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A semiotic analysis on cultural meanings of eating horsemeat

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ABSTRACT
Purpose: Drawing on food consumption research and human-animal studies, this study explores how the meanings related to a living horse may be transferred to those of horsemeat. This is accomplished by constructing a nuanced understanding of how different semantic meaning categories of accepting/avoiding consuming horsemeat relate to each other.
Design/methodology/approach: The current data are collected from various sources of media discussions, including online news, online discussion forums, blog postings and printed articles, generated in Finland after the year 2013. The data are analysed applying Greimas' (1982) semiotic square to open up the semantic meaning categories appearing in the media discussions.
Findings: The semiotic square shows that the meanings of horsemeat arise between the binary oppositions of *human-like* and *animal-like*. In this structure, the category of human-like makes eating horsemeat impossible while the category of animal-like makes horsemeat good to eat. The main categories are completed and contrasted by the categories of *not human-like* and *not animal-like*. They represent horsemeat as an acceptable food, but only after certain justifications.
Research limitations/implications: The data are based on Finnish media texts, and therefore the identified categories are interpreted in this specific cultural context.
Originality/value: The current semiotic analysis adds to the existing food consumption research by shedding light on the cultural barriers that make something edible or inedible. By so doing, the findings present a more nuanced and dynamic understanding of the horse as a special kind of meat animal and the justifications for eating horsemeat. Consequently, the findings offer new insights concerning changing food consumption behaviours into a more sustainable direction, pointing out the hidden meanings that influence this process.

Keywords Horsemeat, Meat paradox, Semiotic square, Cultural categories

Paper type Research article

Introduction

Although we often do not realise it, our daily eating decisions concerning which foods to eat and which foods to avoid are guided by cultural, emotional and psychological meanings. In this paper, we combine food consumption research and human-animal studies and look at the meaning structures that make horsemeat an acceptable or avoidable food as well as the inherent complexities behind these categories. In comparison to other domestic animals, horses may be situated in between the most human-like animals and the most animal-like animals, and thus represent so-called "semi-domesticated animals" (Keaveney, 2008; Smith, 2016). This makes consumers contemplate whether to eat them, because they do not automatically translate as food, unlike more common production animals (Tian et al., 2016). Thus, the question arises: if horses are not really like companion animals (dogs) and not really like production animals (pigs and cows), how do the cultural meanings related to eating horsemeat appear?

The overall purpose of this study is to explore how the meanings related to a living horse may be transferred to those of horsemeat. This is accomplished by constructing a nuanced understanding of how different semantic meaning categories of accepting/avoiding consuming horsemeat relate to each other. To date, only few scholars have discussed how people respond to eating horsemeat. For instance, Jaskari et al. (2015) have presented an analysis where horsemeat consumption is categorised through five paradoxes – Human-like vs. Animal-like, Safe vs. Unsafe, Ethical vs. Unethical, Culinary Delicacy vs. Worthless Food, and Sacred vs. Profane – which exemplify the controversial meanings attached to horsemeat consumption. Hence, their analysis – together with a few other papers (e.g. Cawthorn and Hoffman, 2016; Syrjälä et al., 2016; Peemot, 2017) – illuminates how various religious, ethical, moral and health-related concerns may influence consumers' acceptance of eating horsemeat. While these studies show

that eating horsemeat evokes controversial meanings, the *relationships* between the meaning categories remain unclear, as they appear to be equally important in explaining the avoidance and/or acceptance of horsemeat. However, if we want to understand more specifically how these meanings are constructed and which underlying cultural meaning categories they interrelate with, we need to explore more specifically the complex relationship between horses as living animals and horsemeat as food.

When it comes to understanding meat consumption in general, scholars have been keen on exploring the contradiction involved in enjoying eating meat and disliking hurting animals. These studies refer to the construct of the meat paradox when explaining why humans often end up eating meat even though they experience psychological tensions at the same time (Bratanova et al., 2011; Loughnan et al., 2010; Rothberger and Mican, 2014; Tian et al., 2016). Despite the well-established conceptual development of meat paradox experiences and how people tend to solve these conflicts, there is a lack of more nuanced understanding of how people make sense of meat consumption in specific sociocultural settings and which are the special meanings attached to particular meat animals and their avoidance/acceptance (Ruby and Heine, 2012). For instance, why do people in English-speaking countries respond negatively to horsemeat, while those in French-speaking countries are in favour of it (Hunter and Brisbin, 2016, pp. 252; Jaskari et al., 2015; Syrjälä et al., 2016)? Yet, it is widely acknowledged that the cultural categorisation of animals as human-like or animal-like generates the barriers and boosters for eating those animals (Hirschman, 1994; Sahlins, 1976).

To open up these dynamics, we focus on the cultural context of Finland. Finland can be positioned in the middle of the two cultural extremes – the English-speaking countries and French-speaking regions (Jaskari et al., 2015) – and thus enables us to analyse the complex

interrelation between horses as animals and horsemeat as food within one cultural milieu. Syrjälä et al. (2016) address this cultural peculiarity in more detail, describing the role of horses and horsemeat in Finland. Horses hold a special position in Finnish history, being formerly used in farming and foresting, and nowadays most often for hobbies, such as trotting and riding (Ibid.; Kumpulainen, 2007; Ojala, 2007). Finns have eaten horsemeat for a long time, although the quantities have remained low (Hippos, 2014). For example, in 2012 Finnish consumers ate on average 0.5 kg of horsemeat (with bones) compared to total meat consumption, 77.5 kg per person (MMMTike, 2014). Moreover, only 1,800 of the 4,000 horses that die annually in Finland are slaughtered, and therefore Finns mostly buy and eat horsemeat that is imported from Canada, Mexico, Brazil and Argentina (Syrjälä et al., 2016).

The current empirical data are based on various sources of media texts (e.g. online news, horse magazine articles, online discussion forums and blogs) that were published in Finland after the European horsemeat scandal in 2013. During the horsemeat scandal, it was revealed that several processed meat products included traces of horsemeat, even though the packaging information claimed that they contained only beef (Abbots and Coles, 2014; Yamoah and Yawson, 2014). Also in Finland, the scandal resulted in heated media discussions where the issue of *horse*meat was pondered extensively, demonstrating that the strong reactions were connected not just to misleading marketing and product labelling, but also to horses as animals. This encouraged us to examine the complex relationship between horses as living animals and horsemeat as food. In so doing, we apply the semiotic approach to uncover the mechanism by which the meanings of horses and horsemeat are created, maintained and/or altered within a wider social context (Mick, 1986; Kessous and Roux, 2008).

The paper proceeds as follows. We first discuss the prior meat consumption and human-animal studies from the perspective of horses as potential meat animals. We then describe the materials and methods of data generation and analysis. In the analysis, we apply Greimas' (1982) semiotic square to analyse the subtle semantic categorisations of horsemeat and how they intermingle with regard to horses as animals. The semiotic square model illuminates how the meanings of living horses transfer to avoiding and/or accepting eating horsemeat through the binary oppositions of *human-like vs. animal-like* and the complementary categories of *not human-like* and *not animal-like*. We then discuss each of the cultural categories in relation to prior theoretical examinations. It is concluded that the findings add to prior meat consumption studies by pointing out the nuanced meaning making behind the categorisation of acceptable and avoidable foods, i.e. *why* horsemeat is avoided or accepted. Moreover, we contemplate the findings with regard to sustainable eating and how the current study may help to understand the process of changing food consumption patterns.

The Complexity of (Horse) Meat Consumption

The meat paradox construct has recently attracted a number of researchers in the field of food consumption studies. The concept was presented in 2010 by Loughnan, Haslam and Bastian when they referred to situations where consumers simultaneously dislike hurting animals and like eating meat. Most of the prior meat paradox studies have focused on analysing individuals' cognitively driven ways to solve meat paradoxes. Loughnan et al. (2010) recognise three different solutions for these conflicts (see also Loughnan et al., 2014). One is to stop eating meat by adopting a vegetarian diet. The other two solutions relate to changing one's attitudes towards eating meat. Individuals can either ignore the fact that animals are killed to be eaten or deny

animals' capacity to suffer. In the latter case, consumers have been found to suppress their moral concerns for animals when eating meat. In their later study, Bratanova et al. (2011) built on this discussion and reported that when an animal is categorised as food, it becomes easier to see it as insensitive to pain, which in turn reduces moral concerns regarding eating meat. One of the main conclusions of prior meat paradox studies is that the weaker the link between the living animal and meat, the easier it is for consumers to justify meat eating (Tian et al., 2016).

Accordingly, it is acknowledged that contemporary consumers are increasingly out of touch with the realities of slaughtering and producing meat (Buscemi, 2014; Ruby and Heine, 2012). One piece of evidence for this trend is that particular parts of the meat that are recognisable as parts of the animal, like heads, legs and tails, are on some occasions eliminated from situations in which consumers deal with meat (Buscemi, 2014; Berndsen and van der Pligt, 2004). This tendency to hide the recognisable parts of the living animal is particularly common when meat is purchased from supermarkets and produced through intensive farming. In spite of that, it is claimed that Western consumers are increasingly pondering whether eating meat is right or wrong from the viewpoints of sustainability, animal welfare and health-related issues (e.g. Baker et al., 2016; Hoogland et al., 2005; McEachern and Schröder, 2002; Piazza et al., 2015; Ruby and Heine, 2011). Focusing in greater depth on individuals' rationalisation strategies in the context of meat consumption, Piazza et al. (2015) have elaborated how people defend their choice of eating meat. Their study demonstrated that the 4Ns – referring to the individual's beliefs that eating meat is natural, normal, necessary, and nice – are commonly used to justify meat consumption. They also showed that those individuals who endorse the 4Ns tend to consume meat and animal products more frequently and are less concerned about animal welfare.

However, these prior findings seem to apply only to those animals that are most often regarded as production animals, such as cows and pigs, as prior meat consumption studies have mostly ignored those animals that may be seen as companions in Western cultures (e.g. Tian et al., 2016). A few studies, on the other hand, do not separate between different animals. For example, Ruby and Heine (2012) bunched horses together with 17 different animals when studying the avoidance of eating them in different cultures. Bastian et al. (2012) in turn asked participants to rate the degree to which different animals (32 in total, including horses) possessed mental capacities and then to indicate the edibility of these animals. Their results showed that horses were among those animals that were associated with high mental capacity and therefore were often considered inedible. However, since prior works have discussed horses together with several other animals, we currently do not have specific knowledge on in what ways horses differ in terms of their edibility from monkeys, dogs or cows, for example. Hence, in regard to prior meat consumption studies, it appears that we need a more nuanced analysis of the semiotic meanings that produce justifications for and lead to the avoidance of eating particular meat animals.

As we aim to study how the meanings of a living animal can be transferred to those of meat, we also seek more in-depth understanding of this phenomenon from prior human-animal studies. These studies have emphasised, for instance, that attachment to animals generates a dynamic and multisided influence on consumers' views on domestic animals (Jyrinki, 2012). Thus, animals have for long been classified according to how people anthropomorphise – attach human properties to – them (Serpell, 1986; Beck and Katcher, 1983). Within Western cultures, the two extremes are the most human-like animals (such as dogs) and the most animal-like animals, which are most likely to be objectified and eaten, such as pigs or cows (Sahlins, 1976;

Hirschman, 1994). In regard to these conceptualisations, the horse is considered to hold an intermediate position; for instance, Smith (2016) refers to the horse as a "semi-domesticated" animal, and Scammon (1987) states that people do somewhat anthropomorphise their equine companions, but to a lesser degree than other companion animals (Keaveney, 2008). Therefore, drawing from a number of studies in the human-animal literature (e.g. Beck and Katcher, 1983; Hirschman, 1994; Cheetham and McEachern, 2012; Jyrinki, 2012; Kylkilahti et al., 2016), we propose that the avoidance and acceptance of eating horsemeat are intertwined with the understanding of whether the particular animal is regarded as human-like or animal-like. For instance, how ethical it is to eat a particular animal may change according to whether it is categorised as a human-like subject or animal-like object (Jaskari et al., 2015). We thus suggest that discovering the complex meanings of horses as animals and as human-like subjects is likely to produce more nuanced meanings concerning how and when particular meat animals are avoided and/or accepted.

Materials and Methods

Data Generation

The current data consist of a myriad of media texts created in Finland after the so-called horsemeat scandal took place in 2013 in Europe. The scandal serves here to stimulate the data generation; the aim is not to study the scandal *per se*, but the semantic meanings of horses and horsemeat that were evoked after the scandal broke in the news. Thus, the current data is not initiated by the researchers, but reflects the naturally occurring talk about the issue.

To ensure diversity in data generation, we collected data from several sources, both printed and online. In practice, we applied a purposive sampling procedure (Lincoln and Guba,

1985) to find material related to horsemeat. With regard to social and online media, we used the Google search engine with particular words in data collection (e.g. Kozinets et al., 2014). Initially, the search words included "horsemeat", "horsemeat scandal", and "horsemeat consumption", but eventually the data we found led us to new online data; for example, "horsemeat" led first to "horsemeat scandal" and then to "slaughter transportation". The resulting data were mostly published right after the horsemeat scandal, but we decided to also include a few postings from before 2013 in the analysis. We also reviewed two printed horse magazines in order to determine what they had written about horsemeat consumption: *Hevosurheilu* [Horse Sport] from 2013 to the present and *Hevosenomistaja* [Horse Owner] from 2012 to the present. However, to our surprise, only four articles discussed horsemeat consumption.

In total, the current data consist of four types of sources: 1) 55 Finnish online news items discussing the horsemeat scandal, production and consumption of horsemeat and their comment postings, 2) threads in seven Finnish online discussion forums that had discussed horsemeat, and 3) seven blog postings and attached discussions, and 4) four printed articles from Finnish horse magazines and newspapers that specifically discussed horsemeat. Appendix 1 describes the data in more detail. As the current study is grounded on meanings generated in media discussions, the data provide particularly appropriate means to examine how values, norms, attitudes and symbols related to horsemeat are discussed. The media texts include not only consumers' voices but also those of other actors, such as butchers, food producers, horse organisations, veterinarians and horse devotees.

Data Analysis

The data analysis followed the principles of the semiotic approach. As semiotics aims to analyse the signs through "hidden" and culturally laden meanings (Eriksson and Kovalainen, 2016), the approach enables us to carefully explore the meanings that are attached to horsemeat in the media data. The analytic focus of semiotics should be on patterns instead of individual instances (Freeman and Bell, 2013, p. 342; Kress, 2009), and thus we initiated the analysis procedure by obtaining an overview of the meanings that occurred repeatedly in the texts. In this, we applied qualitative content analysis (Miles and Huberman, 1984) with emic-based descriptions to create an understanding of the patterns of meanings. At this point, we identified a semantic opposition between two basic meaning categories, human-like and animal-like (see also, Jaskari et al., 2015): a living horse was either compared to humans, making it inedible, or to animals, making it edible. It was this binary opposition that led us to further explore more nuanced meaning categories and their relationships in the current context.

Therefore, in the second phase of analysis, we interpreted further this binary opposition between human-like and animal-like through Greimas' (1987) semiotic square. The semiotic square is useful in identifying and interpreting the inherent complexities and ideological contradictories of the given phenomenon (Holt and Thompson, 2004) as it facilitates analysis of the meaning categories in relation to each other and how they make other categories meaningful through these relationships (Bardhi et al., 2010; Corge et al., 2015). The overall aim of the semiotic square is to reveal the meanings based on an initial opposition scheme, e.g. A versus B, (in our case, human-like versus animal-like). This opposition is further extended on the diagonals that represent the contradiction scheme, wherein the contradiction of A is "not A" and the contradiction of B is "not B". Then, the semiotic square reveals meanings through the vertical

schemes representing the complementary scheme: Not A is close to B and not B is close to A. (Corge et al., 2015, p. 13–14.) These relational meanings between the identified schemes open up the plurality of nuanced meanings in this particular context, because all of the terms in the square are seen to intermingle (Corge et al., 2015).

The current semantic categories and their relationships are illustrated in Figure 1 as a relational model. In the model, the binary opposition is between *human-like* and *animal-like*, the two main categories found in the data, while the contradictory categories, *not human-like* and *not animal-like*, complete the main categories.

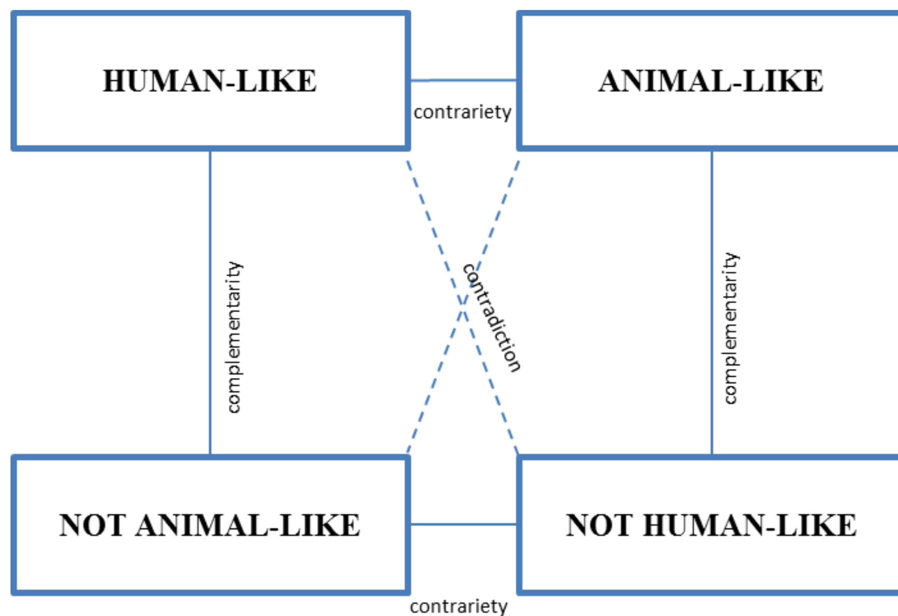

Figure 1. Human-like and animal-like as binary oppositions and their relations in a semiotic square on horsemeat

The categories are interpreted in the following way. First, the category of *human-like* transfers the meanings of a living horse to those that make eating horsemeat something to be avoided; because a living horse resembles a human subject, it cannot be eaten. Opposite to that, the category of *animal-like* reflects the meanings of a living horse as being similar to other animals, so horsemeat is also like any other edible meat. The category of *not human-like* relates to the two main categories by being contradictory to the category of human-like and complementary to the category of animal-like. This category situates horses closer to animals than humans, but shows some differences compared to other meat animals. Accordingly, though the eating of horsemeat is regarded as possible, it is not automatically accepted, and eating horsemeat needs to be justified more carefully than in the case of other meat animals. The contradictory category of animal-like is the *not animal-like* category, which in turn is complementary to the human-like category. The relationship to other categories highlights how living horses are distinguished from other (meat) animals (i.e. showing more nuanced meanings in relation to the category of animal-like) in a manner that transfers these meanings to horsemeat by making its eating acceptable, but again only after justification.

Findings

Below we describe the semantic categories in greater depth. For each of the categories, support is provided by verbatim quotations drawn from the media data. It is important to note that the unit of analysis is not an individual consumer (or other human actors in the data), and therefore the categories do not necessarily manifest in an individual's food choices, but represent how the meanings of horses and horsemeat are constructed in the cultural categories of food and animals.

Category of Human-like

In the category of human-like, the meanings relating to living horses make them subjectified and sentient beings, close to humans. These meanings transfer into horsemeat so that eating horsemeat is considered to be challenging or even impossible, as described in the following blog excerpt: "*Horsemeat is taboo in our country, as in many others. Horses are friends and pets to people – after the death of a horse, its meat doesn't appeal to animal lovers." (Tunne hevonen, 18 February 2013)*

The current data indeed include a number of texts showing that even in Finnish history horses have often been described as companion animals rather than livestock, and are therefore regarded as inedible. The following example shows how the horse is attached with the meanings of companion animals, and thus is not regarded as a food:

> *"If you've spent quality time with an animal for every day for, say, 10 years or even longer, the thought of it hanging on a meat hook might be too much to bear. Not all of us think that horses are tools or means to make money. Don't even try to make us 'sentimental' horse lovers feel guilty – go ahead and eat your own dogs and cats." (Kaleva online, 3 October 2013, comment posting)*

As in the quote above, living horses were often described as friends, family members and valuable helpers for their owners in the media texts used in this study. Thus, aligned with these discussions, our analysis includes plenty of examples of anthropomorphising (Beck and Katcher, 1983; Serpell, 1986) horses, such as giving them human names (Hirschman, 1994) and attributing human-like characteristics to them, such as intelligence and capacity to suffer (Ruby and Heine, 2012). In some cases, horses were described as precious things, and thus perceived as

inedible: *"I'd actually consider a horse as more of a 'valuable item' than a food." (Suomen Kuvalehti, 11 February 2013, discussion forum)*

The current data also include accounts where people ponder why the horsemeat scandal evokes such strong reactions in people. This demonstrates that the horsemeat scandal suddenly forced consumers to take a stand on an issue they had not thought about earlier: whether they would or would not eat horsemeat. Before the scandal, most consumers could ignore the issue of horsemeat in their social realities and did not consider buying horsemeat. Below, one consumer explains the sensation on the basis of the immorality of eating horsemeat:

> *"The main ingredient of this ever-expanding scandal seems to be an almost subconscious concept that many 'civilised' people think eating a horse is immoral – a bit like eating your pet dog!"* (Suomen Kuvalehti, 11 February 2013, discussion forum)

Category of Animal-like

The category of animal-like contrasts with the previous category, as in this category horses represent livestock animals that are like any other meat animals, such as cows and pigs. These meanings make eating horsemeat acceptable, as horsemeat is categorised as an ordinary food. In this respect, the normalisation of horsemeat helps consumers to solve the meat paradox (Bratanova et al., 2011; Piazza et al., 2015). This is exemplified in the following quote from an online discussion forum: *"What's so bad about horsemeat? It's no odder than eating beef!" (Aamulehti, 2 September 2013, discussion forum)*

The category of animal-like is also maintained in the next quote, where a representative from a Finnish meat factory also uses a normalisation strategy and tells how they have used horsemeat in their sausages for a long time and have no intention of breaking this tradition:

“‘Horsemeat is a traditional ingredient. We’ve been in business for 75 years now and have always used horsemeat in Pouttu sausages, such as Kannuswursti. It’s decades old, won awards here and abroad, and ***has always contained horse.*** *We feel that horsemeat gives the products a better flavour and don’t intend to stop using it,’ says Koskinen.” (Talouselämä, 21 February 2013)*

Interestingly, the data show how Finnish consumers became more interested in horsemeat after the scandal broke in the news. Completely new groups of consumers were willing to try out horsemeat. Further, the data include examples indicating that so-called “gourmet” consumers appreciate horsemeat. The following quote exemplifies how consumer demand for horsemeat increased in spring 2013:

“Gourmets are now interested in horsemeat. Interest in horsemeat seems to have grown after last spring’s meat scandal. Stockmann department store’s buyer Kirsi-Marja Juvonen estimates that demand for horsemeat has grown, at least at her store. She believes that the discussions in the spring may have increased awareness of the good qualities of horsemeat, such as its healthiness.” (Kaleva, 2 September 2013)

The intriguing fact that the demand for horsemeat increased after the scandal illustrates how the cultural boundaries of animals and eating are dynamic and may change even in a short period of time. While consumers were previously somewhat unfamiliar with the horse as a meat animal and it did not seem to really fit well in Finnish food culture, the widespread and heated public discussions about it made a growing number of consumers aware of its availability and its nutritional qualities compared to other meat animals. This shows that the surrounding

sociocultural meanings of food may alter the ways consumers make sense of eating – suddenly horsemeat was categorised as a more common food, and among some consumers even as a tasty gourmet meat, illustrating how consumers rationalise meat eating in terms of its being 'nice' (Piazza et al., 2015).

Category of Not Animal-like

The third category of the semiotic square, not animal-like, complements the other categories by being contradictory to animal-like and complementary to human-like. This category shows a more nuanced understanding of the previously identified juxtaposition between human-like and animal-like (Jaskari et al., 2015) as it includes meanings according to which eating of horsemeat is not automatically accepted, though it is regarded as possible. The meanings of this category are based on regarding horses as being different from other production animals, i.e. horses are "not animal-like". This category thus illuminates how horses are categorised as semi-domesticated animals and placed somewhere in between pets and production animals (Keaveney, 2008; Smith, 2016). When transferred to the avoidance/acceptance of eating horsemeat, our findings show that the unfamiliarity of horsemeat may signify status or novelty value for some consumers. This is illustrated in the next quote, where a butcher says that food enthusiasts started trying out horsemeat after the scandal:

> *"According to butcher Ilkka Ripatti, horsemeat has gained a new clientele among thirtysomething couples who like to dine at their friends' houses. They compete by trying to make the most unusual dishes – and horsemeat is a somewhat rarer delicacy." (Yle Kymenlaakso, 20 February 2013)*

On the other hand, this category makes eating horsemeat dubious. In these cases, horsemeat may be acceptable food, but also simultaneously riskier than other livestock animals, such as cows and pigs. Unlike other meat animals whose production is stringently controlled from the legislative and food production perspectives, horses represent animals that are not kept under systematic control during their lives, and eating them also involves food safety issues. The current media talk included plenty of discussions reflecting health-related concerns about eating horsemeat. One special aspect of horsemeat is the medicines that are given to horses during their active life, which are exemplified and discussed in relation to the origins of the meat in the following quotes:

> *"'Do we believe in the purity of horsemeat? Both competition and leisure horses are given plenty of medications – and some of these drugs may lead to a lifelong ban on their slaughter. Veterinarians and slaughterhouses are responsible for ensuring that horses that have been given such restricted substances do not end up in the food chain. The purity of domestic meat is also a question of faith and trust. Do we trust that the slaughterhouses always demand the required documentation? Do veterinarians always record medications given to a horse in its identification document? And is that document where it should be, that is, with the horse?' ponders special researcher Markku Saastamoinen of the Central Union of Agricultural Producers and Forest Owners."* (*Maaseudun Tulevaisuus, 27 February 2013)*

> *"Horsemeat is good. But I wouldn't dare [eat] horsemeat from southern countries, because they give them so much penicillin and other drugs." (Aamulehti discussion forum, 9 February 2013)*

Thus, we can conclude that eating horsemeat evokes feelings of uncertainty. In this respect, our findings can be paralleled to prior studies claiming that people hesitate to eat unfamiliar meat animals and may even perceive them to be disgusting. For instance, Ruby and Heine (2012) have found that in individualistic cultural contexts, especially among Euro-Canadians and Euro-Americans, the animals' psychological attributes contribute to evoking disgust in consumers. Their results show further that especially the intelligence of the animal turned out to be a major predictor of avoiding eating this particular animal. Assuming that horses are in fact often perceived as intelligent entities with feelings, consumers find them different from other production animals, and therefore difficult to eat.

Consequently, our findings can be contemplated with regard to other unfamiliar foods beyond meat consumption. Recent food consumption studies have investigated so-called alternative foods and protein sources, in particular edible insects, and their acceptance (e.g. Baker et al., 2016; Looy et al., 2014). These studies have concluded that although Western consumers may consider it important to decrease the amount of meat consumption, their attitudes towards edible insects are difficult to change due to the emotional and cultural barriers that people attach to them (Looy et al., 2014; Looy and Wood, 2006). The studies have demonstrated that Western consumers often perceive insects as alien and disgusting, and thus find eating them impossible. Comparing these barriers to the meanings attached with horsemeat, we can acknowledge that horsemeat appears to be more acceptable in the current context. Our findings provide evidence that if consumers knew that horsemeat is available and what kind of meat it is, they would be better able to evaluate whether or not to eat it. In particular, transparent product information may serve as one practical way to boost the acceptance of horsemeat. Emotional-

based trust can be created only after the consumers trust that the slaughterhouses, veterinarians and horse owners are honest in their reporting of the medication given to the horses.

Category of Not Human-like

The fourth category of *not human-like* sheds further light on the binary opposition of human-like and animal-like (cf., Jaskari et al., 2015). This category is contradictory to the category of human-like, and thus horses are regarded as different from humans. In particular, it is understood that if horses are not eaten after their death, the consequences may be problematic. For instance what does it mean for unwanted horses when they have to endure longer transportation to a slaughterhouse and what should be done with the carcass if it is not eaten? Thus, this category also complements the category of animal-like, providing a more fine-tuned interpretation of how the meanings of living horses may be interpreted.

When these meanings are transferred to eating horsemeat, we can see that horsemeat is seen as edible, but that its eating has to be justified from different viewpoints, which may be based on moral, ethical and religious meanings (Cawthorn and Hoffman, 2016; Jaskari et al., 2015; Loughnan et al., 2010; Syrjälä et al., 2016). The current data contain plenty of examples where ethical living conditions, transportations, and slaughtering of horses were debated from the viewpoint of animal welfare, emphasising how horses require humane treatment until the very end. This explicates how moral and ethical viewpoints on horses as living animals deserving of a good life and a good death may influence how people respond to eating horsemeat. Living horses are regarded as meat animals, but at the same time seen to possess sensitivity, mental capacities and the capability to suffer (see also, Bratanova et al., 2011). The

next quote illustrates the importance of good treatment of horses and how locally produced horsemeat is regarded as the most ethical alternative:

> *"Horses have been friends to humans and served us for centuries. They deserve to be treated humanely until their death. A horse is a wise and smart animal. If a human treats a horse cruelly, it feels pain, horror and suffering. After all that, its meat must be spoiled by stress. And all of that is done because of human greed and for big profit ... Hooray for local food!" (Syötäväksi kasvatetut, 26 February 2013, Comment posting)*

Syrjälä et al. (2016) have ended up with similar kinds of conclusions pointing out how the increased market demand for horsemeat may actually improve the welfare of horses, especially in the case of old or injured horses that are no longer living a healthy and active life. The following quote exemplifies well how an animal protection supervisor supports eating horsemeat:

> *"Hundreds of horses suffer for years. Taking them to a slaughterhouse would be merciful. According to Heidi Leyser-Kopra, animal welfare supervisor of the City of Turku, 'backyard horses' pass through many owners' hands for years because no one wants to pay to put them down. Internet forums are full of ads for former racehorses that cost only a few hundred euros – or can be yours for free. If Finns could learn to eat horsemeat, this would improve the living conditions of horses. Slaughterhouses would then pay good money for horses. Then even these old racehorses that no one can ride due to leg injuries would also find an end to their pain in a slaughterhouse." (MTV3 Online, 7 August 2013)*

The above quote is an example of how experts highlight moral viewpoints on eating horsemeat. In this kind of expert talk, horsemeat consumption is examined in the larger context of the ethical meanings of raising horses, and consumers are empowered to solve the problem of unwanted horses by choosing to accept horsemeat as part of their ordinary eating habits. In a parallel way, some horse owners in the data argue that real animal lovers do eat horsemeat, as illustrated below:

> *"We horse lovers have an obligation to ensure that our hardworking friends do not have to suffer. If you are a real friend of animals, you should eat domestic and organic meat, and not meat that is produced in intensive production units or meat that comes from those animals that are abused by long slaughter transportations."(Marko Björs, 18 February 2013)*

Hence, the attachment-based meanings related to living horses may actually translate to accepting horsemeat eating (Peemot, 2017). This is due to the realisation that when more horses are eaten, it may improve the welfare of horses in the autumn of their lives, e.g. by shortening the transport of slaughter horses or by enhancing the circumstances of slaughter itself. This category is further attached with meanings that connect eating horsemeat with ecological choices and lifestyles. One quote shows how eating horsemeat instead of burying the carcass is seen as an ethical and ecological act:

> *"'It might not immediately occur to you that eating a horse can be an ethical and ecological act. About four thousand horses are put down each year in Finland. Only a thousand end up in a slaughterhouse, while the rest are buried in pits. By favouring horsemeat, we give these animals a humane end. When there's demand*

for meat, horses don't spend years suffering and won't keep getting sold on,' says Nieminen." (Suomen Kuvalehti, 4 November 2009)

The ethical and environmental meanings relating to favouring horsemeat eating thus come up multifariously in the category of not human-like. For instance, the ecological viewpoints for accepting horsemeat consumption are grounded by justifications of limiting food waste and not throwing away edible meat. In the following, the many-sided arguments in all four categories for both avoiding and accepting horsemeat are discussed and some conclusions are drawn.

Discussion and Conclusions

Drawing on the premises of semiotic analysis, this study has shown how the fine-tuned meanings of eating horsemeat are produced in relation to living horses. Starting with the binary opposition between the categories of human-like and animal-like, the analysis showed that the meanings of a living horse may be transferred to seeing horsemeat as edible or as a target of avoidance. Further, by using Greimas' semiotic square (1987) as a tool for interpretation, we were able to produce a more nuanced understanding of cultural categorisations by analysing how the divergent meaning categories make other categories meaningful in relation to each other (Bardhi et al., 2010; Corge et al., 2015). Accordingly, besides the two initial categories of human-like and animal-like, we identified two completing categories, not human-like and not animal-like, exemplifying those cases where meanings relating to living horses can make horsemeat edible but only after certain concerns had been negotiated.

We can thus conclude that the reasons behind meat paradox situations seem to be more multifarious and complex than most of the prior, often quantitative, studies have acknowledged. The prior meat paradox studies have thoroughly demonstrated these situations from the

perspective of cognitive dissonance, with the basic premise being that individuals try to reduce their discomfort by rationalising their meat consumption (Piazza et al., 2015), categorising meat animals as food (Bratanova et al., 2011) or ignoring the suffering of the animals (Loughnan et al., 2010). To complement these discussions, our study highlights how the decision to avoid or accept eating a particular kind of meat is not merely a "yes" or "no" type of question, but is instead tied to sociocultural meaning-making concerning a living animal. Therefore, in order to understand the cultural and emotional barriers to eating and why a certain meat is rejected or accepted, we need to open up the meanings and their relations in the specific sociocultural context.

When it comes to societal and practical implications, the meanings attached into the categories of animal-like, not animal-like and not human-like provide tools to target the communication to those consumers that show favourable attitudes to horsemeat. For instance, the origin of horsemeat and the humane and ethical treatment of horses may serve as culture-based cues that can be used in segmenting the consumers. Overall, the current findings encourage us to propose that horsemeat has potential to become more common on people's plates and thus they give reason to contemplate how people's food preferences could be changed, and in particular how to promote more sustainable food choices by decreasing Western meat consumption (Baker et al., 2016). From the perspective of carbon emissions, horsemeat is a more ecological food choice than traditional production animals. This is because most horses are not raised and produced just to be eaten, but primarily for recreation and company for people, and therefore it could be argued that their use for meat production does not generate carbon emissions *per se*. Although horsemeat is not as high in protein as insects, for instance, and thus cannot be seen as a sole solution for replacing beef and pork, the issue is not insignificant from the viewpoint of

sustainable eating and avoiding food waste. If horsemeat consumption is wanted to be increased, we need also aggregate-level policies aiming at specific social groups of people with common needs to be able to target the communication effectively (Lowe et al., 2015).

The current empirical discussion is limited to media texts produced after the horsemeat scandal and therefore the findings present a time- and context-specific understanding of the issue. Acknowledging that these sorts of data are continuously evolving and never complete, there remains a constant need to conduct more analysis. For instance, different subcultural settings, such as horse enthusiasts, food enthusiasts and animal activists, would provide abundant opportunities to investigate horsemeat consumption from novel viewpoints. We also call for further research to analyse whether the increased awareness of horsemeat has led to any longer-lasting behavioural and attitudinal changes with regard to eating horsemeat, other meat animals or acknowledging animal welfare issues. Also, future studies are required to investigate in what ways and to what extent these findings are transferable to other changing food practices, such as accepting insects as part of customary diets.

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Appendix 1. Material used for semiotic analysis

Types of data	Where published?	Date
A Online news	Hevosurheilu Online	26.4.2013
	Hevosurheilu Online	26.4.2013
	Hevosurheilu Online	26.4.2013
	Hevosurheilu Online	26.4.2013
	YLE Online	11.12.2009
	YLE Online	26.3.2010
	YLE Online	26.3.2010
	YLE Online	18.2.2013
	YLE Online	19.2.2013
	YLE Online	5.8.2013
	YLE Online	20.2.2013
	YLE Online	29.1.2014
	YLE Online	18.2.2013
	YLE Online	20.2.2013
	YLE Online	17.2.2013
	YLE Online	16.12.2013
	YLE Online	26.2.2013
	YLE Online	12.2.2013
	YLE Online	15.8.2011
	YLE Online	20.2.2013
	YLE Online	20.2.2013
	YLE Online	20.2.2013
	YLE Online	5.3.2013
	YLE Online	20.2.2013
	YLE Online	2.4.2015
	Helsingin Sanomat Online	7.3.2013
	Helsingin Sanomat Online	27.2.2013
	Helsingin Sanomat Online	21.3.2013
	Helsingin Sanomat Online	22.3.2013
	Helsingin Sanomat Online	3.3.2013
	MTV3 Online	22.3.2013
	MTV3 Online	7.8.2013
	MTV3 Online	5.12.2013
	Maaseudun tulevaisuus	27.2.2013
	Maaseudun tulevaisuus	21.2.2013
	Maaseudun tulevaisuus	5.3.2013
	Maaseudun tulevaisuus	2.9.2013
	Maaseudun tulevaisuus	21.2.2013

	Kaleva Online	2.9.2013
	Uusi Suomi Online	24.6.2013
	Uusi Suomi Online	14.4.2013
	Uusi Suomi Online	29.3.2013
	Uusi Suomi Online	22.3.2013
	Uusi Suomi Online	25.2.2013
	Uusi Suomi Online	24.2.2013
	Uusi Suomi Online	22.2.2013
	Uusi Suomi Online	21.2.2013
	Uusi Suomi Online	16.2.2013
	Aamulehti Online	9.2.2013
	Suomen Kuvalehti Online	4.11.2009
	Talouselämä Online	23.6.2013
	Turun Sanomat Online	26.2.2013
	Iltalehti Online	14.2.2013
	Pohjalainen Online	24.7.2013
	Iltasanomat Online	23.2.2013
	In total 55 news	
B Online discussion forums	Suomi24	18.2.2006
	Demi	22.2.2013
	Karppaus	Not available
	Martat	16.9.2005
	Pakkotoisto	2009
	Kotikokki	Not available
	Kemikaalicocktail	Not available
	In total 7 discussions	
C Blog postings	Syötäväksi kasvatetut	26.2.2013
	Syötäväksi kasvatetut	17.2.2013
	Marko Björs	18.2.2013
	Marko Björs	19.2.2013
	Suomen Kuvalehti	11.2.2013
	Tunne hevonen	18.2.2013
	Fifirock - home of happy dogs	27.2.2013
	In total 7 blogs	
D Printed journals	Hevosurheilu	27.3.2013
	Hevosenomistaja	1.2.2013
	Helsingin Sanomat	26.10.2014
	Pohjalainen	13.11.2014
	In total 4 printed articles	