Meat products and consumption culture in the West

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ABSTRACT

Meat products and consumption culture in the West may be traced back for at least 2,500 years. The dominant cultural source was Greco-Roman, with evidence from archeology, surviving documents and the names of meat cuts. The initial uniformity of meat technology and language in the Roman Empire was lost as national boundaries and languages fragmented. More recently, however, there has been a strong trend back to uniformity in meat cutting and grading. This started in the USA to solve logistical problems associated with long-distance commerce and similar changes occurred with the formation of the EU. Issues such as meat inspection and animal transport have been strongly influenced by the effect of literature on public opinion, which then led to legislated improvements. Innovations in other areas such as meat distribution and preservation had military origins. Meat consumption culture was involved in the early development of language, social grouping and religions.

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1. Introduction

Imagine a scale with strong-tasting, tough meat at one end and weak-tasting, tender meat at the other end. It may be argued that the optimum point along the scale for any social group is a cultural preference. With countless ethnic groups having migrated to new homes, this can no longer be considered a geographical preference. Also, Western meat industries now must deal with the increasing culinary ignorance of meat consumers. Parents who could cook a complex meal from scratch, starting with primary products, are being replaced by children who can do little more than heat already processed products. This is a cultural change dictated by patterns of employment and leisure.

Cultural factors may assume an even greater importance on another imaginary scale – from herbivorous to carnivorous food preferences. It may be no mere chance that most meat advertisements in the West incorporate images of traditional butchers or wooden platters heaped with old-fashioned meat products. The message for the target audience appears to be that meat is a traditional cultural food.

This presentation reviews the subtle yet enduring relationships between meat consumption and the culture of the West as seen in language, literature, law and history. In the space allowed, it is only possible to consider a few examples, which are drawn mostly from examples in the English language. The term meat products is applied to both cuts of fresh meat and processed products.
2. Language

The relationship between meat and language may be extremely ancient. Bickerton (2009) argues that the need for cooperation in hunting and meat distribution was a pivotal event in the early development of language. From the Latin *Lanius* or *Macellarius* for a butcher we get our English word laniary, which we may apply to things relating to our industry. The Roman Empire borrowed much from Ancient Greece and, in particular, the Athenian Empire, which is a convenient point at which to consider what we mean by the West in our conference theme of East meets West.

What constitutes the West is a matter of opinion, and mine is that the West has both geographical and political connotations involving the discontinuous development of democracy. There is evidence that democracy first was conceived in Athenian society, most likely in the Ionian city of Miletos early in the sixth century BC (Forrest, 1966). Notwithstanding interruptions from tyrants and monarchs, democracy has prevailed together with other Greek inventions such as mathematics, astronomy, geography, logic, history and political theory. But what traces of Greco-Roman origins persist in the laniary language of the West?

A good example is the *spaud*, used for meat cuts involving the *triceps brachii* muscle in the shoulder region (Swatland, 2004). This has been maintained through Middle English and Old French, through *spaul*, *espalde*, and *espaule*, and links the modern French, *épaule*, to the original Latin, *spatulae*, for the shoulder blades. Hence, in modern Italy, there are cuts through the shoulder of the beef carcass with names such as *taglio di sottospalla* (cut from the under-shoulder) and *sezione e muscolo di spalla* (section of shoulder muscle). While in Spain, the shoulder of a beef carcass is called the *espalda*. There was a linguistic transformation from *scapula* (shoulder blade) to *spatula*, via *spatha* (a double-edged broad sword). The root word even made it across the Atlantic. While *espadilla* is Spanish for the scalpel, a cut of this name survives on a Mexican pork carcass, involving the distal part of the forelimb. The pork *espadilla y codillo* includes the ventral neck and jowl. In a Mexican lamb carcass, the *espadilla* may be a large primal cut or a small shoulder roast, in veal as well as lamb. In the English language, the *spaud* as a shoulder cut of beef was still well known in Victorian times (Smith, 1876). From a Neolithic digging tool (Tarrús, 2008) to the spatula in your own kitchen is a remarkable linguistic journey.

Laniary language also may enable us to chart routes of human emigration. For example, the pattern of meat cutting once prevalent in the English city of Liverpool was similar to the standardized meat emigration. For example, the pattern of meat cutting once prevalent in (Tarrús, 2008) to the spatula in your own kitchen is a remarkable linguistic journey.

For wise humour, the meat industry literature prize must surely go to another American, George Horace Lorimer (1867–1937), the newspaper editor from Kentucky who wrote *Letters from a Self-made Merchant to his Son* (1902), drawing on his early years in the meat industry at the Armour Packing Company. Starting as short sketches, and later bundled together as the famous book, Lorimer’s anecdotes are often reprinted in our meat industry publications.

3. Meat in literature and law

Space does not allow anything more than a selection of my favourites in an attempt to characterize consumption culture in the West. Honoré de Balzac (1799–1850) gets my vote for first place. In his unfinished sketch, *Le Medecin de Champagne* (*The Country Doctor*), this pioneer of realism in European literature wrote that the presence of a butcher in a district says as much for its intelligence as its wealth—the worker feeds himself, and a man who feeds himself thinks.

As far as the meat industry is concerned, realism in literature was pushed to its peak by the pen of Upton Sinclair (1878–1968). This American author and Pulitzer Prize winner exposed atrocious conditions in the meat industry when he wrote his novel, *The Jungle*, in 1906. There was an immediate public outcry leading President Theodore Roosevelt to accelerate passage of the US *Pure Food and Drug and Meat Inspection Acts*. This brings us to an important point—the laws governing our meat industries in the West are a product of our culture in the West, both literary and legal. In North America, for example, we can follow a trail back from the founding meat inspection acts of the US (1906) and Canada (1907), to the introduction of French meat inspection laws to Quebec in 1707 (Heagerty, 1928), and to the meat inspection laws of ancient Rome (Ostertag, 1907). And these may have been influenced by even older Mosaic food laws, which gives us a lineage back to a time when culture, language and law first flowered.

4. Meat in warfare

There is little doubt that the geography of the West has been established by discontinuous warfare, and that there was a very strong palaeolithic connection between meat and warfare. Abhorrence of war first became apparent in Ancient Greece with the tragedy, *The Trojan Women*, by Euripides (480–406 BC), but military spending has now reached astonishing levels in the West, sanctioned by the voters of democracies. Many of the arguments Bickerton (2009) uses to explore the connections between meat and language are equally applicable to warfare. The same tools are used for both hunting meat and for warfare, together with the same strategies of ambush and deception (Clark, 1967).
Soldiers in the Roman Army carried a variety of cured meats including ham, sausages and bacon (Southern, 2006). Coupled with the Roman road system, doubtless this was a key factor in military logistics. But the enemies of Rome also marched with sausages, which we know from an amusing anecdote in which Persian soldiers draped sausages over a captured Roman standard to taunt their opponents (Southern & Dixon, 1996).

Pork products were particular favorites of the Roman army, as cured sausages (farcimina, although Adams (1995) gives other meanings), ham (perna), and bacon (lardum or laridum), with slaughtering at military bases and the products being carried by the troops (Roth, 1999). Perna is still in use for a leg of pork, lamb or veal in Portugal, and crossed the Atlantic to become a leg of lamb in Brazil, while pernil is a leg of pork in both Spain and Brazil (Swatland, 2004). And, of course, there is a connection between another Latin name for sausage, botulis, and botulism from Clostridium botulinum. Botulism was well known in Ancient Rome, and one might speculate on its sporadic occurrence being linked to the supply of curing salt, depending on the nitrate content available for bacterial conversion to nitrite, with subsequent inhibition of Clostridium botulinum (Reddy et al., 1983).

We cannot leave the topic of meat in warfare without some mention of important events in France. In 1800, Napoleon Bonaparte offered his famous reward of 12,000 francs for a practical method of canning meat (Barbier, 1994). In the West, and later developed into our universal methods for canning meat (Barbier, 1994).

5. Education

In the West, most trades were tightly regulated by Guilds or Livery Companies (so called, because members were entitled to wear a special livery or uniform). In Germany, they were called Zünfte (singular, Zunft) and there were equivalent organizations in most countries of the West (Lucassen et al., 2009). The word root for guild is the Anglo-Saxon, gildan, to pay, and this reveals how guild companies worked (Pooley, 1948). Before the days of individual taxation, governments everywhere in the West obtained funds directly from property owners – they were the easiest to identify and apprehend. In return, the guilds were granted monopolies which enabled stock management and facilitated inheritance. It also ensured a ready supply of cheap labour, and it was customary for apprentices (students) to work as indentured servants (paid nothing, but given food and shelter). In time of war, the guilds raised troops for the defence of their city.

Trade changed dramatically in the West once the full impact of the industrial revolution became apparent. Guilds were obstacles to expansion and free trade and soon were deprived of their statutory powers, keeping only their properties, regalia and social life to become the charitable trusts that most are today. Many still own valuable property in the centres of great cities and have ceremonial power with an ambassadorial function, but this left trade education unattended. For many years, the situation was very confused. Some elements of trade education were retained by guilds, while others passed to boards of education primarily concerned with school children. The Worshipful Company of Butchers, a livery company of the City of London, was one of the few to maintain its educational responsibilities with the founding of the Institute of Meat in 1946.

Things were quite different in the USA. Justin Smith Morrill (1810–1898), Senator from Vermont, was convinced that agricultural development required the coordination of research with education. The Morrill Land-Grant Colleges Act (a series from 1862 to 1890) provided the means to start or expand most of the American universities with meat laboratories whose names are familiar today. Experimental stations connected to land-grant colleges were funded from the Hatch Act (1887). Most, if not all land-grant colleges offered or required courses in slaughtering, meat cutting and secondary processing. Vocational colleges in cities then followed for urban students. The faculty involved provided the core group who founded the American Meat Science Association in 1948. It is now the dominant source of industry personnel at the professional level in the USA. Small-scale custom butchers in rural areas function autonomously, except for local hygiene regulations, and centralised meat cutting operations provide their own training. A similar pattern of education is now followed in other countries of the West, the main change being the formation of the EU (Smulders, 1995).

6. Transport and refrigeration

Movement of livestock on the hoof was a vital link in the provision of meat to cities. Cowboys in the USA, gauchos in South America and drovers in Australia once moved animals vast distances, and still they may be working their herds to railheads and headlands. Like traditional butchers, these images are kept alive by advertising, although no modern consumer would tolerate the meat quality of an animal that walked all the way from the ranch to the abattoir. Images such as beef from the Argentine pampas are valuable marketing concepts and may be vigorously defended, like Scotch whisky or French champagne (Champredonde, 2007).

Steam power is unsuited for gradients and rough roads, and it was inevitable that railways would become the dominant method for moving meat – a double journey, once on the hoof to the abattoir or packing plant, followed by a second journey to a city market. Considerable infrastructure was required, together with dedicated rolling stock. In Britain, manure and straw were recycled together with the waste from countless horses, and waggons were white-washed between journeys (Vaughan, 1977). In Smithfield, central London’s great Victorian meat market opened in 1868, the railway came underground to deliver carcasses directly. In the days of horse-drawn waggons for the final distribution, there was a rotunda or spiral inclined plane to raise the meat to street level. Once within the market, carcasses were carried on hand-waggons not much changed from Roman days. Two porters could run carrying a whole side of beef on their shoulder when doing the ’Smithfield trot’. A dozen sides might arrive hanging on an open waggon drawn by a road steam-engine. The waggon sides were covered by roller blinds, more to prevent people in the street hacking off meat than to keep flies off. The gangs of men who moved the meat were quite specialized. Pitches threw bulk meat forwards onto waggons or up onto hooks, while pullers-back dragged the meat into lorries (trucks) or meat coolers. Customs probably were similar in the other Western markets, such as the ‘belly of Paris’, Les Halles.

The creation of the 1868 Smithfield Market in London is another good example of literature influencing legislation, which then determined how consumption culture would develop. Discontinuous warfare dictated that cities be surrounded by defencible walls, and it was logical to place cattle markets and slaughter facilities outside the city walls. But cities expand, and soon Smithfield was within a city which had outgrown its walls. At first, literary references to Smithfield were quite positive. Thus, Daniel Defoe (c. 1659–1731) author of Robinson Crusoe and Moll Flanders, described Smithfield as the greatest of its type in the world (Dunning, 1985), although the dramatist Ben Jonson (1572–1637) in his play Bartholomew Fair (1614) saw the squaller associated with the area. The tone of the comedy is set by Ursula the pig woman, who manages to combine cooking pork with running a public lavatory and a brothel – vulgar perhaps, but a brilliant analysis of people still with us, from magistrates to madmen, and from the foolish rich to the down-trodden poor. By 1853, 277,000 cattle and 1.6 million sheep were being moved yearly through city streets to reach the market (Forshaw & Bergström, 1980) and Charles
Dickens (1812–1870) wrote scathing descriptions of the danger, squalor and chaos, especially in his novels, *Oliver Twist* and *Great Expectations*. The British government responded to public indignation by passing legislation which closed the open live-animal market and replaced it with an elegant-roofed market for carcass meat. This central market and many others like it in the larger cities of the West then set a long-lasting pattern for urban butchers. Butchers chose their meat early in the morning, then transported it to their shops for sale to the public.

The development of railways was a major factor in these marketing improvements, but the development of refrigeration also had a strong effect on consumption culture. From the first meat cooler at the abattoir to the point of sale to the public we now have an unbroken chain of temperature control (James & James, 2002). But before individual domestic refrigerators there were large-scale industrial refrigeration systems, and these had a lasting effect on meat consumption culture. Several attempts to ship refrigerated meat by sea from Australia, Argentina and the USA to the hungry markets of Europe showed it was possible, but technical problems always wiped out the profits. Until, in 1882, the *Dunedin* made it from New Zealand to England with a cargo sold at great profit in Smithfield market. The journey was a long one, because the *Dunedin* was a sailing vessel. Refrigeration was by steam power and air compression and expansion. Some meat is now shipped by air, especially for niche products like game, but this has had a minimal impact on consumption culture compared with the revolution that led to meat from distant countries arriving in Europe. And, of course, it was early refrigeration of muscle prior to rigor mortis that led Ronald Locker (1927–1994) to the discovery of cold-shortening – something which is fundamental to meat science.

Pork consumption in the 1930s was less centralized than beef consumption with numerous small abattoirs still feeding directly into specialized pork butchers. But the development of reliable road transport soon changed that, and pigs started to be shipped to centralized abattoirs. There was a strong feed-back from consumers – the bacon was rotten – quite literally. Dry curing was still used, and increased transport stress caused DFD (dark, firm, dry) pork. Hence, there was poor penetration of curing ingredients. This was discovered and described by Banfield (1935) who was on his way to developing another foundation for our modern understanding of meat quality – the effect of pH on meat quality.

7. Grading

It is not appropriate here to consider the details of meat grading. It is a vast subject. The important point for us is that grading attempts to sort products to match consumer expectations, and consumer expectations are clearly part of consumer culture. One can argue that meat grading has a military origin, with countries such as the USA developing purchasing specifications by 1916 in the First World War. Inter-city distances are vast in the USA compared with most other countries of the West, and this favoured telephone transactions rather than direct selection purchasing – now, of course, via the internet. Beef carcass grading started officially in 1927 in the USA and required a major educational program to make it work (Beard, 1949). Developments were much later in Europe, first with the Common Market and then the EU, where the imposition of hygiene and grading standards now is causing major changes in meat consumption culture in newly integrated countries (Dunn, 2005).

8. Marketing

This is where consumer culture really becomes apparent, with consumers affecting the retail environment by their power of selective purchasing, and retailers seeking to affect consumer preferences by advertising and the nature of the retail environment. This is a cat-and-mouse game with wealth or bankruptcy as the outcome for the provider of meat.

The evidence for retail meat shops in Ancient Greece and Rome is overwhelming (Rixson, 2000). Relief sculptures on butcher’s grave markers show what the shops looked like. The agora was nothing less than what we now call a shopping mall, even to the extent of providing drinking fountains and public lavatories, not to mention tax collectors (mainly on oil), weights and measures inspectors, a place to get a glass of wine and a few monuments to civic pride. The meat shops in the agora had rails to hang meat cuts on hooks, a balance scale to weigh the meat against standard weights and a cutting block with cleavers and knives. There were numerous hanging strings of sausages, and bulk meat in all stages of separation. Lighting was from a central courtyard open to the sky. Apart from marble slabs which cooled overnight, there was no refrigeration, but dry curing and salting had already been invented.

As far as we know, these meat shops were operated by a butcher who served the customers face to face. This pattern of operation dominated for two thousand years until self-service was developed, widely acknowledged as being in 1916 at the Piggly Wiggly supermarket in Memphis, Tennessee. This was followed by the supermarket shopping cart in the 1930s (Grandclément, 2009). Size alone is not the point: there were many large emporia throughout the West serving meat, but still in the traditional manner mediated directly by a butcher. Putting the butcher in a backroom and enabling customers to lay hands directly on packaged meat was the real and slower change requiring great developments in the plastics industry and food packaging (Robertson, 2006).

The individual butcher’s shop is a vanishing part of society in most countries of the West, and the few that remain may owe their survival to environments where pedestrian shopping is attractive. Put most Western consumers in a car with a shopping bag and they will almost certainly drive to a supermarket on the edge of town. Not that customers in traditional butcher’s shops had to carry their own meat – there was always an errand boy to do that job. In many ways, the only improvement in two millenia of marketing was the appearance of refrigerated meat counters.

One of the major factors affecting patterns of meat cutting was the introduction of machine saws (Duginske, 1989). In 1813, Tabitha Babbitt (1784–1853) invented the circular saw in Massachusetts. Bandsaws were developed a little later but were not successful until 1846 when Anne Pauline Crépin in France invented a method to weld the ends of the band securely. About this time, rolled spring-steel became available, and band saws appeared in the meat industry. Thus, the problem of bone splinters from cleavers was replaced by the problem of heated meat paste, which must be scraped off to avoid spoilage. All stages in the technological evolution of meat cutting are still with us. In France, individual muscles cut by knife still dominate rolled meat cuts. In small shops of many countries, knives and hand-saws are dominant, while band saws are used extensively in large shops, particularly in North America. Thus, as we look at the myriad of different meat cutting patterns in the West, those with curved lines indicate knife cutting, while long, straight lines usually indicate bandsaw cutting (Swatland, 2004).

9. Hygiene and health

The scientific basis of meat hygiene needs no introduction, but the more subtle aspects of hygiene in consumption culture are seldom considered. Parasites, toxins and food-borne illness can be real killers even for those with a well developed immune system, so the next line of defence for early man might have been cultural. Newly weaned infants may still watch and learn from what their parents and grandparents are eating (at least in my family). I doubt whether thoroughly cooked fresh meat has ever been much of a hazard to health and, as we all know, it is the combination of internal
10. Meat eating as a social activity

Apart from the solitary hunter or lonely farmer consuming small game, the raising and slaughtering of large meat animals, as well as the preserving and distribution of meat products, requires a small army of cooperating participants. Eating together usually indicates some level of trust, kinship or friendship. Thus, Bickerton (2009) is probably correct with his ideas of meat leading to language. In isolated societies such as those along the River Amazon, there is strong evidence that meat distribution is used to sustain family and political alliances (Patton, 2005). In Athens, where meat consumption culture in the West originated, it is important to remember that meat for general consumption was a special event and mostly derived from animals sacrificed in communal religious ceremonies (Hurwitt, 1999; Osborn, 2004).

A deep instinct for social meat eating may underlie the regular occurrence of country fairs and family gatherings across the West, but nowhere perhaps with such a unique combination of formality and farce as in the Sublime Society of Beefsteaks founded in 1735 by Henry Rich who ran the Covent Garden Theatre in London (Arnold, 1871). The society was limited to 24 elected members who had great wealth or power, and regular dinners in their chambers were marked by theatrical props including special chairs, tokens of office, membership badges and uniforms (blue coats and buff waistcoats with brass buttons). Blind-folded initiates swore an oath of loyalty to the society and were then required to kiss the good book held by a bishop, but as the initiate bent forward to kiss the book, a beef bone was substituted. Despite the aristocracy of some members, there was an egalitarian tradition requiring the newest initiate to arrive early to serve hot plates and wine and to replenish bottles from the wine cellar.

11. Research and professional development

A scientific and technological basis for the meat industry was developed sometimes with industry funding and sometimes with government funding. The first may have been the American Meat Packers Association founded in Chicago in 1906. This evolved into the American Meat Institute, now based in Washington, DC. The Danish Meat Research Institute in Roskilde also got off to an early start as an industry-funded organization. Now it is merged with the Danish Technological Institute. One of the earliest government laboratories was the Low Temperature Research Station in Cambridge, England, founded in 1922. This evolved into the Meat Research Institute at Langford, the survivors of which have now been assimilated into the University of Bristol. There is no space to list all the others. Government-funded meat research institutes have not fared well in recent years, and they have either been changed to private consulting companies or replaced by industry-funded organizations.

Specialized scientific papers on meat science started to appear in the 1920s and 1930s, but were mostly published in government journals, such as the Report of the Food Investigation Board in Britain and in various publications of the United States Department of Agriculture. By the 1940s, papers from a growing number of meat research laboratories in other countries began to appear as refereed papers in journals of general agriculture, or in food and animal science journals. Then, in 1977, Professor Ralston Lawrie (1924–2007) of the University of Nottingham founded a specialized journal, Meat Science. The adoption of electronic publishing enabled a quantitative analysis of East meets West, at least in the area of research: the contributions from the East are increasing (Swatland, 2008).

12. Conclusion

Increased global trading of meat and advances in international communication and cooperation draw attention to geographical variations in meat products and consumption culture. These topics might be a useful addition to the syllabus for students and researchers in meat science.
