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To the market and back? A study of the interplay between public policy and market-driven initiatives to improve farm animal welfare in the Danish pork sector

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Abstract This article discusses the interplay of public policy and market-driven initiatives to improve farm animal welfare (FAW). Over the last couple of decades, the notion of ‘market-driven animal welfare’ has become popular, but can the market deliver the FAW that consumers and politicians expect? Using the Danish pork sector as the empirical setting, this article studies efforts to improve private FAW standards following changes to general regulations. The analysis shows that ethical misgivings regarding the adequacy of current and prospective FAW standards are tempered by the economic considerations that guide the practices of some actors. The study also

25 shows that efforts to improve FAW standards are contingent on collaboration and
coordination across globalised markets among actors with divergent interests. The
findings have important implications for market practices and public policy in relation
to FAW.

30

Keywords Animal welfare, Market Practices, Public Policy, Private Standards

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40 Farm animal welfare (FAW) is an important and highly contentious issue in modern
industrialised food production. Similar to issues such as food safety and quality, setting and
monitoring FAW requirements are increasingly the domain of private-sector actors like
retailers and animal welfare organisations. Through the development, implementation and
monitoring of private standards, they impose requirements on farmers that go beyond the
45 requirements prescribed by public policy and regulations (Christensen, Esbjerg and Sandøe
2012; Richards *et al.* 2013). The growing importance of private standards represents a
significant change in governance practices with profound implications for who has the
responsibility for setting and enacting standards for the welfare of farm animals (Carey, Parker
and Scrinis 2017; Parker *et al.* 2017).

50 The aim of this article is to study the interplay of public policy and market-driven initiatives
when negotiating and enacting FAW standards. The notion of ‘market practices’ (Kjellberg
and Helgesson 2007) is used to explore how FAW standards are negotiated and enacted through
materially interwoven activities of business and non-business actors in the global food
marketing system. This is important due to the growing importance of private standards and
55 because standards are not just neutral technologies for classifying and ordering reality –
standards play an important role in constituting reality as they mandate particular practises to
be followed in the production and selling of animal products (Busch 2000, 2011; Mol 2002).

Through a study of the market practices of business and non-business actors in the Danish pork
sector, the article investigates three related research questions: (1) How do actors in and around
60 the Danish pork sector understand the market for pork, and in particular the market for pork
with better animal welfare than conventional pork? (2) How do various actors try to change the
market for (welfare) pork through the development and use of particular standards?¹ (3) What
are the exchange practices among actors on the domestic market, particularly with regard to
welfare pork? The three research questions are inspired by Kjellberg and Helgeson’s (2007)
65 distinction between three types of closely related market practices – representational practices,
normalising practices and exchange practices (see below for details). The study focuses on how
actors reacted to new regulations requiring sows to be kept in group or loose housing during
gestation (popularly referred to as ‘loose sows’), which came into effect in 2013.

Attention is thus on the role of standards for market practices, in particular efforts to change
70 the market and how it functions, such as when ethical considerations regarding the adequacy
of current and prospective FAW standards are tempered by other considerations, including
economic considerations, affecting the practices of various actors. The article demonstrates

¹ Welfare pork is defined as pork that meets higher FAW requirements than conventional production.

how ethical issues—in this case the welfare of Danish piglets and sows—are often global in nature and therefore cannot easily be isolated to specific markets. Making ethical
75 improvements to business practices is systemic and requires participation of both business and non-business actors along the entire value chain. The article concludes that left to its own devices, the market cannot be expected to deliver the general improvements in animal welfare that proponents of market-based animal welfare hope for, and that therefore there is still an important role to play for public policy.

80 The remainder of this article is organised into five main sections. First, the shift from public policy to private standards for FAW is discussed in more detail to provide some background. Second, it is discussed what a market is and how it is constituted through the practices of business and non-business actors. Next, the setting and methodology used in the empirical study are presented. Fourth, the findings are presented. Here it is discussed how different
85 actors' understandings of the market for welfare pork influence their efforts to change the market through standards, thereby showing that the development, implementation and monitoring of FAW standards mobilise a large number of actors and imply collective work involving both public policy and marketers. The article ends with a discussion of the implications for market practices and public policy in relation to FAW.

90

Background

In Danish law, farm animals have historically been seen as property, serving the interests of their owners, not as having any rights on their own². During the 1800s, the need for rules to prevent cruelty to animals became obvious. Cruelty to animals became a criminal offence in

² The following brief historic overview of animal welfare regulation in Denmark is based on Broberg (2016).

1857 and was incorporated in the Danish penal code in 1866. Over time, it became clear that
95 this was not sufficient, and in 1916 parliament passed the first Danish law for the prevention
of cruelty to animals. The law made it a criminal offence to abuse animals or to treat them
irresponsibly due to neglect or over-exertion.

With minor changes and additions, the law remained effective until 1950. Since the first law
was enacted, a consensus had been established that, as living creatures, animals had a right to
100 proper treatment and protection against suffering. §1 of the law of 1950 thus stated that animals
must be treated properly and not be subject to neglect, over-exertion or any other unnecessary
suffering. Suffering was thus accepted if deemed necessary. Although the legal standing of
animals was strengthened compared to the law of 1916, the new law did not concern the
behaviour of animals. With minor changes, this law was in effect until 1991. In the meantime,
105 concern about modern farming practices was spreading.

The development and diffusion of intensive factory farming practices after World War II, first
in poultry and then in pig and cattle production (Singer 1976), made animal production much
more efficient in terms of increasing output while lowering production costs (Sandøe,
Christensen and Appleby 2003). However, this increased efficiency came at the cost of the
110 welfare of farm animals, as initially highlighted by Ruth Harrison (1964) in her seminal book
Animal Machines. The exposition of the disturbing conditions in which animals were kept in
factory farms caused an uproar in the United Kingdom (Singer 1976), forcing the U.K.
government to form *The Technical Committee to Enquire into the Welfare of Animals Kept
under Intensive Livestock Husbandry Systems*. The findings and recommendations of this
115 committee were published in 1965 in the Brambell Report.

Without questioning the right to raise animals for food, the Brambell Report recommended
that, at a minimum, an animal should have the freedom of movement to stand up, lie down,

turn around, groom itself and stretch its limbs (Brambell 1965, p. 13). These ‘five freedoms’ have since been expanded and revised to include freedom from hunger and thirst; from
120 discomfort; from pain, injury and disease; to express normal behaviour; and from fear and distress (FAWC 2009). The notion of the five freedoms has also had substantial impact on animal welfare legislation and the development of welfare codes and schemes throughout Europe (McCulloch 2013; Webster 1994), although its focus on reducing what is now called ‘negative welfare’ – harmful experiences and outcomes such as pain and frustration – has been
125 criticised (Sandøe and Christensen 2018). For instance, the focus on the absence of suffering means that there is no mention of positive welfare states such as pleasure (Palmer and Sandøe 2018). Furthermore, the focus in most animal welfare legislation is on ‘unnecessary’ suffering, understood as suffering that can be avoided without compromising the level of production, which means that in practice some welfare problems are accepted as necessary (Palmer and
130 Sandøe 2018; Sandøe and Jensen 2013).

The Brambell Report saw national legislation as the main tool for securing animal welfare, and made recommendations for changes to British animal welfare legislation. Recognising that scientific knowledge about FAW was limited and that flexibility was required to be able to take new developments in agriculture into account, the committee suggested a flexible legal
135 structure of animal welfare legislation based on enabling acts³ – a principle that has since become central to both national and international regulation (Brambell 1965; Sandøe and Christensen 2018).

³ An enabling act is a law that empowers an administrative body (typically a government minister or public authority) to regulate activities within a certain area, e.g., to set more specific regulations of animal welfare through ministerial orders.

Enabling acts have also become central to regulation of FAW in Denmark, where a new enabling act on animal welfare was passed in 1991 (it replaced the old 1950 law), creating the legal basis for detailed regulation to be imposed administratively through ministerial orders. In §1, the law recognises that animals are living creatures with the right to being treated properly and protected in the best possible way against pain, suffering, anxiety, permanent impairment and significant nuisance. The phrase ‘in the best possible way’ implies that not all pain is avoidable, whereas the focus on suffering and anxiety goes beyond the physical wellbeing of animals. §2 obligates all who keep animals to ensure that their animals are treated appropriately and that their physiological, behavioural and health-related needs are respected in line with approved practical and scientific experience. Since practical and scientific experience evolves, this means that what is regarded as appropriate treatment is dynamic.

Development of common European rules and standards

The Brambell Committee realised that its recommendations might increase costs in certain sectors of the food industry and that this might hamper the competitiveness of domestic farmers, leading to an increase in imports from countries with lower animal welfare requirements (Brambell 1965). To avoid such unintended consequences of national animal welfare legislation, efforts have since the 1970s been made to set up common rules and standards for FAW on an European level (Sandøe and Christensen 2018). Since Denmark became a member of the European Economic Community in 1973, European rules and regulations have become important for the development of Danish FAW regulations.

The Council of Europe⁴ put the prevention of cruelty against animals on the agenda in the late 1960s, and in 1976 issued the ‘European Convention for the Protection of Animals kept for Farming Purposes’ outlining basic principles for the proper treatment of farm animals (Council of Europe 1976). The Convention states that animals should be sheltered and provided for in a manner appropriate to their physiological and ethological needs, and called for the establishment of a Standing Committee responsible for making recommendations on more specific subjects based on available scientific knowledge. The Standing Committee made specific recommendations concerning pigs in 1986 and 2004.

The EEC approved the Convention in 1978 and ratified it by 1988 in order to ensure free trade within its borders recognizing that ‘there are disparities between existing national laws on the protection of animals kept for farming purposes which may give rise to unequal conditions of competition and which may consequently have an indirect effect on the proper functioning of the common market’ (Council of the European Communities, 1978).

Subsequently, minimum standards for the main animal species farmed in Europe were developed, including pigs. In 1991, a Council Directive outlined minimum requirements for unobstructed floorspace available to pigs dependent on weight and banned the construction or conversion of facilities in which sows and gilts were tethered after 31 December 1995 (to be phased out in existing installations by the end of 2005) (Council of the European Communities 1991). Later regulation has focused on the ability of pigs and sows to move around. Especially pertinent for the present study, as of 1 January 2013, the European Union requires that all

⁴ The Council of Europe is a supranational collaboration of 47 European countries set up in 1949 to promote democracy and protect human rights and the rule of law in Europe. It should not be confused with the European Union, which currently has 28 members. The European Union was preceded by the European Economic Community (until 1993) and the European Community (until 2009).

pregnant sows and gilts be kept in ‘loose systems’ during gestation (Council of the European Union 2008)⁵.

180 With these and other directives, European regulation has set minimum standards but allowing member states to have higher FAW requirements. An option used by Sweden, for instance, whereas Denmark has been reluctant to impose stricter regulations.

From public policy to private standards

European standards have primarily aimed at ensuring that the internal market is efficient and works satisfactorily and to prevent a race to the bottom. However, there has been a marked slow-down in animal welfare legislation initiatives in the EU since the beginning of the 2000s (Sandøe and Christensen 2018), as EU policy makers have become reluctant to impose stricter regulatory demands. The reluctance to impose strict regulation reflects that, as the market for food products has become more global, supply chains often span several national boundaries and regulatory regimes. It is therefore difficult for politicians and public authorities to effectively regulate food safety and quality practices (Hatanaka, Cain and Busch 2005; Tennent and Lockie 2012). Rapid changes in production practices and the concurrent expansion of

⁵ The directive lays down the minimum standards for the protection of pigs confined for rearing and fattening.

For instance, the use of tethers is prohibited and members states are required to ensure that sows and gilts are kept in groups during a period starting from four weeks after the service to one week before the expected time of farrowing. Furthermore, the directive sets minimum requirements for the total unobstructed floor area available to each gilt after service and to each sow when gilts and/or sows are kept in groups, as well as to the flooring surface. Sows and gilts must have permanent access to manipulable material. Certain exemptions are possible for small producers and pigs that have to be kept in groups that are particularly aggressive, that have been attacked by other pigs or that are sick or injured may temporarily be kept in individual pens.

quality attributes also hinder effective regulatory solutions, as these often take long time to negotiate and implement.

195 To overcome these challenges, policy makers in the EU and elsewhere have looked to the market as a means to improve FAW (Heerwagen, Christensen and Sandøe 2013; Ingenbleek *et al.* 2012; Parker *et al.* 2017). Focus has been on making markets work by providing consumers with information that will enable them to express latent needs and demand products with higher animal welfare, thus providing market opportunities to primary producers. The rationale for
200 doing so is outlined as follows:

‘Improved information to consumers offers the prospect of a virtuous cycle where consumers create a demand for food products sourced in a more animal welfare friendly manner which is transmitted through the supply chain back to the primary producer, who may be able to receive a premium price for their product and thus recoup a portion of any associated higher production
205 costs’ (European Commission 2009, p. 2).

Based on this line of reasoning, business and non-business actors have increasingly been given (and taken) the responsibility to set and monitor standards for FAW. To ensure that these standards are credible and that consumers believe they make a difference, the use of private standards and third-party certification has increased substantially in the past 20 years (Guthman
210 2007; Henson 2008).

In the meat sector, current private standards are partly a response to consumers’ ever-increasing concern about the safety and quality of fresh meat due to a string of food scandals since the 1990s (Blokhuis *et al.* 2003; Verbeke 2009). To reassure consumers and meet their demands, actors in the meat sector have developed, implemented and communicated several quality
215 management systems (Blokhuis *et al.* 2010; McEachern and Warnaby 2004; Main *et al.* 2007). These are distinguished by various labels in order to capture and/or retain value for certain

actors (Guthman 2007). Some private standards are broad in scope, covering many different aspects of the production process, including animal welfare, while others focus mainly on FAW. Examples of the latter include Animal Welfare Approved (United States) and RSPCA Assured (United Kingdom).

The development of private standards can be seen as market driven, as private standards are responses to consumer perceptions and behaviour. Thus, private welfare standards can help retailers and producers meet already existing consumer demands (for examples, see Elzen *et al.* 2011; Uzea, Hobbs and Zhang 2011). However, since private standards typically do not attempt to fundamentally reshape market structures and/or the behaviour of market actors in relation to FAW, they are not ‘driving markets’ (Jaworski, Kohli and Sahay 2000). That is, in themselves private standards are not likely to increase supply or demand for welfare products.

Retailers and other actors, including public authorities, use third-party certification to ensure that firms live up to a particular private standard for food safety and production processes. Third-party certification is regarded as independent and effective because the firm or organisation responsible for the certification (at least on paper) is independent of the buyer or seller. This verification makes labelling claims believable, which is crucial if consumers are to pay a premium for products meeting particular standards (Guthman 2007).

As a governance mechanism, third-party certification offers retailers (1) an opportunity to differentiate foods on attributes of interest to consumers (e.g., production methods, product quality, animal welfare or origin), (2) consistent implementation of a standard, regardless of the country of origin, and (3) a means to minimise their transaction costs and economic responsibility, by transferring them to producers and auditors (Hatanaka *et al.* 2005). Similarly, private standards enable retailers to coordinate and control other actors in their supply chain and hedge against network risks (Hatanaka *et al.* 2005; Rindt and Mouzas 2015; Tennent and

Lockie 2012). Private standards help retailers standardise their direct and indirect relationships with suppliers, transfer liability to suppliers and third-party auditors, and balance control over suppliers with the flexibility to replace suppliers to get better deals (Rindt and Mouzas 2015).

245 Despite these advantages for retailers, other actors view private standards in a less positive light. For example, standards might undermine farmers' right and flexibility to make decisions about their own land, company and production processes (Tennent and Lockie 2012). In addition, meeting certain standards rarely translates directly into higher prices paid to farmers; instead, standards often impose large administrative burdens to document that their practices meet set requirements (Hubbard, Bourlakis and Garrod 2007). Although meeting private
250 standards is, in principle, voluntary, for many producers it is a prerequisite for continued production (Hubbard *et al.* 2007; Richards *et al.* 2013). Furthermore, the effectiveness of such initiatives to improve the welfare of farm animals in general has been questioned because they only appeal to the minority of consumers willing to pay a premium for animal welfare products (Lusk 2011). Thus, research suggest that private standards may lead to only modest
255 improvement over legal minimum requirements for some animals (Parker, Carey and Scrinis 2018). Finally, it has been noted that private standards and third-party certification establish barriers to entry as they inevitably rest on the presumption that only some producers and products can meet the requirements of any given standard (Guthman 2007).

260 Through the growth of private standards and related market-based initiatives, recent decades have thus seen a 'marketisation' (Çalışkan and Callon 2009) of animal welfare, where animal welfare has become an economic and not just ethical concern, subject to processes of qualification by a range of economic actors in and around the value chain for animal products (Miele and Lever 2014). The marketisation of animal welfare has often been welcomed by both policy makers and NGOs as a way to get actors to voluntarily make socially desirable changes

265 in value chain and consumption practices rather than through new regulations (Miele and Lever
2013).

The introduction of animal welfare labelled products can be seen as a consequence of the
resurgence of neoliberal policies (Busch 2014; Guthman 2007). However, because governance
of private standards usually goes on behind closed doors and where popular participation is
270 restricted (Busch 2014), their democratic legitimacy in terms of criteria such as participation,
transparency and accountability has been questioned (Fuchs, Kalfagiani and Havinga 2011), as
has the success of markets in delivering public goods such as animal welfare (Guthman 2008;
Renard 2005).

Markets and market practices

275 As noted above, the idea of ‘market-driven animal welfare’ has become something of a mantra.
But what is this ‘market’ in which politicians and others place their hopes for improving FAW?
It is rarely defined explicitly but rather taken for granted, reflecting an underlying belief in an
abstract, perfect market in which anonymous market forces, such as the famous ‘invisible hand’
(Smith 1970 [1776]), cause the demand and supply for a good, like FAW, to meet and set a
280 price that can serve as a signal for the behaviours of buyers and sellers (Marshall 1920).

Economists have put forward powerful arguments for the idea that markets serve as an efficient
economic and social mechanism for setting prices, coordinating behaviour and promoting
individual choice and freedom (Satz 2010). Nevertheless, it is also widely recognised that
markets sometimes fail to provide adequate levels of certain goods. Previous research thus
285 discusses the lack of animal welfare as a ‘market failure’ (Harvey and Hubbard 2013), as
consumers have limited opportunities for expressing preferences for improved FAW in the
current market environment (Lusk 2011). Central to discussions of market failure is the concept

of externalities, which refers to costs and benefits imposed on a third party not involved in the original transaction (Satz 2010). Animal welfare (or suffering) is an example of an externality
290 generated by the production of animal products (Lusk 2011).

This paper dispenses with this neoclassical view of markets as quasi-natural realities that exist independently of the actors involved. Instead, markets are seen as constituted and reconfigured through the concrete activities of numerous actors engaging in their different everyday activities and using different forms of expertise and market devices (Berndt and Boeckler 2009;
295 Callon 2007; Callon, Méadel and Rabeharison 2002; Kjellberg and Helgesson 2007). Markets thus ‘only exist in the doing of them’ (MacKenzie 2006, p. 34).

Kjellberg and Helgesson (2007, p. 141) define market practices as ‘all activities that contribute to constitute markets’ and suggest that we distinguish three interlinked types of market practices: exchange, representational and normalising practices (see Table 1). *Exchange*
300 *practices* are concrete activities associated with performing economic transactions, whether specific to a particular transaction or more general activities that also shape individual transactions. *Representational practices* contribute to the formation of understandings of the market and how it functions, which can help make it more visible to other actors. Research shows that different actors construct quite different understandings of their environment and
305 therefore have different approaches to doing business (Esbjerg 2004; Finch and Acha 2008). Finally, *normalising practices* contribute to establishing normative guidelines for how a market should function or how certain market actors should act. Through these activities, different actors try to change market practices, such that they contribute to the formation and implementation of certain norms and guidelines for action, including the private standards
310 increasingly important for regulating FAW. Because actors such as farmers, slaughterhouses,

retailers and animal welfare NGOs often have conflicting ideals and interests, negotiating and implementing FAW standards can be a highly charged political process.

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In this study, this typology of market practices is used to analyse the negotiation and enactment
315 of FAW standards through the practices of business and non-business actors in the Danish pork
sector. The three types of market practices are entangled and linked through chains of
translation. Translation in this context refers to basic social processes through which something
spreads across time and space (Callon 1986; Latour 1987). This ongoing process involves
intermediaries, such as rules, tools, measures and measurements (Callon and Muniesa 2005).
320 The market is thus shaped and continually evolves in day-to-day interactions among actors
(Kjellberg and Helgesson 2006).

Market actors frame and perform markets by defining standards for FAW, monitoring
exchange processes, benchmarking goods, calculating costs and prices, etc. (cf. Callon 2005).
For a transaction to take place, all elements that are not to be taken into account have to be
325 excluded from the market frame, at least for the time being. Framing involves selecting certain
elements, severing links and finally making some trajectories irreversible, at least temporarily
(Callon 2007). Any framing can be challenged and is thus temporary.

Framing is a delicate process that is neither complete nor perfect and that easily gets out of
control. To capture this, Michel Callon argues that framings are sources of overflowing (Callon
330 1998; see also Parker *et al.* 2018). Overflowings of goods and the activities related to them
'occur when goods act unpredictably, transgressing the frameworks set for them and the
passivity imposed on them' (Callon 2007, p. 144). Economic agents can also overflow,
resulting in 'the creation of new identities, concerns and forms of action' (Callon 2007, p. 145).
Overflowings can have both positive and negative consequences or connotations. They trigger

335 the formulation of new questions or problems (also referred to as matters of concern), which
can stimulate the creation of collectives or groups (Callon 2007). In the case of pork, examples
of issues that are sometimes excluded from consideration, but trigger the formulation of new
matters of concerns, include the effects of meat consumption on climate change and pollution
resulting from animal husbandry or animal welfare.

340 In the attempted qualification and singularisation of products, the actors involved—here, pig
producers, slaughterhouses, retailers, auditors, animal welfare organisation, etc.—weave a web
of entanglements between them (Callon *et al.* 2002). As entanglements proliferate, the
disentanglement of goods becomes increasingly problematic and difficult to obtain (Callon
2005). However, disentanglement from producers, former users or prior contexts is necessary
345 for market transactions to take place (Callon 2005; Thomas 1991).

It is with these insights about markets and market practices in mind that the Danish pork sector
was studied in order to explore the three research questions inspired by the distinction between
representational, normalising and exchange practices: how actors understand the market for
(welfare) pork, how they try to change how the market for (welfare) pork works through the
350 development and use of particular standards and how these are enacted in exchange practices
through the ongoing interactions and relationships between actors.

Methods

Research setting

FAW is a recurring theme in relation to the increasingly concentrated and highly industrialised
355 production of pigs in Denmark, making the Danish pork sector an interesting setting in which
to study how FAW standards are negotiated and enacted.

Around 19 million pigs and sows are slaughtered in Denmark annually, and roughly 13 million piglets are exported for rearing and slaughtering in other countries (primarily Germany and Poland). The sector is very export oriented, as approximately 90 per cent of the pork produced in Denmark is sent elsewhere. Conventional pigs account for around 94 per cent of Danish pig production. In conventional pig production, sows are almost always kept in farrowing crates when they farrow and suckle (or the last 20% of the production cycle), although most stakeholders agree that this practice is not optimal from an animal welfare perspective. Alternative production systems that leave sows loose while they farrow and suckle exist, but they often involve substantial extra costs for farmers.

As of 1 January 2013, the European Union requires that all pregnant sows and gilts be kept in 'loose systems' during gestation (Council Directive 2008/120/EC), a period that accounts for about 60 per cent of the production cycle. Central to this study is how market actors reacted to this, in particular how actors discussed how to handle the marketing of intermediate products with the lifting of the floor.

In 2013, the Danish Parliament passed a bill stipulating that sows should be kept in loose systems during the service phase (mating or insemination), where they spend around 20 per cent of the production cycle. All new units built after 2014 must meet this requirement; full implementation is expected in 2035.

In an agreement reached at a summit in 2014 with the Danish Minister for Food, representatives from Danish agriculture, slaughterhouses, animal welfare organisations, consumer organisations, veterinarians and retail chains promised to work toward several objectives: reduce piglet mortality, keep 10 per cent of sows in loose systems during farrowing as of 2020, halt the castration of male piglets, reduce the number of tail dockings, reduce the prevalence of ulcers among sows and pigs, provide consumers with more information about animal

welfare, and give consumers a means to choose products produced with better animal welfare standards (Minister for Food 2014).

The institutional setting in Denmark combines elements of the (*super*)*market* and *welfare state* models discussed by Kjærnes, Bock and Miele (2009). Retailers try to differentiate pork sold under their brands through labelling initiatives, but this is combined with a strong regulatory regime and widespread trust in government regulation and monitoring of agriculture, processing and retailing, which means that animal welfare is not a matter of concern for the majority of Danish consumers.

Data

To develop an understanding of how FAW standards are negotiated and enacted in particular market practices, semi-structured interviews with stakeholders on the Danish market and five export markets were conducted. This article primarily draws on twenty interviews that were conducted with actors in and around the domestic market during fall 2012 and winter and spring 2013. Informants came from along the entire Danish value chain from primary producers to retailers, as well as from representatives of three stakeholder organisations working with animal welfare in various ways (see Appendix 1 for details).⁶

The interview guide was tailored to each informant, but in general, informants were asked about their own role and job functions, the company/organisation they worked for, their understanding of the pork sector in general and how they developed this representation of the pork sector, how they anticipated the market to change and if it would have implications for

⁶ In addition to the domestic market, twenty interviews were conducted in relation to market practices in Australia, China/Hong Kong, Great Britain, Sweden and the United States. These are all important export markets for Danish pork, and discussions with Danish practitioners suggested that FAW differed in importance across these countries.

FAW; also there were questions about which other actors they collaborated with and how. All interviews ended with questions about who else might provide insights in further interviews. Thus, snowballing was used to identify potential informants. The informants are not necessarily representative, but they represent different perspectives on FAW. Interviews in Denmark were conducted in person. To supplement interviews, relevant documentary material was collected about FAW practices by the companies studied and store visits conducted to see how pork was being sold.

Analysis and interpretation

Interviews typically lasted about an hour and were recorded and transcribed verbatim. Analysis began by careful reading of transcripts and documents, looking for overall themes and patterns in the empirical material (Miles and Huberman 1994). Then the formal analysis started with coding the transcripts, using categories developed from the market practice perspective. Additional categories emerged inductively from the empirical material. Because coding involves ‘separating data extracts from their context’ (Coffey and Atkinson 1995, p. 30), there is a risk of data being decontextualised (Alvesson and Sköldberg 2000). The empirical material therefore was also analysed using ‘meaning condensation’ (Kvale and Brinkmann 2009), which involves reducing empirical material into more concise statements.

Market Practices related to Farm Animal Welfare

For the sake of clarity, the presentation of findings is organised around the three types of market practices introduced above. First, representational practices are discussed in order to show how actors in the Danish pork sector understand the market for welfare pork in domestic and global market contexts. Next, normalising practices are described, including the ways that FAW is

framed by different standards and how private standards are renegotiated following the increase in general welfare standards. Finally, it is outlined how actors enact animal welfare in everyday exchange practices. As discussed earlier, it is important to keep in mind that the different types of practices are related and influence other, e.g. that representations are translated into normalising and exchange practices.

Representational practices: Understanding markets for farm animal welfare

Although less than 10 per cent of the pork produced in Denmark is consumed domestically, it is important to look at how actors view the local Danish market context because how the production of pigs is perceived by the wider public is important for the legitimacy of continued production. However, due to the international nature of the pork industry, viewing the domestic market in isolation is fraught with difficulties as FAW issues ‘overflow’ geographic boundaries. Danish actors, not least farmers and slaughterhouses, take this overflow into account in various ways when they talk about the challenges related to improving animal welfare for Danish sows and pigs.

Animal welfare in a domestic market context

According to a retail category manager, Danish consumers can be divided into two distinct segments in relation to FAW: those who don’t care that much, for whom it is all about price, and then the rest. According to the category manager, this second group accounts for only a small percentage of all consumers. Although this segmentation is a bit crude, it reflects a widespread sentiment among informants, namely that FAW is not a major concern for most Danish consumers, at least if they have to pay more for their pork chops. Danish consumers

are represented as mainly interested in tasty and lean pork at as low a price as possible. For
 445 example, one informant describes consumers as follows:⁷

If they can choose between welfare pork and conventional pork, and the latter is a few kroner
 cheaper, consumers will choose the cheaper product [conventional pork]. [Store Manager, Soft
 Discount Retailer]

Only a very small consumer segment is understood to demand pork produced with better FAW
 450 standards than conventional pork and willing to pay a (small) price premium. However, at least
 some informants think this segment is growing:

I would say that, over the last few years, there has been a development so that some people are
 willing to pay a premium for better quality or higher animal welfare. Quality can be measured
 in many ways [..]. We clearly sense that there are more consumers willing to pay [a small
 455 premium] if they have the opportunity and feel certain that it is better, whether it is in terms of
 animal welfare or something else. But you feel you get something for your money [Sales
 Manager, Slaughterhouse]

Because the representation that most consumers are focused on price is widely shared, FAW is
 subordinated to other concerns in the day-to-day practices of most actors on the Danish market.

460 Some actors argue that the niche status of welfare meat is rooted in the limited supply of
 organic, free-range and other types of welfare pork. Others hold that supply simply mirrors
 demand: *if only* consumers would demand welfare meat, *then* the pork sector would be happy
 to oblige and produce it. For instance, a primary producer says "when the customer wants to
 buy a welfare product, then we make it," while a representative from an industry body argues

⁷ All quotes have been translated from Danish to English. An effort has been made to stay as close as possible to
 the words used during the interviews.

465 that “if [the slaughterhouses] can see a market potential [in higher FAW], then this is a driver for things happening in production.” However, consumers have to be willing to pay a premium that would enable farmers to recoup the extra costs that improving FAW is argued to entail.

Rather than seek to drive the market for FAW, actors in the pork sector can be seen as market driven (cf. Jaworski *et al.* 2000). They wait for consumers to act and thereby assign
470 considerable responsibility to consumers, who have to demand higher levels of animal welfare and be willing to pay extra, not just state that FAW is important when surveyed. This type of circular reasoning explains why farmers and slaughterhouses are reluctant to make dramatic animal welfare improvements and ensures that change is slow.

A key Danish animal welfare organisation asserts growing interest in FAW among Danish
475 consumers and argues that for Danish consumers to demand welfare pork, they may need to be better informed about animal welfare (thus echoing the European Commission). However, other informants suggest consumers already have so much information at their disposal that they have difficulty making sense of it all. These informants do not consider more information an appropriate option, which suggests a link between representations of the market and
480 normalising practices. That positive attitudes towards FAW do not always translate into consumer behaviour is known from previous studies (e.g., Verbeke 2009).

Overflows between domestic and export markets

When discussing opportunities for improving the welfare of Danish pigs and sows, it is remarkable that many Danish informants have constructed views that explicitly link the local
485 Danish market to the global nature of the Danish pork industry. Because it accounts for five per cent of total Danish exports, informants widely recognize the pork sector as being of significant economic importance for the country. Most actors therefore acknowledge that improvements in welfare for Danish sows and pigs must not undermine the international

competitiveness of the sector as a whole, although the animal welfare NGO interviewed
 490 maintains that their main concern is the welfare of animals, not the pork sector. Thus, FAW
 cannot be isolated to the domestic market; it transgresses geographic boundaries and attempts
 to frame it unequivocally. It ‘overflows’ (Callon 1998, 2007).

The competitiveness of Danish production is something different actors discuss, with labour
 costs being seen as a particularly important issue:

495 It is far too expensive to produce [pigs] in Denmark [..]. Our production costs mean that it is
 difficult to be competitive. [...] We have hit a wall in terms of costs in Denmark. [...] Every day
 we try to rationalise our production of pigs so that we become more competitive, i.e., lower the
 labour costs per kilogram pork produced. [Primary producer, Free Range Pigs]

500 Wages are one of the biggest challenges we have as an industry in Denmark. Not that I’m saying
 that we don’t deserve the wages we’re paid, generally speaking, but the countries we are
 competing with simply have a different structure when it comes to taxes and wages. A couple
 of years ago, a benchmark was made [...] and the result that came out was a number that said
 index 44 on wages. That is, every time you do the exact same task in relation to slaughter,
 slicing, etc., you have to pay 44 per cent [in Germany] of what you pay in Denmark [Sales
 505 Manager, Slaughterhouse]

Informants that are mainly active in the Danish market tended to refer to ‘the global market’ in
 an undifferentiated and general manner, glossing over the differences that other informants
 identify between markets. Interviews with export managers and actors in key export markets
 for Danish pork thus suggest that ‘the global market’ is not homogenous but rather quite
 510 heterogeneous and that they have to take differences between countries into account when
 operating on export markets⁸. Some export markets are seen as more important than others in

⁸ It is beyond the scope of this paper to discuss the differences seen to exist between export markets in detail.

terms of how much Danish pork is bought and at what prices. Different cuts of pork are also sold in different markets, each with different demands. This heterogeneity poses a serious challenge to Danish pig producers and slaughterhouses, which must take the unique demands
515 of customers in different countries into account, including their demands for FAW. To complicate matters further, only some cuts command a price premium for higher FAW, and only on some markets. Other cuts sell at world-market prices on markets where FAW is not important, particularly pork sold for industrial use or further processing.

[The big cooperatives] divide the carcass and sell the different cuts in 130 countries. This means
520 that if we in Denmark want something [in terms of FAW], then the cuts sold in Denmark have to pay for all the extra costs, also for the parts that are sold in other countries not willing to pay a premium [for FAW]. [Area Manager, Trade Organisation]

That only a small segment of Danish consumers are seen as willing to pay a premium for FAW and that FAW is seen as playing a small role on export markets is reflected in efforts to change
525 market practices, to which attention now turns.

Normalising practices: Efforts to change how the market for farm animal welfare works

In this section focus is on the normalising practices different actors engage in as they try to change (or maintain) how the market for FAW works. Efforts to either change or maintain how the market works are informed by the representations of the market and understandings of
530 whether current FAW standards are adequate or insufficient. Because FAW standards are constituted as central, we begin by considering how FAW is framed in current standards before proceeding to discuss efforts to negotiate changes to FAW standards.

Framing farm animal welfare through standards

FAW is a vague, contested concept that means different things to different actors, who disagree
535 about what constitutes good FAW and how it should be regulated and monitored (Verhoeg,
Lund and Alrøe, 2004). FAW is framed, objectified and singularised in different ways in
different markets and by different actors. Market framing is a powerful mechanism of exclusion
(Callon et al. 2002), allowing some products to be defined as welfare meat while others are
not. What constitutes welfare meat thus depends on the framing, including the dimensions and
540 thresholds used in the qualification of pig husbandry systems.

In modern agriculture, a central element in the framing process is the development of standards.
A standard refers to any set of agreed-upon rules for the production of certain objects (Bowker
and Star 1999). Standards enable things and actors to work together by spanning more than one
community of practice. To ensure compliance with the standard, some mechanism of
545 enforcement is required. Inevitably, any standard also valorises some points of view and
silences others, but the politics of this fade into the background and become invisible once an
agreement about a standard has been formed (Bowker and Star 1999). In turn, standards
generally exhibit significant inertia, so changing them can be very difficult and expensive.
Finally, standards are not only symbolic but also material and embodied in infrastructure. Thus,
550 FAW standards are embodied in material artefacts such as pits, fixtures, slaughterhouses and
transportation equipment. This creates a time-bind for farmers (Esposito 2011; Laursen and
Noe 2018), who are constrained in relation to what they can do to improve FAW by prior
investments in particular production facilities that are compliant with a certain standard. Thus,
they can only produce the particular type of animal welfare materially embodied in these
555 facilities.

In the Danish pork sector, different actors represent FAW in different ways that are never neutral but that generally favour the actor's own interests or point of view. For instance, the Danish Agriculture & Food Council's 'benchmark' of how pigs are produced in four European countries offers a broad frame in which production systems are compared on a wide range of properties (Agriculture & Food 2014), with animal welfare as just one aspect among several (e.g., quality and control, health and use of medicines, feed, the environment, transport, slaughterhouses, food safety). As Table 2 shows, in this benchmark FAW is operationalized in concrete terms such as the width of farrowing pens, the nature of rooting and enrichment materials, whether floors are fully slatted and whether tail docking is permitted on a routine basis. In this comparison, the product—conventional Danish pork—is singularised, made calculable and positioned relative to its main European competitors and so becomes both comparable and different. Considering the organisation performing the comparison, it is perhaps not surprising that, on most accounts, conventional Danish production standards come out as just a little bit better than competitors' production standards (cf. Bowker and Star 1999).

570

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A narrower framing, strictly focused on FAW, is provided by Dyrenes Beskyttelse (2012), a key Danish animal welfare organisation, which compares Danish pig production systems in terms of outdoor access, use of farrowing pens, tail docking, weaning of piglets, access to rooting materials, medication, space, transportation to slaughter, use of electric prods to drive pigs, control of farmers and where meat is sold. Dyrenes Beskyttelse also distinguishes different types of pork: conventional, organic, free range and special productions. Each 'production' is associated with certain standards, including FAW. Dyrenes Beskyttelse is unequivocal in its assessment of the FAW levels of the various productions, deeming only organic and free-range productions satisfactory. FAW in conventional pork production

575

580 systems, which as we just saw was assessed favourably by the Danish Agriculture & Food Council, is summarily dismissed as ‘simply not good enough’ (Dyrenes Beskyttelse 2012).

These two examples illustrate how the Danish Agriculture & Food Council and Dyrenes Beskyttelse have very different assumptions about the nature of the world, including about the prominence that should be assigned to FAW. That is, they have different ‘organisational
585 paradigms’ (Brown 1989) that provide them with particular roles that are enacted in particular ways, in particular settings and in particular relations with other actors. The Danish Agriculture and Food Council see themselves as representing the interests of the entire (mainstream) pork sector across numerous issues, while Dyrenes Beskyttelse is an organisation focused specifically on the wellbeing of animals.

590 Organisations can have an interest in promoting their own standards at the expense of other standards or labelling schemes. Dyrenes Beskyttelse thus endorses products that live up to their requirements for FAW. This endorsement is viewed as very important by pork suppliers and retailers, as Dyrenes Beskyttelse is regarded as having high credibility among consumers.

These framings also illustrate how the abstract concept of FAW becomes concrete and
595 comparable, able to be passed from hand to hand and across time and space (cf. Callon 2005). Through the various standards, certain qualities become associated with particular goods, and vice versa, and the goods are converted into commodities that can be exchanged.

Pork qualifies as welfare meat by living up to certain standards. What these standards are or should be is contested by farmers that seek to protect their investments in sties and fixtures,
600 animal welfare organisations driven by FAW ideals, retailers that want to be able to source products globally but still seek the legitimacy associated with selling local or regional pork (see also Esbjerg 2004) and other actors interested in preserving production, jobs and export earnings by maintaining the competitiveness of the Danish pork sector.

Negotiating new and revised farm animal welfare standards

605 Negotiating and implementing new or revised FAW standards takes time. The requirement that as from 1 January 2013, all pregnant sows and gilts must be kept in groups during gestation is an example of this (Council Directive 2008/120/EC), as this issue has been discussed since the 1970s (Elzen *et al.* 2011).

Because the rules contained in Council Directive 2008/120/EC were known for many years, 610 market practices did not just change over night at the beginning of 2013. Nevertheless, because the requirement that sows and gilts be housed in loose systems during gestation was one of the key differences between conventional pork and intermediate production systems, the new rules substantially eroded the difference between standard/conventional production and intermediate specialty productions with regard to FAW. Hence, several actors engaged in normalising 615 practices to change the standards according to which intermediate products are produced in order to re-establish a ‘difference’ compared to conventional products and thereby make intermediate products ‘marketable’ again. If there are no differences in FAW levels, it becomes difficult to use FAW in marketing:

I just think that if you have to have something to tell consumers, then you have to have 620 something tangible. As I say about the free-range pig, there you are willing to pay a little bit more per pack as that pig after all has had a better life. [Sales Manager, Pork Supplier]

Identifying and implementing a difference that makes a difference to the animals and consumers can be difficult. For instance, one retail informant noted that he was in discussions with a supplier about which FAW requirements to incorporate in the production of the retailer’s 625 brand of pork to once again singularise the retailer’s private brand and re-establish a difference relative to conventional pork. However, the retailer had found it difficult to reframe the welfare aspects of the pork sold under its own brand because the supplier balanced this particular

retailer's demands and wishes against other concerns, including the preferences of other customers and the sector as a whole. This again demonstrates how individual relationships are entangled and can overflow, and hence that renegotiating standards is far from straightforward, as actors can have conflicting interests and might have made investments in brands and production facilities that they want to protect. Different actors engage in different, sometimes competing normalising practices to influence the market for FAW products in specific directions (cf. Kjellberg and Helgesson 2007).

Some informants described one of the largest Danish suppliers of pork as lethargic, arguing that as a large bureaucratic organisation it finds it difficult, or is unwilling, to change its practices and cope with the hassles involved in serving niches, such as the minority of Danish consumers willing to pay extra for higher FAW levels:

There is no doubt that the stronger your position on the market, the more complacent you become. [Category Manager, Soft Discount Retailer]

[The producer] is very big, and they are super focused on being big. [Category Manager, Supermarket Retailer]

The major actors in the pork sector appear satisfied that Danish pig producers live up to Danish legislation, which they see as more than sufficient to meet the demands from world markets. Because of high relative costs in Denmark, these actors are afraid that unilateral FAW improvements will undermine the competitiveness of the sector. In their opinion, on world markets Danish products are the standard against which other producers are measured when it comes to FAW, food safety, standardisation, legislation and monitoring. The representation of the international nature of the market is performative (Kjeldberg and Helgesson 2007; McKenzie 2006), as it offers both an explanation and an excuse for the current state of affairs and (lack of) initiatives for improving FAW.

The Danish Agriculture & Food Council affects FAW, according to the interviews, though it is also accused of foot dragging by one retail informant:

655 The Danish Agriculture & Food Council works for animal welfare, but they don't lead. They are perfectly able to see where Denmark makes money. It would be nice to see them step up [in relation to farm animal welfare], but you don't cut off the branch you are sitting on. [Category Manager, Supermarket Retailer]

This informant wants the Council to do more, even while acknowledging that Danish pork competes on global markets and that the sector cannot be expected to undermine its own
660 position. Using similar arguments, an industry body emphasises that improvements must be made step by step in order to maintain competitiveness (and protect jobs and export earnings). It prefers voluntary improvements initially, to gain experience with new production systems and routines before they are implemented on a larger scale but is against big unilateral changes in Danish legislation:

665 With regard to legislation, we have a pretty clear policy, according to which we are willing to take small steps ahead of what other countries do [in terms of FAW], but not further than we can maintain our competitiveness, production and jobs in Denmark. [Trade Organisation]

To get pig producers to change their farm-level practices voluntarily, some informants suggest that incentive schemes are necessary to make testing and converting to new production systems
670 appealing. Thus, to test new welfare initiatives in real life practice, and not just on research stations, industry bodies are willing to offer financial support to farmers:

At the moment we know that [improving FAW] requires extra investment, because it require more space, and it costs in terms of mortality and it costs in terms of labour hours. If any producers are to take a leap, and there is a substantial risk that things can go wrong on all three
675 accounts, and that perhaps it costs even more than we think, then it is good to be able to say to

some [producers], that if you are willing to run this risk, then we are willing to help you.

[Manager, Trade Organisation]

Implementing new standards on a large scale takes time, as animal husbandry is very capital intensive. Thus, one informant mentioned that producers need at least a rough idea of the conditions they will have to meet and of the impending requirements because a new sty will
680 have a lifetime of 20–25 years. New production facilities require substantial financial investments, and therefore there is widespread acceptance that welfare requirements cannot change every two years: “A certain stability is necessary, if producers are to be able to live with [FAW] requirements” (NGO). In addition, it can be difficult for farmers that want to
685 improve FAW to finance improvements:

We have been, and are still, looking for more free-range producers. [However,] it is not so attractive to produce pigs at the moment. Therefore, it can be difficult to get farmers to switch to free-range [production]. Many have difficulty borrowing the money it costs, as the economics of producing pigs has been strained for a while. [Sales Manager, Pork Supplier]

690 Speaking from a different organisational paradigm, an animal welfare NGO is dissatisfied with the status quo and demands significant improvements in relation to FAW issues such as the castration of male piglets, tail docking and fixation of farrowing and suckling sows. The normalising practices that the NGO engages in include working on a political level to improve overall FAW standards. It does not favour leaving improvements to voluntary initiatives and
695 instead prefers binding legislation. Because ‘market-driven animal welfare’ is a mantra for the Danish government, the NGO also takes responsibility for informing consumers about animal welfare issues in general and the the animal welfare levels associated with different production standards in particular.

The normalising efforts of some smaller retailers to improve FAW are positively acknowledged
700 by other informants. In contrast, a category manager for a small supermarket retailer lamented
that major retailers did not do more to improve FAW. He suggested that even though retailers
wield substantial power over suppliers, generally they do not want to use it to improve FAW:

It is possible to add something in the supply chain, such as animal welfare, and to get some
consumers to pay a premium, but it requires that retail buyers such as me believe in it. If
705 everyone thinks that it all revolves around price, there is only one thing that can be done, and
that is to buy where prices are low. [Category Manager, Supermarket Retailer]

Other informants agree that major retailers do not emphasise FAW because they perceive
consumers as more interested in low prices and taste than FAW and thus unwilling to pay a
premium for better welfare. The focus on prices also gets linked to the growth of the discount
710 sector, which has continuously gained market shares in Denmark. Instead of making FAW a
priority, the three main retail chains are described as focusing on stable supplies and (low)
prices, which reverberates back through the supply chain to slaughterhouses and pig producers,
who must find ways to cut costs not improve FAW. Several informants assert that larger
retailers should take greater responsibility for FAW because they are in a position to influence
715 consumers. Instead, the informants indicate that these retailers only expect Danish pork to meet
current FAW requirements. The large retailers are described as skilled negotiators, interested
only in making money, even when it comes to FAW. This is illustrated in the following quotes:

The Danish market is dominated by three big retail chains that are ruthless in their trading
approach and that do not emphasise animal welfare in their general policies. It's all about price.
720 But they also sell specialty products that focus on animal welfare in some way. [NGO]

Those big corporations on the retail market dominate many issues. They are not always
governed by the same concerns they would be if they asked their customers what was important

to them. They are driven by what's good for them [i.e., the retailer], and they influence what the customers think more than the other way around. [NGO]

725 Retailers say that they are simply selling the products that consumers demand, thus assigning responsibility for improving FAW to consumers (thus shirking it themselves), the implication being that if consumers would demand products with higher FAW, retailers would supply it. Along similar lines, informants from the pork sector argue that if consumers placed greater emphasis on FAW (and were willing to pay a premium), the supply of welfare meat would
730 increase.

Focusing on FAW in communication with consumers can also have negative consequences, however. One informant thus suggested that it could lead to question such as “Why have pigs not always been treated well?”

Informants expect FAW to be more important for consumers in future but also acknowledge
735 that many consumers will continue not to care. Yet consumers played a role in establishing standards for the transport of live animals, even as they have remained unaware of the issue of confinement of sows. Several informants assert that retailers should take more responsibility for FAW and for making consumers aware that their consumption choices have consequences, that is, that they overflow.

740 **Exchange practices: Enacting animal welfare in ongoing relationships**

On the domestic market, retailers and pork suppliers are engaged in long-term relationships. Retailers and suppliers typically negotiate annual contracts that serve as frameworks, regulating their day-to-day operations and interactions. Exchange practices between pork suppliers and retailers are characterised by frequent interaction and complex relationships, with
745 numerous contacts at various organisational levels. For instance, the sales manager of a large

pork supplier described how he was in ongoing dialogue with the retailer he was key account manager for. At HQ he talks with the CEO of the customer, two operations managers and four regional managers:

750 So, you can say that, already there, I have seven entrances [or contacts to the retailer]. Every day I speak to one or more of them. Of course, each of them has their own focus areas, which have to come together in the end. There's not a day where I don't talk to at least one of them. Often, I talk to two to four of them, or talk to them several times during day. It all depends on what we have going on. [Sales Manager, Slaughterhouse]

In addition, the sales manager interacts directly with store managers and store-level butchers.

755 Relationships are generally described in positive terms, even as the informants acknowledge differing interests. According to a large meat processor, it has developed special productions because retail chains want to offer their customers something unique. The processor continuously discusses the demands that these productions must meet with the respective retailers. For all special productions, FAW is framed as better than that for conventional pork, 760 though the extent of the improvement differs.

Retail buyers emphasise frequent interaction and good, long-term relationships with their Danish pork suppliers. For example, the category manager of one retail chain described the chain's co-operation with its supplier as follows:

765 I regularly sit down with people from [Pork Supplier] to exchange ideas. We talk about what we can do differently, e.g., by giving the pigs a certain feed. [...] Factory managers at the slaughterhouses think in terms of logistics, rational production and efficiency. The people that I do business with are thinking in terms of sales. They then have to go back and make things happen. Some things can be done, others cannot. [...] We have a very, very close relationship with [Pork Supplier]. We recognise each other's mission in this world. It all revolves around

770 'what we can do' in order for both us to run a better business. [Category Manager, Supermarket
Retailer]

Because welfare pork constitutes a small part of the domestic market, FAW does not feature prominently in day-to-day interactions, which are focused on operational issues and ongoing marketing initiatives. FAW is a more general issue that is taken up at irregular intervals when
775 discussing more strategic initiatives although the sales manager of one of the slaughterhouses opined that it is difficult to talk long-term initiatives with big retailers, because retail buyers are evaluated on their ability to purchase cheaply. In contrast, some small retail chains view FAW as an issue that they can use to differentiate themselves from large competitors. Hence it is easier for suppliers to discuss more strategic initiatives with smaller retail chains.

780 Thus, the sales manager of large pork suppliers had recently been involved in developing different training programmes in collaboration with two smaller retail chains in order to prepare butchers for their interactions with consumers. Through these training programmes butchers get insight into how free range pigs are bred and the role that Dyrenes Beskyttelse, the main animal rights organisation, played in monitoring FAW. For instance, he had devised a training
785 programme where the store-level butchers of a supermarket retailer visited and shadowed farmers for a day in order to get a glimpse of what daily life on a farm was like.

Both retailers and pork suppliers reported having good working relationships with Dyrenes Beskyttelse about the organic and free range pork products meeting their requirements for FAW and are endorsed by the organisation.

790 In summary, FAW is not an issue that features in exchange practices related to day-to-day interactions. These are focused on operational issues related to specific transactions. FAW is a more general issue that is dealt with in annual negotiations and various discussion about how the relationship between pork supplier and retailer is to develop.

Discussion

795 The increasing use of private standards and third-party certification to regulate and monitor FAW constitutes a significant change in ‘market practices’ (Kjellberg and Helgesson 2007), as authorities have become reluctant to impose stricter regulations to increase FAW standards due to the difficulty of enforcing regulations in global supply chains.

This article has investigated the shift to market-driven animal welfare in the context of the Danish pork sector. Although there is a strong ideological belief in the power of the invisible hand of the market, this study has shown that it is far from certain that the market can deliver the levels of FAW that consumers and politicians expect. One reason is that when animal welfare is subject to marketisation, it becomes one among several issues for actors to take into account in their entangled interactions. Although some actors have misgivings about the 805 adequacy of current standards, the importance afforded to economic considerations such as the global competitiveness of the Danish pork sector mean that progress has been very slow. A similar conclusion has been reached by Parker et al. (2018), who only found small and incremental improvements in FAW following to the introduction of ethical labelling of chicken-meat in Australia.

810 The slow progress also reflects that FAW is a contested concept in the context of Danish pork sector, as it has also been shown to be in other contexts (e.g., Carey *et al.* 2017; Fraser 2008; Parker et al., 2018). Different actors having different ideas about what constitutes good animal welfare and the importance that should be afforded animal welfare compared to other issues such as the competitiveness of the Danish pork sector. The way that actors approach FAW 815 depends on what good or outcome is sought: FAW, jobs, export earnings or sensory experiences. Some actors prioritise FAW over other concerns in their normalising practices to influence how the market for pork works, whereas for other actors, it is the other way around

– they believe that improvements in FAW cannot come at the expense of the competitiveness of the overall industry.

820 Any standard represents a particular view of FAW. Developing a FAW standard involves establishing a metrological network that measures and objectifies certain aspects of animal welfare. For pigs, FAW is thus measured in terms of hay, space, naturalness, and (the absence of) tail docking and castration. Certain ideas or values accordingly transform into social facts, and the abstract notion of FAW becomes visible, audible, tangible and knowable. Ideas about
825 FAW also translate into standards and procedures, material devices such as fixtures, maximum travel times and so forth. Through this standardisation process, pigs become commodities that can be classified into certain categories (conventional, organic, free-range) and easily exchanged among economic actors (farmers, slaughterhouses, importers, retailers, consumers). As a consequence of the marketisation of animal welfare, FAW becomes one product attribute
830 among many that consumers and other actors take into account in their exchange practices (Kjellberg and Helgesson 2007, Miele and Lever 2014).

As socio-technical devices and procedures, FAW standards organise encounters between goods and agencies (Callon *et al.* 2002). They are negotiated over time and enacted in the daily practices of various actors. Compliance can be monitored in different ways, whether by the
835 actors themselves engaging in routine self-monitoring efforts, or by third-party auditors that make a living from checking private standards. Third-party certification is important for convincing consumers that there is a difference between labelled and un-labelled products that they should pay a difference for (Guthman 2007).

One of the issues highlighted by the present study is that enacting and complying with a FAW
840 standard often involves investing in material devices. Implementing FAW standards often requires substantial remodelling of existing pits and fixtures or the construction of new

production facilities. Improvements in FAW are thus contingent on changes made by farmers who invest in new pits and new furnishings and alter their management practices. It is more labour intensive to have loose sows, for instance, at least in the short run when new routines and skills must be developed and learned. As FAW is seen as important to only a small segment of Danish consumers and the majority of consumers are regarded as unwilling to pay extra for better animal welfare, most actors in the Danish pork sector are reluctant to make the investments in new pigsties, furnishings and marketing necessary to improve FAW. Many actors are playing a waiting game: they express interest in higher FAW but are waiting for other actors to take the first step, not least for more consumers to be willing to pay extra.

The analyses show that the development, implementation and monitoring of FAW standards mobilise many actors working together (and sometimes against each other) to reconcile divergent practices and make compromises among various justifications for standards (Busch 2011). Through their normalising practices, these actors engage in collective work (Callon 2005), attempting to accommodate or make compromises among different interests and ideas — not just about what constitutes good animal welfare and how it should be improved but also about the costs involved, supply, demand and the international competitiveness of the Danish pork industry. In the attempted qualification and singularisation of some pork products as welfare products, the key actors involved—producers, slaughterhouses, retailers, auditors, animal welfare organisations—weave a ‘web of entanglements’ (Callon *et al.* 2002). It is impossible for actors to disentangle from these complex relationships, but it is relevant for the various participants to reflect on how they can be more perceptive and responsive to the relationships they are in (Gruen 2015). Except for noting that changes in FAW standards have to make a difference to pigs and sows, the data shows that there is very little room for the experiences of animals themselves in the market practices of actors in the Danish pork sectors.

Furthermore, the data shows that ethical reflections on the appropriateness of current FAW standards and related practices are tempered by economic considerations.

Agreeing on a standard is only the start of a range of other decisions that must be made by the actors. A farmer has to choose whether to invest in new pigsties and furnishings that conform
870 with a particular standard; retailers must decide whether the standard is right for them; animal welfare organisations have to determine whether they want to endorse a particular standard as animal friendly or not, and so on. Improvements in FAW is thus entangled in a complex of relationships between numerous actors working together or against each other.

Previous work on how FAW standards are negotiated has been narrower in scope than the
875 present study. For instance, the illuminating work by Carey, Parker and Scrinis on the development of welfare labelling in Australia mainly focuses on what we have classified as normalising practices – how different actors in and around the Australian egg industry tried to influence the definition of “free range” eggs in the face of consumer-oriented challenges to prevailing labelling practices (Carey, Parker and Scrinis 2017; Parker *et al.* 2017). Using the
880 market practice perspective, the present article extends this work by studying how representations of the market are taken into consideration when developing FAW standards and how these are enacted in ongoing exchanges between different, deeply entangled actors in the Danish pork sector and beyond.

Because the Danish pork sector is geared towards world markets, where animal welfare is seen
885 as playing a minor role, the demands of individual Danish retail customers wanting to develop a private standard are balanced against other concerns by slaughterhouses. Furthermore, actors often have divergent interests and views of the market. Therefore, they sometimes actively work against each other, such as when animal welfare NGOs rail against intermediate levels of FAW sold under retailer brands.

890 This study has focused on the Danish pork sector, and many of the findings are very context-specific. Nevertheless findings are relevant for other export-oriented sectors, as it highlights how improvements in national FAW levels is dependent on entanglements with global markets, especially when production is very export-oriented. By showing how some sectors are tied into global networks that influence the ability and willingness to make FAW improvements, this
895 article differs from previous work. A different take on internationalisation of FAW is provided by the work by Parker and colleagues on the Australian chicken-meat sector, in which they show how stakeholders refer to developments in EU regulation in order to push the Australian government to follow and have challenged local supermarket chains to follow the example of UK retailers and be more proactive in fostering increased consumption of higher-welfare meat
900 (Parker, Carey and Scrinis 2018).

Left to its own devices, there is a risk that ‘the market’ will focus on economies of scale and lowering costs, not on serving the small, if growing, niche willing to pay extra for better FAW or improving FAW in general. This is especially true if different actors continue to wait on others to take the next step: for consumers to be willing to pay extra, producers to increase
905 supply or retailers to take a leading role in marketing products with better FAW. There was thus no evidence to suggest that any of the major actors were striving to drive markets for FAW products. The conclusion must therefore be that public policy must continue to set acceptable minimum standards that leave room for actors to offer products that offer products meeting higher requirements at an acceptable extra cost. Although the ability of the market to
910 successfully deliver sufficient levels of public goods like animal welfare can be questioned (e.g., Busch 2014; Guthman 2008), there is also evidence suggesting that a market for animal friendly products can be created and sustained (Miele and Lever 2013). In the case of the Danish pork sector, the gradual introduction of new, stricter requirements through public policy is likely to stimulate market-driven efforts to offer products meeting higher requirements

915 because retailers view FAW as an important issue that they can use for differentiation purposes. However, such change is by necessity slow, as improvements in animal welfare involve significant investments in production facilities and marketing.

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Appendix: Informants

Twenty informants were interviewed about the Danish market during fall 2012 and winter and spring 2013. Interviews were conducted with three primary producers (a conventional pig
1105 producer, a free-range pig producer and an organic pig producer), sales managers from two large Danish slaughterhouses, a project manager from a company marketing organic and free-range meat and the corporate communications manager of a large meat processor. Furthermore, interviews were conducted with three retailers: a soft discount chain, a mid-market supermarket chain and an upmarket supermarket chain. For each retailer, the interviews involved the
1110 relevant category manager/retail buyer at the corporate level, a store manager and a store-level butcher/category manager. Finally, we interviewed representatives of three stakeholder organisations working with animal welfare in different ways: the communication manager and the project manager responsible for pigs at a large Danish animal rights organisation, the area manager of an organisation representing Danish farmers and the Danish food industry and the
1115 area manager for housing and environment of an organisation in charge of research and development tasks related to live pigs communicating knowledge obtained through these activities to practitioners.

Table 1 Market Practices

| | Representational practices | Normalising practices | Exchange practices |
|------------|---|---|--|
| Definition | Activities that contribute to the construction of understandings and models about how the market “looks” and how it “works.” | Activities that contribute to establishing guidelines for how a market should be (re)shaped or work according to some (group of) actor(s). | The concrete activities related to performing discrete economic transactions. |
| Examples | Gathering and analysis of sales statistics in order to evaluate the effect of advertising and promotion activities. Customer segmentation based on importance of animal welfare. | Efforts to change markets (e.g., liberalisation). Efforts to specify and enforce general guidelines (e.g., legal requirements for animal welfare). Establishment of voluntary standards (both public and private) for animal welfare. | Activities linked to specific transactions: - Product specifications - Price negotiations General activities: - Organisation of marketing channels - Generic promotion of animal welfare - Annual negotiations |

1120 *Source: Adapted from Kjellberg and Helgesson (2007).*

Table 2 Comparison of Housing and Welfare between Denmark and European Competitors

| | Denmark/DANISH | Denmark/UK Contract | England | Holland | Germany |
|----------------|--|--|---|---|---|
| Pregnant sows | Housed in accordance with EU legislation. The pen must not be narrower than 3m. There must be straw on the solid or drained flooring. | No confinement from weaning until 7 days before predicted date of farrowing – otherwise requirements as per Danish standard. | No confinement from weaning until 7 days before predicted date of farrowing. At least 2.8 m between sides of pen in indoor systems Around 40% of UK breeding herd is kept outdoors. | Housed in accordance with EU legislation. At least 2.8 m between the sides of the pen. | Housed in accordance with EU legislation. At least 2.8 m between the sides of the pen. |
| Farrowing pens | Housed in line with EU legislation. Appropriate nest building material in sufficient quantity is required, unless this is technically impossible because of the slurry system used at the farm. The piglets must have an area that is separate from the sow. If necessary, there must be a source of heat. The Danish pig industry's aim is for 10% of sows to be loose in the farrowing pens by 2020. After 2021 all newly built farrowing units must be designed as loose systems. | | Housed in line with EU legislation. Appropriate nest building material in sufficient quantity is required, unless technically impossible because of the slurry system used at the farm. The piglets must have | Housed in line with EU legislation. Appropriate nest building material in sufficient quantity is required, unless technically impossible because of the slurry system used at the farm. The piglets must have | Housed in line with EU legislation. Appropriate nest building material in sufficient quantity is required, unless technically impossible because of the slurry system used at the farm. The piglets must have |

| | | | | |
|------------------------------------|--|--|--|---|
| | | a thermally comfortable and dry lying area. | an area that is separate from the sow. There must be a source of heat. | an area that is separate from the sow. There must be a source of heat. |
| Weaning of piglets | After 28 days. The average in 2012 was 31 days. | Not before 28 days or 21 days for batch production. | After 28 days or 21 days for batch production. | After 28 days or 21 days for batch production. |
| Enrichment and rooting materials | All pigs must have permanent access to sufficient quantities of straw or other manipulable rooting and enrichment material. Enrichment and rooting material must be of natural materials and in contact with the floor. Chains alone are not acceptable. | All pigs must have permanent access to sufficient quantities of enrichment or other rooting material. Chains alone are not acceptable. | All pigs must have permanent access to manipulable materials. Chains with plastic hooks are permitted. | All pigs must have permanent access to manipulable materials. The materials must be harmless and adequate. Chains with plastic hooks are permitted. |
| Flooring for piglets and finishers | Since 2000, it has been forbidden to build sties with fully slatted floors. With regard to newly built sties, at least half of the floor for piglets and at least one-third of the floor for finishers must be solid or drained. Applies to all systems from 2015. | Fully slatted floors are permitted provided minimum slat and opening widths are observed. | 40% solid floor for piglets and finishers required. | Fully slatted floors are permitted. |

| | | | | |
|--------------------|---|--|--|--|
| Sprinkling systems | All pigs over 20kg (including sows) must have access to a sprinkling system or another system to keep cool. | No regulation | No regulation | No regulation |
| Castration | Pain relief must be administered before castration takes place. Anaesthetic must be used if castration is carried out 7 days after farrowing. | Castration is not permitted by RTA standards. According to UK legislation, castration is permitted up to the seventh day after farrowing. | Pain relief must be administered before castration takes place. Anaesthetic must be used if castration is carried out 7 days after farrowing. | Pain relief must be administered before castration takes place. Anaesthetic must be used if castration is carried out 7 days after farrowing. |
| Tail docking | Not permitted on a routine basis, but permitted if it can be documented that measures must be taken to prevent tail biting. Only permitted between day 2 and 4 after birth and no more than half of the tail may be docked. | Only within the first 72 hours after birth and not on a routine basis | Docking of part of the tail no later than seven days after birth. | Docking of part of the tail no later than four days after birth |
| Tooth reduction | Tooth clipping is not permitted. Tooth grinding is allowed, but not on a routine basis. Tooth grinding must take place within the first four days after birth. | Piglet teeth clipping is allowed up to 72 hours after birth, but not on a routine basis. | Tooth clipping is allowed within the first seven days after birth. | Tooth clipping is allowed within the first seven days after birth. |

Source: Agriculture and Food (2014).