THE RISE OF AGRICULTURAL ANIMAL WELFARE STANDARDS AS UNDERSTOOD THROUGH A NEO-INSTITUTIONAL LENS

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Introduction

In recent years there has been an explosion of agricultural animal welfare standards. The rise of animal welfare standards has coincided with an increase in all types of standards (e.g. food safety, food quality, environmental standards) in the agrifood system. The emphasis on standards has occurred as regulation of agrifood systems has shifted. Whereas nation-states used to be the primary regulators of agrifood systems, the new agrifood terrain now includes, not only nation-states, but also global governance organizations, (e.g., World Trade Organization, WTO), multilateral and regional regulatory schemes, (e.g., the European Union, EU), and private sector organizations, including transnational corporations (e.g., Cargill and Wal-Mart) (McMichael 2004; Higgins and Lawrence 2005; and Scholte 2000).

As the organization of agrifood systems has shifted, standards[1] have become one of the most significant emerging practices for governing food (Bain, Deaton, and Busch 2005; Higgins and Lawrence 2005). Economists have typically highlighted the role standards play in helping to reduce transaction costs, increasing the predictability of a product, and in general, simplifying what could be a very tedious and complicated process. With the increasing importance of standards, however, a shift has occurred from the use of standards as technical tools for market homogeneity to the use of standards as strategic tools for accessing markets, coordinating systems, enhancing quality and safety assurance, product branding, and creating niche markets (Giovannucci and Reardon 2000; Reardon et al. 2001).

As global agriculture restructuring has occurred and the importance of standards have been recognized, scholars have raised concerns surrounding the distributional benefits of standards, especially for developing countries, small scale producers (in developed and developing countries), and farmers utilizing alternative production systems (Bain et al. 2005; Dolan and Humphrey 2000; Dunn 2003; Freidberg 2004; Reardon and Farina 2002; Unnevehr and Roberts 2004). In particular, this growing body of research has highlighted the following: the rise of different types of standards, the lack of opportunity for specific groups to participate in standard setting, the high costs associated with standards adoption, and the elevation of standards that require adherence to specific forms of production and processing in agrifood systems. Much of this later work on standards has come out of a political economic tradition, and this literature has provided empirical evidence regarding the disproportionate distributional benefits emanating from standards and the role that powerful actors have in setting standards (Bingen and Busch 2006; Busch et al. 2005; Freidberg 2004). However, still absent is an organizational analysis of agrifood standards and the role that institutions play in shaping agrifood standards. This article incorporates sociological neo-institutionalism in an effort to

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[1] "Standards are documented criteria or specifications, used as rules, guidelines or definitions of characteristics, to ensure consistency and compatibility in materials, products, and services. In use, standards become measures by which products, processes and producers are judged" (Bain et al. 2005, 81). Standards for animal agriculture tend to focus either on food safety or product attributes, which generally encompass quality concerns like meat tenderness or animal welfare issues (Ransom 2006).

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provide a more nuanced understanding of the current political economic theorizing about agrifood standards. Specifically, neo-institutionalism provides a new theoretical lens to help explain the recent growth in agricultural animal welfare standards that allows for the recognition of the role that institutions, not solely individual actors, play in shaping the creation and adoption of standards.

Historically, standards in most national food sectors have focused on what are called product (or performance) standards, that is the composition (e.g., shape, color, etc.) of the final product and/or health features of the product (e.g. pesticide residues, contaminants, etc.), all of which are easily measured in the end product (Hannin, Codron, and Thoyer 2006). In much of the recent standards literature, the explanation for the emergence of food safety (or product) standards has to do with the decline of nation-state regulation combined with the many well-publicized food safety scares that have occurred in various countries (e.g., BSE - bovine spongiform encephalopathy, E-Coli contaminated meats and vegetables, and dioxin-contaminated chicken). Thus, in order to reassure consumers of the safety of food products, countries and companies have imposed more stringent food safety standards. However, consumers are also called upon as the explanation for the increase in animal welfare standards and, more broadly, quality standards. Quality standards, (i.e., organics, fair trade, animal welfare) as opposed to food safety standards (i.e., pesticides residues, contaminants), are processed based standards. This means that the focus is on how the product is produced, with definitions of quality revolving around shared, socially constructed values (such as environmental conservation or regional characteristics) (Renard 2005). Moreover, quality standards are voluntary standards, and it is argued that industry leaders adopt voluntary quality standards due to consumer demand, or at the very least, to allow retailers to differentiate products along lines that appeal to consumers, such as animal welfare, environmental sustainability, and worker welfare (Hatanaka, Bain, and Busch 2005).

Yet, there are several aspects of animal welfare standards that challenge the notion that these standards are due solely to consumer demand. First, animal welfare standards increase the cost of production, and thus most companies that adopt voluntary animal welfare standards would seemingly do so with the expectation that the consumer is willing to pay for the perceived quality content.[2] For example, EU studies of the cost of production for chickens utilizing animal welfare standards in Europe have estimated increased costs in production from 5 to 50 percent, depending upon the types of changes made, such as reduced stocking density, size of cage, and raising chickens outdoors (Moynagh 2000 citing EU Scientific Committee reports). Yet, several studies of Western industrialized countries reveal that the number of consumers that are willing to pay more for improved animal welfare remains limited (see for example European Commission 2002; Mitchell 2001), and the more processed the product the less concerned consumers are about the issue (Moynagh 2000). Another explanation for the adoption of animal welfare standards, which is also linked to consumer demand, is the idea that an organization needs to "maintain a positive image or at the very least avoid negative publicity" (Renard 2005: 420). While there is certainly evidence to support this explanation, the consumer argument relies on the assumption that consumers purchase products that are aligned with their value systems. Building on previous literature that has correctly pointed out that consumer values and actions are not always aligned (Swidler 1986; Wright 2005), this article argues that an understanding of consumer values and action is necessary, but insufficient to understand the responsiveness of organizations to agricultural animal welfare standards. As such, this article will make use of neo-institutionalism (Powell and DiMaggio 1991) to better

[2] A minimum level of animal welfare standards will actually reduce costs in animal production and processing, but most animal welfare standards being proposed today target a higher level of animal welfare than the minimum required by law (see Grandin 2001).

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understand the rise of agricultural animal welfare standards, and more generally to provide a guide for recognizing the ways in which institutions shape the actions of organizations.

Neo-institutionalism is briefly elaborated on below, followed by a discussion of institutional isomorphism as described by DiMaggio and Powell (1991b). Woven into the institutional isomorphism discussion is an analysis of agricultural animal welfare standards. Specifically, the World Animal Health Organization, private food retailers use of third party certification and corporate social responsibility reports, and the increasing emphasis placed on science of animal welfare will be discussed as it relates to agricultural animal welfare standards. The conclusion elaborates upon the ways in which institutional isomorphism can provide a more robust understanding of the rise of agricultural animal welfare standards and provide a guide for future studies related to agricultural standards.

Neo-Institutionalism

Neo or the "new" institutionalism, as a theoretical framework, has been used in many diverse settings including, but not limited to economic works by Douglass North (1990) and Oliver Williamson (1985), economic sociologists (e.g. Fligstein 1996; Granovetter 1985; White 1981), organizational theory (Scott 2001) and in historical comparative analyses (Evans 1995). Institutions are defined as intersecting social structures consisting of loosely bounded constellations of symbolic (i.e. codes, conventions, scripts) and material or behavioral (i.e. rituals, habits, practices) forms (Conrad 2006; Friedland and Alford 1991). Neo-institutionalists stress that while institutions provide structure to everyday life and guide human interaction, behavior of individuals and organizations must be explained on a situational basis, as behavior is deeply rooted in the cultural, political, and legal frames that the institutions are situated within (North 1990; Scott 2001).

As with any theory, neo-institutionalism is not without its critics. Specifically, sociological neo-institutionalism has been critiqued for reducing agency to enactment and neglecting power and group conflict (Colomy 1998). Yet, several scholars have recognized the value of neo-institutionalism in sociology and have attempted to integrate and further the ideas of neo-institutionalism, for example Granovetter's embeddedness (1985), Fligstein's construction of a field (1996), and Barnett and Finnemore's organizational analysis of global economic governance institutions (1999). To date the use of sociological neo-institutionalism within agrifood studies has been limited, yet neo-institutionalism fits well with political economic agrifood studies. While political economic perspectives provide the ability to recognize that economies are embedded in political and social relations, neo-institutionalism furthers our ability to appreciate the different ways in which institutions provide substantive guides for practical action. Moreover, neo-institutionalism draws attention to the manner in which organizations are influenced by and imitate each other to promote success (Clemens and Cook 1999; Dobbin 1994; Powell and DiMaggio 1991; Taplin 2006).

A Neo-Institutionalist Analysis of Agricultural Animal Welfare Standards

Any analysis of standards must begin with a brief discussion of The World Trade Organization (W.T.O.), as the operation of the WTO and its standard setting bodies have contributed to the importance placed upon standards in the agrifood system. The World Trade Organization (W.T.O.) was created in 1995 as a permanent institution administering several international trade agreements and dealing with cases of international trade disputes (Spriggs and Isaac 2001). The goal of the W.T.O. is to facilitate trade for producers of goods and services, importers, and exporters. The creation of the W.T.O. effectively gave "more teeth" to trade dispute settlement procedures (Victor 2000). Under the W.T.O. there are two agreements

that are most relevant to agriculture and food products, which are the Technical Barriers to Trade (TBT) and the Sanitary and Phytosanitary (SPS) Agreements. The SPS agreement focuses explicitly on food safety issues, while the TBT agreement is broader in scope, pertaining to any internationally traded product. The WTO's SPS Agreement explicitly recognizes three international organizations (commonly referred to as the "three sister" organizations) that develop international standards, guidelines and recommendations for food and agriculture. One of the three sister organizations, the *World Animal Health Organization* (OIE),[3] develops standards for animal health.

In 2005, the OIE officially adopted agricultural animal welfare guidelines, marking the first time a global governance organization has provided guidance on the issue. The guidelines focus on slaughter for human consumption, land and sea transport of animals, and humane euthanasia of animals for disease control purposes. The significance of the OIE adopting animal welfare guidelines is linked to the fact that as one of the three sister organizations, the OIE serves as reference point for rulings in WTO dispute settlement cases.[4] The moment the WTO identified the OIE as one of the three sister organizations was the moment in which the institutional arrangements of animal agriculture changed.

For our purposes, the elevation of the OIE to international rule maker, is key in understanding the ways in which institutions complicate and constitute the paths by which solutions are sought (DiMaggio and Powell 1991a). OIE provides an international forum for discussion and debate surrounding animal standards. With the establishment of the OIE as one of the three sister organizations, all countries and organizations became more attuned to the dialogue occurring within the OIE. For example, reporting on the first OIE global conference on animal welfare in Paris, France in February 2004, someone from a U.S. non-profit agricultural industry supported group writes:

> The three most important points to animal agriculture in the USA, and to many other countries outside the European Union, that arose from the meeting are:
>
> - The OIE will establish international guidelines for animal welfare starting with farm animals;
> - Confinement and transportation will be major issues; and,
> - Many expect the EU to use animal welfare as a factor in trade negotiations.
>
> If the World Trade Organization ultimately adopts the OIE's recommendations, the OIE guidelines will serve as the basis for international trade. Additionally the OIE anticipates its recommendations will lend support for developing relevant legislation in the countries that do not yet have animal welfare regulations. (Johnson 2004)

Due to the position of the OIE in relation to the WTO, the potential power of animal welfare standards have been elevated within economic and government institutions. The OIE creates an arena within which organizations and governments exchange ideas and experience conflict

[3] OIE was previously known as Office International des Epizooties.

[4] OIE standards and guidelines are not equal to national legislation, but rather are viewed as recommendations to national governments. However, there is an advantage for countries that choose to adopt the OIE's standards, guidelines and principles into national legislation. Effectively, the standards promulgated by the three sister organizations provide a so-called "safe harbor" for countries. Safe harbor refers to the idea that measures based on international standards, guidelines or recommendations developed by each of the three sister organizations are presumed to be consistent with the SPS Agreement, and Members who base their measures on them can be confident of their compliance with the SPS Agreement.

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over the topic of agricultural animal welfare, but more importantly, the interactions that occur in the OIE cement what DiMaggio and Powell (1991b: 65) refer to as an organizational field—organizations in the aggregate that constitute a recognized area of institutional life (e.g., key suppliers, regulatory agencies, and other organizations that produce similar services or products).[5]

Recognizing an organizational field allows us to begin to understand the emergence of animal welfare standards across a wide range of organizations, as DiMaggio and Powell (*Ibid*) explain, "once disparate organizations in the same line of business are structured into an actual field…powerful forces emerge that lead them to become more similar to one another." This point can be made clear by examining Table 1 where it is notable that many of the agricultural animal welfare standards have emerged during the same ten-year period. The rise of agricultural animal welfare standards can best be explained by DiMaggio and Powell's concept of isomorphism — constraining processes that force one unit in a population to resemble other units that face the same set of environmental conditions. Specifically, institutional isomorphism focuses on the fact that organizations compete not just for resources and customers, but also for political power and institutional legitimacy.

DiMaggio and Powell further specify three mechanisms through which institutional isomorphic change occurs. These three are coercive, mimetic, and normative. Since all three can be seen within agrifood organizations, each mechanism will be discussed and directly related to animal welfare standards. For our purposes each institutional isomorphic mechanism will be discussed as a discrete entity and linked to specific cases of agricultural animal welfare standards, however, in reality, these three mechanisms can, and often do, overlap.

Coercive isomorphism stems from political influence and the problem of legitimacy. This type of isomorphic mechanism results not only from both formal and informal pressures exerted on organization by other organizations upon which they are dependent, but also by cultural expectations in the society within which organizations function. Within the agrifood context there are several examples of explicit imposition of organizational animal welfare standards on dependent organizations, the most notable of which involves Third Party Certification (TPC) of suppliers required by food retailers. TPC and third–party certifiers are "private or public organizations responsible for accessing, evaluation, and certifying safety and quality claims based on a particular set of standards and compliance methods" set by agrifood organizations (Hatanaka, et al. 2005: 355, citing Deaton 2004). The power of food retailers to set standards has increased in the past decade as the market share controlled by a few dominant retailers has increased. For example between 1993 and 2000, the market share of the top five retailers in France increased from 48 to 61%, in Italy from 11 to 25% and in the U.S. from 20 to 40 % (Busch and Bain 2004).

One of the more recent and well-known examples of a certification scheme is GLOBALGAP, which until recently was known as EurepGAP (Euro-Retailer Produce Working Group for Good Agricultural Practices).[6] GLOBALGAP focuses on farm certification standards, with the intention of ensuring safe food that is produced respecting

[5] The process of institutional definition of fields is characterized by "an increase in the extent of interaction among organizations in the field; the emergences of sharply defined interorganizational structures of domination and patterns of coalition; an increase in the information load with which organizations in a field must contend; and the development of a mutual awareness among participants in a set of organizations that they are involved in a common enterprise" (DiMaggio and Powell 1991, 65).

[6] GLOBALGAP was announced as the new name of EurepGAP in September 2007. GLOBALGAP intends to reduce confusion and the number of audits required by streamlining the GAP standards required for producers.

Table 1: Examples of Private Sector, NGO, and Public Sector Agriculture Animal Welfare Policies and Guidelines

Organization	**Position in Industry**	**Year***	**Applied Region**
EurepGAP	All the major European food retailers	1997/2004	EU (Belgium, Finland, Germany, Netherlands, U.K.) & Switzerland
Freedom Food - Labeling Scheme		1994	U.K.
Certified Humane - Labeling Scheme		1998	United States (U.S.)
Free Farmed - Certification & Labeling		2000	U.S.
Private Sector		**Year**	**Applied Region**
Fast Food Chains (FFC)			
McDonald's	Largest FFC	1999	Global – locations that have McDonalds
Burger King	2nd Largest Burger FFC	2001/2007	Global – locations that have BK
KFC (a part of Yum! Brands)	Largest chicken FFC	2003	
Wendy's International	3rd Largest burger FFC	1998/2001	
Grocery Retailers			
Ahold	3rd Largest	2003	The Netherlands & subsidiaries in U.S. and Europe
Kroger	4th Largest	2001	U.S.
U.S. Packers			
Tyson Foods	1st for Beef & Chicken	2003	North America
Cargill	2nd in Beef	2007	North America – notified an animal rights group phasing out sow gestation crates for the past four years.
Smithfield Foods	1st in Pork	2003/2007	North America 2007 phase out gestation crates
ConAgra Foods	3rd in Beef and Pork (co-owned Swift &Co.)	2001	North America – adopted Food Marketing Institutes (FMI – an industry group) animal welfare guidelines; Developed in-house guidelines for Turkeys.
International Organizations		**Year**	**Applied Region**
OIE		2005	Global
Regional & National Governments		**Year**	**Applied Region**
European Union - *Treaty of Amsterdam*		1997	All EU members
United Kingdom *The Welfare of Farmed Animals*		2000	U.K.
Swedish Animal Welfare Act; Swedish Animal Welfare Ordinance		1988	Sweden - the most stringent agricultural animal welfare regulations in the EU

* If two years are listed, the second year signifies when the organization created stricter animal welfare standards. The year listed indicates the date of implementation of animal welfare standards, although some companies do not make implementation date available (e.g. Wendy's International).

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worker health, safety and welfare, environmental and animal welfare (EurepGAP.org). The Euro Retailer Produce Working Group initiated EurepGAP in 1997. Originally made up of a group of 13 of the largest European retailers including, Royal Ahold, Marks & Spencer, Tesco, Safeway, and Sainsbury, the mission of EurepGAP was to develop a harmonized standard for Good Agricultural Practices (GAP), together with a third party certification (TPC) system for the production of fresh fruit and vegetables.[7] GLOBALGAP now has certification programs for three areas, one of which, the Integrated Farm Assurance, includes a sub area that engages with animal welfare for cattle and sheep, dairy, poultry, and pigs. In the future, GLOBALGAP intends to expand their animal welfare guidelines, which will also expand to aquaculture. However, in the past several years NGO (non-governmental organization) groups lobbied EurepGAP/GLOBALGAP to slow their implementation of their standards arguing that too many small farmers, especially in developing countries, would be harmed by their inability to meet the stricter criteria required by EurepGAP retailers (see Graffham, Karehu, and Macgregor 2006). In response EurepGAP agreed to slow the implementation of their required standards. Beyond altruistic motives, it should be emphasized that if EurepGAP could not source enough products because so few producers met their standards, then the legitimacy of EurepGAP would be compromised.

The above example of the implementation of TPC by a powerful retail organization is an example of coercive isomorphism in the form of organizations exerting formal pressure on other organizations. National regulations that companies must comply with also represent coercive isomorphism. However, in the case of animal welfare guidelines, most organizations' animal welfare standards are more stringent than national regulations. Yet, many companies acknowledge national regulations in their own animal welfare policies as a means of gaining legitimacy with national governments and the corresponding national public. This is an example of coercive isomorphism occurring by way of cultural expectations. Ultimately, there is a need for organizations to lodge managerial authority and responsibility, at least ceremonially, in a formally defined role in order to interact with other hierarchical organizations. Evidence of this more cultural type of coercive isomorphism can be found in company Corporate Social Responsibility (CSR) reports. While there is no consistent definition of what is meant by CSR, they typically attempt to engage with the 'triple bottom line' of economic, social, and environmental performance (Busch et al. 2005; Maloni and Brown 2006). Thus, private food retailers publish CSR reports as a way of informing stakeholders of the issues they are addressing beyond simply putting food on the supermarket shelf. For example, Table 2 provides a comparison of the animal welfare sections of two major companies' CSR reports (U.K. based Marks and Spencer and U.S. based Smithfield Foods). Both of the CSR reports make reference to national definitions of animal welfare. In the case of Smithfield, reference is made to the U.S. Humane Methods of Slaughter Act 1978, while Marks & Spencer makes reference to the five freedoms (discussed further below) that emanated from the U.K. government appointed committee in 1979.

As part of the creation of legitimacy within coercive isomorphism, TPC and CSR reports are often closely linked. In order for a company to make claims about animal welfare within a CSR report, the company often carries out third party certification schemes to assure stakeholders (i.e., consumers, government officials, and other companies) that practices such as animal welfare are actually being followed within the food supply chain. However, CSR reports do not require certification schemes, so the two initiatives do not have to be coupled.

[7] The Euro Retailer Produce Working Group agreed to work together to develop EurepGAP as a benchmark standard in order to avoid a situation where suppliers have to be separately certified for multiple retailers (USDA/FAS 2001).

Table 2. Excerpt from Corporate Social Responsibility Reports on Animal Welfare

Company	**Corporate Headquarters**	**Excerpt from Animal Welfare Policy/Principles**
Smithfield Foods, Inc.	Virginia, USA	Smithfield Foods, Inc. and all its subsidiaries involved with the production or processing of live animals are required to provide: • Comprehensive written animal welfare programs to ensure animal well-being. • Shelter that is designed, maintained and operated to provide a physical environment that meets the animals' needs. • Access to adequate water and high quality feed to meet animal nutrition requirements (production facilities) and in accordance with the ***Humane Methods of Slaughter Act 1978*** (processing facilities). • Humane treatment of animals which meets or exceeds the requirements of the ***Humane Methods of Slaughter Act of 1978***, and all applicable American Meat Institute Animal Handling Guidelines (processing facilities).
Marks & Spencer	London, United Kingdom	Marks & Spencer aims to ensure that wherever animals are used in the production of our products, their welfare is protected and that wild animal populations are used sustainably. Specifically for Marks & Spencer food products, it is our aim to ensure that all animals' welfare is protected by: • Working with farmers who share our attitude and approach to animal welfare. • Adopting the recommendations of the ***Farm Animal Welfare Council*** including ensuring that farming systems meet as many of the ***five freedoms**** as possible. (*the five freedoms are; i. Freedom from hunger and thirst, ii. Freedom from discomfort, iii. Freedom to express normal behaviour, iv. Freedom from pain, injury and discomfort, v. Freedom from fear and distress)

Mimetic isomorphism results from uncertainty within the environment in which organizations operate. DiMaggio and Powell (1991b: 69) argue that organizations may model themselves on other organizations when organizational technologies are poorly understood, goals are ambiguous, or when the environment creates symbolic uncertainty. Agriculture animal welfare standards provide one of the best examples of an uncertain environment, both in terms of not having an agreed upon definition of agricultural animal welfare, nor fully understanding the best techniques for ensuring adoption and compliance to animal welfare standards.

As animal welfare standards have become part of a global conversation surrounding agriculture trade, there has been a greater emphasis on the sentience of animals and the science behind animal well-being. Increasingly, within international organizations' like the OIE and in regional and national legislation there is an understanding of animals as sentient beings, not solely as commodities to be owned and traded (Farve and Hall 2004). The foundation of legally recognizing animals as sentient beings actually began almost thirty years earlier when Ruth Harrison published *Animal Machines* in 1964 in the U.K. (Wolfson 1996). Due to Harrison's work, the Brambell Committee, appointed by the British government, examined the

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conditions in which livestock were kept within systems of intensive husbandry. The committee was charged with assessing whether standards ought to be set in the interest of animal welfare. Emanating from the Brambell Committee were the five freedoms of animal welfare. These five freedoms were to be considered for all agricultural animals regardless of their location in the industrial agricultural process (i.e., on the farm, in transit, or at the point of slaughter). The five freedoms include: freedom from hunger and thirst, freedom from discomfort, freedom from pain, injury, disease, freedom to express normal behavior, freedom from fear and distress (Farm Animal Welfare Council 1979). Although the five freedoms were never given the force of law (Wolfson 1996), the U.K., other European countries, and the EU relied heavily on the five freedoms in drafting animal welfare legislation over the past thirty years.

The recognition of animals as sentient beings came to a peak when the EU signed the Treaty of Amsterdam in 1997 which recognized animals as sentient beings and required that animal welfare be considered when policies relating to agriculture, transport, and research are formulated or implemented by any of the EU member states (Hirsch 2003). Despite a decade or more of animal welfare advocates fighting to redefine the status of animals within the EU, the Treaty of Amsterdam was the first EU document that not only recognized animals as sentient beings, but also made the treatment of animals legally binding.[8] Today, despite the EU having passed the Treaty of Amsterdam there continues to be a tension between viewing agricultural animals as inputs to the food system versus as sentient beings that deserve equal protection under the law (refer to Miele, Murdoch, and Roe 2005 for an analysis of EU animal welfare regulation). The shift in legal recognition of animals represents divergent paradigms regarding animal protection. Generally, the animal rights perspective argues that humans should not dominate over animals, while the traditional welfare perspective does not counter human domination, but argues that humans should show concern for animals' physical and emotional health (see Buller and Morris 2003; Francione 1996; Lubinski 2004 for more information). Animal welfare as an object of governing within agriculture is still in the process of clarification (Miele et al. 2005: 182).

Correspondingly, there is considerable disagreement over the science of animal welfare and over the techniques that should be employed to ensure adequate welfare among agricultural animals. Not coincidently, there is an emphasis on science within the WTO's SPS and TBT Agreements. The WTO cannot be credited with causing the increased focus on science in animal welfare discussions. Rather the WTO is a part of a global trading system that promotes rationalization and efficiency and the appeal to scientific values like objectivity and transparency are one means to achieve these goals (Hatanaka et al. 2005). In order to successfully reduce trade barriers, it is important that the WTO rely upon "objective measures" and not on cultural variables or other factors that would effectively limit trade. For example the SPS Agreement specifically privileges trade rules based in science. Article 2, Paragraph 2 under the SPS Agreement states:

> Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is **based on scientific principles and is not maintained without sufficient scientific evidence**, except as rovided for in paragraph 7 of Article 5.[9] [emphasis added] (WTO SPS Agreement 1995)

[8] The Treaty of Rome (1957) created the European Economic Commission (EEC) and in the text of the Treaty animals are defined as agricultural goods. Over the years many proposals were made, but none successfully, to change the way animals are defined in the Treaty of Rome (European Biomedical Research Association 1997).

[9] Article 5, paragraph 7: In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information, including that from the relevant international organizations as well as from sanitary or phytosanitary measures applied by other Members.

Despite the strong emphasis on scientific evidence, the science surrounding animal welfare remains inadequate. Currently, the U.S. government uses health indicators (e.g., presence of illness) to measure animal well-being, whereas the EU government relies upon health, productivity, physiology, and ethology (e.g., comparison of animal behavior in an intensive farming situation with normal behavior) (Moynagh 2000). Within the private sector there is also a fair amount of debate over animal welfare and best practices for producing animal welfare. In the U.S. Temple Grandin, a prominent animal scientist and a major participant in constructing animal welfare standards for fast food restaurants, argues there are five key measurements inspectors need to follow in order to ensure animals receive humane treatment at slaughtering plants (Grandin 2005). These include: accuracy of stunning animals, amount of vocalization by the animals prior to slaughter, insensibility and unconsciousness on the bleed rail, amount of electric prod use by staff, and the number of animals that trip or fall. However, there are many other actors within and outside the industry in the U.S. and in Europe that argue that there should be many more measures to be followed. The infighting and contested terrain of animal welfare standards within an industry at the point of slaughter is symbolic of the types of arguments that occur in international trading arenas between countries, particularly when the conversation is expanded to include production techniques. Among the issues debated for domesticated animals internationally include adequacy of space for the animals to move around and types and amount of feed the animals consume. One group working on agricultural animal welfare is a diverse group of researchers working on a large EU funded project entitled "Welfare Quality Project." One aim of the project is to develop a monitoring system for good farm animal welfare. To this end, "there are more than 30 researchers involved in this sub-project to ensure that the scheme has a good scientific basis" (Keeling n.d.). However, the group notes that regardless of the scientific principles utilized, for a monitoring scheme to be widely accepted and implemented in practice, the scheme "has to satisfy public, industry and political views of animal welfare" (*Ibid*).

Clearly, the practices of agricultural animal welfare remain contested. This includes the uncertainty over consumer reaction and willingness to pay for more stringent animal welfare standards. Thus, in situations of uncertainty, organizations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful. This can best be seen within the fast food retail sector where the number one fast food chain globally, McDonald's, was the first to implement animal welfare standards and audits for all suppliers (Zwerdling 2002). Shortly thereafter the other major fast food chains followed McDonald's lead, including Wendy's, KFC (formerly Kentucky Fried Chicken), and Burger King. A similar trend can be seen among global grocery retailers and a less public shift in animal welfare standards among major U.S. pork, chicken and beef packers. According to one industry group representative, many U.S. companies on the production side of animal agriculture have not publicized their shift in animal welfare policy in part due to the uncertainty of the types of animal welfare standards that will become the standard to follow and consumer willingness to pay extra for meat that comes from animals raised utilizing more stringent animal welfare standards (personal communication 2007, see for example Cargill in Table 1).

This raises the point that there is also a ritual aspect to mimetic isomorphism, in that companies adopt these innovations to enhance their legitimacy. The adoption of innovations may or may not reflect the actual work of the companies. Meyer and Rowan (1991) note that conformity to institutionalized rules tends to contrast with efficiency criteria of an organization, yet institutionalized rules provide ceremonial conformity and legitimacy. Animal welfare

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In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

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standards can run counter to profit maximization and increased efficiency of livestock production facilities (i.e., the increased costs of production and consumer unwillingness to pay for such standards). From the very earliest days of industrialization, techniques for meat production and slaughtering were developed based on ideas of factory production. In other words, an assembly line process with a greater division of labor that increased efficiency served as an ideal model of how to advance the agricultural industry, and farm animals became sites for capitalist accumulation through processes of selection, breeding, and intensive husbandry (Buller and Morris 2003). The technologies and methods used in meat production reflected industrial societies' interest in increasing control of animals and humans (Burt 2006). Due to the success of an assembly line approach to meat production, Western industrialized societies are able to raise and slaughter animals on a scale not previously imaginable. For example in the United States, it is common in large slaughterhouses for 300 cattle an hour to be slaughtered, with the rate of cattle killed every twenty-four hours in the U.S. around 100,000 (Burt 2006). The size of the slaughter facility is often criticized as it relates to animal welfare due to the large number of animals that: are held in holding pens, are exposed to extreme temperatures in holding areas, and experience elevated stress levels due to transportation and handling of animals upon arrival at the slaughter facilities.

Table 3 displays the overall increase in the quantity of live animals exported globally in the past thirty years.[10] Live animal trade is highlighted because trade in live animals represents the proverbial tip of the iceberg, as companies prefer to move meat in processed form.[11] Thus the increase in live animal trade over the past thirty years is reflective of the overall increase in consumption of meat products globally. Consumption rates reveal that the developed world (Western, industrialized countries) will increase meat consumption from eighty-eight million metric tons in 1988 to a projected one-hundred and fifteen million metric tons by 2020, while the developing world is estimated to more than triple their meat consumption from fifty million metric tons in 1983 to a projected one-hundred and eighty-eight million metric tons in 2020 (Delgado et al. 1999).[12] In addition, live animal trade represents one of the more inhumane practices in animal agricultural production. Live agricultural trade usually involves long shipment periods in which animals, usually onboard cargo ships, are exposed to overcrowded confinement (where animal diseases more easily spread), poor ventilation, and extreme temperatures (Millstone and Lang 2003; Wright and Muzzatti 2007).[13] Thus, viewing agriculture animal welfare standards within a broader political economic perspective can enable us to better understand the neo-institutionalist point that rules can provide ceremonial conformity and legitimacy, but have the potential to **not** actually reflect the demands of the work environment (DiMaggio and Powell 1991a; Meyer and Rowan 1991).

Finally, *normative isomorphism* is the pressure brought about by professions. Formal education and legitimation in university specialists and the growth and elaboration of professional networks that span several organizations are two aspects of professionalization that are important to normative isomorphism. Historically, university specialists (particularly animal scientists) have played a significant role in shaping the lives of agricultural animals. The history of university specialists' engagement with animals and animal welfare is grim.

[10] The Europeans are seen as more agricultural animal welfare friendly, yet approximately two million live pigs, cattle, sheep and horses are transported around Europe annually. For example, approximately 1.5 million pigs are exported annually from the Netherlands to Italy and Spain for slaughter or further fattening, due partially to the strict anti-pollution laws in the Netherlands (see Millstone and Lang 2003).

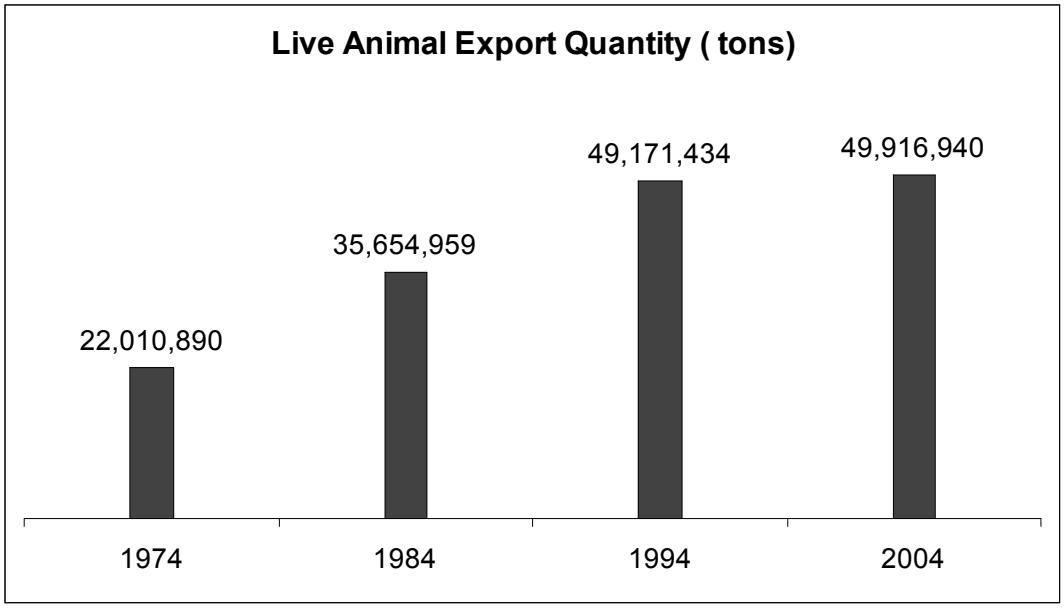
[11] It takes four times as many resources to transport live animals than to transport meat (Millstone and Lang 2003).

[12] In developing countries, population growth, urbanization and income growth are identified as key factors that have contributed to the major increase in demand for food of animal origin (Delgado et al. 1999).

[13] In the 1990s several cargo ships carrying live animals caught fire and sunk killing anywhere from 40,000 to 70,000 sheep each time (see Wright and Muzzatti 2007).

Within sociological texts animals have largely remained invisible and the interactions between humans and animals ignored (Tovey 2003). More broadly within the natural sciences, animals have been seen as inferior and separate from human activities and human qualities, such as the capacity to have emotions (Haraway 1989; 1991; Ritvo 1987; Siebert 2006). While there have long been critics of animal treatment within agriculture, most critics have been situated outside the university (e.g., NGOs). Being situated outside the university means that claims made by animal welfare activists are often ignored as illegitimate sources of knowledge (refer to Harding 1991 for an elaboration of what counts as legitimate knowledge).

Table 3. Thirty Years of Live Animal Export



Source: FAO Statistics Division 2007

However, in recent years the knowledge surrounding the science and technology of animal welfare has become contested terrain. People and organizations that are situated within university settings and professional networks will continue to be the primary definers of what is considered legitimate knowledge surrounding animal welfare. Yet, due in part to the elevation in the importance of the OIE, and, therefore, the creation of an organizational field (organizations in the aggregate that constitute a recognized area of institutional life) around animal agriculture, the conversation surrounding animal welfare has shifted. Beginning in the 1990s university courses focused on animal welfare and animal rights began being offered across many different disciplines. One can now find courses focused on animal welfare/well-being, animal rights, and animal sentience in over forty states in the U.S., in addition to courses offered in Canada and Spain (CRLE 2007). Furthermore, the shift to focusing on animal sentience (as opposed to animal behavior) among professional animal scientists will continue to reshape the way agricultural animal welfare is discussed (CIWF 2006). In addition, there is new grant funding available nationally and regionally to support academic research on agricultural animal welfare standards (e.g. the EU funded project "Animal Welfare Quality"). Finally, the formation of an organizational field facilitates the ability of a variety of organizations, not only university specialists, but also NGO personnel, to enter into a conversation about agricultural animal welfare standards. Of the three types of isomorphism, normative isomorphism makes up the smallest component of a neo-institutionalist analysis of agricultural animal welfare standards and yet, has the potential to redefine the conventions and practices surrounding animal agriculture.

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Conclusions and Implications

According to DiMaggio and Powell, for all three types of isomorphic mechanisms, isomorphism will proceed even if there is an absence of evidence that it increases internal organizational efficiency. While some voluntary agricultural animal welfare standards can work well within the model of efficiency that much of the Western industrialized farming world relies upon, there are many other animal welfare standards that do increase costs of production (e.g., size of holding pens, use of anesthetic during castration or dehorning), with no assurance that organizations or individuals will receive a premium for their product (e.g., see Moynagh 2000). If it is understood that organizations are often rewarded for their similarity to other organizations in their fields because it becomes "easier for organizations to transact with other organizations, to attract … staff, to be acknowledged as legitimate and reputable, to fit into administrative categories that define eligibility for public and private grants and contracts," all of which are important rewards for any organization (1991b: 73), then we begin to understand why so many organizations have adopted agricultural animal welfare standards in recent years.

Thus, utilizing a sociological neo-institutional perspective provides a framework for more fully understanding the rise of agricultural animal welfare standards. While consumer demand is a factor in the rise of agricultural animal welfare standards, there are other factors at work within the agrifood system. Moreover, neo-institutionalism allows us to recognize the ways in which institutions define the solutions to agricultural animal welfare. Neo-institutionalism also signals to scholars that some solutions are forgone because they are not even in the realm of possibility within the current institutional framework and organizational fields. Indeed this article has outlined some of the organizations that have adopted animal welfare standards for food animals, but future analyses could focus on the ways in which institutions shaped the discourse and practices of agricultural animal welfare standards within these organizations. Such an approach would further an analysis of the ways in which particular practices dominate at the expense of other types of practices within organizations. An analysis of this sort would also allow for an examination of the discourse and practices that are so central to the maintenance and legitimacy of institutions that they remain unchallenged at the public level (Conrad 2006).

A neo-institutional analysis highlights the distinction that should be made between the formal structure of an organization and its actual day-to-day activities (Meyer and Rowan 1991: 42). Thus, while there are several scholars researching the certification (TPC) programs being implemented by private retailers, it appears important to continue to revisit the on-going *practice* of agricultural animal welfare standards (and other quality/process standards), not simply the initial implementation of the standards. As neo-institutionalism suggests the organizational form has the potential to take precedence over the content. This seems especially important as it is likely a growing proportion of the Sanitary and Phytosanitary (SPS) measures within the World Trade Organization will be focused on process standards (e.g., animal welfare or other production techniques), which as highlighted earlier are much harder to observe and measure in the final end product (Unnevehr and Roberts 2004). Ultimately, acknowledging institutional isomorphism is useful for understanding the politics and ceremony that pervade much of our modern organizational life.

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