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Mad Cows and Ailing Hens: The Transatlantic Relationship and Livestock Diseases

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Introduction

This paper addresses the transatlantic dimensions and impacts of outbreaks of two particular diseases: bovine spongiform encephalopathy (BSE, or Mad Cow Disease), and avian influenza (AI), during the 1990s and the early years of the 21st century. These diseases represent a particular kind of transboundary risk – to some extent, given the trade in animals and animal products across the Atlantic, an instance of transboundary interdependence – that has become particularly high-profile in recent years.

Specifically, this paper addresses three questions, focusing on policies and responses made at the federal (in the case of the US) and supranational (the EU) levels. First, and especially given the contentious nature of relations between the European Union and the United States over food safety related issues such as genetically modified organisms (GMOs) or beef hormones, I ask how these diseases have affected the transatlantic relationship.¹ Have they been a source of contention between the world's two economic superpowers, or have the US and EU found ways to manage this particular type of interdependence? When animal health or food safety in one country is threatened by a disease outbreak in a trading partner, the first line of defense is almost without exception a trade embargo. Outbreaks of BSE and avian influenza in recent years have been no exception. Although not entirely unproblematic (being certainly unpopular with farmers in the afflicted countries, and often with international authorities), these trade bans between the US and EU have not caused anything like the same degree of contention that have surrounded GMOs or beef hormones. Instead, their affect has often spurred significant reform in afflicted countries. One case examined in this paper looks specifically at how a short-term, targeted ban by the EU on US poultry products after an AI outbreak in 2004 might reflect a new trend in such embargoes. Nonetheless, and despite a history of dealing with animal diseases on both sides of the Atlantic that dates back to the 19th century, there is little evidence that the US and EU are working effectively together to minimize disruption to trade in the event of future outbreaks.

Second, what can we learn from comparing the responses of the US and the EU to these diseases? Infectious diseases which are able to jump the species barrier, from animal to human, and which can be carried rapidly around the globe through trade or travel are becoming very much a focal point of concern for national and international authorities (Klempner and Shapiro, 2004). Being able to compare US and EU responses at different levels, and assess why they differ, and to what effect, could yield valuable recommendations for other parts of the world, and for future disease outbreaks. More broadly, this comparison yields some interesting conclusions about politics (notably food safety and public health politics) in the US and EU. In some ways, these two economic powers are not as different in their response to these sorts of diseases than their behavior in other issue areas might lead one to expect: both are quite precautionary in their responses, not only at the initial, “outbreak” stage but also over the longer term, contra conventional wisdom on the comparative use of the precautionary principle in the EU versus the US.² But the differences that exist reflect different institutional structures and stages of development. Notably, one of the prime motivations for EU activities in this area has been to build and expand its authority as a new, supranational form of governance. The US, on the other hand, has not (yet) responded to BSE or AI with institutional change and reform at this level, continuing to rely on its existing patchwork of relevant agencies – including the US Department

¹ Thus contributing to the wider literature on the transatlantic relationship across different issue areas. See, for example, Vig and Faure (2004); Mowle (2004), Vogel and Ansell (forthcoming)

² However, see Wiener and Rogers (2003) on cases where the US is precautionary.

of Agriculture (USDA), the FDA, the CDC, and the National Wildlife Service – to coordinate its response. The US and EU, too, are largely on their own in developing responses to disease – in that international organizations such as the World Health Organization (WHO) or the International Organization for Animal Health (Office International des Epizooties, or OIE) focus their aid and capacity-building efforts on poorer countries. Nonetheless, rules and standards established by these international organizations do influence US and EU responses, and provide guidelines to which all member states should conform.

Finally, and related to the above, this paper asks to what extent can we identify transatlantic policy diffusion, or even policy convergence between the US and the EU in the arenas of food safety and public health policy? To what extent do they demonstrate that they have learned from each other's experience? The story elaborated here is more one of policy diffusion from the US to the EU than one of regulatory convergence or harmonization.³ In developing two new agencies – the European Food Safety Authority (EFSA) and the European Center for Disease Prevention and Control (ECDC) – the European Union clearly modeled their structures and functions on their US equivalents – the Food and Drug Administration (FDA) and the US Centers for Disease Control and Prevention (CDC), but adapted and changed these basic models to better fit the realities of EU politics. Notably, these agencies reflect the relatively strong, and continuing role, of member state governments in the EU, and the EU authorities' decision to build a more technocratic governance model – specializing in the production and provision of authoritative knowledge to the member states rather than taking over national governance functions. By comparison, US policy-making in these arenas is highly concentrated at the federal level: unlike many other arenas of US policy-making, US states are allowed little deviation from federal standards, and are very much subject to federal rules and agencies.

This paper draws on the experiences of and responses by the US and the EU to BSE (1988 to present) and avian influenza (2004 to present). Rather than seeing this as two separate cases, the very different experiences of the US and EU with these two diseases during the time periods examined makes it more accurate to view the analysis that follows as a series of smaller cases, which are designed to throw light on the questions above. Further, the rapidly developing story of AI (notably, of the H5N1 variant that swept Asia in 2004 and moved across the globe into Europe, Africa and potentially beyond) makes a thorough assessment of responses difficult at this stage. Thus, this paper examines:

- The EU's response to the emergence of BSE in the UK in the late 1980s, then to its spread across the EU in the 1990s
- The US's response to BSE in the EU (and other countries) prior to 2003 – and its response after its first case was diagnosed in December 2003
- The EU's response to a minor outbreak of highly pathogenic AI (the H5N2 strain) in Texas in 2004
- The emerging response of the US and the EU to the global spread of AI (H5N1) that had as of March 2006 led to the death or culling of over 200 million birds worldwide, the deaths of 105 humans through contact with infected birds, and which, some fear, may mutate to spread via human to human contact.

These cases can be roughly categorized, according to whether authorities in either region perceived the threat as internal (within its borders) or external (coming from abroad), and its source as specific (a particular, identifiable point of origin) or general (origin unknown or multiple origins). These perceptions are important, as they help condition authorities' choice of response, as is whether or not authorities were able to anticipate upcoming shifts in disease

³ On transnational policy diffusion, see Dolowitz and Marsh 2000; Stone, 2000.

threats and origins (notably the shifts from external to internal, and from specific to generalized threats).

Figure 1: Threats Posed by BSE and Avian Flu

| | Internal Threat | External Threat |
|------------------------|---|---|
| Specific Origin | EU's response to BSE in UK | US response to BSE in EU EU response to AI in US, 2004 |
| General Origin | Spread of BSE across the EU Emergence of BSE in the US | Global spread of AI (H5N1), 2004-2006 |

Responding to Transnational Epidemics

One of the reasons why – despite some very critical differences – that BSE and AI make for an interesting comparison is that they are both zoonoses: animal diseases that can jump the species barrier to humans. Generating an effective response requires mobilizing authorities responsible for animal health, food safety and human health.⁴ Both poultry and cattle, too, are heavily traded commodities, forming the bulk of the world's consumption of meat. Any infection or disease – be it BSE or AI, or diseases with less serious implications for human health, such as foot and mouth disease, or Norwalk Disease – thus has the potential to be rapidly spread around the world. Further, many argue that such diseases are exacerbated or even (in the case of BSE) caused by practices of industrialized agriculture – animals kept in crowded, enclosed conditions, and fed “unnatural” feedstuffs are more prone to diseases, and epidemics spread more rapidly under these conditions.

In general, it is possible to identify general patterns of national responses to diseases like BSE or AI, at a number of levels, and over time. Although later sections will elaborate the differences in how the EU and US combat both diseases, broad similarities exist across countries in terms of potential points of intervention, and it is worth identifying these now.

a. First Lines of Defense: Emergency Measures and Trade Embargoes

At the onset of the outbreak, authorities in the afflicted country or region undertake extreme emergency measures. These include immediate slaughter of infected or potentially infected animals or birds, their herds and flocks, and quarantine of infected areas. Usually, these measures are accompanied by compensation for affected farmers (although the impact on farmers, and level of compensation is frequently a focal point for social conflict in these cases).

⁴ It is largely accepted that BSE is transmitted through the food chain: cattle eat feed made from rendered mammalian protein (sheep, cattle) carrying the disease, and the infectious agent passes through them into the human food chain. It is not easily destroyed through processing or cooking. Unlike influenza viruses, incubation times are slow, but the disease is invariably fatal, for cattle and humans. For humans, AI, by contrast, is less of a food safety issue than one of safe handling of infected animals. The virus does pass directly, and rapidly, from bird to bird – and it is thought one of the main vectors of transmission are infected wildfowl – but to date, human cases have occurred only in people who have close contact with infected birds.

For unaffected countries, their immediate concern is usually to keep the disease out of their domestic animal populations and out of the human food chain. In the case of BSE, bans on imports of live cattle, beef and beef products (including animal feed and fertilizers) from the UK were swift and sweeping – and in most cases, still in effect, nearly twenty years after the initial outbreak. In the case of bird flu, embargoes include live birds, chicks, eggs, and carcasses, even though not all of these are likely carriers of the infection.

Trade embargoes in the event of animal disease are by no means new. In 1878, the British government adopted legislation requiring strict health examinations for cattle from other countries – and thus, in March 1879, US cattle exported to Britain became subject to an immediate slaughter order due to an outbreak of pleuro-pneumonia in Virginia and New York. This impasse was only broken when the US government, at the urging of its domestic producers, introduced its own animal and meat inspection plan, thus restoring confidence in its exports (Kastner and Powell, 2002, pp. 284-5).

The main difference these days is that these bans are subject to more international scrutiny, and must be justified according to internationally established standards and risk assessments, or risk being labeled protectionist. While such trade embargoes are recognized under the WTO's Sanitary and Phytosanitary (SPS) Agreement, adopted in 1995 – which accepts the right of countries to adopt controls to protect public health, as long as those controls “do not represent arbitrary, discriminatory or scientifically unjustifiable restrictions on international trade” (Kastner and Powell, 2002, p. 289), other organizations have expressed concern at the speed and extent of trade embargoes in the event of even minor disease outbreaks. In March 2004, the UN's Food and Agriculture Organization (FAO) warned that reactions to animal diseases were, at that point in time, affecting approximately one-third of global meat exports, potentially wiping \$10bn from an annual market worth \$33bn. Earlier in 2004, the OIE, whose responsibility is oversight and information provision on animal diseases worldwide, issued a press release indicating concern over swift trade embargoes in the absence of scientific risk assessment as to the actual threat posed by the outbreak, and in violation, or misinterpretation of its standards.⁵ As far as US-EU relations are concerned, such embargoes have been nowhere near as controversial as other food-safety related trade disputes between the two superpowers, such as those over GMOs or beef hormones, as shall be discussed below.

b. Institutionalizing the Response: On the ground (or in the barnyard)

After the immediate reaction to a disease outbreak, the next steps are to institutionalize internal reforms designed to prevent future outbreaks of the disease, and/or to minimize the impact of a long-term epidemic. These reforms may be in response to any or all of scientific advice or the results of official commissions or inquiries, consumer pressure – or the demands of trading partners. They may also occur in response to a “generalization” of the disease threat, as it moves from a specific source to a generalized outbreak in multiple countries, or as authorities realize the need to build their capacity to deal with similar sorts of threats in the future. Ultimately, this may mean a shift from emergency measures to a routine control model, with long term policies and programs in place to detect, control and/or prevent outbreaks of disease. In the cases of BSE and avian influenza, key points of intervention occur along the beef or poultry supply chain. Given that both diseases may infect humans, the public health system – and in particular, the ability to monitor for potential human cases – also comes under scrutiny.

⁵ OIE Press Release, January 2004, "The OIE standards on BSE: A guide for understanding and proper implementation", at http://www.oie.int/eng/press/en_040109.htm

In the case of BSE, key points of intervention occur along the beef supply chain. Critically, new policies target what cattle are fed (particularly banning feed rendered from other mammals), how they are slaughtered (in order to minimize the entry of SRMs, or “specific risk materials”, such as spinal cord or other nervous tissue, into food supplies), and to ensure that only healthy (and preferably younger) animals enter the food chain. Testing, monitoring and surveillance are also critical components of these policies. While there is, as yet, no ante-mortem test available for BSE, a wide range of post-mortem tests are available and used in countries afflicted with the disease. Testing programs and protocols show extensive cross-national variation – from Japan’s (now discontinued) policy of testing all cattle sent for slaughter, to the smaller, primarily high-risk samples used by the US prior to 2004. Control programs, of course, include monitoring human health, and undertaking reforms to prevent human to human transmission of vCJD. Notably, this has led to additional restrictions on blood donations in many countries (O’Neill, 2003). As time progresses, such controls become routinized. After the immediate crisis has passed, strict emergency measures may be rolled back by relevant authorities. In the case of BSE, the EU eventually established a “routine control” model, which recognized the disease as endemic, but established testing and slaughter rules at a level somewhat below what they had been at the peak of the epidemic.

c. Reforming Health and Food Safety Governance: Brussels and Washington, DC

The emergence of BSE in the UK and its subsequent spread across the EU led to a fundamental shake-up of regulatory institutions for governing food safety. While not unprecedented, the twin threat to human and animal health posed by BSE, and the connection to certain practices of industrialized agriculture led to a reorientation and coordination of EU food safety policy: “from farm to fork” – EU Food Safety Agency (to be further discussed below). Then, in late 2004, the EU established a new European Center for Disease Prevention and Control (ECDC), which has taken the lead in coordinating the threat of the H5N1 strain of bird flu to the EU. As shall be discussed below, both these new agencies are modeled – to some extent – on the US Food and Drug Administration (FDA) and the Centers for Disease Control (CDC).

Broader institutional reforms are not unusual in response to a new disease threat. This may involve building new agencies and institutions, fundamentally reshaping existing agencies, or working towards coordination between agencies that previously had not worked so closely together. Ideally, these new institutions, or new institutional configurations, work to meet not only, say, BSE, but also to ward off the worst impacts of new and different disease or food safety threats. However, not every country takes this path. The US, in comparison to the EU, has chosen to work within existing institutional structures (despite their complexity), in order to address the BSE and AI threats. This policy divergence (although it represents overall convergence in institutional configuration between the two superpowers) is best explained by the fact that the EU is an emerging supranational governance authority, and has been better able (and more willing) to take these steps as part of its overall governance project, without having to face the same long-entrenched interests and practices.

BSE in the EU and the US, 1988-2006

Emergence and Spread of BSE

BSE was first reported in the UK in 1986, and soon became epidemic among British cattle. In 1992 and 1993 – the peak years of the epidemic - over 70,000 UK cattle were found to have the disease (OIE, 2006b). Most scientists believe that cattle were infected through being fed ruminant-derived meat-and-bone meal (MBM), a practice that resulted from the need to find a cheap source of protein for mass-produced beef. BSE is a form of transmissible spongiform encephalopathy (TSE), diseases that destroy brain tissue, causing disorientation, loss of motor and cognitive skills, coma, and, quite rapidly, death. At the moment, there is no vaccine, cure or reliable ante-mortem test for BSE or its human form.⁶ There are several human TSEs (Rhodes, 1997). The most prevalent is "classic" Creutzfeldt-Jakob Disease (CJD), which occurs spontaneously in roughly 1 in one million humans, mostly over the age of 60. What was most disturbing about the British BSE epidemic was that the infectious prion causing the illness was able to jump species, and that it took nearly 8 years after the initial BSE outbreak for the British government to acknowledge this fact, even as the media publicized the deaths of a number of young people from a mysterious brain-wasting disease, and scientists pointed definitively to a link between BSE and this new form of CJD, known as vCJD.⁷

In Britain, the crisis led to the slaughter of millions of cattle, long-standing trade embargoes, and severe loss of public confidence in the governance of food safety (Jasanoff, 1997; Powell and Leiss, 1997). BSE has subsequently been reported in 24 other countries. While at first many of these cases were in cattle born in Britain, its incidence in indigenous cattle has now overtaken the imported cases (OIE, 2006a). In 2004, 536 cases of BSE were reported worldwide in 17 countries, not including the UK (OIE, 2006a). Further, several key uncertainties remain about BSE, regarding the extent of the human toll from vCJD (Ghani et al, 2000; Valleron et al, 2001; Huillard D'Aigneaux et al, 2001), other sources and means of transmission, including via blood transfusion and the possible circulation of the infectious agent through other species, such as poultry or sheep (Ferguson et al, 2002).⁸ As of March 2006, 154 deaths from vCJD had been reported in the UK, at a median age of 28.⁹ Although the human death toll in the UK is nowhere close to meeting the most dire predictions, the nature of the disease and the relative youth of its victims has significantly amplified risk perceptions around the disease, and necessitated strong policy responses on the part of governments of afflicted countries, even in the event of only a few cases (O'Neill, 2005)

The European Union Response to BSE, 1988-2006

On the outbreak of BSE in the UK, the nascent EU faced a series of difficult challenges, challenges which it eventually turned into an opportunity to create EU-wide competency in food safety regulation. In particular, it was able to take advantage of the crises in consumer confidence across the member states caused by the disease, and the disastrous mishandling of the

⁶ Progress is, however, being made on developing live tests. See McKie, 2004.

⁷ The major battles over determining whether or not BSE had jumped the species barrier to humans occurred in the UK. The final admission of the likelihood of this link was announced in parliament by Health Secretary Stephen Dorrell on March 20, 1996, who reported the findings of the Spongiform Encephalopathy Advisory Committee, which reflected a growing scientific consensus that BSE had, in fact, done the unexpected, and jumped the species barrier. See Powell and Leiss (1997).

⁸ Generally, studies on the human toll from vCJD have trended downwards. However, a recent study bucked this trend, predicting that up to 237 persons per million could be incubating the disease. See Zosia Kmietowicz, "High numbers than previously predicted could be incubating vCJD", *British Medical Journal*, May 29, 2004, p. 1279.

⁹ UK CJD Surveillance Unit, at <http://www.cjd.ed.ac.uk/figures.htm> (accessed March 12, 2006)

outbreak by the British government. However, to date it has not been able to restore global confidence in the safety of its cattle and beef products.

At first, when BSE was apparently confined to the UK, the EU (then the European Community) acted to ban all movement of British beef and beef products throughout the Community, while the UK government undertook its own emergency measures. But, given the relatively slow incubation of the disease, such measures were not successful: BSE started showing up in cattle imported from Britain in other countries in 1989, and by 2001, BSE had been diagnosed in native-born cattle in 16 European nations (including EU member states, future members and non-members) (OIE 2006a).

BSE has also taken a terrible toll on the production and export of EU beef (Pickelsimer and Wahl, 2002). In 1995, the UK exported 77,000 metric tons of beef and veal; in 2000, it exported less than 2000 metric tons. The EU exported 934,000 metric tons of beef and veal in 1995, but only 640,000 in 2000 (Pickelsimer and Wahl, 2002).¹⁰ In 2004, forecasted exports of EU beef were only 360,000 metric tons, down 40,000 metric tons from 2003.¹¹ The US, on the other hand, by remaining BSE-free, had benefited from this decline in EU exports while imposing measures of its own to ensure it remained so.¹²

Once it became apparent that the UK was facing a BSE epidemic, the EC first banned export of UK cattle born before July 1988 (Decision 89/469/EEC), following it up with progressively stricter bans, culminating in March 1996, with the ban of all UK beef exports worldwide (Decision 96/239/EC). These moves not only angered the British, but the EC's initial response to BSE came under fire only member governments and the media not only for being based on the disingenuous assumption that BSE would remain confined to the UK, but also for its fragmented and opaque approach to policy-making in the area of consumer health and food safety (Vincent, 2004; Vos, 2000; Buonanno et al, 2001). In particular, a European Parliament Committee of Inquiry in its 1997 report faulted the EC Commission for downplaying the human health effects of the outbreak, and failing to allow full scientific discussion as part of the public debate, and for failing to follow up with additional measures after banning UK beef exports, and feeding of mammalian proteins to farm animals in 1994 (Vincent, 2004, p. 507). Both the Parliament and a separate Court of Auditors report called for greater transparency, and greater coordination of activities and timely dissemination of information by the Commission in dealing with BSE.

These reports helped set the stage for a multi-phased shakeup of existing EC policy regarding consumer health and food safety over the following five years (remarkably rapid reform by EU standards). The major planks of the European Commission response are laid out in its Communication on Consumer Health and Food Safety in April 1997, and in a January 2000 White Paper on Food Safety. The basic principles along which the Commission reorganized these functions were, first, to separate the functions of legislation and scientific advice and monitoring, and second, to achieve greater transparency (which would include streamlining and integrating functions distributed across a number of Directorates General – DGs - and advisory committees). In 1997, all scientific committees whose work concerned consumer interests were transferred to DG XXIV, which in 1999 became the DG of Health and Consumer Protection (DG SANCO) (Bergeau-Blackler, 2004). This followed the establishment in 1996 of the Scientific Steering Committee (SSC), whose role would be to provide “the best possible” scientific advice across issues involving consumer health and safety. The 2000 White Paper went even further,

¹⁰ See also <http://www.fas.usda.gov/>

¹¹ USDA beef import and export figures, at <http://www.fas.usda.gov/dlp/circular/2004/04-03LP/toc.htm>

¹² For example, the bans placed by other countries on EU beef raised US exports of beef, meat and bone meal, and horsemeat, the latter to the EU, although not by as much as expected (Freeman, 2002, pp.357-358)

calling for the establishment of a European food safety agency, whose task would be to provide scientific advice on all aspects of food safety to both EU-wide agencies and to member states, and provide the central node in a network of cooperation between all relevant actors within the EU. Thus, in 2003, the EU launched the European Food Safety Agency, under DG SANCO, whose “farm to fork” philosophy is designed to guide the EU through any and all food safety-related crises into the future. While the EFSA has no legislative function, it is the filter through which all EU food safety decisions must pass. It has a powerful agenda-setting role within the EU, and its emphasis on developing authoritative scientific bases for political action – based on risk analysis and the precautionary principle – is likely to set the stage for future reforms of EU governance (Vincent, 2004, p. 517). Further, it very much represents a role the EU itself sees as critical to its identity as an effective supranational governance institution.

Specifically, against the background of this fundamental governance reform, the EU policy regime for handling BSE has itself gone through a number of different phases. First, the EU has shifted from viewing the epidemic as a contained threat (i.e. contained to the UK, an outlier member state in many respects) to one that has afflicted virtually all member states to greater or lesser degrees. Second, it is becoming apparent that the EU views BSE as a time-limited threat (despite the fact that the dimensions of the human epidemic are not yet known). Currently, the EU has, in essence, adopted a routine control and prevention regime to which all member states must adhere (but have done so to varying extents over the last decade or so). The EU has, since 2001, required testing of all symptomatic animals, as well as all animals over 30 months sent for slaughter, and has banned feeding of all mammalian proteins to all farm animals (SSC, 2001). Countries which find BSE are immediately subject to short-term intra-EU trade embargoes, and to subsequent careful monitoring and surveillance by the European Food Safety Authority. In July 2005, the Commission released a discussion document, “The TSE Roadmap” (COM(2005) 322 Final), which envisages how TSE control policy is likely to evolve over the medium (2005-2009) to long term (2009-2014) should current positive trends in overall TSE reduction in farm animals continue.¹³ Most recently, the EU has announced the lifting of final controls on UK cattle and beef exports to the rest of the Union.¹⁴ They admit the eradication scenario faces potential challenges – notably the possible emergence of TSEs in small ruminants, such as goats – but these discussions certainly represent a good deal of confidence in the EU’s ability to control and eradicate these diseases. Nonetheless, these actions have, so far, done little to convince the rest of the world to lift its embargoes on EU beef.

The US Response to BSE, 1988-2006

The US response to the emergence of BSE in the UK and then the EU makes an interesting comparison to that of the EU governing authorities. First, the US very clearly defined BSE as an external threat, and, until December 2003, when its first case was diagnosed, based its policy regime primarily on keeping the disease out of the country, with correspondingly weaker controls. Second, US authorities were concerned from the outset to avoid the mistakes made by their counterparts in the UK and EU, particularly in downplaying the risk to public health. Finally, unlike the EU, the US policy response involved several well-established agencies operating from the federal level (there is next to no state-level deviation from federal rules and standards laid out by the FDA and USDA). Although coordination among them remains an issue, there have been few calls for the sort of consolidation of food safety authority or fundamental

¹³ See http://europa.eu.int/comm/food/food/biosafety/bse/roadmap_en.pdf

¹⁴ “EU Lifts British Beef Ban”, *The Guardian*, March 8, 2006

reorganization that happened in the EU. In fact, domestic consumer response to the three cases of BSE that have been diagnosed in the US as of March 2006 has been remarkably muted, even non-existent, especially in comparison with the EU public. The major impetus for policy change in the US has, instead, come from federal authorities and from the US's trading partners – notably Japan – who have led calls for changes in basic US BSE control policies.

Starting in the late 1980s, the US took a three-step approach to controlling BSE and vCJD (O'Neill, 2005): first, prevent introduction, second, should introduction occur, prevent infection of large numbers of cattle, and third, prevent vCJD emerging in the human population. This led to the so-called "triple firewall" of import bans, surveillance and testing, and a ban on feeding most mammalian proteins to ruminants.¹⁵ As early as 1988, the USDA set up an inter-agency BSE working group. In 1989, the US banned the import of live cattle, feed and beef products from the UK (and any other country in which BSE might be found). In 1997 such imports were banned from all of Europe. Finally, the US acted within hours of the May 20 announcement by the Canadian government of the single BSE case to ban cattle and beef products from Canada.

Testing and surveillance began in 1990, with educational outreach to vets, laboratory technicians and beef producers. The US testing program focuses on "downer" cattle, or others showing unstable neurological symptoms, and only really started growing in 2002, when nearly 20,000 cattle were tested after slaughter. Feed bans started much later: in 1997, the USDA supported FDA regulations to prohibit feeding of "most mammalian proteins" to ruminants.

Yet, cattle and food are not the only aspects of vCJD prevention policy in the US. In 1999, the US Food and Drug Administration (FDA) recommended that people who had spent more than six months (in total) in Britain from 1980 to 1996 should not be allowed to give blood.¹⁶ In 2001, the FDA tightened donor deferral recommendations, lowering the time spent in the UK to three months, and indefinitely deferring donors who have spent five years or more in France from 1980 to the present, including US military personnel who had been based in Europe over the same period. US blood banks began implementing these recommendations in May 2002, and they came fully into effect on October 31, 2002.¹⁷ While the actual number of donors affected appears small, these restrictions have had a "last straw" impact on already tight supplies in the US: if some other blood demand or supply crisis occurs, the system is strained to breaking point (O'Neill, 2003). However, these measures, also in place in several other countries, appear to be fairly widely accepted, and certainly are not as controversial as BSE policy. An interesting feature of this approach is its highly precautionary nature: US actions were based on a study in which BSE was found to have been transferred through blood, based on a single sheep (Houston et al, 2000). So far, no humans are known to have contracted vCJD in this manner.

US policy towards BSE, and towards beef imports from the EU appears to be based less on a desire to protect US beef markets from external encroachment than on risk assessments of its vulnerability to BSE entering from outside the country. For one, the US imports relatively little beef, and has always relied more on production within North America (i.e. including

¹⁵ See "USDA Actions to Prevent Bovine Spongiform Encephalopathy (BSE)", May 2003, at www.aphis.usda.gov/lpa/issues/bse/bsechron.html

¹⁶ Scott Gottlieb, "FDA bans blood donation by people who have lived in UK", *British Medical Journal* (BMJ) Vol. 319, No. 7209 (August 29, 1999):535.

¹⁷ "Guidance for Industry: Revised Preventive Measures to Reduce the Possible Risk of Transmission of Creutzfeldt-Jakob Disease (CJD) and Variant Creutzfeldt-Jakob Disease (vCJD) by Blood and Blood Products", US FDA Center for Biologics Evaluation and Research (CBER), January 9, 2002 (<http://www.fda.gov/cber/bse/bse.htm>, accessed March 10, 2003), and Deborah Josefson, "US worried as restrictions on blood donors tighten", *BMJ* September 1, 2001, p. 469.

Canada).¹⁸ The study that provided the cornerstone of US BSE policy was commissioned by the FDA in 1998 and authored by the Harvard University Center for Risk Analysis (Harvard, 2001). Published in December 2001, this study has been the most influential in shaping official policy debates around BSE. It examined the likelihood of the "worst case scenario" in the US: that BSE emerges in US cattle (either from internal or external sources), spreads among the cattle population and enters the human population. The study developed a systematic model for studying various paths BSE might take to reach human beings. It took the position that in fact, the appearance of BSE in the US cattle population is quite likely on a very minor scale, but that it is next to impossible for it to become epidemic. It concluded, "in short, the US appears very resistant to a BSE challenge, primarily because of the FDA feed ban, which greatly reduces the chance that a sick animal will infect other animals. However, the effectiveness of the feed ban is somewhat uncertain because compliance rates are not precisely known" (Harvard 2001, p. 97). Thus, it focused primarily on technological and epidemiological factors, and getting the right policies in place, rather than on potential failures in implementation and compliance that could undermine these. Some of its popularity with the policy establishment lies in the fact that it affirmed the approach taken by the US government to date, and suggested few major reforms to existing practices.

Still, US policy towards BSE was heavily criticized by stakeholder groups, most especially consumer activist groups, who saw internal measures as being weak, fraught with loopholes, and subject to serious implementation problems (Rampton and Stauber, 1997). On the other hand, there has been little or no criticism of the external measures taken by the US, in terms of trade bans and blood donor deferrals.

Of course, this situation changed in December 2003, when test results showed a dairy cow in Washington state testing positive for BSE. Although domestic consumer reaction remained muted, USDA and FDA immediately began speeding up a process of policy reform already under discussion in the months since May 2003, when Canada announced its first case. On December 30, 2003, then-USDA Secretary Ann Veneman announced new measures, followed by the FDA on January 26. The USDA measures include banning all nonambulatory cattle from the slaughter process, measures to remove SRMs from meat entering the food chain, and moves to construct an adequate national system of animal identification (Sugarman, 2004a). The FDA also tightened feed rules significantly (Gilcrest, 2004). Finally, USDA announced an expanded cattle-testing program, one that necessitates the use of rapid testing techniques favored in Europe, but, until then, resisted by USDA. Cattle-testing will increase ten-fold, to 221,000 cattle annually. At the same time, the US is under pressure from leading trading partners both to expand testing further, and to introduce an effective cattle tracking and monitoring system, in order to trace any outbreaks to their source as quickly as possible.

Many of these new measures have been strongly disputed by the US beef industry, much more politically powerful than its EU counterpart. However, their implementation – albeit slow – is proceeding apace. As of early 2006, the US has restored trade relations with most of its erstwhile partners, and domestic consumption of conventionally-raised beef remains stable. BSE has, in effect, been far less of a crisis in the US than the EU, but has still triggered significant reforms in how beef is raised and processed. One of the most interesting features of the new BSE control regime in the US has been the extreme transparency adopted by authorities in the testing process – currently, potential positive results are announced to the media before they are finalized. Over the longer term, however, the US is clearly at a different stage compared with its

¹⁸ According to USDA figures, the US consumes roughly 13m metric tons of beef per year, but imports only 1.3-1.5 million metric tons of that quantity.

EU counterparts: it is only now entering the “routine control” phase of its policy regime, and has (publicly, at least) given little thought to the longer term. Although so far the US has apparently escaped an epidemic, it is not yet certain what the future trajectory of identified cases of BSE is going to be, and what the impact of finding tens, or hundreds of cases could be on the overall political landscape of US food safety politics.

Avian Influenza, 2004-2006

History and Recent Outbreaks

If the 1990s were marked by the emergence of BSE as a major global threat to human and animal health, leaving authorities scrambling to generate an adequate response, then the early years of the 21st century belong to avian influenza (AI, or bird flu), particularly the lethal H5N1 strain of highly pathogenic AI, which emerged in South East Asia in 2004 and has subsequently spread to the rest of Asia, Europe and Africa, generating fears of a human flu pandemic which could potentially kill hundreds of millions of people.

Like BSE, AI is a zoonosis – a disease that can jump from animals to humans. Its spread and impact, too, are magnified by practices of industrialized agriculture, under which animals are raised and kept in crowded, enclosed conditions, making them far more vulnerable to disease epidemics. At the same time, AI is not a new disease. Its incubation periods are far shorter, and while it can be spread through trade in live or recently killed birds, the main vector for the disease is thought to be migrating wild birds. Further, AI cannot be transmitted through eating cooked chicken. To date, humans infected by the disease are those involved in handling live birds.

Nonetheless, the story of AI outbreaks in recent years adds some important dimensions to our story of transatlantic relations and comparative EU and US responses to a potential epidemic, especially when examining institutional change within the EU. Going back to our typology of responses to, and points of intervention in preventing the global spread of diseases, this section will focus first on the EU response to a 2004 outbreak of non-H5N1 AI in the US, and second, on the extent to which the EU is adopting the US policy model in the creation of a new European Center for Disease Prevention and Control (ECDC). This section is necessarily a little more speculative than the previous one on BSE, as the H5N1 AI epidemic is still spreading rapidly, allowing little time for reflection. At this point in time, while it is safe to say that it has certainly posed a serious threat to poultry, the virus has not yet mutated to allow human-to-human spread.

Avian influenza (AI) can infect many sorts of birds, including chickens, turkeys, ducks, and geese, commonly raised for human consumption.¹⁹ It was first identified 100 years ago. Avian flu virus strains are categorized into two main forms: low pathogenic (LPAI) and highly pathogenic (HPAI). LPAI is by far the less dangerous of the two, rarely fatal to infected birds, and it does not infect humans. However, it is known to rapidly mutate, especially if left unchecked, into HPAI. Symptoms include depression, decreased food consumption, lower egg production and respiratory problems. Once detected, poultry producers are required to clean and disinfect farm buildings, and birds imported into the US are tested for foreign strains of the virus. It is primarily spread through bird to bird contact, and indirect contact with contaminated equipment and materials. Highly pathogenic AI is, by contrast, extremely dangerous to birds and

¹⁹ For information on avian flu, see http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_ahavianflu.html and http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_ahlpai.html, and WHO Avian Influenza Fact Sheet, 15 January 2004, at http://www.who.int/mediacentre/factsheets/avian_influenza/en/

to humans. Human infection from HPAI is relatively recent, suggesting that the virus has mutated. It primarily affects people who come into close contact with infected birds. In 1997, 18 people in Hong Kong were infected in the course of an HPAI outbreak, of whom 6 died. Hong Kong's entire poultry population, around 1.5 million birds, was culled in three days. HPAI viruses strike quickly, and are far less vulnerable to standard treatments than LPAI viruses, and therefore travel more easily, with more devastating effects. They are thought to originate from migratory wildfowl, which form the virus's reservoir.

Between 1959 and 2003, there were only 21 recorded outbreaks worldwide of HPAI, mainly in the Americas and Europe.²⁰ In the case of one outbreak, in the US in 1983-84, the virus began with relatively low mortality, but within 6 months was killing nearly 90% of infected birds. 17 million birds were culled at a cost of nearly \$65 million. Another, in Mexico, broke out in 1992 and, due to lack of prompt control measures, lasted until 1995. The 1997 Hong Kong outbreak was the first known instance of avian flu being contracted by humans. The most recent outbreaks, which began in Asia in 2004 proved even more deadly (mortality rates of 60 and 70%, cf. 30% in Hong Kong in 1997), alarming officials at the speed of travel of the virus, and its possible mutations.²¹ Ultimately, the major fear officials hold about avian flu is that it could generate a global flu pandemic, similar to the 1918-1919 flu outbreak, which is estimated to have killed 40-50 million people worldwide (Kolata, 1999).²²

The early months of 2004 saw one major and one minor outbreak of HPAI around the world. The combination of these two outbreaks, whose roughly concurrent timing was more than likely a coincidence, lead to a strong reaction from the international community. The major outbreak of HPAI (H5N1 strain) occurred in East and South East Asia. First reported in South Korea in December 2003, cases were subsequently confirmed in Cambodia, China, Indonesia, Japan, Laos, Thailand and Vietnam. Vietnam suffered the worst outbreak - with at least 14 human deaths (out of 19 cases - as of mid February), outbreaks in more than 400 separate locations, and a cull of 23 million birds.²³ Thailand reported 5 deaths.²⁴ International and national officials swung into action. The WHO Global Influenza Surveillance Network, the FAO, and ASEAN all took on major roles in helping stem the spread of the disease. However, the WHO noted that "the present outbreaks in poultry are historically unprecedented in their geographical scope, international spread, and economic consequences for the agricultural sector".²⁵ Many small and backyard poultry flocks were affected, and 100 million birds were killed or destroyed in the first two months of the outbreak, although compensation for farmers was minimal.

None of these measures halted the spread of this particular epidemic. As of March 2006, the H5N1 virus had been found in birds across Asia, Africa and Europe. The first outbreaks in the European Union were identified in wild swans in Italy, Greece, Germany and Austria; cases have subsequently been found in France and across Central Europe.²⁶ Of the 186 human cases diagnosed in eight countries as of late March 2006, 105 patients have died (World Health

²⁰ World Health Organization, "Avian Influenza and Human Health: Report by the Secretariat for the 114th Session of the Executive Board", April 8, 2004, at http://www.who.int/gb/ebwha/pdf_files/EB114/B114_6-en.pdf

²¹ Jane Parry, "Mortality from avian flu is higher than in previous outbreak", *British Medical Journal*, February 14, 2004, p. 368.

²² Amy Kazmin, "UN experts fear global spread of bird flu", *The Financial Times*, February 6, 2004, p. 8.

²³ BBC News, "Mapping the bird flu outbreak", February 20, 2004.

²⁴ Parry, "Mortality from Asian Flu", *BMJ*

²⁵ World Health Organization, "Avian Influenza and Human Health", op. cit., p. 2

²⁶ BBC News, at <http://news.bbc.co.uk/2/hi/health/4531500.stm>

Organization).²⁷ An estimated 200 million birds have died as a result of the outbreak (Altman, 2006).

H5N2 Avian Influenza in North America, 2004: The EU Responds to a Specific Threat

The second, more minor outbreaks of HPAI occurred in North America: in Texas and in British Columbia, both reported in late February 2004. The US states of Delaware, Maryland New Jersey and Pennsylvania were already under surveillance, due to an outbreak of LPAI there earlier in the month, which was brought under control after the slaughter of at least 86,000 birds.²⁸ Authorities believe this infection, which started in Delaware, originated in a live animal market in New York City. Then, on February 20, a case of HPAI turned up on a small farm in Texas - the US's first case since the 1983-84 outbreak.²⁹ A different strain of HPAI than the one that appeared in Asia (H5N2 rather than H5N1), the chickens did not exhibit the usual symptoms of HPAI, and only further testing revealed the nature of the strain. Immediately, the Texas flock was culled and quarantine established. While it was possible that the chickens were infected by wildfowl, it was also possible they had been infected at a live market in Houston.³⁰

Right away, the EU and many other countries suspended imports of eggs, poultry and poultry products from the US.³¹ The meaningful part of this ban is that on egg imports, which accounted for about one-quarter of total EU egg imports, or about 9 million eggs, worth \$20 million annually, and on live chicks.³² As *Food Chemical News* points out, "the poultry meat ban is academic, because the EU already refuses exports on the grounds that American processors use chlorine to sanitize carcasses".³³ Although the EU recognized that the Texas strain was likely not as dangerous as the Asian version, the EU justified its decision on the basis of risk posed to European flocks. The suspension was set for an initial period of 30 days, subject to review. On March 9, 2004, authorities found HPAI among avian flu cases in the Canadian province of British Columbia, and the EU imposed a similar ban on Canadian exports of poultry.³⁴

One month later, the European Commission's Standing Committee on the Food Chain and Animal Health met to consider the North American ban, which was partially lifted.³⁵ The EU left in place a limited ban, on areas of each country in which the HPAI outbreaks occurred, namely the entire state of Texas, and large parts of British Columbia, applicable until August 23,

²⁷ Human cases of AI have been found in Azerbaijan, Cambodia, China, Indonesia, Iraq, Thailand, Turkey and Vietnam (March 24, 2006).

²⁸ James Dao, "Bird Flu has Farmers Jittery", *The New York Times*, February 16, 2004, p. A12.

²⁹ Joan Murphy, "Avian flu hits Texas; live bird markets likely culprit", *Food Chemical News*, March 1 2004, pp. 24-5.

³⁰ Murphy, "Avian flu hits Texas", op. cit.

³¹ Commission Decision 2004/187/EC. See "International Roundup: countries respond to avian flu outbreaks", *Food Chemical News*, March 1, 2004, p. 25. Other countries, including Russia and Hong Kong had already banned imports from Delaware, although technically, LPAI is not a "reportable" disease according to international guidelines.

³² The EU imports around 450,000 day-old-chicks from the US annually, more than half its imports (BBC News, "EU suspends US poultry imports", February 24, 2004).

³³ "International Roundup", *Food Chemical News*, March 1, 2004, p. 25.

³⁴ In the course of dealing with this outbreak, BC authorities ordered the slaughter of 19 million birds; this appears to be far more than in Texas ("New strain of Avian Flu found in BC", *The Toronto Star*, May 12, 2004.)

³⁵ See http://www.europa.eu.int/comm/food/animal/diseases/controlmeasures/avian/index_en.htm, and "Avian Influenza (AI) - Response to Outbreaks in Asia, Canada and the US in 2004, Chronology of Main Events and List of Decisions Adopted by the Commission", as of 21 April, 2004, at http://www.europa.eu.int/comm/food/animal/diseases/controlmeasures/avian/ai_chrono_21-04-04.pdf

2004, when all restrictions were lifted.³⁶ In announcing this decision, European Health Commissioner David Byrne was quoted as saying, "this demonstrates the proportionality and flexibility of the EU's decision-making capacity based on risk analysis".³⁷ As 15% of the poultry in Texas (the US's sixth largest poultry producing state) is exported, this imposed some significant costs on its poultry industry.³⁸

H5N1 Avian Influenza: The EU and US Respond to a Generalized Threat

As the H5N1 strain of AI spread around the world in 2004-2006, governments and international organizations (notably the WHO and the OIE) began scrambling to formulate responses to a twin threat: to commercial and domestic poultry operation, and to human health. In the latter case, it has been necessary to address both the health of poultry owners and workers, and the more nebulous possibility that the virus could mutate to spread from human to human. From the outset, this outbreak of AI has been addressed on an emergency footing. Actions taken around poultry include the culling of infected flocks, and measures to prevent exposure in currently healthy flocks (e.g. keeping them indoors; vaccination; preventing export from infected areas and countries). Many countries have, following WHO and OIE guidelines, established educational and outreach programs to help citizens (farmers or otherwise) recognize and report signs of the disease. Vigilance is high. In terms of human health, the race is currently on to find appropriate treatments for human victims, and to identify, manufacture and stockpile appropriate vaccines and treatments for a possible outbreak. The level of alarm in the popular press about a possible pandemic is high, but the health establishment is split about the probability of its occurrence.³⁹ All experts, however, agree that the speed and distance of travel of such a virus around this globalized world would both be far higher than in past epidemics.

In both the US and the EU addressing the threat of H5N1 has engaged agencies across human health, agriculture and wildlife agencies. In the US, the USDA (APHIS), the CDC, the National Wildlife Service, and the FDA are all engaged in the effort to prevent, or minimize, an AI outbreak. In the EU, in addition to the EFSA, the AI epidemic is the first major test for its new European Center for Disease Prevention and Control.⁴⁰

The ECDC, based in Sweden, near Stockholm, opened for business in May 2005, with an initial staff of 10, under the leadership of Zsuzsanna Jakob, formerly Hungary's top public health official.⁴¹ Its mandate is to monitor and control the spread of infectious disease across the EU and neighboring states, in essence coordinating and expanding an existing network of surveillance and informational agencies across the member states (MacLehose et al, 2002). It will take over the EU's Early Warning and Response System on infectious disease, and provide scientific advice and training to member states. By 2010, the ECDC is expected to employ 300 staff, with an annual budget of 90m Euros (Jack, 2005). As an agency, it has been compared to

³⁶ APHIS, Avian Influenza Trade Ban Status as of 12-27 04, available at www.aphis.usda.gov/lpa/issues/ai_us/ai_trade_ban_status.html

³⁷ Stephen Clapp and Steven Lewis, "Flu-related restrictions eased on North American poultry imports", *Food Chemical News*, April 5 2004, p. 25.

³⁸ Lianne Hart, "Bird Flu Threat Shuts Live Markets", *Los Angeles Times*, February 29, 2004, p. A20

³⁹ The seriousness with which the Western media is taking the avian flu threat can be seen by looking at the websites of major news organizations (CNN, the New York Times, BBC, NPR, The Guardian, Canada's CBC, etc.), all of which have "in-depth report" sections on the disease. On splits in the health establishment on the likelihood of a human pandemic, see the articles in a special Science section of the New York Times, March 28, 2006.)

⁴⁰ <http://www.ecdc.eu.int/>.

⁴¹ Stephen Clapp, "EU authorizes Center for Disease Prevention and Control to begin next year in Stockholm", *Food Chemical News*, April 12, 2004, p. 23

the US's CDC (Wigzell, 2005; EPHA, 2004).⁴² However, it differs from its original model in significant ways. First, it does not have anything like the same size or powers as the CDC. Instead it is designed (rather like the EFSA) to be a central point in a network of related agencies and organizations, particularly the national bodies of the member states. It thus takes a more decentralized approach than its US equivalent (Jack, 2005), providing advice and information rather than taking control of disease situations. It also does not (at present) have plans for its own laboratories, another function to remain in the domain of the member states. In May 2004, when the ECDC was first proposed, authorities did not expect it would be tested so soon. It remains to be seen how well it will cope with a potential flu outbreak among the EU's human population. However, the founding of the ECDC, along with the EFSA reflect the EU's current philosophy of supranational governance when it comes to issues of scientific knowledge and advice across the 25 member states. Both agencies also reflect a degree of policy convergence – albeit only up to a point, and conditioned by the EU's political and institutional context – with the US.

Analysis

1. The Transatlantic Relationship Story: Trade Embargoes and Risk Mitigation

Trade in live animals and animal products, and in agricultural commodities more generally between the US and the EU has been fraught with conflict for a long time now. However, and perhaps counter to arguments made elsewhere (e.g. Freeman, 2002), trade embargoes in response to infectious livestock diseases have caused little inter-governmental conflict, although they are not cost-free.

Trade embargoes in response to animal diseases in foreign countries may perform any of three functions. First, they can serve as a precautionary measure to protect domestic livestock and public health. Second, they can be a protectionist measure, put in place to protect domestic markets from foreign encroachment. Third, they can be a tool to get another country to change its policies in handling a given disease. In this way, they are used to mitigate negative effects (and risks) of economic interdependence over the longer term.

In the context of transatlantic trade relations, the US response to BSE in the EU, and the EU response to HPAI in the US in 2004 are most pertinent. Each of these outbreaks generated different trade embargoes. The US responded to BSE in Europe with a complete ban on imports of beef and beef products from the UK (1989) and the EU (1997). These bans remain in force to this day. The EU ban on poultry products and eggs from the US was far more targeted. Designed to be temporary (based on monthly reviews), in April 2004, the ban was limited only to the state of Texas, where the outbreak of HPAI occurred.⁴³

There is some dispute over the ultimate purpose of trade bans in response to disease outbreaks. Following the arguments posed by Kastner and Powell (2002), the US and the EU have to balance domestic concerns (industry and consumers) with international commitments to freer trade. Conventional wisdom has it that trade bans are reactive, and defensive policy instruments for risk mitigation - and, blunt instruments when it comes to creating incentives for policy change over the longer term. Critics argue, too, that such bans tend to benefit domestic

⁴² Compare mission statements – ECDC: “assess and communicate current and emerging threats to human health from communicable diseases”; CDC: “To promote health and quality of life by preventing and controlling disease, injury and disability” (EPHA, 2004).

⁴³ The EU was not directly involved in the ban on US beef exports in 2003, as all trade in beef and beef products had effectively halted due to the hormones dispute. However, other countries imposed strict conditions under which the ban on US beef exports would be lifted, which USDA is currently addressing or negotiating.

producers more than they benefit public and animal health, and, in effect, constitute non-tariff barriers to trade. This discussion disputes both these points. First, I argue that the US reaction to BSE in Europe is more accurately seen as precautionary (protecting human and animal health) rather than protectionist. Second, the case of the EU's selective, and targeted embargo of US poultry exports in response to avian flu demonstrates a particular use of trade embargoes: to generate positive incentives for policy change in the target country under particular conditions - namely, when domestic consumer pressure for such change is not present. Although not directly relevant to this chapter, Japan's ban on American beef following the US's first case of BSE presents another example of this sort of targeted, conditional trade embargo.

In general, the US is not noted for taking a "precautionary" approach - in the sense of acting either in the context of significant uncertainties, or going above and beyond what prevailing evidence might suggest - in leading environmental and food safety issues of the day. However, even countries such as the US, which are not generally known for their advocacy of the precautionary principle, tend towards precautionary action particularly when human health is at stake (Wiener and Rogers, 2002). Further evidence in favor of US precaution, rather than protectionism, lies in the lack of international dispute of its actions - both international organizations and the EU have accepted this embargo. Second, US authorities have justified their decisions strictly, and effectively, in terms of threats to human and animal health.

Certainly, the US experienced some benefits from the worldwide embargo on EU beef products, and the politically powerful US beef industry favors them. However, a close examination of the debate in the US policy establishment, where policies were fairly clearly justified on the basis of scientific risk assessments (regardless of whether everyone agreed with these assessments), and adding in the ban on blood donors, it is more likely that these measures were designed primarily to protect human and animal health against the emergence of BSE and vCJD within the US. One may argue that the framing of BSE by the US policy establishment as a purely external threat does go some way to protect the US beef industry. By denying possible internal sources of infectivity, and not addressing existing loopholes in policy at feedlots and slaughterhouses, consumer advocates argued that USDA was effectively denying different sources of risk. Second, it may be that the BSE trade bans opened the door for later disputes around GMOs and beef hormones, which the US certainly has argued in WTO tribunals are protectionist measures on the part of the EU. However, these measures are still being adjudicated, and it remains the case that no BSE or avian flu bans have been challenged under international trade law.

International trade law permits trade embargoes when large-scale outbreaks that will result in huge economic costs are possible. Food safety, animal and plant health standards are regulated under the World Trade Organization's Agreement on Sanitary and Phytosanitary Measures (SPS Agreement). Under this agreement, countries are able to set their own safety and health standards, but they "must be applied only to the extent necessary, must be based on scientific principles, and must not be maintained without sufficient scientific evidence".⁴⁴ So far, there have been no challenges to these particular embargoes under GATT/WTO. Thus, there is a high degree of national (or, in the case of the EU, supranational) autonomy in this area. However, that does not mean it will remain indefinitely free of conflict.

A further argument against the notion that trade embargoes based on animal diseases are more protectionist than precautionary is that the main beneficiaries are frequently third parties who are unaffected by the disease. Latin America has been the big winner in both the recent BSE and avian flu outbreaks, while the Australian beef industry has benefited immensely from

⁴⁴ Kennedy, 2000, p. 84 n 169, cited in Freeman, 2002, p. 360.

the closure of Canadian and US beef exports.⁴⁵ Losers, on the other hand, include the farming community in the embargoed countries (who often face bitter battles with the government over compensation) and consumers in the countries imposing the embargo, who often have to pay higher prices for beef or poultry products.

Given the blanket nature and permanent status of the US trade ban on the EU because of BSE, I would also argue that it was not designed to change EU behavior. This can be seen clearly by comparing the more targeted and review-based ban on US poultry products which the EU put in place in 2004, which did appear to be targeted at changing US behavior and policy.⁴⁶ It was quite clearly based on sets of conditions the US had to meet in order for it to be lifted, and subject to periodic review. One possible motive behind this set of actions on the part of the EU was a fear that US consumers lacked the concern to push for change.

Of the two North American areas affected by the EU poultry ban, British Columbia, through a massive slaughter (1.5 million birds), inspection and disinfecting program, made better progress in eradicating the disease, and recovered from the outbreak.⁴⁷ Texas struggled more with meeting EU conditions, and as late as June 2004, a small flock at a farm in Hopkins county was found to be infected with a strain of LPAI, and destroyed.⁴⁸ USDA Began putting together funding for a national LPAI prevention program, which is endemic to the US - which will be able to detect the virus before it mutates into HPAI.⁴⁹ Again, trade concerns appear to be behind many of these measures, which include a high degree of transparency.⁵⁰ These measures have subsequently been overtaken by preparations against an outbreak of the H5N1 strain of AI, but do demonstrate that US agencies were already taking action against AI in advance.

This use of trade embargoes - as a short-term, targeted tool in order to change specific policies and practices in the target country - has several advantages. First, it avoids large-scale costs, and therefore the likelihood of worsened relations over the longer term between the parties involved. Second, as a practice it is generally more in harmony with international trade and food safety regulations. Third, and perhaps more controversially, it is a way for one country, or group of countries to influence domestic politics and practices of their trading partners. This is seen as a particularly useful tool for trading partners of the US - including the EU and Japan - in cases where they are concerned about the relative absence of concern on the part of most US consumers. Further, this has proven to be a relatively successful tool in recent cases of BSE and avian flu, and appears to have inflicted little damage on transatlantic relations more generally. Whether or not these sorts of trade embargoes can be over-exploited is yet to be seen. Relevant authorities in the US and the EU are giving high priority to the task of preventing the introduction and spread of animal diseases such as BSE or avian flu, recognizing the complexities of controlling trade and the actions of myriad farmers and producers across different jurisdictions. In other words, they appear to be accepting that export/import bans are not going to be wholly effective on their own in preventing disease spread, or, if it will, that costs to consumers and producers might be too high to bear politically.

⁴⁵ Steven Lewis, "Latin American exporters seek to profit from bans on US beef", *Food Chemical News*, January 12, 2004, pp. 28-29.

⁴⁶ A parallel example can be seen in Japan's imposition of conditional trade bans on US beef and beef products in December 2003, following the first US case of BSE.

⁴⁷ Alex Binkley, "BC poultry farmers start over after avian flu outbreak", *Food Chemical News*, July 5, 2004, p. 17.

⁴⁸ Texas Animal Health Commission News Release, "Avian Influenza (AI) Detected in Small Flock in Hopkins Country", June 23, 2004.

⁴⁹ USDA News Release, "USDA funding approved for avian influenza prevention program", May 12, 2004, at <http://www.usda.gov/Newsroom/0191.04.html>

⁵⁰ Hart, "Bird Flu Threat Shuts Live Markets", *LA Times*, February 29, 2004

However, while steps on both sides have been taken to reinforce domestic defenses and coordination in the event of an outbreak, less has been done to develop cooperative mechanisms that would allow the US and EU to ward off potentially damaging disease-related trade embargoes in advance. In other words, the two economic superpowers are following "separate but parallel" tracks in terms of regulatory policy, but paying less attention to developing joint, long-term solutions to preventing the transmission of livestock diseases across national borders. In July 1999, the EU and the US signed a veterinary agreement, whose aim was, according to a European Commission press release, to "facilitate trade in live animals and animal products between the EU and the US by establishing a mechanism for the recognition of equivalence of sanitary measures operating in the two regions" (Freeman, 2002, p. 366). The negotiations for this agreement were very contentious, based in part on different conceptions of risk and what counted as valid assessments, in the light of already-existing conflicts. As Freeman notes, this agreement essentially validated the existing status quo, and has apparently generated little analysis or excitement.

2. The Comparative Story

Examining, particularly, their respective responses to BSE, but also their more nascent responses to the H5N1 strain of bird flu yields some interesting differences and similarities between the EU and the US, both in the development of "on-the-ground" strategies to combat the disease, and in the development or reform of related governance institutions.

It should first be pointed out that countries tend to act in remarkably similar fashions in an initial outbreak crisis – either using severe measures to get the disease under control within their own borders, or reinforcing their border defenses and imposing trade embargoes to keep the disease out. It is in how countries react to a potential outbreak over the longer term, learn to manage a disease that has become endemic, or undertake deeper government or institutional reforms.

To return to Figure 1, and using BSE as an example, the US and EU of course differed in terms of how and when they experienced "mad cow" disease. In the EU, the epidemic began within its borders, and spread across the continent over the course of a few years. While the US began taking defensive measures in the late 1980s, it was not forced to reexamine its BSE control regime until late 2003, despite heavy criticism from several consumer groups and the Government Accountability Office (GAO, 2002, Rampton and Stauber, 1997). To date (March 2006), only 3 cases of BSE have been officially diagnosed in the US, compared to many thousands across Europe. To some extent, the perception held by the US policy establishment that BSE was a minor, and external threat (a view backed by important scientific studies) helps explain what might be termed a "selectively precautionary" response, focused primarily on keeping the disease out, and minimizing the possibility of an "internal" outbreak. However, up until 2003 (and even to some extent afterwards), the US government has avoided the widespread criticism leveled at the EU after its first and inadequate response to BSE (Vincent, 2004). Still, since then, the EU and its neighbors have moved to a strong routine control model to which member states adhere (and which they do so, though not without many initial problems). It is currently contemplating how it can move to eradicate the disease, and thus ramp down its control regime over time.

A focus on the timing of, and vulnerability to diseases such as BSE and AI, does not, however, capture some of the important aspects of this comparative study. One must also look to the institutions and actors involved in driving and formulating particular responses, and at the longer term institutional outcomes. While there is not space here for an in-depth study of

comparative regulatory structures, styles and participation in these two regions, a few observations are in order.⁵¹

Most importantly, governance institutions and powers at the “federal” level differ across the EU and US. The US centralizes control over food safety and animal and public health at the federal level. US states have very little ability to determine their own standards, or to allow their individual standards to exceed federal ones. These regulatory powers are, while centralized in Washington DC, spread out over a wide array of federal agencies and subagencies (USDA, FDA, CDC, Wildlife, APHIS). Under these conditions, a central problems faced by the US government is one of inter-agency coordination and cooperation, rather than one of institution-building (despite come calls for change – see Taylor, 2004). The EU, by way of comparison, has traditionally (and remains) far more decentralized. Member state governments bear the ultimate responsibility for ensuring the health and safety of their citizens (and livestock). But the EU has long struggled with developing the content and form of a Union-wide public health establishment (Cucic, 2000 Randall, 2000), as well as a coordinated response to biosecurity threats (Sundelius and Grönvall, 2004). The two agencies established in the wake of BSE and in advance of H5N1 avian flu, the EFSA and ECDC, reflect this context. First, both agencies were established specifically as providers of authoritative knowledge, not as rule-making, political authorities designed to supplant the authority of the member states. Second, both integrate broad policy areas – to that extent, it seems that EU authorities are seeking to avoid the coordination problems that have hampered the US. In any event, Brussels’ response to BSE and other transnational epidemics cannot be separated from its status as an emerging form of supranational government, endeavoring to establish its powers and legitimacy to its members and to the outside world. Such efforts in the context of areas of deeper integration – the establishment of a single currency, constitution-building – have met with differing levels of success. The establishment of EU-wide information and coordination agencies around issues of health and food safety reflect yet another facet of the EU’s “state-building” process.

3. The Policy Diffusion Story

The final aspect of this story concerns the extent to which any transatlantic policy diffusion or learning is evident in how the US and the EU have responded to AI and BSE. Have particular policies or institutional structures crossed the Atlantic? Has either party learned from the other’s experience?

As has already been mentioned, in the “crisis” stage of a disease outbreak, authorities tend to follow similar response patterns. In part following past experience, and in part following directives from, say, the WHO, such convergence is not surprising. Yet, stepping back and looking at longer-term patterns of behavior and institutionalized responses, the US and EU are very far from achieving convergence in responding to BSE and AI, and it is unlikely that is an official goal, despite the possibility that harmonized structures of risk regulation (and mutual recognition of such) might help avoid, at least, the economic disruption of a disease outbreak in one country or the other. As is the case with general security problems or concerns, states remain committed to protecting their own populations when under threat from a disease like BSE or AI. National authorities are more likely to sacrifice economically, and remain reliant on their own

⁵¹ Two aspects important for future research are the role of industry and consumer groups in the respective policy making processes, and the role of public opinion. Available evidence suggests that on the whole, the US public tends to be far less concerned about BSE than their EU counterparts (e.g. Vogel, 2003), but more data is needed.

institutions and policies, than take a chance that could increase the vulnerabilities of their citizens.

Nonetheless, it is possible to identify learning and policy diffusion across the Atlantic, at least in two respects. First, the US authorities learned from the rather disastrous mistakes made by the UK government, and by European authorities on the initial outbreak of BSE. Their policies addressing BSE have been transparent from the outset, and they recognized it as a threat to both cattle and human health early on. US authorities have also done a better job of communicating their policies and programs to stakeholders and to the public at large. These levels of transparency and communication have, of course, not satisfied critics of policies pre and post December 2003, but the American public seems assured that their government is not letting them down (O'Neill, 2005).

Second, the creation of the EFSA and ECDC are fairly clear examples of transatlantic policy diffusion. Modeled on their US equivalent agencies – the FDA and CDC – they nonetheless demonstrate some clear differences. Their powers are less extensive, designed to function in a system where a good deal of power and governing capacity remains concentrated at the member state level. Yet, their commitment to providing objective scientific advice (authoritative knowledge) in the event of threats to animal or human health, and to food safety mirrors the missions of their US partners. It is still too early to tell, however, how well these agencies will perform their designated functions, and how they will evolve in the future.

Conclusion

To conclude, outbreaks of livestock diseases – even those with potentially severe impacts on human health – have not been a major source of tension in the transatlantic relationship. This does not mean that they have not caused serious economic and other costs for both partners, as well as causing major trade disruptions – but rather, that the two partners have not seriously disagreed over their respective approaches (and trade bans placed on one by the other) when either has experienced an outbreak of BSE or avian influenza.

Both take such outbreaks very seriously. Even the US approach to BSE could be characterized as precautionary in several respects, and both the US and EU are putting strong measures in place to counteract a potential global human flu pandemic. Still, it is probably most appropriate, from the evidence presented in the BSE and AI cases, to argue that they are each following “separate but parallel” tracks in managing the risks of transboundary livestock or human diseases. Further, their particular responses, while partially explained by their individual experiences of the diseases, have also been conditioned by wider institutional priorities – notably, the EU’s “state-building” project. Mutual coordination of policies (joint risk management strategies) is rare. This perhaps reflects the highly “nationalist” approach the European countries and the US have historically taken when faced with a direct threat to health security within their borders.⁵² It remains to be seen whether these practices will change, or whether we will see any further convergence in policy institutions if such threats of transboundary disease intensify over the coming decades.

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⁵²Although both are working with the WHO and other agencies to build response capacity to AI in poorer countries

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