an increasing dairy skepticism. The following quote shows this inner conflict explicitly:

> *I am again very hypocritical, when I say the livestock sector needs to be halved, but I also just ranted about how much I love cheese. And I will for sure eat it today. So, I definitely feel this tension: It is actually not allowed, but I will eat dairy again anyways* (P5, F; F1-170).

Comparing coping strategies for meat and dairy

This section presents the findings on which CS are used by the participants connected to their dairy consumption. First, we elaborate on the CS we found for dairy to prevent or reduce cognitive dissonance that have also been identified for meat consumption (Joy 2010; Nijland 2016; Piazza et al. 2015; Rothgerber and Rosenfeld 2021). Second, we elaborate on three CS found that were specifically used for dairy. We also add a fifth N to the Ns of justification (Joy 2010; Piazza et al. 2015). Lastly, we comment on the extent to which dairy-related cognitive dissonance occurred.

Strong overlap with meat-related coping strategies

We found dairy-related examples for all CS described by Nijland (2016) and we found examples for almost all mechanisms to prevent and reduce cognitive dissonance as described

by Rothgerber and Rosenfeld (2021) (see Tables 7 and 8). *Denying animal mind* (that is, to claim that farm animals do not think, feel, and suffer the same way humans do) was the only mechanism for which there was no example in this sample.

Rothgerber and Rosenfeld (2021) describe mechanisms to prevent and reduce meat-related cognitive dissonance (MRCD). We found examples of both for dairy-related cognitive dissonance (DRCD). One of the mechanisms to *prevent DRCD* is called *dissociation. Self-definition as humane dairy-eater* is an indirect strategy to *reduce DRCD*, implying that the dairy one eats does not hurt the animal it comes from or is involved. While in these samples most participants consume dairy, several already lowered their dairy consumption and one participant does not consume dairy at all. They, therefore, use the most direct mechanism to handle cognitive dissonance, which is *behavioral change*.

There are also direct strategies like the four Ns of justification: dairy is *natural*, *normal*, *necessary*, and *nice*. We describe this in more detail in the next section. We chose to only mention a few examples that demonstrate the overlap between meat- and dairy-related CS. An extensive list of all CS and examples from the qualitative data can be found in Appendices 2 and 3.

Lastly, it was noticeable that the discussion in the context of dairy consumption and production often shifted towards egg and especially meat consumption by the participants themselves. This could highlight a redirection of the problematic aspects of dairy towards other (more impactful) problems relativizing an occurring feeling of discomfort about dairy.

Dairy-specific coping strategies

In addition to the overlapping CS for meat and dairy we also identified several dairy-specific CS: Dairy is (1) *indirect*, (2) *overwhelming*, and (3) *neglectable.* While we analytically distinguish these three CS, they are not meant to be fully distinct and in fact they empirically often occur together. Rather, each makes a different aspect of dealing with cognitive dissonance more salient. We conclude by suggesting adding a fifth N to the framework of 4Ns for justifying meat consumption specifically for dairy.

Dairy is indirect

The indirect aspect of dairy (products) was mentioned by participants on three different levels, related to the cows, the products, and the food system. Dairy was framed as an indirect animal product, with an emphasis on life rather than death for the animal. The killing of *cows* in dairy farming appears to be invisible as there seems to be no direct killing involved.

> *With meat, animals are slaughtered – killed. And everything that happens to them. With dairy this is not the case. The animals can still have a good life.* (P15, F; F3-280).

Another participant shared their knowledge on the role of male calves in dairy production while at the same time disconnecting this part of the dairy industry from the animal product itself. This highlights an idea of indirect suffering of animals in the dairy industry:

> *(Male calves from the dairy industry) just get bought for fattening them or for calves' meat. Calves' meat – super sad. But we were talking about dairy…* (P17, V; F3-22).

On the *product level*, dairy is indirect as often invisible to the eye, while it is still an ingredient in many food products, for example, in desserts (cake, cookies, chocolate) or even potato chips:

> *I tried to eat vegan for a while and then you realize that in potato chips one of the very last ingredients is milk powder. (…) That's super annoying.* (P6, V; F1-118)

This notion extends to the *system level*, where dairy is indirect and deeply embedded in the food system. We cannot directly see all the products in which dairy is incorporated, making it harder to identify.

Dairy is overwhelming

Several participants mentioned some form of overwhelming feelings when it comes to making the right decisions in the grocery store. This is mostly related to all the different factors that can be considered: sustainability, water use, animal welfare, health, and a lack of trust in information sources. The participants mention struggles on an individual but also systemic level, making it even harder for them to determine what makes a responsible choice, also in light of other consumption domains like fast fashion. A question that came up repeatedly was whether individual choices will actually make a difference.

> *I am becoming more and more critical, and that is not useful. And also, really tiring.* (P14, V; F2-338)

> *At some point you'll also stop believing anything and you just don't know what to do. I can go and collect information everywhere, but then you'll spend your whole life collecting information, and is this information even true?* (P15, F; F2-339)

> *Considering everything that is wrong about the animal industry, sustainability, or dairy industry… there is also a lot wrong with the fashion industry (…). So, you can only pay attention to a limited number of things.* (P4, F; F1-159)

> *I think about everything that is happening… but I feel a bit powerless and hopeless considering the whole system*. (P12, F; F2-148)

Participants repeatedly shared their emotions and frustrations related to issues in current food systems and the lack of perspective for change caused by their individual actions and dairy:

> *There is so much information about everything coming your way. You can only absorb a limited amount. (…). (Dairy) is only one of the factors, but you only have a limited attention span.* (P4, F; F1.-159)

> *Some things are already difficult enough – like writing a thesis. So, I allow myself to have dessert, with milk*. (P1, F; F1-176)

Other scholars have also described this for meat as "Neutralization - which minimizes personal impact or responsibility by comparing consumption with alternatives of greater perceived moral concern." (Dowsett et al. 2018, p.285). This was often paired with connotations of feeling powerless as an individual changing the whole food system. At the same time, participants seemed to feel stuck when it comes to changing their diets and consuming less dairy. Since dairy is so deeply embedded in current food systems, it seems unavoidable. Similarly, the neutralization described by Dowsett and colleagues does not lead to quitting the consumption of meat, but rather has a paralyzing effect, halting change.[1]

Dairy is neglectable

The CS for *dairy is neglectable* requires some context since it can be approached on four different levels: on a system, product, human and cow level. First, dairy seemed to be small/unimportant enough to be neglected in a systemic way compared to other big issues:

> *It is a lot. I mean, how? Just imagine: You have to do it all? You'll have to change everything in the Netherlands, and there still must change a lot before… and we will probably not live anymore then.* (P12, F; F2-114)

Second, dairy seemed not to be significant or important enough to be worth considering on a product level. Many food items contain small amounts of dairy, which in the bigger scheme of things seem not significant enough to the consumer and can therefore be seen as neglectable. At the same time dairy is contained in so many processed foods, mostly in the form of milk powder, making it hard to avoid for consumers. Participants repeatedly shared their frustrations on this.

> *Dairy is in almost every product: cookies, in chips, like what? Milk powder…* (P1, F; F1-118).

Third, dairy can be seen as neglectable because participants already put effort towards avoiding/ reducing meat in their diets. The impact of avoiding meat might already be considered high (enough). This could be used as a CS; classifying dairy as neglectable reduces its importance compared to meat. Lastly, the aspect is neglectable is also reflected on cow level, as the participants shared that dairy cows *still have a good life.* (P15, F; F3-280) for the production of milk.

The CS for *dairy* is *indirect*, *overwhelming*, and *neglectable* all address similar aspects related to understanding the complexity regarding consumers' perceptions of dairy and its role in current food systems. It was noticeable that these CS are strongly interconnected. We visualized the connecting factors in Fig. 3.

While dairy is indirect, and dairy is overwhelming cover three levels, the CS dairy is neglectable covers all four levels and is therefore more encompassing. Moreover, each of the CS has a different quality; 'dairy is indirect' has mostly a cognitive quality, and 'diary is overwhelming' has mostly an affective quality. Just like 'meat/dairy is natural, neces-

[1] Eating fully 'ethical' may be experienced as overwhelming in general, and not only in the context of dairy. However, for most of the students in our sample, this mainly seemed to be used as a rationalization for continuing to eat dairy, but not meat.

sary, normal and nice' the strategy that 'dairy is neglectable' has a more evaluative quality, leading to a clear justification for behavior, As is depicted in Fig. 3, the 'indirect' and 'overwhelming' categories 'feed into' the 'neglectable' category. The neglectable aspect of dairy therefore covers a valuable addition to the list of the Ns of justification for meat consumption, for which currently four Ns have been identified. We found dairy-related examples for all four Ns and see a need for adding a new N for dairy to this list. Table 9 includes dairy-related examples for the existing four Ns applied for dairy – dairy is *natural*, *normal*, *necessary*, and *nice*. The fifth N of justification – dairy is *neglectable* has been added, based on the findings described in this section.

Dairy-related cognitive dissonance

Describing the occurrence of cognitive dissonance is challenging because in most cases it is a deeply subconscious psychological phenomenon and therefore does not directly reflect in speech. In the conceptual framework, we elaborated on the different categories including different CS: mechanisms preventing and reducing cognitive dissonance (Rothgerber

Fig. 3 The different levels of dairy(-specific) coping strategies

Table 9 The five Ns of justification for dairy consumption (built on Joy 2010; Piazza et al. 2015; Rothgeber and Rosenfeld 2021)

Category	Definition	Examples
Natural	Appeals to biology, biological hierarchy, natural selection, human evolution, or the naturalness of eating dairy.	*But what else are cows for? (…) Because you strongly get the feeling that the animal (cow) has a function. (…) I don't think that we will ever fully stop it (dairy). We have just started using these animals after all.*
Necessary	Appeals to the necessity of dairy for survival, strength, development, health, animal population control, or economic stability.	*I associate (dairy) always with sports (.) and I also still keep thinking about the idea that dairy makes you strong.; Protein; Calcium; Good for the body*
Normal	Appeals to dominant societal norms, normative behavior, historical human behavior, or socially constructed food pyramids.	*(Dairy is) pretty Dutch also, I think that we are a real dairy country.;* *But we do this already for thousands of years, I mean they (cows) are domesticated for our consumption.*
Nice	Appeals to the tastiness of dairy, or that it is fulfilling or satisfying.	*I love cheese so much, yogurt, and other dairy products.; I also just like the taste of a grilled cheese sandwich in the morning.*
Neglectable	**Appeals to the evaluative conclusion that dairy is too hard, or insignificant to avoid.** **System level**: Small enough or unimportant enough to be neglected.	*Some things are already difficult enough – like writing a thesis. So, I allow myself to have dessert, with milk.; There is so much information about everything coming your way. You can only absorb a limited amount. (…). (Dairy) is only one of the factors, but you only have a limited attention span.*
	Product level: Not significant or important enough to be worth considering.	*I tried to eat vegan for a while and then you realize that in chips one of the very last ingredients is milk powder. (…) That's super annoying.; Dairy is almost in every product: cookies, in chips, like what? Milk powder…*
	Human level: Individual choices are not significant enough for change.	*I think about everything that is happening… but I feel a bit powerless and hopeless considering the whole system.*
	Cow level: Suffering of the non-human animal is not significant.	*With meat, animals are slaughtered – killed. And everything that happens to them. With dairy this is not the case. The animals can still have a good life.*

and Rosenfeld 2021); and CS to reduce, oppress or embrace dissonance (Nijland 2016). We found examples of dairy for all these categories. By identifying these CS amongst the participants, we can confirm the occurrence of dairy-related cognitive dissonance (DRCD).

The mechanisms to *prevent* cognitive dissonance work differently from the rest of the CS because they do not require the individual to experience cognitive dissonance (yet) by for example avoiding engaging with the topic. Several participants repeatedly requested more information about dairy to be able to form an opinion on the topic. The participants may not have engaged with the topic or chosen to avoid learning about the dairy industry before. After one of the sessions, a participant concludes:

> *I find it an interesting realization that I have such a different view towards meat compared to dairy, while they are both animal-sourced foods. And that I… well, I am just curious why I do this. So that's what I mostly think.* (P3, F; F1-337)

This reflects that the way dairy is seen compared to meat is (still) different. This participant started to challenge this thought by questioning their own perception of both animal-sourced foods. Identifying as flexitarian, they might therefore already deal with the meat-related cognitive dissonance they are experiencing. They partly make use of the most direct strategy of behavioral change by eliminating meat (to some extent) from their diet. The occurrence of cognitive dissonance for dairy only seems to be starting for these participants.

Discussion and Conclusion

In this final section, we critically reflect on the main findings of this exploratory study. We elaborate on the limitations and future research directions.

Framing of Dairy Opposed to Meat

To our knowledge, this is the first attempt to systematically compare consumers' framing of dairy with meat. We found that our sample of Dutch students at Wageningen University frame dairy much more positively than meat. This can be understood as a CS in and of itself. By highlighting meat as a widely accepted driver of food system unsustainability, consumers can relativize the impact of dairy production. The findings also describe the departure point of consumers' current dairy framing towards processes of change, namely the assumption that meat consumption is to be conceived of as the priority intervention field. This shows a lack of problematization of dairy compared to meat. If this is already the case for 'forerunners' such as students from Wageningen, we expect this to be even more so the case for Dutch consumers in general.

Dairy-related Compared to Meat-related Coping Strategies

In this study, we found clear evidence of a dairy paradox. We saw a strong overlap between meat- and dairy related CS and expanded the existing frameworks on meat consumption with dairy-specific CS, understood as subconscious mechanisms to deal with cognitive dissonance. Consumers can switch between CS depending on the trigger. CS are not mutually exclusive, neither in the existing frameworks for meat, nor the dairy-specific CS we add. Instead, consumers can deflect by "switching" between different CS when attempts to alleviate cognitive dissonance remain unsuccessful. This constitutes an additional challenge for communication strategies to facilitate the protein transition towards more plant-based foods. Developing and testing tailored communication strategies that are responsive to such switches represents a promising avenue for future research.

The Connection of Dairy-specific Coping Strategies

The three dairy-specific CS (dairy is *indirect*, *overwhelming*, and *neglectable*, see Fig. 3) found in this study show some overlap with previous research on meat-related strategies. All the CS can operate on three or four different levels, which makes them even harder to detect

and pinpoint than meat-related CS. We hope that the developed framework and visualization of this embeddedness can help the overall understanding and provide a basis for change.

Overwhelming on Many Levels

In addition to the four different levels in Fig. 4, the *overwhelming* aspect of reducing dairy in one's diet can play out on multiple levels (e.g., livelihoods of farmers, contrasting information, too many things to consider, or own life priorities). For the scope of this research, we could only make a start by investigating the underlying aspects of this CS. The outcomes might, however, suggest that the CS *dairy is overwhelming* corresponds to broader sentiments of resignation, similar to Lamb et al. (2020) who describe surrender as one of the discourses of climate delay with variants of *change is impossible* or *doomism*. Dairy, similar to wicked problems like the climate crisis, might be perceived as too overwhelming to reduce, leading consumers to surrender when confronted with this problem. Therefore, communication strategies are needed that focus on small feasible steps that lead one out of the overwhelming feeling.

A New N of Justification

With this study we add to the existing four Ns on justification. Justifying dairy (and/or meat) consumption not only as natural, normal, necessary, nice but also *neglectable.* While the first four are employed to cast a positive light on the consumption of ASF, the N of neglectable initially acknowledges problematic aspects of consumption of ASF. Neglect carries a certain awareness, as well as paralyzing effect ("my choices won't make a difference"; parallels with embracing, admitting dissonance (Nijland 2016). It thereby works in a slightly different way than the other four Ns directly defending the consumption of animal products. The CS *dairy is neglectable* could also be seen as a more subtle version of *willful ignorance* (Rothgerber and Rosenfeld 2021): ignoring a seemingly smaller issue at hand and categorizing it as small or unimportant enough to be neglected, even though some dairy products like cheese have a higher environmental impact than chicken meat. Neglect implies a notion of awareness among the consumers and a willingness to critically engage with the importance of the issue. At the same time, the consumers' hands seem to be tied, rendering any further action impossible. Neglect carries the meaning of acknowledgement of a problematic aspect but also the choice to proceed with the consumption anyway after scrutinizing the issue and (d)evaluating its (un)importance. Further research could build on this general awareness and seek to expand it, for instance, by offering easy alternatives or creating a safe space for acknowledging the struggle and building supportive narratives from there.

Cognitive Dissonance and Strategic Ignorance

A necessary condition for consumers to employ CS is that they experience some form and extent of cognitive dissonance. When no or only very little tension is experienced when confronted with contestations of meat or dairy consumption, cognitive dissonance remains low, and so does the use of CS. One way for consumers to avoid experiences of tension is to be strategically ignorant toward the issue. In meat-related literature, Onwezen and van der Weele (2016) differentiate between two types of strategically ignorant people: (1) those who

do not care and therefore ignore the issue; and (2) those who do care but strategically choose to ignore the issue: willful blindness (detachment or concealment (Nijland 2016). For meat consumption, all participants in the sample seemed to care about the problematic aspects of meat (type 2), made use of other CS, or changed their behavior. For dairy consumption, however, our study shows examples for both types 1 and 2 of strategic ignorance. This connects to the results on dairy and meat framing where dairy was framed more positively and less problematic than meat. While this observation requires further exploration, it lends support to the conclusion that dairy differs from meat in the way consumers construct the ethical impermissibility of consuming dairy and meat.

The Dairy Paradox and the Cheese Paradox

After completion of this study, a new study was published that offered an in-depth analysis of dairy consumption contestations. The authors explore in a sample of vegetarians and in-depth interviews how vegetarians justify consuming non-meat animal products and coined their findings under the term *cheese paradox* (Docherty and Jasper 2023). This new study also identifies cognitive dissonance in the consumption of dairy products and highlights differences in dissonance between plain milk and cheese. Vegetarians seem to be less disgusted by the idea of consuming cheese compared to milk. This links to our finding on the CS *dairy is indirect* on product level. We also saw that the dairy being incorporated in other food products (e.g., baked goods) or altered consistency and taste of milk in cheese helps to dissociate and therefore reduce dissonance. With this study we can strengthen the argument by identifying dairy-related cognitive dissonance also among a mixed sample with a variety of dietary identities (vegan, vegetarian, and omnivore).

Limitations and Future Research Directions

Limitations

As Braun et al. (2019) put it "there's no one way of making sense of data. Think about where you sit in relation to your data, and how you interpret and make sense of them" (p.435). The first author and primary researcher of this paper identifies as vegan, which very likely has had an influence on the way the data was interpreted. Veganism is challenging the dominant ideology called carnism: the underlying belief system or ideology that has conditioned humans to eat certain animals and animal products (Joy 2010). Yet, it should be noted that both carnism and veganism are ideologies that can influence interpretation. The point is not to argue about which ideology is better but to be transparent about the subjectivity and belief system of the analyst(s). The other two authors identify as mostly vegan and vegetarian. Personal background, dietary identity, and choices are both a strong motivation as well as a bias for this research. Being aware of this bias helped to critically reflect on this position, whilst it also allowed us to highlight aspects of the topic that have not been addressed priorly. Skovdal and colleagues (2015) describe reflexivity as particularly important for qualitative researchers, highlighting two aspects: First, being alert to potential biases and adjusting if necessary, and second, creating critical awareness of the researcher's engagement and its limits. As any, especially qualitative, research can never be

(and does not aspire to be) fully objective, being aware of our personal investment, transparency and honesty have high priority. Corresponding to the second aspect, subjectivity combined with reflection and reflexivity becomes a strength for feeding the interpretation rather than hindering it. We further counter this bias with the three different dietary perspectives of the authors.

We want to highlight three other limitations that we see arising from the research setting and approach. Firstly, focus groups have been chosen as a data collection approach because of their potential to surface discursive contestations and competing viewpoints. However, focus groups may also be susceptible to group dynamics like confirmation bias or social desirability. Although we have taken precautionary measures such as collaborating with an experienced focus group facilitator and creating a non-judgemental atmosphere of open exploration and dialogue, distortions resulting from the use of focus groups cannot be ruled out. As a direction for future research we therefore suggest that the focus group analysis could be supplemented with in-depth qualitative interviews. Secondly, we also acknowledge the specific setting in which this research took place as a limitation. As students at a leading university specializing in food and sustainability, our participants represent a highly educated subgroup with strong exposure to academic discourse on sustainable food. This background enabled rich insights into how young people navigate the contested discursive space of sustainable eating they are part of. However, it also means that it remains up to further research to investigate to what extent CS differ for other, less well-educated segments of the population. Thirdly and lastly, our research interest in young consumers' struggles, experiences of tensions, and discursive practices in navigating the contested space of sustainable eating approached the phenomenon from a distinct angle that is different to other cultural or social science approaches to understand consumer preferences. With our study, we did not aim to challenge these socio-cultural influences. We chose this arguably limited angle for a distinct purpose that delineates the scope of this paper: to better understand in how far there is also a dairy paradox (as opposed to the meat paradox) with dairy-specific CS. Moreover, as this group can be regarded as forerunners in behavior change, the outcomes may be predictive for future behavior changes in society at large.

Future Research Directions

After conducting this exploratory study on the framing of meat compared to dairy and dairy-related CS, we suggest further exploring this topic with a different, potentially international, and diverse sample. This can contribute to investigating the underlying aspects of the found complexity of dairy compared to meat.

In addition to dairy, there are other animal-sourced foods in current food systems which could be justified as more indirect, neglectable, or overwhelming compared to meat. They too can be explored further building on these (for now) identified dairy-specific CS: The finding of this research could be a base to further explore cognitive dissonance and CS for ASF like eggs, lard, gelatin, or honey. We think it is likely that particularly the CS that these ASF are indirect and neglectable play a role in the justification of consuming these products as well.

The findings suggest that there are three different time phases where dairy-related CS can be used (1) before cognitive dissonance (CD) occurs, (2) while CD is occurring, or

(3) after CD has occurred. For dairy is indirect, overwhelming, and neglectable further research could help identify when those CS occur over time. This could be at one or more time phases.

Overall, further development of tools to identify when CS are used, could be a valuable future research direction. Building on this, we can ask the question: How to deal with CS when detected? Lastly, we see a strong need for the development of communication strategies adapted to the reflexive and subconscious nature of CS. Based on the findings of this study, we assume a need for different arguments dependent on the different levels where CS occur.

Conclusion

We found many differences in the way Wageningen University students framed dairy compared to meat. Dairy was framed much more positively than meat. While all participants had considered reducing their meat consumption this was not the case for dairy. Based on the frame analysis we can conclude that meat-related cognitive dissonance occurred across the whole sample since all participants knew of the problematic aspects of meat. Dairy-related cognitive dissonance was not experienced by all 18 participants. However, there is a strong overlap in the types of CS the students used for dairy compared to meat. We found examples for almost all meat-related CS equally for dairy. Additionally, we identified three dairy-specific CS: dairy is *indirect*, *overwhelming* & *neglectable.*

We thereby add to the literature on the cheese paradox (Docherty and Jasper 2023) and provide the basis for the introduction of the *dairy paradox* to academic literature: many people wish to avoid harming animals, yet most people also consume dairy. The side of the paradox describing the problematic aspects of dairy agriculture can be extended beyond animal welfare, considering environmental and/or health-related impacts.

By naming a concept, the dairy paradox, we can start to talk about it, reflect on it and start to question it. Joy (2010) says the same about introducing carnism to academic literature. As mentioned before, carnism is the mainstream, dominant ideology contrasting veganism. For dairy, the dairy paradox, dairy-related cognitive dissonance, and CS can help to understand parts of the underlying mechanisms of dairy consumption. In our comparatively 'progressive' sample in sustainability transitions we also observe a shift of the dairy image towards more negative. Although dairy is not on the same level as meat, problematizing dairy seems to slowly enter societal discourse. With this, we can build on improving the communication and facilitation of dairy in the protein transition.

Appendix 1: Inductive codes

Table 10 includes the most relevant dairy-related themes identified. The number indicates the frequency of quotations related to this theme. The grey themes that are generally about food systems and not dairy specific. The theme price (also in grey) was also very dominant in this sample. However, since the participants in the sample were students who tend to be on a tight budget, we decided to not consider money as a strong indication.

Table 10 Dairy-related themes sorted by frequency in the data set

Theme	#	Example
Positive dairy image	40	Reinforcing: "Dairy still sounds pretty romantic to me." (P18; F3-216) Criticizing: "(Fristi) is a good example because it contains 0% fruit and its water mixed with milk powder. While most people think: 'oh a natural product, healthy sugars, vitamin D. You need to eat animal sourced foods to get these nutrients.'" (P9; F2-49).
Overall reduction/ Change in consumption	35	"There is a need for change on the big scale. That's really tricky." (P10; F2-66).
Dairy is problematic	33	"Calves get immediately removed from their mothers. That's pretty tough." (P16; F3-225).
Dairy is tasty	32	"I love cheese so much, yogurt, and other dairy products." (P5; F1-102); "I also just like the taste of a grilled cheese sandwich in the morning." (P12; F2-531).
Dairy is normal	28	"(Dairy is) pretty Dutch also, I think that we are a real dairy country." (P14; F3-189) "But we do this already for thousands of years, I mean they (cows) are domesticated for our consumption." (P17; F3-237)
The whole food system is problematic	27	
Overwhelming	26	"There is so much information about everything coming your way. You can only absorb a limited amount. (…). (Dairy) is only one of the factors, but you only have a limited attention span" (P4; F1.-159). "Some things are already difficult enough – like writing a thesis. So, I allow myself to have dessert, with milk" (P1; F1-176).
Price	23	students
Dairy is necessary	23	"I associate (dairy) with always with sports (.) and I also still keep thinking about the idea that dairy makes you strong." (P5; F1-122); "Protein" (P5; F1-114); "Calcium" (P1; F1-121); "Good for the body." (P4; F1-112)
Dairy image becomes more problematic	22	"I find it an interesting realization that I have such a different view towards meat compared to dairy, while they are both animal sourced foods. And that I… well, I am just curious why I do this. So that's what I mostly think" (P3, Flexitarian; F1-337) "It is a gradual shift for me, because first I started to think about meat. And I thought that is too much suffering, so I totally stopped consuming it (…) Now I start thinking about dairy (…) but that's way harder to fully avoid." (P6; F1-303)
Animal agriculture is inefficient	21	
Media twists the dairy image (+/–)	20	(+) "I don't feel (…) tricked, if I buy a package of milk" (P1; F1-258) (–) "This is really a marketing thing of milk. That we therefore see it as way more positive." (P2; F1-162) "Greenwashing labels" (P6; F1-289)
Reduced dairy consumption	19	"I buy less and less dairy, probably because I do find sustainability more important than taste." (P14; F2-356) "No, I don't even like the taste of cow's milk. Quark I do like a lot, but milk? No. Now I buy almond milk." (P13; F3-488)
Powerless	19	"I don't see my own contribution as significant enough to stop it." (P7; F2-530) "The irrelevance of one person making a difference. And I also just like the taste of a grilled cheese sandwich in the morning." (P12; F2-531)
Vegan for animal welfare	18	"Reason number one is animal welfare, because I think that we can't treat animals like this" (P11; vegan, F2-539)
Dairy is deeply embedded in food production	18	"I tried to eat vegan for a while and then you realize that in chips one of the very last ingredients is milk powder. (…) That's super annoying." (P6; F1-118)
Dairy is tradition	11	"(Dairy is) pretty Dutch also, I think that we are a real dairy country." (P14; F3-189) "But we do this already for thousands of years, I mean they (cows) are domesticated for our consumption." (P17; F3-237)
Dairy is indirect	8	"It is a product of the animal not the animal itself… that makes a very, very big difference to me" (P15; F3-280).
Dairy is only an animal product	5	"It is a product of the animal not the animal itself… that makes a very, very big difference to me" (P15; F3-280).

Appendix 2: Deductive codes

The following table summarizes all coping strategies described for meat consumption in by Nijland (2016) in Table 11. Here, these frameworks were applied for dairy:

Table 11 Dairy-related coping strategies

	Coping strategy (CS)	Definition	Dairy related example
CS to reduce dissonance	**Adding consonants to behavior**	Selectively applying cognitions to represent the decision as a positive one	"Dairy makes you strong." (P1; F1-122) "(Dairy is) pretty Dutch also, I think that we are a real dairy country." (P14; F3-189)
	Eliminating dissonance	Bringing forward cognitions that decrease or eliminate the negativity of the decision	"With meat, animals are slaughtered – killed. And everything that happens to them. With dairy this is not the case. The animals can still have a good life." (P15; F3-280)
	Amplifying consonants	Making the drives and cognitions that support the made decision seem important	"Well for me it works like this: I am starting to work out more lately and if I talk to people about it, everyone says 'you need to eat a lot of quark – for protein! That's what makes you strong!' So that influences me, so yeah, I mean, if it's only about the taste it doesn't make much difference." (P13; F3-491)
	Trivializing dissonance	Making the drives and cognitions that oppose the decision seem unimportant	"With meat, animals are slaughtered – killed. And everything that happens to them. With dairy this is not the case. The animals can still have a good life." (P15; F3-280)
CS to oppress dissonance	**Misinterpreting**	Depicting or imagining the situation in a way that deviates from reality	"An ideal image of a green meadow, blue sky." (P1; F1-112) "With meat, animals are slaughtered – killed. And everything that happens to them. With dairy this is not the case. The animals can still have a good life." (P15; F3-280)
	Shifting responsibility	Revoking personal agency and blaming others for the situation	"I don't eat meat if someone else prepares it for me, but if someone cooks with cheese than I don't have a problem with it." (P14; F3-142) "I really enjoy it when my housemates buy things with cheese… yesterday we had pasta with gorgonzola, and I think that's super tasty!" (P16; F3-362)
	Detachment	Creating an emotional distance between the self and subjects that are possibly negatively affected by a decision (includes denial of mind and linguistic objectification	"The comparison with dog milk seems unfair to me" (P17; F3-235) "(Male calves from the dairy industry) just get bought for fattening them or for calves' meat. Calves' meat – super sad. But we were talking about dairy…" (P17; F3-224) "No, I don't even like the taste of cow's milk. Quark I do like a lot, but milk?" (P13; F3-488)

Table 11 (continued)

	Coping strategy (CS)	Definition	Dairy related example
	Concealment	Hiding or repressing the (negative sides of a) situation to avoid confrontation all in all	"I value my taste above my feeling of guilt." (P7; F2-155)
CS to accept dissonance	**Admitting dissonance**	Acknowledging that there is discomfort, instead of trying to hide it	"I am again very hypocritical, when I say the livestock sector needs to be halved, but I also just ranted about how much I love cheese. And I will for sure eat it today. So, I definitely feel this tension: I know I shouldn't, but I will eat dairy again anyways." (P5; F1-170) "Well, I was standing on Utrecht central station once and I told the guy: I just really like the taste of certain (animal sourced) products. And he was like: "Yes, but what is more important; That you like the taste of something or that the animal has a good life?" – And well, he really had a good point there. It is tricky." (P13; F3-498)
	Embracing dissonance	Feeling good by virtue of the non-oppression of any cognitions or drives	"I don't really feel any tension. If I think I buy oat milk now I think well done. If I don't do it, I think okay. I just leave it at that. It doesn't seem hypocritical to me, valuing the one choice over the other." (P1; F1-174).

Appendix 3: Deductive codes

The following table summarizes all mechanisms to reduce meat-related cognitive dissonance described by Rothgerber and Rosenfeld (2021). Again, these frameworks were applied for dairy.

Table 12 Mechanisms to reduce Dairy-related cognitive dissonance (DRCD)

		Coping strategy (CS)	Definition	Dairy related example
Mechanisms to prevent DRCD		**Avoidance**	To avoid enduring it by refraining from acknowledging animal welfare, environmental, or health concerns with dairy consumption	"I still have a pretty good image about dairy. I don't associate any negative things with it. So, I just buy it if I want to buy it or if I feel like it." (P15; F3-344) "Dairy still sounds pretty romantic to me." (P18; F3-216)
		Willful ignorance	To prevent individuals from experiencing aversive arousal from DRCD	"I value my taste above my feeling of guilt." (P7; F2-155) "(Male calves from the dairy industry) just get bought for fattening them or for calves' meat. Calves' meat – super sad. But we were talking about dairy…" (P17; F3-224)
		Dissociation	To pretend that no animal is involved during dairy consumption. This disconnect is accomplished by dissociating the animal from the food product.	"It is a product of the animal not the animal itself… that makes a very, very big difference to me." (P15; F3-280)
Mechanisms to reduce DRCD	Indirect strategies	**Perceived behavioral change**	To convince oneself and others that one does not consume a large amount of dairy, thus minimizing the perceived moral troubles of one's eating behavior	"No, I don't even like the taste of cow's milk. Quark I do like a lot, but milk? No. Now I buy almond milk." (P13; F3-488)
		Self-definition as humane dairy-eater	To proclaim that even if one eats dairy that comes from animals, the dairy that one eats does not harm animals because it is humanely produced	"I have less issues with it, because for dairy it seems easier to me get it organic or even biodynamic, and it is easier to get local dairy." (P17; F3-260)

Table 12 (continued)

			Coping strategy (CS)	Definition	Dairy related example
			Do-gooder derogation	Through upward social comparison, individuals can feel threatened by those they perceive as taking moral positions that they themselves are unwilling to adopt by symbolically rejecting the moral permissibility of eating animal products, vegans seemingly qualify as "moral rebels"	"But this is of course a PETA strategy…" (P17; F3-239) "They had, … these really nasty movies showing. (P13; F3-503) – "But is it the really good image? Often it is really twisted." (P15; F3-504)
			Third-party blame	To obscure personal responsibility for the mistreatment of farmed animals by placing third-party blame on other entities in the food system.	"This is really a marketing thing of milk. That we therefore see it as way more positive." (P2; F1-162) "Dairy is almost in every product: cookies, in chips, like what? Milk powder…" (P1; F1-118)
			Moral outrage	At third-party transgressors in the food system or even at others who mistreat animals outside the food context. Such moral outrage is partially motivated by an effort to assuage personal guilt and to cast dispersions on others.	"About what you say about (vegan) cheese, also time to shame the whole industry of cheese. The fact that it is just water, coconut oil, modified starch, binding ingredients and some carotin or something… That it is just a piece of oil tied together with starches (…) I think it ridiculous that they keep selling this!" (P12; F2-438)
	Direct strategies	Animal-based reduction	**Denying animal mind**	To claim that farm animals do not think, feel, and suffer the same way as humans do	–
			Dichotomization	To classify animals into those we love and those we eat (from) explains myriad inconsistencies in the way animals are treated	"The comparison with dog milk seems unfair to me" (P17; F3-235)

Table 12 (continued)

		Coping strategy (CS)	Definition	Dairy related example
	Dairy-based reduction	**Dairy is natural**	Focus on human relationships with animals and depicts the relationship - whether it be through religious or evolutionary forces - as one characterized by human dominance and animal subordination	"But where else are cows for? (…) Because you strongly get the feeling that the animal (cow) has a function. (…) I don't think that we will every fully stop it (dairy). We have just started using these animals after all…" (P2; F1-312)
		Dairy is normal	Works on social support and social norms, which can act as consonant cognitions against dissonance and help placate guilt by social reassurance	"(Dairy is) pretty Dutch also, I think that we are a real dairy country." (P14; F3-189) "But we do this already for thousands of years, I mean they (cows) are domesticated for our consumption." (P17; F3-237)
		Dairy is nice	Emphasizes gustation and that dairy is simply too delicious to avoid	"I love cheese so much, yogurt, and other dairy products." (P5; F1-102) "I also just like the taste of a grilled cheese sandwich in the morning." (P12; F2-531) à total of 32(!) quotes on 'dairy is tasty' across the data set
		Dairy is necessary	Dairy is nutritionally essential for optimal well-being, thus abdicating the individual from responsibility for harming animals	"I associate (dairy) with always with sports (.) and I also still keep thinking about the idea that dairy makes you strong." (P5; F1-122) "Protein" (P5; F1-114); "Calcium" (P1; F1-121) "Good for the body." (P4; F1-112).

Appendix 4: Focus group guide (translated version as sessions were held in Dutch)

Focus Group Discussion Guide – June 2022 (90 min).

Moderators introduce themselves. Welcome and thank you for joining today.

(Focus group 1 & 2: Prof. Cor van der Weele & Sarah Kunze; Focus group 3: Sarah Kunze)

Short introduction about the project (10 min).

Good afternoon. We are a group of researchers at WUR interested in your vision on current food systems and animal proteins. We invited you because we want to listen to your opinion on the food you eat and where it comes from. The focus of this study is on Dutch WUR students with ages between 18 and 26. This type of session in held three times with students from different study programs across WUR. As a reminder, this session is recorded. We do this to help create transcripts and for later data analysis. All details will be anonymized.

Rules:

- The session is open and interactive.
- Everyone's opinion matters, you are encouraged to share opinions, questions, doubts and whatever come first to mind.
- We are very interested in the interaction between participants, so feel free to share your thoughts at any moment.
- There is no right or wrong answer. We listen without judgement.
- You don't have to talk about topics you don't feel comfortable with.
- Help protect the other participants privacy and avoid sharing details beyond this group.
- The sessions is planned to last about 1.5hs. (possible extension?)
- The goal is not to reach a common ground, but to engage in discussion. (Start recording)

First round of discussion: **getting to know each other** (10–15 min).

In this first round we would like to create an atmosphere where everyone can share something and to exchange thoughts about the topics we raise questions about.

1. **Introduction**.

Goal: To understand the background and lives of participants a bit better, for themselves to get to know each other, and to encourage conversations among each other.

Background.

- Name.
- What do you have for breakfast most days?

Feeling of place and community.

- (How long) Do you live in Wageningen?
- Which factors have encouraged you to choose Wageningen University?

2. General perception of food products and production.

Goal: To understand the connection of each person to food products and production.

Did you ever think about where your food comes from?

If you could change something what would that be?

Second round of discussion: **what do you think about animal protein** (30 min).

3. Food habits, **eating cultures**.

Which animal products do you eat in your daily life?

Is there a difference between what you are served by others and what you buy yourself?

Which animal products would you eat on special occasions, buy yourself, or order? (for example, because of the social setting, curiosity or necessity (dying of hunger).

4. Origin, **important items and organizing**.

What are your associations with eating dairy? (Free association of thoughts and feelings)

5. Knowledge of keeping and killing animals; ideal scenario.

What do you associate with the production of dairy? (Free association of thoughts and feelings)

Where does your knowledge come from?

How is your knowledge limited? Would you ideally know more? Would you like to know more?

Would you like to change something in the dairy industry? If so, what and how?

(How would your ideal scenario look? Do you consider it a realistic ideal scenario?)

6. Connecting, **seeing beneath the surface**, **ambivalence**.

How does this topic make you feel/ what are you thinking? And how do you cope?

Are there aspects you would rather not think about?

7. Topics, **consumer/ citizen**, **tipping point(s)**.

Which topics influence your choice (to eat or not eat dairy (both!)) the most? And how?

First free associations, then – 'some people find … important, others not, where do you stand?'

- own health.
- impact on the environmental impact (rainforests, CO_2 emissions, water, landscapes).
- animal welfare (health/welfare, production system, keeping/killing).
- price.
- livelihoods of farmers, regulations for production.
- global food supplies.
- taste, enjoyment, luxury, the feeling you get from eating dairy.
- convenience, restricting factors (physicality, feeling freedom of choice).
- habit.
- social context/ pression from your environment, culture, religion.
- naturalness.
- necessity, presence/absence of alternatives, trust in alternatives.
- animal species (intelligence, kinship, relational/emotional value).
- awareness, trigger (something was just pointed out, for example, seen a video or seen in reality).

What are the decisive points for you; the tipping point(s)?

(What are the considerations, what connects to what?) What (might) be holding you back from change?

Third round of discussion: **further associations** (20–25 min).

a. *Thought experiment*: (depends on discussion at question 5) If you were a dairy farmer, what steps would you need to take to get one glass of milk?

b. Advisement stimulation (from Dutch grocery store): What do you think about these milk packages?

c. What do you think about cultivated milk? (precision fermentation dairy?)

After talking all this time about animal proteins: which thoughts/feeling/ideas come up for you?

Finally, is there something (left) from the entire session that you'd still like to share thoughts or remarks on?

Wrap up. (5–10 min)

We have reached the end, thanks again for participating. The data that has been collecting in this session, will be used to enrich knowledge on future policies of our food systems. We have a small gift for everyone who participated which you will receive via mail in the coming days. Thanks again and have a nice evening.

After we stop the recording, you are welcome to stay longer to talk about the topic. It is possible to have triggering aspects, so we would like to provide the space to ask questions etc.

Depending on what you have signed in the consent form, you will be informed on the results of this study or contacted in case there are any follow-up questions.

Appendix 5: Code book for inductive coding of coping strategies based on known ones for meat

(1) Coping strategies. Nijland (2019) differentiates between 10 different coping strategies (CS) for eating meat based on previous research and her findings of which four are to reduce dissonance; four to oppress dissonant cognitions; and two to accept dissonance:

(2) Meat-related cognitive dissonance (MRCD).

Rothgerber (2019) compiled similar coping strategies, here referred to as mechanisms, in his meat-related cognitive dissonance in short *MRCD-framework.* Two years later Rothgerber & Rosenfled (2021) further developed the framework and proceeded to distinguish between mechanisms to prevent MRCD and to reduce MRCD:

Table 13 Coping strategies for eating meat. (Source: Own visualization based on Nijland (2019))

CS to reduce dissonance	CS to oppress dissonance	CS to accept dissonance
• **Adding consonants to behavior**: selectively applying cognitions to represent the decision as a positive one: "It's normal and natural and healthy. Everyone eats meat. You should, too." "Yeah, I eat meat. But you know, if we wouldn't farm cows, they would probably be extinct by now. Eating meat supports farming and thus helps the cows." • **Eliminating dissonance**: bringing forward cognitions that decrease or eliminate the negativity of the decision: "Nature is cruel. In the wild, animals often die in horrible ways, they starve to death or get ripped to pieces by a predator. At least our slaughter is quick and relatively painless." "Animals don't have a soul. They may not even have feelings. Especially fish." • **Amplifying consonants**: making the drives and cognitions that support the made decision seem important: "It's important to eat protein to stay healthy. Without your health you're nothing." • **Trivializing dissonance**: making the drives and cognitions that oppose the decision seem unimportant: "How can you campaign for animals while there still are humans suffering from famine?" "Pff, not this again. Those people from the party for the animals always exaggerate so much and they represent what? They only have two seats in parliament. That's nothing."	• **Misinterpreting**: depicting or imagining the situation in a way that deviates from reality: "It's not so bad. When I think of a farm, I think of animals roaming outside, all together, and the farmer being there all the time to care for them and feed them when there's not enough grass to be found." • **Shifting responsibility**: revoking personal agency and blaming others for the situation: "It's the system that forces farmers to farm this way – and the government doesn't take enough action. And the money-orientation of most consumers: they always buy the cheapest meat they can find. What can I do?" • **Detachment**: creating an emotional distance between the self and subjects that are possibly negatively affected by a decision (includes denial of mind and linguistic objectification): "Who cares about chickens - they're just stupid animals." "I like pork." • **Concealment**: hiding or repressing the (negative sides of a) situation to avoid confrontation all in all "When such a clip with animal suffering or climate change horrors pops up on my news feed, I scroll down as quickly as I can, and I certainly don't click on it. I don't want to see any more of it. It makes me too sad." "Yeah, yeah. Now what about that cute blouse that we saw the other day, are you going to buy it?"	• **Admitting dissonance**: acknowledging that there is discomfort, instead of trying to hide it: "Ok, so I'm kind of conflicted about this. I know farming is bad for the environment, like, look at climate change and all. But I also like the taste of meat a lot and, though animals should be treated well, I find eating meat part of nature. What I do might be partly wrong. I am aware of that." • **Embracing dissonance**: feeling good by virtue of the non-oppression of any cognitions or drives: "I try to be as well-informed as I can about meat, weigh all the advantages and disadvantages against one another, and only then make my decision. Which can be different in different situations. But I make it a matter of principle to include all possible information and give space to all urges in me, before deciding. This is the most fair way to decide. Really, honestly letting in all information, and the difficult feelings that come up with it, and not trying to cover anything up - not even anger or fear or sadness. It was hard at first, but it is the best. I love it. It's honest. It's real."

Table 14 Coping strategies for MBCD. (Source: Own visualization based on Rothgerber and Rosenfeld (2021)

	Mechanisms to reduce MRCD		
Mechanisms to prevent MRCD	Indirect strategies	Direct strategies	
		Animal-based reduction	Meat-based reduction
• **Avoidance**: To avoid enduring it by refraining from acknowledging animal welfare, environmental, or health concerns with meat consumption • **Willful Ignorance**: To prevent individuals from experiencing aversive arousal from MRCD • **Dissociation**: To pretend that no animal is involved during meat consumption. This disconnect is accomplished by dissociating the animal from the food product.	• **Perceived behavioral change**: To convince oneself and others that one does not consume a large amount of meat, thus minimizing the perceived moral troubles of one's eating behavior • **Self-definition as humane meat-eater**: To proclaim that even if one eats meat that comes from animals, the meat that one eats does not harm animals because it is humanely produced • **Do-gooder derogation**: Through upward social comparison, individuals can feel threatened by those they perceive as taking moral positions that they themselves are unwilling to adopt by symbolically rejecting the moral permissibility of eating animals, vegetarians seemingly qualify as "moral rebels" and are subject to denigration. • **Third-party blame**: To obscure personal responsibility for the mistreatment of farmed animals by placing third-party blame on other entities in the food system. • **Moral outrage**: At third-party transgressors in the food system or even at others who mistreat animals outside the food context. Such moral outrage is partially motivated by an effort to assuage personal guilt and to cast dispersions on others.	• **Denying animal mind**: To claim that farm animals do not think, feel, and suffer the same way as humans do • **Dichotomization**: Animals into those we love and those we eat explains myriad inconsistencies in the way animals are treated including why Americans express outrage at dogs being eaten in some cultures while simultaneously disregarding the moral worth of chickens, cows, and pigs in their own culture.	• **Meat is natural**: Focus on human relationships with animals and depicts the relationship - whether it be through religious or evolutionary forces - as one characterized by human dominance and animal subordination • **Meat is normal**: Works on social support and social norms, which can act as consonant cognitions against dissonance and help placate guilt by social reassurance • **Meat is nice**: Emphasizes gustation and that meat is simply too delicious to avoid • **Meat is necessary**: Meat is nutritionally essential for optimal well-being, thus abdicating the individual from responsibility for harming animals

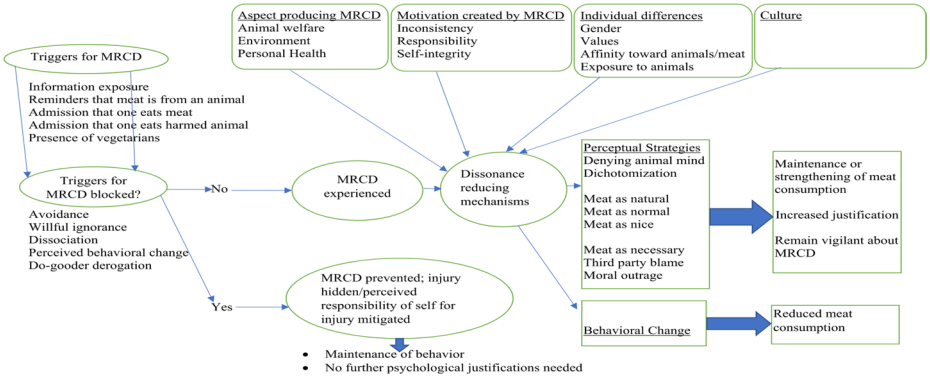

Fig. 4 The MCRD-framework. (Rothgerber 2020)

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Data Availability Sequence data that support the findings of this study have been deposited according to the Data Management policies of Wageningen University.

Declarations

Ethics Approval The Social Sciences Ethics Committee (SEC) of Wageningen University approved this study on April 7, 2022. The research was conducted in compliance with the Netherlands Code of Conduct for Research Integrity. Participants were informed about the research and provided written informed consent. The participants were not informed of the specifics of the study beforehand to ensure unprepared responses on the research topic.

Clinical Trial Number Not applicable.

Competing interests The authors declare no competing interests.

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