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Visiting a Farm: An Exploratory Study of the Social Construction of Animal Farming in Norway and the Netherlands Based on Sensory Perception

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Abstract. Most citizens in modern societies have little personal knowledge or experience of animal farming. This study explores the social construction of animal farming by studying how citizens perceive and evaluate modern farming after visiting a farm in real life. We wanted to understand how (non-farming) citizens develop an opinion of modern dairy farming when experiencing dairy farming in real life and practice, and how they translate what they see, smell and feel into an evaluative perception and mental image. We therefore conducted dairy farm visits with citizen panels in Norway and the Netherlands and asked the panel members to register what they saw, heard, smelled and felt and what they appreciated (or not) on the farm. The aspects that respondents registered could be grouped into four themes: the animals and their products, the rural landscape, farm practices and the farmer. When respondents described their experiences of these aspects on a specific farm, they appeared to look at them from three angles: modernity, tradition and naturality. Most respondents wanted farms to be modern, traditional as well as natural, but they were ready to negotiate and to accept compromises. Many respondents considered the farmer to be responsible for reconciling modernity, tradition and naturality. By taking different topics and issues into account and looking at animal farms from multiple angles, the respondents' developed a balanced and nuanced opinion of animal farming. The image that they constructed was not dualistic (arcadia versus factory) but pluralistic, thus at the same time more complex but also more flexible than expected. We expect that the development of a pluralistic image and balanced opinion was facilitated through the direct experience of dairy farming and farm life.

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The article starts with a theoretical analysis and aims to contribute to recent debates in rural sociology in two ways: 1) it studies how material experience and mental perception interact in the construction of an evaluative image of animal farming; and 2) it explores the social construction of animal farming as embedded into to the construction of nature, rurality and human-animal relationships. It concludes by discussing the contribution of the findings to the ongoing theoretical debate in this field.

Introduction

Modern Western societies are urbanized societies, in which most people have hardly any experience with farming (e.g. Cloke, 1997). In such societies, farming and the countryside acquire specific meanings. In the present article, we describe such meanings on the basis of dualistic contrasts. One of the contrasts in relation to farming and the countryside is that, 'life on the land' represents the good life compared to life in the city. Farming is portrayed as a more natural, authentic life, away from the artificiality of life in the cities (Eder, 1996). The countryside is romanticized and described as 'arcadia' – a place where people, and especially farmers, live close to animals and in harmony with nature (van Koppen, 2002). In this vision, the city is viewed as 'Babylon' – a crowded, noisy and dirty place where life is stressful and dangerous (Short, 1991; Frouws, 1998). Although agriculture is part of the rural idyll, it is at the same time under increasing criticism for putting the environment, food safety and animal welfare at risk (Frouws, 1998). Here reference is made to the 'unnatural' developments occurring on modern farms, their industrial character and the resulting careless and disrespectful treatment of animals and nature (Fraser, 2001). Over the last decades, animal farming is more and more confronted with public concern and criticism, which raise the question how the different images of animal farming are interacting within contemporary social imagination and how they are constructed as contrasting but also supplementing and fluent images, as they are neither 'given' nor stable. The present study explores the ongoing social construction of animal farming by studying how citizens translate what they see during a farm visit into an evaluative mental image of animal farming.

In order to understand how these images are constructed, it is important to consider the embeddedness of people's knowledge and experience and the context in which their opinions are formed (Macnaghten and Urry, 1998; Carolan, 2008). As we have argued above, most people in modern societies have little personal knowledge or experience of farming; their opinions are often based on second-hand information, often obtained from newspapers and television (Cloke, 1997). They are therefore often considered as laypersons and have been excluded traditionally from agricultural research, which is strongly expert-oriented with a firm belief in agricultural science and technology. Animal farming is one of the many issues or sociotechnical controversies where a debate with the public has long been avoided but would be highly desirable and necessary (Callon et al., 2009). Callon and others (2009, p. 108) refute the general view of experts that laypersons 'don't know what is good for

them', and that studying public perceptions of technologies are interesting only for promoting the public acceptance of these technologies (Callon et al., 2009). Instead, they plead for interaction and cooperation between different actors involved in sociotechnical controversies, in which the different actors – including laypersons – are given the opportunity to learn from each other (Callon et al. 2009). Several studies about laypersons' perceptions of animal farming – particularly about animal welfare – have been conducted over the past years, mostly in the form of survey studies (e.g. European Commission, 2005; Glass et al., 2005; Boogaard et al., 2006; María, 2006). Although laypersons are able to express their opinion in survey studies, learning possibilities remain limited. The present study tries to enable learning by taking citizen panels to farms, as thus to give citizens (as laypersons) the possibility to experience an animal farm in real life and to learn about animal farming when forming their opinion.

Our aim then is to understand how (non-farming) citizens develop an opinion of modern dairy farming when experiencing dairy farming in real life and practice, and how they translate what they see, smell and feel into an evaluative perception and mental image. More specifically, we aim to answer the following questions:

1. What do citizens notice on a dairy farm?
2. Which of these aspects of dairy farming do they appreciate and consider as important to preserve for the future?
3. Why do they consider these aspects as important to sustain?
4. Do citizens of different countries, in this case the Netherlands and Norway, differ in what they notice and appreciate on dairy farms and how do they express their appreciation?

The article is divided into five sections. After the introduction, we discuss the recent debates in social theory about the social construction of nature, animals and rurality. We believe that these debates are relevant for understanding how citizens construct their image of animal farming. The third section describes the research methodology (farm visits with citizen panels) and the research locations in the Netherlands and Norway. In the fourth section we present the empirical findings. The fifth section provides the conclusions and discussion.

The Social Construction of Animal Farming

Over the last decade, there has been an increasing interest among rural sociologists in the social and cultural meanings of rurality, nature and – more recently – animals in modern society. By now it is generally accepted that these understandings and relations change over time and are context and place specific. This interest coincides with the cultural turn in rural studies (Barnett, 1998; Cloke, 1997; Philo, 2000; Morris and Evans, 2004; Cloke, 2006). Although the cultural turn in rural studies paid much attention to the social construction of nature, the social construction of rurality (Cloke, 1997) and human–animal relationships, it has somehow by-passed the agricultural sector (Morris and Evans, 2004). The present study contributes to this field

by exploring the social construction of animal farming and its embeddedness in the construction of nature, rurality and human–animal relations.

The theory of social constructivism has been widely applied since Berger and Luckmann (1967) first wrote about it, and has been interpreted in many different ways (Sismondo, 1993; Demeritt, 2002). Generally speaking, the theory departs from the idea that phenomena are socially constructed and that they would be different if constructed in another society, with different values, needs or interests (Boghossian, 2001). More recently, social constructivism is criticized for focusing on the social and cultural meanings of phenomena and ignoring the influence of materiality – how material or physical characteristics contribute to the construction of a phenomenon and its meaning and have, as it were, their own role to play (e.g. Demeritt, 2002; Castree and Braun, 2006). The present study attempts to address this critique by confronting the respondents directly with the materiality of animal farming. We asked the respondents to notice and consciously experience the material world through sight, smell and noise, and to reflect upon these material experiences while forming an opinion. During the analysis, we aimed at getting insight into the (selective) process of sensory experience, evaluation and mental perception or image construction, in order to better understand their construction of animal farming.

In summary, this study aims to contribute to recent debates in rural sociology in two ways: 1. it studies how material experience and mental perception interact in the construction of an evaluative image of animal farming; and 2. it explores the social construction of animal farming as embedded into the construction of nature, rurality and human–animal relationships.

The Social Construction of Nature

Recent social theory departs from the idea that nature is socially constructed and constituted symbolically rather than objectively given (Greider and Garkovich, 1994; Eder, 1996; Macnaghten and Urry, 1998). The way in which nature is perceived depends on its historic, geographical and social context and is culturally defined (Eder, 1996). There is no one singular nature, only natures (Macnaghten and Urry, 1998). In the past, nature was often depicted as wilderness, a dangerous place or an intimidating force that needed to be tamed (Short, 1991). Modern day society conceptualizes nature in several ways. On the one hand, nature is considered as 'Arcadia' (van Koppen, 2000) – a realm of purity and moral power, to be enjoyed or worshipped (Eder, 1996). At the same time, nature is seen as being under threat from modern society's drive to control and dominate nature (Eder, 1996) and to use it as a production resource (van Koppen, 2000). With new technological developments, domination all too easily turns into exploitation and (potentially) destruction (Macnaghten, 2006). Nature therefore needs to be protected and preserved, ultimately in order to safeguard the future of humanity.

Farming plays an important role in both these conceptualizations of nature. It figures as a threat to nature because of the negative effects of modern production methods (Eder, 1996; Franklin, 1999). But farming may also figure as part of nature

and its preservation, especially when traditional and 'natural' production methods are employed (Macnaghten, 2004). In the latter concept, the traditional farm is an important element of the countryside and natural rural landscape, and therefore part of the rural idyll and pastoral myth.

The Social Construction of Rurality

Social understanding of 'the rural' changes over time and place. Compared with urban areas, the countryside may be pictured as remote, backward and unsophisticated but also as honest and authentic, safe and clean. While social perceptions of the rural idyll are persistent, their precise interpretation varies according to time and place (Short, 1991, 2006; Bunce, 2003; Cloke, 2003; Horton, 2003). In general, the rural idyll only acquires meaning in contrast to an un-idyllic other one (Short, 1991), and 'the concept can be used as an ongoing point of reference to less complex ways of simpler and more honest endeavour, and keying into fundamental human desires to sustain some harmony with nature and community' (Short, 2006, p. 146). Farm life is part of this romantic picture representing the good and traditional way of life in which people live in harmony with each other, with nature and with animals. Farmers are not so much producers in this pastoral myth but act more as proverbial shepherds, watching over and caring for their animals.

After World War II, farming became increasingly mechanized and rationalized and anti-idyllic images of animal farming came into being (Bell, 2006). Since then 'the pastoral myth has been sullied by the use of pesticides, and fertilizers and by the emerge of factory farming systems where cows never feel grass beneath their feet and hens live and die in small cages in sunless rooms lit only by electric light' (Short, 1991, p. 38). With modernization, farming became the offender instead of the defender of idyllic traditions and one could even say that the idyll has 'been turned against' farming (Short, 2006, p. 143). Increasingly, citizens have become concerned about damage to the environment, the destruction of cultural landscapes, the loss of farming traditions and about food safety and animal welfare. However, the rural idyll appeared remarkably persistent, in the sense that people seem willing to 'forget' or 'close their eyes' for the production-side of farming in favour of the idyll (Franklin, 1999), and over the last decades the countryside became disconnected from agricultural production (Frouws, 1998).

Human–Animal Relationships

The relationship between farm animals and humans has been described as the oldest and most intimate of all society–nature relations (Buller and Morris, 2003), but it is also an ambivalent relationship (Eder, 1996). The ambivalence can be traced back to the two classical and dichotomous conceptualizations of nature described above: as being wild and to be controlled, and as vulnerable and to be protected (Eder, 1996; Macnaghten and Urry, 1998). On the one hand, farm animals represent the modernist conception of nature as wild and to be tamed, domesticated, husbanded and con-

trolled (Buller and Morris, 2003). Using farm animals for human purposes is part of the desired and taken-for-granted dominance of humans over nature. In contrast, farm animals symbolize nature and 'the rural', which, in the post-modern romantic construction, need to be reified and protected (Eder, 1996). They embody rural traditions (e.g. traditional breeds) and colour and animate the landscape with their presence and diversity (Yarwood and Evans, 2000; Buller, 2004). In this symbolic role, animals are seen as 'icons of nature and rurality' (Buller, 2004, p. 139), which should be looked after by caring farmers and should lead a good and happy life. But at the same time, farm animals are kept in 'factory farms', where they are turned into a means of production and become 'victims of a greedy, global economy' (Franklin, 1999, p. 3), just like nature. Consequently, farming practices are called into question, raising, for example, animal welfare issues (Buller and Morris, 2003).

Furthermore, emotional and social ties with animals increased in the twentieth and twenty-first centuries, which gave them a rather paradoxical position (Tovey, 2003; Macnaghten, 2004; Wilkie, 2005). This means that, due to increased empathy, we feel connected to farm animals, but use and eat them as meat at the same time. This instrumental value clearly distinguishes them from being human.

To summarize, human–farm animal relations in the twentieth and twenty-first centuries are complex, ambiguous and even paradoxical (Yarwood and Evans, 2000; Buller, 2004; Macnaghten, 2004; Jones, 2006). Societal values have shifted, in the sense that production and economic purposes of animal farming are no longer taken for granted (Buller and Morris, 2003). Instead, animal farming also reflects values of nature, culture, rurality and empathy towards farm animals. The present study tries to gain further insight in 'the complexities, paradoxes and messiness' (Jones, 2006, p. 197) of human–farm animal relationships by better understanding how citizens construct their image of animal farming. The present study therefore starts literally at the farm gate by taking people to an animal farm.

Research Method

In order to investigate citizens' opinions about present-day farming, we organized dairy farm visits and asked the participants to observe the farm and to register and elucidate their observations. The following section explains the research methodology in more detail.

Research Locations

The study was based on the idea that nature, the rural and human–animal relationships are socially constructed and hence are culturally defined (Greider and Garkovich, 1994; Eder, 1996; Macnaghten and Urry, 1998). As a result, we expected the constructions of dairy farming to differ between countries. On the basis of the literature review (above), we anticipated that the extent of urbanization, population density, land use, geography, and the relative abundance and character of natural areas would contribute to these constructions. For this reason, we decided to compare

the Netherlands and Norway; both are developed, modern and high-income countries, but vary considerably with regard to their geography, population density and land use. The Netherlands is highly urbanized, has a high population density (484 people/km² in 2003; CBS, 2007) with a large part of its land under cultivation (55.5% in 2003; CBS, 2007) and only a few small nature areas, all of which are man-made and managed. Norway is less urbanized, has a low population density (15 people/km² in 2006; SSB, 2007) with large areas of 'wild' and relatively unmanaged nature and only a small part of the land used for agriculture (3.2% in 2006; SSB, 2007).

We decided to focus on dairy farming as it is a prominent and traditional sector and occupies a relatively large part of the agricultural land in both countries. It has been practiced for hundreds of years and people in both countries associate animal farming with dairy farming (Haartsen et al., 2003). Moreover, in both countries, the aesthetics of the countryside have been, and remain, strongly influenced by dairy farming: pastures with grazing cows are considered to be a tangible feature of the countryside. Besides, dairy farming is less intensive and less contested compared to other sectors, such as pig or poultry farming; and it was expected that dairy farming would give people the opportunity of experiencing farming with less preformed opinions, and of noticing a bigger variety of aspects, than in more intensive systems which are 'known' to have 'animal welfare issues'. But, of course, the exclusion of intensive farming is a shortcoming of the present study, as people most likely experience pig or poultry farming differently. One should be careful, therefore, with extending the presented findings to more intensive farming systems.

In the Netherlands, dairy farming has been modernized considerably since World War II, when Dutch farmers were stimulated to produce as much and as efficiently as possible, resulting in highly productive dairy farms. In recent years, Norwegian agriculture has also been stimulated to become more cost effective (Storstad and Bjørkhaug, 2003). To survive financially, two types of dairy farms are developing. The first, 'organic dairy farming', can be seen as a continuation of the traditional, relatively small-scale pattern of dairy farming in Norway. The second type is called *samdriftsfjøsset* (joint-shed farm), in which several farmers merge their farms and cattle herds and build one large *fellesfjøsset* (cubicle shed). Farmers manage the joint-shed farm together in order to produce as efficiently as possible for the conventional market.¹ To give the respondents a realistic idea of dairy farming, we selected farms that represent the most common practices in each country. In the Netherlands, we selected six average dairy farms located in three different areas; in each area, one of the farms was involved in nature and landscape conservation. In Norway, we selected one organic and one joint-shed farm in the same area. Due to time and financial restrictions, we were unable to include more farms and citizen panels in Norway. In the analysis, we did not differentiate between farms, because of these small group sizes.

Data-gathering Method: Farm Visits – Lived Experience

In modern society, many citizens know little about animal farming from first-hand experience; they hardly know where their food comes from, how it is produced or

what animal farming actually entails (Holloway, 2004). There seems to be a 'collective blanking out' of animal farming and especially of those aspects that involve the use of animals (Macnaghten, 2004). Following Franklin (1999, p. 127), livestock production systems have been 'deliberately obscured from the sensitive and critical public gaze' from the nineteenth century onwards. As stated in the introduction, most citizens can therefore be considered to be 'laypersons' on animal farming. There are different methods for involving the public into research, such as focus-group discussions, consensus conferences and panel studies (Callon et al., 2009). This study made use of panel studies, by conducting farm visits with (non-farming) citizen panels, because this methodology gave citizens the opportunity to learn about dairy farming through lived experience. As such, this process allowed laypersons to gain a better understanding of dairy farming when forming their opinion. Learning opportunities are limited when compared to other methodologies such as consensus conferences, in which different actors (e.g. scientists, laypersons, technicians and politicians) are cooperating for a longer period of time and are in search for a common world (see also Callon et al., 2009). However, the aim of the present study was not to search for a common world for animal farming or to facilitate participatory decision-making. Our aim was simply to explore the process of construction of meaning and the role of lived material experience. Lived experience involves sensing, feeling and knowledge, and it gives insight into people's perceptions of reality. This matches the notion that social practices are embodied, and experienced through the body rather than grasped purely at an intellectual level (Macnaghten and Urry, 1998; Carolan, 2008).

In total eight panels (with eight respondents in each) visited eight farms. Each panel visited two farms on the same day, with the sequence of the visits changing for each panel. In the Netherlands, the farm visits took place in the spring and autumn of 2005 with six citizen panels visiting dairy farms in three areas (Friesland, Brabant and Zuid-Holland). In Norway, the visits took place in autumn 2006 when two citizen panels visited two dairy farms in one area (Vestfold).

The farm visits were organized in the following way. First, the farmer told his or her story about the farm. Each respondent received a hand-out with specific information about the farm (land area, number of animals, litres of milk produced, etc.). Next, the farmer gave the respondents a guided tour of the farm and land. Thereafter, the respondents walked around unaccompanied while responding to a questionnaire.

The questionnaire focused on sensory perceptions, on the grounds that sensory perceptions are the primary basis for reflection (Merleau-Ponty, 1970) and provide a way to gain insight into people's experiences (Krogh, 1995; Krogh and Clementsen, 2004; Carolan, 2008). We asked the respondents to note down what they smelled, heard, saw and felt; we also asked them to indicate if their perceptions were positive, negative or neutral and to try to explain their judgments. In addition, each participant received a digital camera and recorded 10 pictures per farm representing valuable aspects of the farm, which, in their opinion, should be preserved for the future. A few days after the farm visits, the respondents received their pictures by post. We asked them to select five pictures per farm that represented the most valu-

able aspects, to explain their choice and to send the pictures and explanations back to us.

Data Analysis

The questionnaire was designed in Dutch and translated into Norwegian by a bilingual Norwegian. With perceptions and feelings a correct understanding and interpretation of words is of crucial importance. In order to analyze the Norwegian and Dutch data, one of the Dutch authors learned Norwegian. She translated the Norwegian data into English and discussed her translation and interpretation with the Norwegian author. For the analysis of the data we used the programme ATLAS.ti (2006). We created two databases: one Norwegian (with English translation) and one Dutch. Each consisted of one document per respondent: a total of 16 and 47 primary documents, respectively. The analysis followed four steps, in line with the four research questions. In the first step, we identified what the respondents registered when experiencing the dairy farms. In the second step, we analysed which aspects respondents evaluated as positive and important to preserve. We then analysed respondents' explanations of their choices and, finally, any differences and similarities between the Norwegian and the Dutch respondents. We wanted to better understand how people construct their images of animal farming and, therefore, we asked them to consider how they perceived and experienced the farm through the senses. In the analysis, we did not differentiate between perceptions per sense, because we were interested in perception as a whole.

Respondents

In the Netherlands, we selected the respondents from the CAPI@HOME database of the Dutch Institute for Public Opinion (NIPO), using the following selection criteria: age, gender, educational level, place of residence (urban or rural) and value orientation.² In Norway, we used the same selection criteria, except for value orientation. We approached people personally by telephone, inviting them to participate. Respondents in both countries received modest financial compensation for taking part, to ensure that not only people with interest in agriculture would participate. Table 1 gives an overview of the composition of the panels in both countries. Because of the small group sizes (particularly in Norway), we did not look for differences between social groups but for differences between countries. Moreover, a quantitative follow-up study in the Netherlands focused on differences between people.

Empirical Findings

The empirical findings give insight into the social construction of animal farming and follow the structure of the research questions. We have illustrated our findings with quotes from the participants. After each quotation, we note the participants' nationality and number, e.g. NL-14.

Table 1. Composition of six citizen panels in the Netherlands and two in Norway.

Country	Netherlands ¹		Norway ¹	
	Intended	Actual	Intended	Actual
Selection criteria				
Number of panels	6	6	2	2
Total number of citizens (8 per panel)	48	47	16	16
Age range (years)	18–75	18–75 ²	18–75	14–82 ²
Gender (% female)	50	51	50	50
Urbanization (% living in urbanized areas)	50	51 ³	50	62.5 ³
Educational level (% higher educated)	17 ⁴	36	19.6 ⁴	12.6

Source (note 4 only): CBS, 2007; SSB, 2007.

Notes: ¹ The intended numbers are based on the planned design; the actual numbers show the actual composition of the citizen panels. ² Netherlands: $\mu = 44.0$, min = 18, max = 75, s.d. = 15.5; Norway: $\mu = 46.0$, min = 14, max = 82, s.d. = 22.6; ³ Netherlands > 1,000 addresses per km², 8 missing values (= 1 panel); Norway > 300 inhabitants per km². ⁴ Netherlands: average % higher educated (at least 'bachelor degree'). Norway: average % higher educated (at least 'short tertiary education').

Four Themes

What the respondents registered on and around the farms could be grouped into four themes: the animals and their products, the rural landscape, farm practices and the farmer. Responses within the *animals and their products* theme include references to the variety of animals on the farms: dairy cows, calves and bulls, as well as sheep and chickens. Respondents also noticed the animal products, such as milk and meat for human consumption; and they often noted details about how the animals were kept and cared for: inside or outside, type of shed, feeding management, and the use of cow mattresses and electric rotating cow brushes.

The *rural landscape* theme contains the respondents' observations about the farmyard and the house, the garden, sheds, barns and silos, farm machinery, fields and pastures, fences, shrubs, trees, flowers, farm animals and wildlife.

The *farm practices* theme includes all references to the use of technological innovations, such as a manure scraper, a concentrate box, a feeding chip and a computer. This theme also included recognition of organizational aspects of dairy farming – for instance, that the farm was run as a family farm or that the farmer lived on the farm and combined work and family life.

Under the theme the *farmer* we grouped all the observations relating to the farmer and his/her personal and professional characteristics, such as enthusiasm, motivation, engagement, close contact with animals, professionalism and level of education.

Positive Aspects

We structured and analysed the phrases used by respondents when explaining why they appreciated certain aspects of the farm and of farm-life and why they considered these important to preserve for the future. In these explanations, participants referred to specific elements (e.g. machinery) and the feelings that these aspects evoked (e.g. happiness, nostalgia, fear, surprise or admiration). When the respondents explained what they liked or disliked about what they experienced on the farm, they tended to use terms as 'cosy' and 'idyllic' but also 'efficient' and 'unnatural'. Their evaluations

resulted from reconsidering their experiences from the following three angles of vision: modernity, tradition and naturality. Modernity in farming refers to a continuing process of rationalization, searching for the most productive and efficient farming systems by making use of high levels of technology. Tradition refers to our past and rural way of life. Farming traditions include collective representations and customary ways of doing things, such as the involvement of family members in the farm. And third, farming reflects ‘naturality’ through farming’s intimate interactions with nature, animals and the soil but also through its dependence on nature – on the rain, the wind and the sun. On the basis of these three angles of vision, we schematically summarized a selection of responses (one per theme).

Animals and their Products

Table 2 summarizes those aspects about *animals and their products* that the respondents evaluated as positive and important to preserve. Respondents in both countries appreciated that the farms produced food (milk) for human consumption and the modern, and thus hygienic and safe, way in which food was produced (part of modernity). Norwegian responses included the view that food produced in Norway was important for safeguarding public health.

‘We all need to have food. Times of crisis might come and then it is good to produce sufficient food ourselves. Nowadays we can buy cheap food from abroad, but we can never be sure about their use of biocides. Let us buy Norwegian food with the guarantee that the products are fresh and free of pesticides’ (NO-2).

Participants from both countries appreciated the way in which animals were kept in contemporary, modern farms and the use of innovative devices such as cow mat-

Table 2. Dutch and Norwegian citizens’ appreciation of dairy cows and products.

Angle of vision	Modernity	Tradition	Naturality
Country			
Netherlands	<p><i>Food production:</i> milk production, human needs, production oriented.</p> <p><i>Modern achievements:</i> hygiene, good product quality.</p> <p><i>Technological innovations:</i> cow mattresses, electric rotating cow brushes, automatic feeding.</p>	<p><i>Dutch culture:</i> cows in the pasture, variation in animal species (e.g. sheep or chickens), typical Dutch products (e.g. cheese).</p>	<p><i>Animal nature:</i> natural environment, natural feed, freedom to move, being able to go outside (cows in the pasture), eat and drink when they want, birth, natural mating, cow and calf living together.</p>
Norway	<p><i>Food production:</i> milk production, production oriented.</p> <p><i>Modern achievements:</i> hygiene, food safety, public health.</p> <p><i>Technological innovations:</i> cow mattresses, electric rotating cow brushes, igloo huts (outside calf pens).</p>	<p><i>Norwegian culture:</i> natural way of farming, variation in cow breeds (e.g. Jarlsberg), taking care of traditional breeds (should not become extinct), variation in products (not mono-production).</p>	<p><i>Animal nature:</i> freedom to move around, freedom to choose (in- or outside), cows in the pasture, eat and drink whenever they want, fresh air, natural manure, natural mating.</p>

tresses, electric rotating cow brushes and automatic feeding technologies, which, in their view, increased animal welfare as well as production efficiency. Dutch respondents valued grazing cows and dairy products such as cheese and milk, because they preserved Dutch culture and identity (part of tradition).

‘For me dairy farming is part of Dutch culture: Dutch cattle in the pasture, black-pied in the north and red-pied in the south, has defined the Dutch landscape through the years. Also Dutch cheese is famous all over the world’ (NL-25).

In Norway, respondents valued the diversity and variety in both animals and products at the farms and the presence of traditional cow breeds, such as Jarlsberg cows, rather than Norwegian Red cattle (part of tradition). In addition, they appreciated the variety of food products in contrast to monoculture. Dutch respondents considered it important to preserve the ‘animals’ naturalness’, and they expressed the view that farm animals should be kept in an environment that resembles nature as much as possible. Animals should have enough freedom of movement and the opportunity for expressing their natural behaviour. Dairy cows should therefore graze in pastures (part of naturality).

‘In my view cows belong outside. A cow is a social animal and needs to have as many opportunities as possible for expressing her natural behaviour in a natural environment’ (NL-39).

For the same reason, they wanted calves to stay with their mothers and not be taken away shortly after birth. Norwegian respondents also appreciated a ‘natural situation’ in animal husbandry, which ensured ‘natural animal keeping’.

‘I value this photograph as it portrays Jarlsberg cows... They look very well taken care of; they are beautiful cows, and not pressured to produce an enormous amount of milk; they produce 5000 l/year, which is animal friendly. Traditional breeds naturally belong on this farm; they continue to keep animals in a natural way, as in the past’ (NO-11).

Norwegian participants referred to ‘natural animal keeping’ as the traditional way of farming (part of tradition) whereas Dutch respondents underlined the need for the environment to be as natural as possible (part of naturality). In both countries, however, the freedom of animals to move, drink, eat and rest whenever they wanted, as well as their ability to graze outdoors all year round, were of utmost importance.

The Rural Landscape

Table 3 gives an overview of the respondents’ appreciation of the *rural landscape*. Participants from both countries appreciated the idyllic beauty of the rural landscape and its reflection of their country’s culture and traditions (part of tradition). The sound of a tractor, the smell of cows and straw, and the peaceful rural environment evoked childhood memories and feelings of nostalgia. Wind, fresh air and the sounds of birds (part of naturality) were tangible aspects of such a quiet and peaceful environment and evoked relaxed and happy feelings. Norwegian respondents valued the

Table 3. Dutch and Norwegian citizens’ appreciation of the rural landscape.

Country	Angle of vision	Modernity	Tradition	Naturality
Netherlands		<i>Productivity:</i> Monotonous production landscape.	<i>Cultural landscape:</i> ‘typically Dutch’, beautiful, characteristic for the region, idyllic, romantic picture, history, cultural heritage, preservation value. <i>Nostalgia:</i> emotional matter, old-fashioned, memories, farm smell, pleasant, cosy, peaceful environment.	<i>Nature:</i> let nature run its course, natural balance, ‘helping’ nature, silence, bird sounds, peace and quiet, open landscape, beautiful to see, wind, fresh air. <i>Pleasant experience:</i> feeling of freedom, being outside, being happy, relaxing, healthy, holiday feelings.
Norway		<i>Productivity:</i> viability of the countryside.	<i>Cultural landscape:</i> classical for Norwegian agriculture, taking care of the landscape, beautiful, aesthetic, attractive, fresh air, healthy life at the farm, pleasant, attractive, positive experience, quiet. <i>Nostalgia:</i> sound of tractor, smell of cows, the way it should be (smell and sounds), cosy, old-fashioned, home-made, melancholy, memories of childhood.	<i>Wilderness frontier:</i> prevent expansion of forest and scrubs, transition area to the forest.

fred og ro (peace and quiet), which the Dutch respondents described as *rust en ruimte* (quiet and open space). Although they used slightly different terms, they were expressing the same value: a peaceful and quiet countryside as a counterweight to ‘the stress of daily life’. Both Dutch and Norwegian participants also valued the openness of the rural landscape, although for different reasons: Norwegian respondents expressed their fear that the forest may take over the land if farmers stop cultivating it (part of naturality).

‘This picture [of cows in the pasture] is most valuable to me, because [it is] important that the growth of forest and bushes is restricted. At the same time, the cows are able to graze in the open landscape’ (NO-16).

Dutch respondents appreciated the open farming landscape as a buffer to urbanization.

‘The Netherlands is becoming too full and over-urbanized. The countryside has to stay as it is, as a counterweight to progressing urbanization’ (NL-17).

Dutch respondents appreciated the rural landscape as a green area and as part of naturality. They described the rural landscape as a ‘natural’ landscape that should contain a variety of farm animals (part of nature).

‘This picture of sheep and lambs is valuable to me. This is how I see nature’ (NL-13).

In Norway, respondents valued the rural landscape as a 'cultural landscape', contributing to national culture and identity (part of tradition).

'Dairy farming has a hundred-year-long tradition in Norwegian cultural life and for me Norway without dairy production is unthinkable' (NO-5).

In both countries, several participants stressed that they preferred a varied landscape (part of tradition) to a monotonous one (part of modernity).

'I really like the variation and I think that most people appreciate this. [I value] the contrast between the pastures and the ditches and a few trees or sometimes a pool. A varied landscape makes you more curious, you are more taken up by it. I really miss that in a monotonous landscape' (NL-46).

One Norwegian respondent considered it important that dairy farming contributed to the viability of the countryside (part of modernity). Others explained that they wanted to see and enjoy the rural idyll and therefore associated the rural landscape with values of tradition and nature rather than with production or modernity.

Farm Practices

Table 4 illustrates the respondents' appreciation of *farm practices*. Respondents in both countries valued technological developments (part of modernity) for two reasons. First, technology reduces farm labour and increases efficiency; this should contribute to increases in farm income and the farmers' free time. In Norway, participants considered more free time as an important advantage of joint-shed farming. Second, technological innovations reduce heavy work burdens.

'Farm work has become easier on modern farms. The sheds are more spacious and allow the farmers to work more efficiently. There are computer-controlled feeding boxes (with ear chips) and the milking parlour is adjusted to the farmers' way of working' (NL-5).

But Dutch and Norwegian respondents also wanted to preserve farming traditions. They were glad that the farmers' families were still involved in the farm. And, they gave a high value to farmers' frequent and close contact with their animals.

'Of course there is the contact between humans and animals... This contact is really part of being a farmer. It is about life. I think this is the joy of being a farmer, working with living beings... I can imagine that it greatly enhances the value of your work when you work with animals' (NL-43).

A close and personal farmer-animal relationship demonstrated to the visitors that the farmers took good care of the animals, as it was in the past. In addition, the participants referred to the continued importance of manual labour as a positive feature, even if the farm might be a bit messy as a result. Both contact with animals and the enduring importance of manual, artisanal work made dairy farming seem different from other, more industrial economic sectors. Several respondents found it important to preserve such traditional characteristics, which satisfied a sense of nostalgic longing. Dutch respondents appreciated the link with nature, expressing this through their appreciation of wildlife (birds) and nature conservation. In Norway, respon-

Table 4. Dutch and Norwegian citizens’ appreciation of farm practices.

Country	Angle of vision	Modernity	Tradition	Naturality
Netherlands		<i>Modern achievements:</i> less heavy work, good control, machines, impressive, necessary, progress, clean, innovation, renewal, good for animals, efficiency, sufficient income.	<i>Pastoral myth:</i> cosy, taking care of animals and humans, working with living beings, knowing the animals, giving attention. <i>Rural idyll:</i> personal time schedule, being free to do what you want, family, harmony.	<i>Nature:</i> in touch with nature, love for nature, taking care of nature, actively involved in nature, protecting birds, conservation of plants and birds.
Norway		<i>Modern achievements:</i> clean, tidy, practical, new, useful, modern, economically based, effective, very modern, good working conditions, increased efficiency, lightens work.	<i>Pastoral myth:</i> humans need animals, people and animals together, working with living beings, taking care of animals, name plates for the cows (personal relation), farmer knows every cow, creating everything that lives. <i>Rural idyll:</i> always something to do, farmer and wife, family, children.	<i>Wilderness frontier:</i> prevent expansion of forest and scrubs, transition area to the forest.

dents appreciated the fact that farmers kept the forest back and prevented wilderness from encroaching onto the open landscape.

The Farmer

Table 5 illustrates how the respondents’ described their perception of the *farmer*. Here the phrases used could not be categorized into the categories used above (modernity, tradition or naturality). All the expressions referred to the personal characteristics of the farmer, either as a ‘human being’ or as a ‘businessman’. Participants in both countries valued the farmers for similar reasons. They admired their strong motivation, passion and enthusiasm for their farm and profession.

‘The farmer! Without him there would be no farm, no milk and the countryside would not be put to use. I admired that the farmer talked about his profession with so much love, that he was creative in innovating and had a positive vision of the future’ (NL-36).

The participants valued the closeness of the human–animal contact, not only for the sake of the animals, but also as part of the joy of being a farmer. They also admired the farmers’ entrepreneurship, their freedom to organize and manage the farm and their up-to-date knowledge and high level of education. The latter was underlined by Dutch respondents.

‘It is a large farm with few workers. Such an efficient enterprise demands a lot of knowledge and expertise. This deserves respect: there are no “stupid” farmers anymore’ (NL-23).

Table 5. Dutch and Norwegian citizens' appreciation of the farmer.

Country	
Netherlands	<i>Type of man/woman:</i> way of life, love for animals, honesty, enthusiasm, affinity, the farm is at the farmer's heart, friendly, being happy, hospitable, respect, admiration. <i>Entrepreneur:</i> manager, businessman, dynamic, realism, much knowledge, proud, trust, openness, being content, creativity, diversity, eager to work, skilled.
Norway	<i>Type of man/woman:</i> joy, happiness, harmony, idealism, enthusiasm, optimism, have faith, willingness to contribute, down-to-earth, friendly, honesty. <i>Entrepreneur:</i> realistic, creativity, flexibility, vigorous, capability, hospitality, freedom, clever, knowledge, experience, strategic thinking, good planning.

Dilemmas and Balances

In this step of the analysis, we explore how respondents weighted conflicting aspects against each other and what they saw as a satisfying balance. We found that respondents expressed concerns about potential imbalances and dilemmas between modernity, tradition and naturalness. The entwinements between the three angles of vision can be illustrated as a threefold knot (see Figure 1). The knot reflects that the three angles of vision are complementary parts of the whole. Each component influences another. Moreover, the threefold knot avoids notions of hierarchy or priority – all three angles of vision are equally important. And finally, a threefold knot shows the complexity of the interrelations better than a 'standard triangle'; the relationships appear less linear and the angles of vision are not represented by a single dot but by a more diffuse and flexible shape, that can represent transitions between, for example, modernity and tradition or naturalness and modernity. Below we describe the balances and dilemmas for each theme.

Animals and their Products

Many Dutch respondents expressed concern about modern dairy farming being unnatural and in conflict with nature. They specifically referred to the separation of calf and cow, calves being fed with milk powder rather than their mother's milk, the use of artificial insemination instead of natural mating, the short lifespan of farm animals and 'unnaturally' high milk production per cow.

'Production comes first. I understand that a farm has to function like a business and that milk production needs to be as high as possible. But I feel a bit of resentment too. Because what is best for the animals? As humans where are we going?' (NL-43).

Several respondents recognized that such modern aspects are inherent to dairy farming today and that this reality should be faced.

'On the other hand I am quite realistic: it is an enterprise after all. When cows are no longer able to produce milk... they should go to the slaughterhouse. If you do not want to face that reality, you should not buy milk' (NL-36).

Sometimes naturalness and modernity complemented each other. Dutch respondents mentioned, for example, that innovations, such as cow mattresses, increased the naturalness of the environment by imitating it or by compensating for a lack of it.

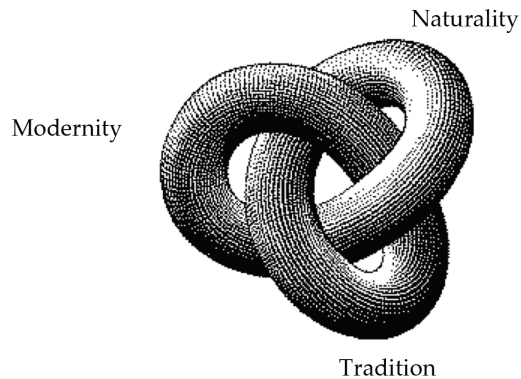


Figure 1. Threefold knot representing relations between Modernity, Tradition and Naturality in animal farming.

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'This picture [of a cow shed] is valuable to me because the cow has sufficient space to move around; she is not tied in a box. The half-open shed copies the natural environment as much as possible' (NL-39).

Norwegians were less concerned about the conflict between naturality and modern production than the Dutch respondents, although they were also worried about the short lifespan of production animals.

'[I feel] wistful. Short lives. More the feeling of an industry' (NO-3).

Norwegian respondents accepted that cows were kept for production purposes. And while Norwegians valued a 'natural way of keeping animals', they did not necessarily see this as being in conflict with using modern equipment, such as individual housing for calves in modern 'igloo huts' (outside calf pens).

'This picture [of a calf in an igloo hut] is valuable to me because it shows that the calves are well taken care of and looked after. The calves can eat hay exactly when it suits them... And when I see this calf in a 'private' and large pen alone with a lot of hay, it makes me happy. That is exactly how it should be (NO-9).

Several Norwegian respondents, however, worried that the increased specialization of modern farms threatened traditions and might endanger the traditional diversity of farm production.

'This picture [of a rooster] is valuable to me because it shows the variety on the farm; it is no monoculture, but a wide range of products are made – juice, herbs, eggs, milk, etc.' (NO-14).

In conclusion, we can say that Dutch respondents were more concerned about the dilemma between production and the animals' nature and the imbalance between modernity and naturality. Norwegian respondents were more concerned about the

dilemma between farm specialization and the preservation of diversity and variety in farm production. Hence, they feared an imbalance between modernity and tradition (see Table 6).

The Rural Landscape

Dutch and Norwegian respondents also perceived the issues around the *rural landscape* to raise quite different dilemmas. In the Netherlands, respondents were concerned about increasing urbanization and recognized the need to maintain an open, ‘natural’ landscape. To them, the rural landscape represented a relaxed and idyllic environment (embodying tradition as well as nature), which was disrupted by the noises of machinery.

‘I am a bit disappointed about the noise of all the machines at the farm. There is more noise pollution here than in a city centre’ (NL-36).

This shows a conflict between modernity and the ideas of tradition and naturality. Norwegian respondents mentioned the importance of the cultural landscape as a place for relaxation, and they were concerned about forests recolonizing the cultural landscape when farmers stopped cultivating the land. In addition, several respondents expressed concern about modern dairy farming changing the traditionally diverse rural landscape into a ‘monotonous’ production landscape. Hence, Norwegians experienced two dilemmas in the rural landscape: with naturality and modernity both endangering the maintenance of the traditional rural landscape (see Table 6).

Farm Practices

Participants in both countries recognized a similar dilemma about *farm practices*, acknowledging the conflict between technological and economic development (part of modernity) and the conservation of typical farming values (part of tradition). One Dutch respondent described this in the following way:

‘This is a picture with a wheelbarrow. It is a very traditional image. It is nice that this can still be found on the farm. It is a tool of authentic manual labour. Of course, not everything can stay authentic, this is the dilemma. You also have to be able to survive financially otherwise you cannot realize your ideals. I understand that very well, this is a frequently occurring dilemma’ (NL-43).

Table 6. Perceived dilemmas in Norway and the Netherlands between three angles of vision (Modernity, Tradition and Naturality) for three themes.

Country	Themes		
	Farm Animals and their products	Farming Practices	Rural landscape
Norway	Modernity – Tradition	Modernity – Tradition	Naturality – Tradition
Netherlands	Modernity – Naturality	Modernity – Tradition	Modernity – Tradition Modernity – Naturality

Many Norwegian respondents worried that production-oriented agriculture would lead to a loss of traditions.

‘The “old farm” is gone. Farms have become large, factory like, efficient’ (NO-14).

But respondents also saw the possibility for combining modern production and tradition:

‘This picture [of a joint farming shed] is inspiring to me because it shows that traditional milk production can also be modern and develop itself (NO-15).

The same respondent mentioned that nostalgia and development can go together:

‘This picture [of a tractor] is important to me because it shows both nostalgia and agricultural development’ (NO-15).

Both Dutch and Norwegian respondents were enthusiastic when innovations and new techniques went hand in hand with maintaining the traditional farm.

‘This picture [of machines and a shovel] shows the activity on the farm: there are colourful machines behind the gauze and an old-fashioned shovel at the front. To me, this picture shows how renewal, innovation and new techniques need not damage the value of the farm’ (NL-36).

In general, participants appreciated technological innovations (part of modernity) but at the same time wanted to preserve farming traditions (part of tradition) (Table 6).

The Farmer

When analysing the respondents’ observations about *farmers*, it was apparent that they saw them as being at the centre of all of the perceived dilemmas. They expected farmers to handle these dilemmas, solve the conflicts and maintain the desired balance between modernity, tradition and naturality.

‘[The farmer] has a very reflective attitude to his work. He is well informed (has a lot of knowledge) about animals, breeding, chemistry, market, economy, together with idealism and engagement’ (NO-12).

Only a few respondents expressed criticisms about farmers.

‘This is a production-oriented company, and a chilly and unpleasant farm. I still think that he is a good farmer as he is a good businessman. I think it has to be like this nowadays, it is a necessity’ (NL-40).

National Differences

The descriptions and perceptions provided by the Dutch and Norwegian respondents differed in some respects and showed exploratory evidence for three main points of difference. First, Norwegian respondents described the rural landscape as

a cultural landscape, distinguishing it from 'free' (wild) nature. This is clearly expressed in the following quotation:

[I hear] birds chirping. Close to nature, access to the forest, a gradual conversion from free nature to a cultural landscape' (NO-5).

In Norway, the rural landscape was considered a transitional area between free nature and the urban landscape. It helps to protect citizens against the wilderness but is also appreciated for its peace and quiet and the opportunity to escape from the stress of city life. By contrast, in the Netherlands, the rural landscape is perceived as a 'natural' landscape, the 'green area' a term used to describe everything that is 'not urbanized'. The Dutch public also appreciate the quiet and open space of the rural landscape as a contrast to life in the city (van der Ziel and Steenbekkers, 2006). In short, Norwegian respondents perceived the rural area as a transitional area between nature and urban areas, while Dutch respondents experienced the rural area as part of the 'green area' and nature (see Figure 2). Respondents in both countries appreciated the rural area as being quiet and peaceful, and different from the city. One Dutch citizen stated: 'I feel happy. One day at a farm feels more relaxed than a week's holiday'. Gullestad (1992) argues that peace, quiet and silence are connected with achieving a harmonious, balanced state of mind.

Second, the different perceptions of the rural landscape also influenced the perceptions of farm animals. According to Franklin (1999), animals can be part of three different areas: (a) urban, (b) intermediate and (c) relatively wild and natural areas. Norwegian respondents perceived farm animals as part of the 'intermediate' areas, whereas Dutch respondents considered farm animals as part of nature. This difference influenced national concerns about the way in which animals were kept on farms. Norwegian respondents generally accepted that animals were kept under human control for utilitarian purposes. They were concerned about the loss of the traditional diversity of animals and animal products but less about the naturalness of the animals' lives. This last issue was the main concern of Dutch respondents. They wanted the animals to live in a 'natural' environment and to live 'natural' lives. In conclusion, we can say that Dutch respondents were more concerned about values of naturality when it comes to rural landscapes and farm animals, whereas Norwegian respondents were more concerned about values of tradition. These findings are in line with a study by Vihinen (2001, p. 192), who also noted that 'the values of the environment and nature were more obvious for the Dutch than rural or agrarian values'.

Third, Norwegian respondents greatly appreciated the production of (sufficient) food in Norway as they considered domestic products to be safer and of higher quality than products from abroad. This is in line with Norwegian consumer studies, which show that Norwegian consumers put great trust in domestic agriculture, food control and products (Nygard and Storstad, 1998). Dutch respondents appreciated the export of dairy products and were proud of the worldwide fame of typical and traditional Dutch products, such as cheese and milk. Although respondents from both countries were concerned about the loss of farming traditions, Norwegians showed more concern about this than the Dutch. The following quotation empha-

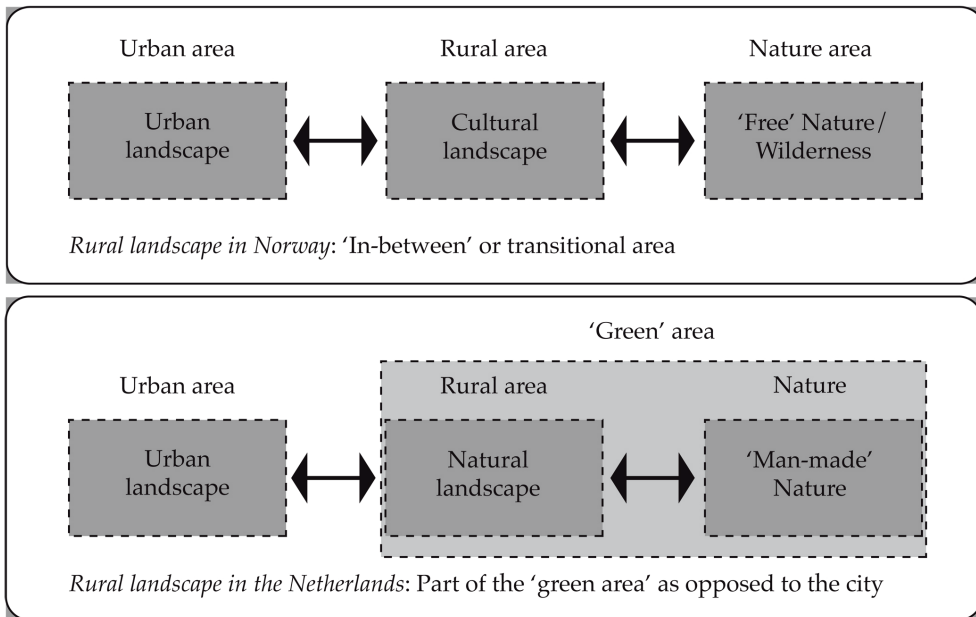


Figure 2. Position of the rural landscape in Norway and the Netherlands.

sizes the importance attached to farm traditions in Norway and summarizes the main arguments made.

'Is the farm important apart from for milk production? Is the farmer important? Yes! Would it be sufficient to have just professional large-scale farm milk production? No! Do we need Norwegian food production? Yes! Can we buy everything in the market? No! Does the farmer's culture mean something for our identity? Yes!' (NO-14).

Most Norwegian respondents wanted dairy farmers to combine aspects of modernity and tradition. These findings are in line with the study by Daugstad et al. (2006), which depicts agriculture as both a threat to, and a caretaker of, cultural heritage.

'It is thought-provoking that farming is on its way to becoming a cultural institution instead of just being about food production... Why should we maintain agriculture in a world where cheap food overflows the global market? (NO-12).

The Dutch and Norwegian respondents expressed similar thoughts about farmers. In both countries they expected farmers to solve all of the perceived dilemmas and to maintain the balance between modernity, tradition and naturality.

'This picture [of a milking shed] symbolizes the heart of the farm. Ultimately, it is all about milk production. This is the place where the animals and the business interest meet every day. This picture shows how the farmer

deals with weighing these interests... It made me think that it is possible to combine animal welfare and business interests' (NL-1).

Conclusions and Discussion

The main aim of this article was to explore the social construction of animal farming and the role of material experience. In this section, we summarize the main empirical findings, reflect on contributions to recent debates in (rural) sociology and make recommendations for further research.

The Social Construction of Animal Farming

The empirical findings suggest that the social construction of dairy farming is constituted around four different themes: the animals and their products, the rural landscape, farming practices and the farmer. Several of these themes have been previously identified in sociological debates, such as 'the rural landscape' in the social construction of nature and rurality (Short, 1991, 2006; Macnaghten and Urry, 1998; Cloke, 2003) and 'animals' in the construction of human–animal relations (Buller and Morris, 2003; Tovey, 2003, Eder, 1996). This confirms our expectation that the social construction of animal farming is interrelated with and embedded in the construction of nature, rurality and human–animal relations. It is interesting to note the prominent role that the farmer and farm practices play in the construction of dairy farming. This provides a strong link to the human world. The farmer has an important role as a person who has not only professional knowledge but also emotions and affection, and hence 'morals'. In this way, the 'sensitive' farmer maintains the humane face of agriculture. Their emotions prevent a purely instrumental handling of animals and nature and they assure 'care' for animals and nature. The ethical aspect of 'care' is emphasized here, and expressed in terms of the farmers' love for animals and the link between the farm and the family. Farm practices are also seen as important human and cultural ingredients of dairy farming; they link today's farmers with their forebears and farming traditions, but also root them in modernity, where work should not be too demanding physically and should be rewarded fairly. Farmers are not just seen as economic actors who use their animals as 'means of production'. They are also seen as human beings with a moral responsibility to assure the welfare of their animals. Equally, they are seen as fellow citizens whose well-being should be secured as part of modern culture and social justice.

Second, we found that people evaluated their on-farm perceptions by reconsidering them from three angles of vision – modernity, tradition and naturality. They also explained how they felt frictions between the three. They appreciated the modern, hygienic and thus 'safe' production of milk but also wanted the animals to live naturally. They were in favour of technological innovations that improve the farmer's working conditions, but they also wanted to keep farming traditions alive and to maintain the traditional way of farm-life. This is interesting as it demonstrates that citizens' appreciation of dairy farming is not solely dependent upon preserving tra-

dition, i.e. an idyllic image of farming. While it is true that people appreciate tradition in terms of diversified production, variety of farm animals and traditional landscapes (Yarwood and Evans, 2000; Buller, 2004), they also greatly value modern achievements, such as safe and sufficient food, sufficient farm income and good working conditions for humans and animals. The respondents seemed happy with modernity as long as nature and tradition were not too threatened. It is also interesting that participants thought that farmers should reconcile care for animals, landscapes and production – or in other words to keep modernity, tradition and naturality in balance. They respected farmers for this ability and showed a lot of trust in them. This, however, places a large responsibility on farmers.

Third, social constructions are context dependent. The comparison between Norway and the Netherlands showed that there were indeed differences between both countries, but there were also interesting correspondences in the social construction of dairy farming. Respondents from both countries referred to similar angles of vision when explaining what they liked and disliked about dairy farming. In both countries, they attached importance to maintaining a balance between modernity, tradition and naturality. Neither the Dutch nor the Norwegian respondents judged the farms they visited as purely good or bad or expressed a preference for a purely modern or purely traditional agriculture. Both nationalities wanted farms to be modern, traditional as well as natural, and both were ready to accept compromises and to negotiate limits of acceptability. However, the present study involved visits to very specific types of dairy farms. We anticipate that the threefold knot of modernity, tradition and naturality would be useful for analysing citizens' valuations of more intensive animal farms. In a recently conducted follow-up study citizen panels visited intensive husbandry farms and first analysis of the experiences and feelings already revealed more worries and resentment. A follow-up study might also increase insights into where balances tip over and citizens see the dilemmas as irresolvable.

Finally, we learnt that sensory experiences are indeed important for understanding the social construction of animal farming. First, respondents expect to experience certain sensations – you should feel, hear and smell certain things on a dairy farm; these sensations are tangible – 'material' elements of the social construction of animal farming; here we can think of the wind on our face, the smell of grass or the sound of birds. Second, sensory experiences are strong carriers of meanings – the smell of hay refers to nature but also to nostalgia and the desire to hold on to tradition, whereas the sound of machinery is associated with industry. In doing so, the study reconfirmed the important role of the material world in the social construction of phenomena and the need to include the material into our analysis (e.g. Demeritt, 2002; Castree and Braun, 2006). Meaning is constructed in (reflective) interaction with the material world and 'material' bodily sensations (Crossley, 2005; Carolan, 2008).

Farm Visits with Citizens – A Reflection

Visiting a farm evoked feelings – of nostalgia and appreciation of tradition and continuity – but it also enabled participants to recognize and identify with farmers and

their right for an adequate income and less physical labour. It also led participants to recognize the comfort and autonomy that modern sheds and devices such as automatic milking and feeding technologies provide to dairy herds (compare with Holloway, 2007). The respondents' valuations of the farms were not black and white, in the sense that animal farming was considered as either 'good' or 'bad'. When respondents explained what they appreciated or disliked about the farms, they referred to the rural idyll and the pastoral myth (and hence tradition); however, at the same time they took into account that 'one needs to be realistic', recognizing elements of the 'anti-pastoral' image – more specifically, the hard work by and low returns to farmers. In this context, modernity was not seen as being only 'bad', for the respondents appreciated that some aspects of modern dairy farming, such as automatic milking and other machinery, represented improvements. By taking into account different topics and issues and by looking at animal farms from multiple angles of vision, the respondents developed a balanced and nuanced opinion of animal farming. The image that they constructed was not dualistic (Arcadia versus factory) but pluralistic, thus at the same time more complex but also more flexible than expected.

We expect that the development of a pluralistic image and a balanced opinion was facilitated through the direct experience of dairy farming and farm-life. Instead of judging aspects as 'good' or 'bad', the participants set limits and preconditions for their acceptance and respect, referring to what they had noticed, reflected on and learned during their visit. Direct experience, then, seems to promote better understanding of the 'realities' that farmers have to deal with (compare with Carolan, 2007). This finding is important for the ongoing political debate about farmers' 'license to produce', but is also interesting for scientific research.

The present study not only provided insights into laypersons' perspectives, ideas and concerns about present-day dairy farming, but it also showed that laypersons are willing and able to discuss 'very "real" dilemmas' in society (Macnaghten, 2004, p. 548). The respondents stated explicitly that their wish for farms to be modern, traditional and natural could only be achieved through accepting compromises. They were ready to do this and weighed the advantages and disadvantages of certain aspects of dairy farming in search of solutions. To give one example: participants accepted modern cow mattresses replacing the traditional and natural layer of straw as the mattresses provided additional comfort. But there were limits to the flexibility or elasticity in these evaluations, especially when the naturalness of animal life was concerned. Outdoor grazing is a clear example of this. Norwegian and Dutch respondents were very concerned about the trend of keeping cows indoors all year round. Outdoor grazing was considered to be essential and non-negotiable in assuring animal welfare and maintaining an essential element within the typical, traditional rural landscape.

Farm visits are not only useful for the purpose of studying citizens' opinions. They are also a potentially useful and effective instrument for promoting citizens' engagement and participation in policy development and decision-making. Callon et al. (2009) describe 'hybrid forums' in which laypersons not only learn more about a con-

tested issue – e.g. animal farming – but also learn from and with other actors, such as politicians and scientists, in order to develop a common vision and share public decision-making democratically. Although the present study cannot be considered a ‘hybrid forum’, it does contribute to a better understanding of social concerns and criticism of present-day animal farming. For future research, it might be interesting to explore the possibilities of a common world for sustainable animal farming, by involving, for example, politicians, farmers, (animal) scientists, animal-welfare organizations and laypersons. The learning process would then be broadened from laypersons visiting an animal farm to a collective learning process with a variety of actors related to animal farming.

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Notes

1. The joint-shed farm in Norway is comparable with the production methods of conventional dairy farming in the Netherlands, except for the social organization of the farm, since in the Netherlands it is rare for one farm to be run by three farmers.
2. We used value orientations in another part of the research project. For the present study we did not look at value orientations and therefore do not elaborate further on this selection criterion.

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