Fear of animal foods: a century of zoonotics

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Abstract

Animal diseases can be spread to humans through the food supply. The article investigates this zoonotic hazard in an historical context and reflects on the nature of public reactions to such risk. It concludes that food scares have been with us for at least 150 years and that consumer responses in terms of changes in demand have been complex.

Keywords: Zoonotic disease; Food scares; Food history

Introduction

Zoonoses are diseases that can be passed to humans from animals and this article is about their mediation by the food supply. The zoonotic hazard overall has been growing in the UK since the mid-nineteenth century due to a number of factors, and the present paper is about the variety of public responses to this threat. It is a topic that has regularly hit the headlines in the last twenty years or so, but there is only a limited literature to help us think about the safety of livestock products in the past and to give an historical dimension to the contemporary debate about diseases such as Bovine Spongiform Encephalopathy (BSE).

Rather than reconstructing patterns of disease or describing their health impact, five discourses will be considered that indicate the dimensions of public concern. These are ways in which zoonoses have been discussed and perceived by society at large and they are means for us to analyse long-term trends. Several of the themes overlap or intersect with each other.

Early risk attitudes and the media

In this initial section we will discuss three ways of looking at risk in the late nineteenth and early twentieth centuries. First, there is the active risk-confronting attitude of the Victorians and Edwardians which can be seen in their writings about improving conditions of work in factories, upgrading slum housing, or building sewers (Freedgood, 2000). This social and sanitarian vision included concern for the food supply and there were attempts, for instance, to reduce adulteration through legislation, starting with the Sale of Food & Drugs Acts of 1860, 1872 and 1875 (French & Phillips, 2000).

Second, some animal-related risks had the characteristics of being socially constructed. Rabies, for instance, was a high-profile disease from the 1870s onwards (Walton, 1979). Mortality was minimal but the particularly painful and unpleasant manner of death from 'hydrophobia' caught the public imagination and led to calls for dog muzzling in the streets and the quarantining of imported pets. Glanders and farcy, two variants of a bacterial horse disease, were also a source of what, in retrospect, seems to have been exaggerated public fear. According to Anne Hardy, the deaths in London of two ostlers' wives in 1892 from the human form of glanders caused 'public panic' and were the spur for its eradication as a public health risk (Hardy, 2002). The fear was generated by media attention and a content analysis of newspapers such as *The Times* would show an increasing trend over the last 150 years in the reporting of zoonotic food scares. There is no space here for a full treatment but we may hypothesise that the trend is as much related to structural changes in the media as it is to any real increase in the risk of consuming animal foods. One writer (Beardsworth, 1990) argues that modern food scares have many of the characteristics of 'moral panics,' and their genealogy can therefore be traced back to the sensational popular reporting of the late Victorian period, which in some forms has survived in today's tabloids.

Novels are potentially also a source of public information, perhaps the best example being Upton Sinclair's *The Jungle*, written as an exposé of the appalling conditions in the Chicago Stockyards (Sinclair, 1906). There was revulsion on both sides of the Atlantic for the large-scale industrial slaughtering that Sinclair described, and little imagination was required to guess at the low quality of food that it produced. An immediate loss of

British consumer confidence in American canned meats caused a mini-crisis and gave ministers the momentum they needed to push tightened food regulations through parliament (the Public Health (Regulations as to Food) Act, 1907).

Third, there was a quantifiably significant set of hazards in consuming meat and milk up until the mid-twentieth century. The highest risk was from bovine tuberculosis, which is estimated to have been responsible for over 800,000 deaths in the UK between 1850 and 1960 (Atkins, 2000a), probably the largest food-related zoonotic mortality in history. This disease did not cause panic, however, because it was insidious, with outward symptoms similar to those of human, pulmonary tuberculosis. (The main differences were a high incidence among babies and young children fed on cow's milk, and infection in sites away from the lungs.) Discursive characteristics of this disease included a high degree of scientific controversy and an astonishingly fierce public debate about technologies such as pasteurization that offered a preventative solution. There was also dispute about appropriate policies of interventionist governance. Here were many of the features of indeterminacy that are recognisable in recent discussions about BSE (Hinchliffe, 2001).

Beastly foods

To many Victorian observers, the presence of zoonoses was evidence of nature out of control, sometimes in the very heart of their rapidly growing cities. There was nothing new in epidemic livestock disease but the large-scale 'murrains' that swept through town dairies in the eighteenth and nineteenth centuries were somehow symbolic of the need to purify 'the urban' from animal externalities: their smell, their manure, their blood. An intervention of great significance came in 1866 with the compulsory slaughter of animals infected with the 'cattle plague' or rinderpest. This demonstrated that such diseases were susceptible to policy, and central and local authorities were encouraged to introduce controls, for example the various Contagious Diseases (Animals) Acts. Also, in the twenty years or so before the First World War, planning measures imposed restrictions on the last urban livestock farmers, notably through strict hygiene requirements. Ironically,

this seems to have increased the zoonotic hazard because production shifted to rural areas, where regulations and enforcement were lax.

Blame the consumer

A common discursive refrain, particularly in the nineteenth and early twentieth centuries, was criticism of the consumers of livestock products. From time to time they were accused of ignorance and lack of interest in high quality, disease-free meat and milk. Politicians and food industrialists were patronizing or simply dismissive of their intelligence and intentions, for instance as measured in their lack of willingness to pay for clean, pure milk in the early days of certified and graded milk in the 1920s. In 1933 Sir Frederick Hobday, Principal of the Royal Veterinary College, thus asked how it was possible that there was still tuberculosis in milk.

> 'The answer lies mainly in the apathy of the general public which does not appear to wish, nor does it care, to know whether the milk is from a tuberculosis-free herd, nor will it as a body pay a small sum extra per quart in order to ensure that the milk is obtained from … a "tubercle-free" herd (Hobday, 1933, 451).

This elitist view of expertise was common. Knowledge was seen to be vested in professions, such as that of veterinary surgeon. Consumers needed to be guided, educated and, above all, persuaded. Evidence from the USA and the UK suggests that the early decades of the twentieth century saw a step-change in attempts by food industries to shape the opinions of their customers. Protecting the reputation of corporate brands was one motive but there was also advertising and public relations activity by trade associations anxious to construct a positive image of their particular commodity. A good example of the latter was the National Milk Publicity Campaign, which from 1920 onwards sought to boost milk consumption. In addition, the many food campaigning organizations in civil society, such as the National Clean Milk Society (1915-28), also contributed to moulding opinion through the construction of positive images.

Despite this model of top-down knowledge communication, consumer citizenship, defined as active participation in institution- and market-shaping, was nevertheless

evident in the increasing numbers of societies and associations that campaigned for unadulterated food, wholemeal bread, vegetarianism, unpasteurized milk, or a minimum dietary standard for children. Some were inspired by mystic or political ideologies, some by the new science of vitamins, and others by a romantic vision of pre-industrial, wholesome food (Atkins, 2000b). The situation was fragmented, however, and difficult to characterise because consumers did not necessarily share common interests, modes of consumption, or health outcomes.

Food poisoning scares

The argument in this fourth section is complex. On the one hand we are told by risk society theorists (Beck, 1992) that modern food scares are emblematic of a loss of public trust in the institutions designed to uphold food safety. Consumers certainly seem to have greater concerns than, say, thirty years ago about the healthiness of their diet and have switched certain habits, for instance away from full-fat milk because of worries about heart disease. On the other hand, the evidence of long-term dietary change being linked to specific food poisoning scares or other zoonotic diseases is surprisingly thin.

If one was to rely solely on the media for information about food, it would be tempting to assume that food poisoning has been a major problem, particularly of the late twentieth century. Official data indicate a rising trend for *campylobacter*, *salmonella*, *E. coli* O157, *cryptosporidium* and other food-poisoning incidents. But there is more than one possible interpretation of these statistics.

First, it could be that these 'trends' bear little relation to the real prevalence of food poisoning but rather are a function of the efficiency of data collection. There is some evidence in support of this claim. A large and carefully structured recent survey of 9776 patients in England found that only one in 136 cases of 'infectious intestinal disease' is recorded in the national database and that only one in six ever comes to the notice of a medical practitioner (Wheeler et al., 1999).

Second, there is room for debate about the common assertion that there has been an upsurge of virulent new strains of infective agents and that these are responsible for the rise in food poisoning. *Salmonella*, for instance, did not cause concern in the egg

industry until 1956 (Cooter & Fulton, 2001). Schlundt argues that *enteritidis*, the most serious of the *salmonella* serovars for food poisoning 'appeared simultaneously around the world in the 1980s' (Schlundt et al., 2004, 53). This has been called 'the *S. Enteritidis* pandemic' and is attributed to transfer via chick embryos (Thorns, 2000). But an alternative view is that these infections have always been present and only recently have they have been connected with measurable outbreaks. Thus, Anne Hardy thinks that the first acceleration of food poisoning on a large scale came in the nineteenth century (Hardy, 1999). This was reported only sporadically at first and then, from the 1880s onwards, more systematically by local Medical Officers of Health, some of whom took a scientific interest in outbreaks, while others were looking for areas of public health on which to stamp their authority. At first, meat and seafood, especially shellfish, were seen to be susceptible to 'decay'. Only later did it become obvious that micro-organisms were responsible for alarming large-scale outbreaks of illness, especially once bacteriologists were employed as epidemiological detectives. Food poisoning was only made notifiable in 1949, and from 1981 *salmonella* was reported separately. One or other of these dates tends to be used as the 'year zero' in historical commentaries.

A third interpretation is that the data are a reflection of the post-war intensification of the British food system and the public's continuing demand for cheap food rather than for quality. Together these powerful forces are said to be responsible for the build-up of a reservoir of infection that will be difficult to eliminate, and that in terms of both environmental damage and animal welfare such intensive agriculture is not sustainable.

Fourth, the upsurge in food poisoning may be correlated with kitchen technologies such as refrigerators, deep freezers, microwave ovens (Oddy, 2003). Food preparers may not have fully appreciated the need for the thorough defrosting and cooking of individual items, or understood the importance of use-by dates on cook-chill products. The problem with this explanation is that once again it is a critique of consumer competence, as discussed above.

The problem of *salmonella* in eggs and chicken in the 1980s was thrown into relief by an extraordinary political event – one that had a major impact, in the short-term, upon consumption and in the long-term upon public awareness of food safety. In December

1988 junior Health Minister, Edwina Currie, announced that 'most of the egg production of this country, sadly, is now infected with *salmonella*.' The consequences were severe. The consumption of eggs fell for a short period by 50 per cent and eventually Mrs Currie was forced to resign, having told the truth in an 'impolitic' manner (Smith, 1991; North & Gorman, 1990). Some writers have seen the crisis the start of the era of manufactured crises. True or not, the incident had virtually no long-term impact on consumption. This is clear from the historical series of the National Food Survey, which shows a decline in egg intake starting in the mid-1960s and continuing steadily to the present. On this curve the salmonella incident appears as little more than a blip.

Dread risk

Dread risks are events that we perceive (even if incorrectly) to be beyond our influence and therefore uncontrollable. The public's reaction against the introduction of genetically modified foods sits in this category, as does BSE.

BSE was first diagnosed in Britain in November 1986 in cattle that had developed uncontrollable staggers that were clearly due to neurological impairment. The symptoms were similar to those in other Transmissible Spongiform Encephalopathies, for example scrapie in sheep. Soon thousands of cattle were affected, then tens of thousands, and ultimately 1.5 million. The epidemic reached its peak early in 1993 and in March 1996 the Secretary of State for Health, Stephen Dorrell, announced in the House of Commons that a link was possible between two prion diseases: BSE and New Variant Creutzfeldt-Jacob Disease (vCJD) in humans.

Despite a great deal of controversy, explanations of the outbreak are relatively straightforward. In 1981 the government had relaxed controls on the rendering industry and, for various technical reasons, this facilitated the recycling of infective material in protein-rich cattle feed. Only wholly grass-fed herds were therefore spared the challenge of BSE. Once this was realized, in 1988, a ban was introduced on offal in feed, and the following year Specified Bovine Offal was to be removed in abattoirs. In 1996 animals over 30 months were prevented from entering the human food chain, and beef on the bone was banned from 1997 to 2000. A system of cattle traceability was devised. These

policies were largely successful and the disease has now been all but eliminated from the British beef industry.

At the time of writing (August 2007) there have been 165 cases of people with confirmed vCJD in the UK so far, of whom 161 have died. Under an intense media glare, beef consumption dropped across the EU. In the UK there was a 40 per cent reported drop in the consumption of beef in the first month after the announcement in 1996. This can be traced in daily scanning data from supermarkets (Smith et al., 1999). The reaction was even greater in Germany in 2000 when BSE was found in 25 indigenous cattle, and the fear spread to other European countries that had previously felt safe. And yet, counter-intuitively, in Britain the long-term decline of beef consumption, which started in the 1950s, has actually been reversed since 1996. This is due to consumers switching from joints to other beef products, and from the cheaper cuts to the more expensive, for instance organic. Perversely there seems to be greater consumer confidence now that the worst excesses of the 1980s industry have been corrected.

Conclusion

Dietary constraints in the past have not only been a matter of income and supply-side constraints. Consumers have always reacted to information about quality, and especially disease. We may reasonably speculate that behaviour was regionally and culturally specific, although much comparative research is needed to clarify the nature of the responses. This paper has argued, on the basis of a number of discursive themes, that zoonotic infections have provoked a variety of reactions in British consumers. Most of these were probably no different from the prevailing perceptions of risk that were current at any one time. Only dread risks, such as BSE, have reached to more fundamental levels beyond the bounds or normal rational behaviour but, even here, the immediate changes in consumption have been below the horizon of secular changes due to income, lifestyle and other shifts. Yes, consumers have responded to health messages, but over periods of years rather than the weeks or months that an individual food scare may live in the media. This is in contradiction to the now voluminous literature about the risk society of the era of globalization, which claims *salmonella* in eggs and BSE as icons of a whole new age of

manufactured risk. It seems that risk society theorists must look further back in time if they are to test their claims about novelty of food scares. Right now those claims seem to be shaky and certainly not grounded in convincing historical evidence.

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