

**The 'ins and outs' of biosecurity: Bird flu in East Anglia and the spatial representation of risk**

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## **The ‘ins and outs’ of biosecurity: Bird flu in East Anglia and the spatial representation of risk**

### **Introduction**

The threat to animal and human health posed by avian influenza has been in the news since the end of 2004 (Nerlich and Halliday 2007) and has been of considerable concern to policymakers, journalists and the public. Fears of a flu pandemic in humans, if the animal virus mutates, increased in the summer of 2005 when both Russia and Kazakhstan reported outbreaks of avian influenza or so-called bird flu in poultry in late July which were confirmed as H5N1 in early August. Outbreaks in both countries were attributed to contact between domestic birds and wild waterfowl via shared water sources. In August 2005 *The Times* published an article entitled “Norfolk a bird flu landing place?” in which two well-known experts, Professors John Oxford and Hugh Pennington warned that Norfolk could be at risk from migrating birds (*The Times*, 26/08/05). The autumn of 2005 saw heightened anxiety about bird flu throughout the world and this continued in early 2006 when bird flu outbreaks occurred in Turkey, France and Germany and when a Whooper swan infected with H5N1 was found in Scotland.

In an era where heightened sensitivity to risk dominates policymakers’ agendas (Beck, 1997; 1999), public policy discourse has been deemed to be increasingly preoccupied with ‘securitization’ (Ibrahim, 2005; Adamson, 2006). Security measures are justified by reference to threats from outside the boundaries of the nation state (Hyndman, 2007; Bigo, 2002). This particular theme often centres upon a rhetorical contrast between the ‘outside’, which is deemed to be dangerous, and the ‘inside’ which is locked down tightly, secured and safe (Chilton, 1996). In this formulation, “practices of border control do not simply defend the ‘inside’ from the threats ‘outside,’ but continually produce our sense of the insiders and

outsiders in the global political economy” (Amoore and de Goede 2005: 168). These concerns have also been major topics for linguistic investigation at the interface between metaphor analysis and security policy research (Charteris-Black, 2006; Chilton, 1996; Thornborrow, 1993). As Charteris-Black has pointed out with regard to Chilton’s research (2006: 575):

Chilton argues convincingly for the importance and pervasiveness of spatial metaphors in relation to political discourse. He argues for a container schema in which ‘what is inside is close to the self, and what is outside is also outside the law’. He also refers to ‘a spatial containment schema which grounds conceptualizations of one’s country as a closed container that can be sealed or penetrated’ [...].

These concerns with securitization and the distinctions between inside and outside are equally prominent in discussions of movements of non-human life, including poultry and disease organisms.

Bird flu arrived in Norfolk in April 2006 in the form of the low pathogenic strain H7N3. A year later, in February 2007, it returned, this time to Suffolk, in the form of the highly pathogenic strain H5N1 which can pose a risk to humans. Both outbreaks were brought under control relatively quickly but raised questions about the transmission routes of the virus, the causes of the outbreaks and biosecurity, which can refer, especially in the UK and since the outbreak of foot and mouth disease (FMD) in 2001, to simple cleansing and disinfecting, but also to powerful systems of surveillance (Donaldson and Wood, 2004).

The outbreaks also stimulated debates about who was most at risk and who was the most likely transmitter of bird flu and therefore to blame for the outbreaks – ‘outdoor’ flocks (including free range farms and backyard flocks) or ‘indoor’ flocks (intensively reared

poultry, including barn and battery flocks, for example). On the one hand wild birds crossing national boundaries and spreading the virus to outdoor flocks were regarded by many as the most logical transmission route for the virus. The British Poultry Council says, for example that “[o]utdoor flocks under free-range and organic systems are at serious risk of infection” (British Poultry Council 2001). On the other hand the second outbreak, which occurred in a factory farm, made some question the ‘myth’ that wild birds are the main vectors of virus transmission and argue that intensive poultry farming, long-distance poultry transports and the global trade in poultry products are mainly to blame for the spread of bird flu. The Soil Association, the UK’s leading environmental charity promoting “sustainable, organic farming and championing human health”, contends for example that “the spotlight” should be “...on industrial-scale globally-traded intensive poultry production” (Soil Association, 2007). The issue of bird flu and biosecurity therefore divided people not only along national and international lines, but also along ideological and financial lines (big companies/small farmers; organic/intensive farming).

This article examines how one local newspaper, the *Eastern Daily Press* (EDP), reported on the two outbreaks and how various issues relating to risk, blame, space and biosecurity were discussed. In the following we shall first provide an overview of the two outbreaks, introduce the concept of biosecurity and then go on to discuss our methods and results.

## **The two outbreaks – an overview**

### Norfolk 2006

According to a detailed epidemiological report issued by the Department for Environment, Farming and Rural Affairs (DEFRA) (2006), three holdings, consisting of two free range layer chicken flocks (Whitford Lodge farm at North Tuddenham, near Dereham (owned by

Banham Poultry), Norwich Road and Mowles Manor Farm, owned by Geoffrey and Simon Dann) and one broiler breeder chicken flock (owned by Banham Poultry) were infected with low pathogenic avian influenza type H7N3 in April 2006. No other evidence of infection was found in any associated premises, or any other potentially exposed premises within 3 km of these holdings. Infection is believed to have arrived at the first infected premises, between 17 and 20 March 2006. The source is believed to have been wild birds, which have direct access to this outdoor flock. Infection is believed to have arrived at the second infected premises between 2-5 April 2006 with transmission occurring through shared personnel or equipment. Infection is believed to have arrived at the third infected premises (an indoor flock), and the first to be reported, between 15 and 18 April 2006 (DEFRA, 2006).

As the epidemiological report pointed out, the mortality rate at the indoor broiler farm was high and therefore aroused suspicion, whereas mortality at the free-range outdoor farms had been relatively low. This sparked renewed debate as to whether free-range poultry is more resistant or can tolerate viruses better than intensively farmed chicken. Based on the available evidence, transmission occurred possibly by fox carriage of carcasses and introduction of virus to the housed birds through fomites (inanimate objects or substances capable of spreading infection) spread on contaminated footwear. The report of DEFRA's investigation concludes that biosecurity measures should include preventing the predation of dead birds by free-living species such as foxes and advocates not practicing the deliberate feeding of foxes with poultry carcasses. This last conclusion of the report provoked debate in the Norfolk farming community along the lines that no farmer would really be stupid enough to feed dead chicken to foxes, which would thereby be attracted to the premises. Dann, owner of the free-range farm, poured scorn on the suggestion in DEFRA's final report that the infection had been spread to another farm in North Tuddenham by a fox taking an infected

carcass from their farm - saying that in five weeks of investigation animal health workers were unable to find a single dead chicken on the premises. (EDP, 20/10/06)

Various surveillance and restriction zones were set up and culling began on 27 and 30 April. Restrictions were lifted on 26 May. It took until October 2006 for farms to be fully restocked.

### Suffolk 2007

The full epidemiological report published by DEFRA on 20 April 2007 (2007a) found that a highly pathogenic H5N1 avian influenza virus was confirmed in a turkey finishing unit in Holton in Suffolk owned by Bernard Matthews on 3 February following increased mortality and suspicion of disease reported on February 1. As a result the necessary arrangements were made for a full epidemiological investigation. This started on 3 February when further virological examinations revealed the virus to be of Asian lineage and molecular genetic studies revealed that the nucleotide sequence of the HA gene, one of eight genes, was identical to that of the isolate of HP H5N1 AI virus from an outbreak in domestic geese in Hungary in January 2007 (DEFRA, 2007a).

As a result a 3 km protection zone, 10 km surveillance zone and a restricted zone encompassing 2000 km<sup>2</sup> were set up. 159,000 turkeys were slaughtered with the cull completed on 5 February. The outbreak was confined to a single farm adjacent to a turkey factory comprising a slaughterhouse and two processing plants (DEFRA, 2007a). The plant was disinfected, with cleaning complete on 12 February and permission was given for production to resume (EDP, 20/02/07). On 14 February 2007 some Bernard Matthews turkey products were cleared by the Food Standards Agency to be released for sale. On 1 March 2007 'housing restrictions' around the plant were lifted, meaning turkeys no longer had to

stay indoors. The wider 10 km surveillance zone remained in place. All remaining control measures were lifted on 12 March.

Initially officials from the plant were reported as extolling the excellence of the biosecurity measures adhered to, but later stories of officials criticising the plant for serious biosecurity failings and hygiene lapses appeared. Despite an extensive investigation no sufficient evidence was brought to light according to which Bernard Matthews could have been prosecuted and he received around £600,000 in compensation on 20 April 2007 (BBC News 2007). As a *Wikipedia* entry on Bernard Matthews summarises, it transpired that Bernard Matthews had been importing 38 tons of partly processed turkey meat from their Saga Foods company, in Sárvár, Hungary to a processing plant next to the farm in Holton. Although Saga Foods lies 165 miles from an outbreak of avian flu that had occurred in geese in the south of the country, in Sventes, a company director admitted that it was “possible” that some of the meat could have come from the exclusion zone and Whitehall expressed concern over biosecurity (*Wikipedia*, 2007). Later a slaughterhouse, in Kecskemét near the site where geese were infected, was found to also have been used by Bernard Matthews.

DEFRA’s (2007a) final report into the outbreak revealed that 60 kg of turkey breast meat imported from Hungary had been dumped on January 15 in open bins outside the processing plant and had provided easy pickings for rats and wild birds. It is thought that this meat was originally from birds slaughtered at Kecskemét, close to farms where infected geese had been found on January 14. Therefore the most plausible, but unproven, explanation for the events at Holton is that these birds may have been carrying the virus without showing signs of disease (DEFRA, 2007a).

The 2007 outbreak differed from the 2006 one, in that it involved a poultry processing unit, not only a farm, as it was caused by H5N1 not H7N3. It was highly poignant that the virus found its way into a Bernard Matthews plant, just as it had done in 1992, the last time

before 2007 that H5N1 had struck a British poultry flock. The company and its Norfolk owner became well known in the UK following a series of TV commercials in which Bernard Matthews had used the now famous ‘Bootiful’ catchphrase in a distinctive Norfolk accent. In a metonymical chain, the outbreak tainted the reputation of Bernard Matthews himself, his plant, his flock and his products, but also the space and place that had made them famous.

### **The concept of biosecurity: vagueness and diversity**

In the years following the FMD crisis in the UK in 2001, the concept of ‘biosecurity’ has become used routinely to label methods of disease control such as cleaning, culling and vaccination (Nerlich and Wright, 2006). Although the term was less well known in the UK prior to 2001 (Donaldson and Wood, 2004: 373), it was used by North American commentators to describe the first major outbreak of avian influenza in 1997 in Hong Kong which led to the slaughter of about 16 million poultry and infected 18 humans. In 1997 a poultry website in the United States stated that: “Systems of biosecurity are becoming more and more critical to poultry operations, as outbreaks of avian diseases are forcing farmers to destroy entire flocks.” (Rice, 1997) The article goes on to explain the intricacies of poultry plant hygiene and laments that

On the farm of old, animal immunity came from exercise, sunlight and the freedom to peck or root in the soil. Today one facility will house millions of birds, kept alive in atrocious conditions by drugs and “biosecurity”--the term now used to describe a full array of antibacterial measures. (Ibid.)

Definitions of biosecurity vary between countries, especially the UK, New Zealand (where biosecurity has long become central to agriculture and environmental management) and the



United States (where biosecurity has recently become linked up with bioterrorism and homeland security); definitions might also vary between species, e.g. biosecurity surrounding cattle or poultry; and finally, they may vary according to how animals are farmed -- in fields, factories, barns, sheds, backyards etc. There are then multiple (potential) definitions of biosecurity. Nick Honold from the Food and Agriculture Organization of the United Nations even contends that “there is no accepted definition of the term ‘biosecurity’” (Honold, 2006).

In 2007 DEFRA provided the following definition which focuses mainly on keeping disease out but neglects measures designed to stop the disease spreading (especially on the global level):

Biosecurity literally means ‘safe life’. If you work or come into contact with farm animals, biosecurity means taking steps to make sure that good hygiene practices are in place. This will help prevent the spread of animal disease. Good biosecurity is a vital part of keeping new disease away from animals. It also helps to improve farm efficiency, protect neighbouring farms and the countryside. (DEFRA, 2007b)

Some have called for “A unified definition of biosecurity” which would “cover strategies to assess and manage the risks of infectious diseases, quarantined pests, invasive alien species, living modified organisms, and biological weapons” (Meyerson, 2002). Others have sought to understand the “second-order” of biosecurity, the politics, morality and techno-scientific practices which might be mobilized by actors in order to advance and/or stabilise a particular notion of biosecurity (Collier et al., 2004: 3). Here we focus on the spatial language of biosecurity and its implication for the perception of risk and blame. We ask: How does ‘biosecurity’ function in the media notwithstanding the vagueness and complexity

surrounding its definition and what role does spatial language play in the media coverage of issues related to biosecurity?

### **Conceptual framework, material and methods**

Spatial terms, especially spatial prepositions, can be used both literally and metaphorically, as in ‘they are in the shed’ and ‘they are in danger’; ‘they stood before him’ and ‘she put her child before herself’; ‘the fence was high’ and ‘biosecurity was high’ etc. One aspect of the spatial use of language can be studied through the analysis of what Lakoff and Johnson (1980) have called ‘orientational metaphors’. Such conceptual metaphors, they argue, structure how we think about the world, especially about issues of time (‘we are running out of time’, ‘think before you speak’ etc.), but also social and moral issues (Chilton, 1996; Boers, 1996; Tenbrink, 2007). Examples of orientational (conceptual) metaphors are HAPPY IS UP -- SAD IS DOWN, GOOD IS UP -- BAD IS DOWN, RATIONAL IS UP -- IRRATIONAL IS DOWN, CONTROL IS UP -- LACK OF CONTROL IS DOWN; INSIDE IS SAFE -- OUTSIDE IS UNSAFE and so on. Such conceptual metaphors (generally signalled in cognitive linguistics by the use of small capitals) can give rise to utterances such as ‘I am on cloud nine’; ‘he is down in the dumps’; ‘lowering biosecurity measures will lead to disaster’, and so on. The conceptual metaphors on which such expressions are based are themselves rooted in various image schema such as: CONTAINER, e.g. border, inner, outer; FLUIDS, e.g. flow, stream, current; and PATH, e.g. path, toward, along, forward (Chilton, 1996). The container schema can be mapped, for example, onto a nation or a country, a farm or a shed (loosing metaphoricity along the way, as sheds, are, literally containers). Viruses, for example, can be conceived as flooding into the UK (a metaphorical container) (Law, 2006) along various paths and as part of a variety of other, more literal, containers or carriers, e.g. poultry, wild birds, foxes, humans, lorries, and so on. In this respect, there are various aspects of space that can be exploited to talk about ‘the

ins and outs' of biosecurity: distance (close, far), containment (hold something in, keep something out), boundary (line between in and out, transition), movement, direction, speed and acceleration, a path or journey that is traced through space, and so on.

Lexis Nexis Professional was used to search one regional newspaper, The *Eastern Daily Press*, between January 2006 and 12 March 2007 (when all restrictions pertaining to the second outbreak were lifted) using the key word 'bird flu'. 83 articles were retrieved (31 pertaining to the 2006 outbreak 52 to the 2007 one; 9 articles from 2006 had to be discarded as they only mentioned bird flu in passing). We have selected a local paper covering the areas where the outbreaks occurred because its local focus means that coverage of the events, personalities and twists and turns of the story is likely to be more detailed than in the national press. In addition, in the case of events like these, national media may well take up issues which were first broached in local newspapers (Gorman and Mclean, 2002); thus a local paper focus will give us clues as to how the issues were originally formulated.

The corpus was subjected to close reading and literal and metaphorical spatial expressions were retrieved and sorted into themes. In the *Eastern Daily Press*, many of the news stories examined the uncertainty surrounding the transmission route of the virus, and in the spirit of securitization described above, debated various vectors of virus transmission and discussed 'barriers' imposed to stop the spread, including biosecurity. Another focus of debate, in line with the concern over movements across boundaries and borders in many security discourses, was the movement between (in and out of) spaces, including other nations, farm premises, processing plants and poultry sheds. Biosecurity was a central topic in the media coverage and in government investigations of the outbreak, with the issues discussed in terms of space (indoor/outdoor; local/global; national/international) and flows (movement, barriers, vectors) between spaces (farms, sheds, countries etc.). Activities that count as biosecurity were also discussed more concretely in terms of mapping the

transmission of the virus, the actions taken to keep it contained, and various hypothesis of virus transmission onto actions, agents and objects, such as wild birds, foxes, humans, clothes, sheds, national borders, fences and so on. The language of space in relation to risk, blame and biosecurity was therefore chosen as the focus of this article.

Results based on such a small sample and one case study can obviously not be generalised and further research into the topic of biosecurity and space is needed. However, the results achieved provide some indication of the state of public debate regarding biosecurity at two crucial points in time, that is, when the UK experienced one minor and one major outbreak of bird flu.

### **Analysis: Biosecurity, space and language**

#### Biosecurity: ideal and reality

Although the term biosecurity was used during both outbreaks of avian flu, the low-pathogenic one in Norfolk in 2006 and the high-pathogenic one in Suffolk in 2007, there was, in both cases, a difference between what one might call ‘aspirational biosecurity’, an image of biosecurity that is evoked by most farmers and implemented by some, and what is happening on the ground. This ideal of biosecurity was beautifully paraphrased in an article published during the outbreak of low-pathogenic avian flu in 2006, when avian flu was actually much more on people’s mind than at the beginning of 2007 when interest began to wane.

From the back-garden enthusiast to the professional producer, strict biosecurity measures have become the key to preventing the arrival of bird flu in East Anglia. ....As each bird flu case has been confirmed - in France and then Germany, it has reinforced the strict biosecurity and hygiene precautions taken by the poultry industry in this country. (EDP, 28/04/06)

Here biosecurity is conceptualised as an activity around ‘keeping the virus out of the country’ or preventing it from spreading from ‘other’ countries to ‘our’ country. The threat of bird flu is seen spatially, as moving in gradually and biosecurity is seen as a barrier erected to keep the invader out, rather than being conceptualised as a result of or as being inherent to the various systems of poultry production themselves.

#### Biosecurity and modernity: forward or backward, high or low

The same article quotes Nigel Joice, owner of a farm in Fakenham, Norfolk and the National Farmer’s Union spokesman on avian flu, who was frequently interviewed in 2006 and 2007. Shortly after the 2006 outbreak, he pointed out that:

It is standard that all poultry units follow the same “all in, all out” approach. A new flock is introduced into a clean, disinfected and completely empty building and then after each batch, the cycle starts again....For the organic and free-range producer, the prospect of bird flu will cause bigger headaches if birds have to be taken inside. (EDP, 28/04/06)

Cleanliness and hygiene are key elements of ‘high’ standards of biosecurity, and they are, by some, linked to modernity, whereas lapses in biosecurity or ‘low’ standards of biosecurity and the associated risks of spreading disease are projected onto ‘the other’ (Joffe, 1999) and onto the past – that is ‘backwards’, both in space, time and the social groups involved. As the director of Banham poultry, which was at the centre of the first outbreak, told a reporter: “biosecurity is our Bible here... It’s not like we are eating and sleeping with the chickens in this country” (EDP, 28/04/06) - something that was blamed for the spread of bird flu in

‘other’ (‘backwards’) countries, especially in the Far East, but also later on in Turkey for example where bird flu claimed human victims in the very poorest parts of the country.

This indicates that issues of proximity and distance, are as important in biosecurity as cleanliness and hygiene -- and this on various levels: proximity between birds and humans, as highlighted in this quote, but also, and more importantly, proximity between birds and other wildlife – an issue that was discussed throughout the two outbreaks - , and, as it turned out, proximity between poultry and poultry. The issue of inside and outside or indoors and outdoors became a central debating point in both outbreaks, especially the suspected ‘contamination’ of the modern, indoor (high biosecurity) flocks by the old-fashioned, perhaps even backward, outdoor (low biosecurity) flocks.

Conceptualisations organised around the up-down dimension and the near-far dimension were dominant ways of conceptualising biosecurity in ordinary discourse (as reported in the media). In this context conceptual metaphors, such as HEALTH AND LIFE ARE UP; SICKNESS AND DEATH ARE DOWN; HAVING CONTROL OR FORCE ARE UP; BEING SUBJECTED TO CONTROL OR FORCE IS DOWN, have not only implications for how we think and talk about biosecurity; they also have normative associations and frame policy options. From the (dominant) perspective of industrialised farming, high biosecurity is associated with health, control, modernity and rationality and low biosecurity with disease, loss of control, backwardness and irrationality, whereas from the point of view of (the less dominant) organic or free range farming the high biosecurity advocated by industrial farmers is believed to lead to disease by lowering the immunity of birds.

#### The indoors/outdoors and inside/outside conundrum

In line with the broader pattern of discourses surrounding security and securitization, the threat from avian flu comes from elsewhere (Booth, 2005) and movements and migrations are

regarded with suspicion (Turner, 2007). Thus, for some time, the threat of avian flu to British poultry flocks had been mainly conceptualised as a journey whereby the virus would migrate from East to West, carried along a trajectory or path traced ‘in the sky’ above by migrating birds and sometimes ‘landing’ on the outdoor ground or soil. Outdoor flocks were therefore regarded as being at higher risk from bird flu than factory farmed flocks which are kept inside the securitized boundary, indoors and under cover. As one farmer said during the 2007 outbreak: “The current thinking is that it is mostly carried by wild birds, so the birds that are most at risk will be outside.” (EDP, 02/02/07) The risk of bird flu is conceptualised as coming from the outside in, from above to the ground and from the ‘wild’ to the ‘farmed’. Biosecurity is regarded as important indoors as well as out, but conceived as being of a ‘higher’ standard in indoor environments.

This view of the spread of the virus, what one can call the dominant hypothesis (British Poultry Council, 2001), seemed to be confirmed by the outbreak in 2006 which may have begun in a free range flock, as pointed out in the DEFRA report. However, the outbreak was first reported in an ‘indoor flock’ where the mortality rate had increased. At this stage, one farmer, Geoffrey Dann, whose own free range farms were later also found to be infected, said on 28 April, 2006: “‘It is a hell of a blow to the people who have got the farm [Whitford Lodge, owned by Banham] that is involved.’ He said it was a mystery how the virus got on to the farm as the flock was kept under cover.” (EDP, 28/04/06) In the same article the local vet Stephen Lister (who was initially suspected to have been infected himself in the 2007 outbreak but then cleared and who was also the one who had identified a previous outbreak of H5N1 in 1992 on a site owned by Bernard Matthews) is quoted as saying:

“The poultry industry has a very proactive attitude to biosecurity [...]. Things have gone up a gear since H5N1 and if anything we expected that the first case would be in a free

range flock in contact with wildfowl not an indoor flock like this so how the infection got into the premises is still a surprise.”

“It really is incredibly sad for the company involved. Banham is an excellent company with an excellent record of biosecurity and welfare.”

This then presented a puzzle to the predominant metaphorical frame of biosecurity discourse where outdoors is hazardous and indoors is safe. Subsequently however, the dominant frame was reasserted. The outbreak, which was first detected in the ‘indoor’ farm (owned by Banham Poultry), began in the ‘outdoor’ free range farm owned by Dann, but that poultry there had not died in sufficient numbers to arouse suspicion. The mystery still remains however, how the virus got from the ‘outdoor’ farm into the ‘indoor’ farm. As an information sheet from the Soil Association entitled ‘Better out than in’ put it:

Nobody could understand how the virus had penetrated the high-biosecurity unit. As a puzzled poultry industry spokesperson said: “Everyone had expected an outbreak to occur in an outdoor flock first.” As it turned out it had. Following official confirmation in the indoor unit, a vet for two nearby free-range egg flocks alerted Defra to the likelihood that they might have been infected earlier – but in such a mild form that the vet responsible for the free-range flocks had failed to diagnose their symptoms (slow-down in production and slightly raised mortality) as bird flu. (Soil Association, 2006)

There seems to have been some ‘breaches’ in biosecurity involving contaminated footwear or foxes carrying the virus from one farm to another. The image of biosecurity as a defensive ‘wall’ against the invasion of the virus was therefore shattered. In response, Banham poultry have now erected a ‘real’ barrier intended to keep the virus, that is, carriers or containers of



the virus, such as foxes, out: a fence. As the EDP reported on 23 December 2006 “Banham Poultry have also built a customised fence around the perimeter of the farm to keep wild animals off the site.”

### Biosecurity and barriers

The various barriers ‘erected’ against the virus (to keep it out but also ‘contained’) correspond to various hypotheses regarding biosecurity and the transmission of the virus: netting over ‘outdoor’ flocks is intended to keep the free range poultry protected from wild birds; keeping birds indoors makes even more sure that they don’t get in contact with wild birds; dips and vehicle sprays, as extolled by Joice in 2007 (EDP, 05/02/07), are supposed to keep the virus from travelling on vehicles; washing, changing clothes and boots, using hand rubs, either soap or alcohol, foot dips and boot scrubbers etc. are intended to prevent the virus from travelling on humans. On top of these ‘everyday’ biosecurity measures, there are measures imposed once an outbreak has occurred, such as ‘locking the farm tight’ and ‘sealing the farm off’ (both mentioned in 2006) and the imposition of surveillance, restriction and exclusion zones. These measures are supposed to prevent the virus from travelling or spreading across the country and beyond.

The indoor/outdoor mystery deepened in 2007 when H5N1 was found on a site owned by Bernard Matthews. As one article wrote at the time:

It is an irony not lost on poultry farmers that a disease thought most likely to strike free-range flocks has broken out indoors. If indoors is the right term for a structure that resembles an aircraft hangar, on a vast site that is itself a former airfield. (EDP, 07/02/07)

However, there was another mystery related to space, this time not the indoor/outdoor space related to the image schema of a container but the issue of distance and proximity and the issue of movement along a rather long trajectory or route spreading far across the whole of Europe.

### The near/far conundrum

Speculations about transmission routes were rife both in 2006 and 2007, but were much more intense in 2007, as the focus shifted away from the indoor/outdoor dichotomy to the near/far and import/export dichotomies. The link between Hungary and the UK was detected, in form of a “[w]rapper found in the factory in Holton, identifying a Hungarian slaughterhouse” (EDP, 14/02/07). This wrapper was a trace in space encapsulating metonymically the whole spatial network of poultry production.

Unlike in 2006, when migration routes of wildfowl were still seen as the main route of virus transmission, movement of poultry across the globe, became the centre of attention in 2007, just as “long distance” animal movements (EDP, 07/02/07) had been found to have spread foot and mouth disease in 2001 and “poultry-to-poultry transmission” became to focus of attention in 2007.

Bernard Matthews’ “import and export business was allowed to continue despite the avian flu outbreak, only stopping after investigators decided it might have been the route which brought bird flu into the UK.” (EDP, 13/02/07) There had been, it appears, as in 2001, during the FMD crisis, no immediate ban on animal movements. And, as during the FMD crisis, this outbreak made consumers more aware of the extensive movements of animals and animal products involved in the production of cheap food, such as, in this case, “frozen breaded [turkey] products” (EDP, 09/03/07) and the biosecurity risks that such long-distance movements might pose (Nerlich, 2004). People became aware not only of what got into

animals (viruses, antibiotics etc.) and into humans (cheap food and perhaps viruses and antibiotics) but also how animals move around along a very long food chain before getting into the human body as the final container. And along that chain there were various ‘leaking’ containers that let the virus travel, from farms and slaughterhouses to waste bins and roofs and from lorries to ‘leaking’ dead animals.

For some time people were able to project biosecurity lapses onto a far-away ‘Eastern’ country and deflect blame from ‘us’ onto ‘them’, echoing the way that the east has regularly been depicted as alien or threatening (Neumann, 1999). However, soon proximity issues re-emerged and superseded issues related to distance. According to the DEFRA report, Bernard Matthews’ plant comprises a turkey slaughterhouse, two poultry processing plants and 22 barns which are located quite near to each other. The processing plants handled 4,657 tonnes of meat in the month before the outbreak, including 256 tonnes from two sources in Hungary, primarily breast meat that was simply trimmed at the plant (Naughton, 2007). With the re-establishment of a coherent story as to how the securitized boundary could be breached, and how contaminants from a former Eastern Bloc country could have arrived, the puzzle then became how the pathogen had moved from one part of the complex to another. The proximity between the farm and the processing plant might have made it possible for the virus to get in or, expressed differently, it might have made it more difficult for bioscurity measures, to keep it out. Sir David King, the then government chief scientific advisor pointed out that: “At the processing plant there is a question of what is done with the waste product. There is a possibility that it may be open to wild birds or vermin which could carry it into the huts.” (EDP, 10/02/07) And David Miliband, the then Environmental Secretary, said: “Infection could have entered the turkey sheds carried from waste products by birds or rodents or on footwear and clothing” (EDP, 20/02/07). The initial DEFRA report blamed the company “for

leaving meat waste in uncovered bins, leaking roofs on turkey sheds and allowing plastic bags containing raw meat juices to blow around the site” (EDP, 03/03/07).

The issue of biosecurity therefore had to be reconceptualised. It was no longer possible to blame wild birds and outdoor farms, that is, neighbouring ‘others’ for spreading the virus (Joffe, 1999). Whilst one possible route of transmission did involve movement into the UK from Hungary, it was also no longer possible to blame distant and unhygienic ‘others’ in any simple way for infecting high-security premises. The problem was conceived to lie in gaps or wholes or openings located in adjacent objects and spaces and the movement between them on the premises themselves (Donaldson and Murakami Wood, 2007). This led to a blurring of boundaries, both spatial and metaphorical, between near and far, us and them, wild and domesticated, food and waste.

#### Biosecurity, great and small

The restrictions imposed in 2006 seem to have been followed without provoking too many complaints. This was different in 2007 when small free-range poultry keepers began to complain and apportion blame:

“... It is very upsetting to have to keep your healthy birds inside.”

“They should be worrying less about that and more about the biosecurity at Bernard Matthews and the gulls and rodents that have been getting in”. (EDP, 20/02/07)

Again, this was an issue of inside and outside, but also of big farmers against small farmers, something that came to the fore in the use of spatial metonymies. People complained that free range chickens had to be “shut up in their pens”, but that “they are letting live birds into Bernard Matthews” (EDP, 15/02/07). Here Bernard Matthews stands for the sheds that house

birds owned by the company called Bernard Matthews, which is owned by a person called Bernard Matthews. And: “A lot of little people’s livelihoods are involved. H5N1 has only been found in the big people and yet the little people have to suffer.” (ibid.) Here a person/name stands for the farm itself and the livestock kept on it. Here ‘the big people’ stands for ‘Bernard Matthews’ which stands for the poultry ‘in which’ H5N1 has been found.

The issue of indoor and outdoor is here combined with that of small and big farms or ‘little people’ versus big corporations. A similar dichotomy is for example exploited on the website of a famous organic farm, Sheepdrove Organic Farm, which stated at the time of the Bernard Matthews outbreak: “Spreading infection from wild birds and backyard poultry are really just ways in which the poultry industry tries to put the blame on others – the small people!” (Sheepdrove, 2007; Grain 2007)

The events therefore enabled some participants to reconfigure the narrative of transmission. No longer a matter of wild birds to free range to indoor flocks, outdoor producers and their supporters were able to mobilise a different story, yet one which alludes to familiar tropes of national and local boundaries. In this account, it is the global trade in poultry itself which desecuritized us against disease.

If the main purpose of biosecurity is to ‘keep the virus out’, then biosecurity failed both in 2006 and 2007, as in both cases the virus “slipped under the radar” (EDP, 01/03/07). Both outbreaks were however quickly brought under control, but farms reopened for business at quite a different pace. As one free range farmer pointed out metonymically, again highlighting the difference between indoor/outdoor and small/large:

“We don’t want to open until we know where the disease has come from and we know that it is safe. He [Bernard Matthews] should not open either.” (EDP, 15/02/07)

## Conclusions

The discourses of biosecurity identified in the local press coverage focused on the ‘local’ worries caused by disease coming in from ‘peripheries’. The ideal of territoriality is presented while simultaneously reflecting on de-territorialization as a response (King, 2002).

Waeber’s (1995) original account of securitization proposed that the notion of security was broadening beyond its original meaning of state defense to include social, environmental, and political issues. In the material presented here we have seen the dilemma between the free movement of goods and resources across boundaries demanded by a liberalized economic agenda, and the maintenance of boundaries which is the best available response to biosecurity concerns. Questions of the desirability of transnational movements of poultry products, the length of time for which farms should be isolated and the length of time for which birds should be confined indoors all allude to the theme of ‘inside’ versus ‘outside’ and the relative risks presented. Consistent with the securitization thesis, we can see the metaphors of security from the domain of politics, where risks from outside - another country, migrating wild birds, outdoor poultry, people, materials or animals entering the sterile world of the indoor poultry shed - are predominant (Chilton, 1996). Securitization revolves around discourses of fear (Hyndman, 2007) and these are used to underwrite the allocation of resources to manage risk by fortifying boundaries. As Turner (2007) points out, the contemporary global economy with movements of people, products and services has paradoxically led to an ever greater preoccupation with the control of boundaries and the ‘enclavement’ of potentially hazardous or vulnerable things, in our case poultry.

The *Eastern Daily Press* coverage focused on the ideal strategies of separation and containment (biosecurity) between nations, farm premises of different types (indoor/outdoor; large/ small; factory/farm), and also animals of different types (poultry, wild fowl, foxes, etc.). Alongside discussion of actual and possible barriers, is a focus on the flow of people

(including migrant workers), products and wildlife between (in and out of) spaces, including other nations, farm premises, processing plants and poultry sheds. The 'risk' of trade as a conduit for infection is countered by the identification of globalization as a source of incoming wealth (from poultry companies) and outgoing scientific and agricultural expertise by which disease can be controlled.

The versatility of this suite of metaphors of boundaries and of 'outside' and 'inside' is attested by the fact that it could be extended to accommodate different possible explanations. Whether the disease had come from wild birds and outdoor poultry, or from meat imported from Hungary, the themes of securitization and boundaries were deployed and risks were formulated as emerging from a potentially contaminated world outside the poultry house.

The extent to which this pattern of argumentation and the use of spatial language, which maps language and culture onto the spatial politics of disease management, extends beyond our case study of local newspaper coverage into other contexts is an empirical question which will be answered in subsequent phases of our research programme.

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