EATING FROM THE BIN: SALMON HEADS, WASTE AND THE GEOGRAPHIES
THAT MAKE THEM

Corresponding Author:

Dr Benjamin Coles
Lecturer in Economic Geography
Department of Geography
The University of Leicester
Leicester
LE1 7RH
United Kingdom
bfc2@le.ac.uk
(+44) (0)116 252 3854

Co-author

Dr Lucius Hallet IV
Assistant Professor
Department of Geography
University of Western Michigan

Word count: 8587 (including references)

ABSTRACT

Recent scholarship in the social sciences and humanities have begun to question the cultural contingencies that demarcate waste from ‘stuff worth keeping’ (Watson and Meah *forthcoming this issue*). Drawing from a material culture(s) perspective this scholarship has variously interrogated the relationships between objects, commodities and value, as well as those of consumption and consumers in order to problematize ‘typical’ linear discourses of production, consumption and disposal and respatialize (Heatherington 2004). Missing in these debates, however, are the ways in which place and place-making are complicit in constituting these relationships. These questions of value and waste (and the places where they are negotiated) become particularly interesting when it comes to food because the lines that separate food from waste are often thought of as impermeable and the process of transformation as irreversible. This paper, however, engages with where and how the lines that delineate food-waste from foodstuff are drawn, as well as where and how these lines are contested, transgressed and otherwise reproduced as part of geographical processes of place and place-making. Through the lenses of salmon heads and salmon, their peculiar material properties, the places where they are (re)valued and the geographies into which these places and objects assemble, this essay examines what happens to waste for it to become food, and for food to become waste.

Specifically, we employ a ‘topographical’ perspective that interrogates place and place-making within food markets (as sites where waste and food are delineated) to analyse the geographical relationships whereby in some places salmon heads are valued as food-stuffs and in others where salmon-heads are valued as waste. We use this perspective to further argue that these valuations extend beyond the place of one market, are indeed are produced as part of an assembled geography of markets, and by tracing out the geographies of not just salmon heads but also salmon, and the markets where each can be found, we can better understand and articulate where as well as how it is that waste can become food. Ultimately, we argue that questions of food and waste are not just questions of materiality, but questions of the ways in which the material relate to the social and cultural relations of place, place-making and geography.

KEY WORDS: WASTE, COMMODITIES, FOOD, PLACE, GEOGRAPHY

MATERIAL EVALUATIONS: OPENING PROPOSITION

We're in the indoor portion of Birmingham's Bull Ring Market, standing in front of a fishmonger, a ways off of the main centre-aisle. One vendor tells us that either the very poor or the idle rich come here to shop. This is one of the out-of-the-way stalls: less shiny, smelling like old fish, cheaper, with various fish from different parts of the world – more than the turbot, cod, sea bass or salmon that mainstream fishmongers located in a more convenient position within the market might sell. This place seems to specialize in what the industry sometimes calls 'trash' fish, pompano, rockfish or conger eel – those that get caught in the nets but have little commercial demand beyond what a fisherman might be able to get for them quayside. In this marketplace someone will find a use for it, buy it and eat it. The fish are layered out in rows and packed on ice. In the corner of the display, off to the side, there are buckets full of fish parts, bones, carcasses, off cuts, and startling for us, salmon heads. A very thin black man with a vaguely Caribbean accent is arguing with the fishmonger over price of salmon heads; apparently they're now 55 pence a pound. He complains that this is too expensive; they used to be 35 pence apiece. When asked if they were for his cat, he says no, they were for dinner. 35p is not much money, but for the man arguing it is the difference between buying one fish head or two – the difference between possibly having enough to eat or not (excerpt from field diary 2006).

We begin this paper with two opening propositions: waste and rubbish are not food, and salmon heads, along with the rest of its carcass, as well as other such discarded materials usually found skips and bins, even if edible, are waste. Waste is 'matter that has crossed a contingent cultural line that separates it from stuff that is worth keeping' (Watson and Meah forthcoming) and food, a 'thing' caught up in the process of being eaten by a consumer' after being valued as a foodstuff (Roe 2006: 112). In some instances, owing to particular materialities of particular objects as and to fundamental properties of their geographies, waste crosses back over the 'culturally contingent line'. It is (re)valued into foodstuffs – objects with the potential to become food. It is (re)formed into food. This essay interrogates these materialities and these geographies. Through the lenses of salmon heads and salmon, their peculiar material properties, the marketplaces where they are (re)valued and the geographies into which these places and objects assemble, this essay provides an account of what happens to waste for it to become food.

We are geographers, and questions of 'where' are important to us. This paper engages with where and how the lines that delineate food-waste from foodstuff are drawn, as well as

where and how these lines are contested, transgressed and otherwise reproduced through and within food markets. The opening vignette illustrates the ways in which the relations that comprise Birmingham's Bull Ring Market challenge normative distinctions between food and waste and transform the market into a place where a waste-stuff like salmon heads are re-valued and commoditized into foodstuffs. We argue that the relations whereby waste becomes food extend beyond the place of this market, where waste-stuff like salmon heads are materialized into food-stuffs to other sites where salmon-heads are valued as waste and separated from the rest of the valuable salmon. By tracing out the geography of not just salmon heads but also salmon we can better understand and articulate where as well as how it is that waste can become food. We further argue that these are not just questions of materiality, but questions of the ways in which the material and the places into which the material is embedded assemble into a kind of geography. For us as geographers these questions of 'where' become questions of place and place-making, which makes ultimately them into questions of geography.

Questions of geography extend beyond Geography. Place and place-making are fundamental to the ways in which humans engage with the world and construct their realities (Malpas 1999, Tuan 1998). Sack (2003) writes that place-making is a moral project because one feature of place is that it unavoidably interconnects with other places and is therefore complicit in their making (and vice versa). He argues that humans are intrinsically moral beings compelled to 'do good' and that 'evil' happens not through malicious actions but rather through actions resulting in inadequate geographical awareness, the ability to 'see' and realize how actions in one place relate to places (Sack 2001a, Sack 2001b). He (2003: 23) further contends that increased geographical awareness leads to a richer and more varied understanding of reality, which leads to the construction of 'intrinsically good' geographies that 'can be used as the basis for judging our actions and our use of place'. We deploy this argument to suggest that waste, particularly salmon heads, is available as food because some of the places where food and waste are demarcated, specifically markets, preclude geographical awareness. Furthermore we argue that methodological 'tools' often utilized to understand object and commodity processes (commodification, commoditization and the commodity fetish) such as object biographies or commodity chain analysis, are not sufficient to interrogate the transformation of waste into food because they are situated in a truncated geographical perspective that does not reveal the geographical possibilities of an object beyond that of the commodity (Page 2005, Appadurai 1986 (2005), Kopytoff 1986)

We employ a ‘topography’ (place-writing) to articulate the ways in which the delineation and evaluation of food and waste connect a constellation of disparate places into an interconnected geography of food and waste and to rectify the quandaries that dealing with the mutability of objects and their geographies might raise (see Coles and Crang 2011, (Coles forthcoming-a). Drawing from ‘multi-sited ethnographic’ approaches that follow ‘people’, ‘things’, ‘metaphors’, ‘plots, stories and allegories’ and ‘conflicts’ (see: Marcus 1995), this topography examines place and place-making through the material circulations of objects such as salmon and salmon heads. Part of this includes going to individual sites and contexts of valuation to determine individual moments in the material ‘lives’ of objects (Appadurai 1986 (2005)). Framing salmon-heads as a foodstuff requires going beyond both materialities and the markets where they are constituted and to their interconnected geographies. Topography likewise follows Marcus’s (1995:96) lead and ‘moves out of single sites and local situations of conventional ethnographic research design to examine the circulation of cultural meanings, objects, and identities in diffuse space-time’, and it ‘develops a strategy or design of research that acknowledges macrotheoretical concepts and narratives of the world system but does not rely on them for the contextual architecture framing a set of subjects’. The emphases of topography is place, place making and their constitution into a geography through the interrelation of social, material and discursive relations (see: Sack 1997). The significance of this geography is that it is both a nexus of relations and a conduit through which they flow. The interrelatedness of place means that the material relations in one place, such as the valuing of salmon for food, impact the social and discursive as well as the material relations in another, which helps to explain the presence of salmon heads, first as waste and then as food. Elements such as power reverberate through these geographies, and they manifest in a variety of different and potentially unexpected ways. Salmon heads are one-such unexpected materialization. Thus, we argue that the delineation and evaluation of food and waste, and the demarcation of waste from food, are acts of place and place-making, making questions of food and waste questions of geographical contingency and subject to both moral and material evaluation.

Beginning with the propositions that salmon heads are waste, and waste is not food, we address the geographical contingencies that separate food from waste and those that transform waste into food through vignettes gleaned from our empirical research into food, markets and place (such as the one that opens this essay). We use them to work through a number of important issues concerning objects and commodities, value and its negation (e.g.

waste), food and materiality and the places and geographies where (and how) these things happen. We site this essay in three UK-based food markets: Birmingham's Bull Ring Market is a retail market located in the city centre; London's Billingsgate Market is a mostly wholesale market located in Docklands, East London, and London's Borough Market, another retail food market but it is one noted for its high-end, 'ethical' and 'alternative' foods and for its reproduction of a kind of 'foodie' culture (Coles and Crang 2011). We focus on markets because we argue that they are the main places in which food and waste are contested. Although 'market' and 'marketplace' may refer to discursive spaces of the economy as they are constituted in particular sites (see: Abolafia 1998, Callon 1998), we interrogate these markets individually as places that value food, waste, salmon and salmon heads, before connecting them into a broader geography. As marketplaces each represent the assemblage of people, things and ideas, organized around the buying, selling and exchange of goods, and thus are places where such actions as commoditization, and such 'things' as commodity fetishes are produced, consumed and/or otherwise evoked. Ultimately we are interested in the ways that the social, material and discursive relations of the market assemble to reproduce a place that does not promote meaningful geographical awareness, which is ultimately why waste like salmon heads can cross over contingent boundaries to become food in the first place.

MATERIAL EVALUATIONS: SALMON AND SALMON HEADS

A fishy smelling puddle of icy water covers nearly the entire floor of Billingsgate Market. It's cold; it's wet; it's slippery, and we're standing in the middle of it. We would find later, long after departing the market that a certain lingering fishiness seemed to follow us around. Billingsgate Market is the City of London's main fish market and at one time the largest in the world. It is open to the public, but the market's primary business is with the city's caterers and fishmongers, making it a busy place. There are forty or so vendors, each with their seafood on display. Stalls are laid out to show off a wide variety of fish and shellfish. Everything is displayed on ice, and fish is packed in polystyrene cartons that are all seem to be a standardized size. Given the tremendous volume of fish that are on display we can only wonder at how many of these cartons are used each week, and how many of them make their ways into skips and landfills at the end. We guess about the amount of ice the fish market uses in a year.

This market has no stylized ‘marketing’. The architecture of the building resembles an aluminium Quonset hut. The fish here are traded on price, quality and the skill of negotiators, buyers and sellers haggle who to get the best prices for the commodities before porters ferry them to waiting vehicles that disseminate the fish into London’s fishmongers’, retail food markets, restaurants. This is an everyday place of food but one largely hidden within a vast food system. We’re here looking for salmon heads. Billingsgate has an extraordinary variety of fish available, including numerous types and ‘configurations’ of salmon – filets, ‘steaks’, whole fish, but we’ve yet to spot just their heads here. Given their retail value (somewhere between 40 and 55 pence) their absence at a mostly wholesale market is unsurprising (excerpt from field diary 2010)

Salmon heads begin their ‘lives’ as waste. Before they are separated from the rest of the fish, salmon heads are part of an assemblage of materialities that comprise a fish, and embody specific bio-physical characteristics, portray particular socially and culturally derived values that conspire to make parts of the fish a foodstuff and parts a waste-stuff. These assembled materialities inhabit discrete geographical locales, ranging from the sea, a fishing boat, a collection of markets to finally the body as food, or the bin as waste. These locales further assemble into a geography that comprises salmon and salmon heads. As the whole ‘thing’ moves from place to place, however, this assemblage is cut apart. Some parts are valued as foodstuffs and begin their own ‘lives’ where they have to potential to become food. Others parts, such as the heads and carcasses, are not valued as foodstuffs. They begin a different ‘life’ where they might become bi-products for which applications can be found, or they might become waste and subject to disposal. The places where these assemblages and disassemblages occur are critical in determining the shape, direction and indeed geography of their various future material lives.

Salmon are cold-water fish from the North Atlantic and the North Pacific. Unlike cod or halibut, familiar to those who frequent fish and chip shops, whose carcasses, like other white fish, are often prized by restaurants because they are used for making fish stock, salmon is an oily fish. This is important because oily fish not only spoil faster than lean white fish, when they begin to spoil it is obvious because of the smell. One of the reasons why salmon carcasses are not used for fish stock is that boiling water has a similar effect to the bacteria growth of spoilage. Both quickly break down salmon’s fatty amino acids and proteins into nitrogen and sulfur compounds, which are ultimately the chemicals that make fish smell ‘fishy’ in the first place (McGee 2004: 205). These bio-physical properties are one reason why the recent history of salmon as a food source is marked by technological

capabilities, such as ice, flash freezing and refrigeration, that keep the fish as ‘fresh’ as possible – to inhibit these chemicals from forming, to prevent the fish from going off and to keep it from smelling and tasting ‘fishy’ or worse (Freidberg 2009).

As a food and as a commodity, salmon is available for purchase almost everywhere, and it comes in many forms. At the fishmonger, it is available fresh, whole, in filets, or cut into steaks. In supermarkets, it can be displayed ‘fresh’ at the fish counter or tinned in the canned goods section. Often it can be found frozen in Cryovac bags in the freezer aisles with along with other fish associated with the ‘world’ food system, such as tilapia. In broad terms salmon can be segmented into two classes. Market salmon are those that appear for sale in the world’s retail and wholesale markets and are destined for restaurants, fishmongers’ and domestic kitchens and dining rooms. Market fish can be either wild-caught or farmed-raised, factors that impact their price and position within the market, and they are sold through a variety of marketing systems where prices are set through negotiations that take into consideration the fish’s provenance, quality and size as well secondary factors such as season and availability, all of which trickle down to impact the price and value of salmon. Salmon are also part of industrialized and mechanized fishing systems where the movement of salmon from ocean to saleable item is created in on-board factory-fishing ships or in the pens where they are farmed. These systems rely on economies of scale and largely supply supermarkets with ‘fresh frozen’ filets and steaks. The processes are largely mechanized to remove as much flesh as possible from the carcass, and even remaining flesh is mechanically separated from the carcass to be ground up and tinned. The bones and heads are packed separately, and typically sold frozen *en masse* in 1 ton blocks to fertilizer manufacturers – a recent price check showed the going rate for a block of salmon heads to be about 950 US dollars (\$) per ton (we were unable to find anyone who would deal in smaller quantities of heads, and given the equipment necessary to deal with such a quantity, one ton of salmon heads can probably be considered ‘for industrial use only’).

The critical difference between market and industrial salmon is that market fish enter markets as whole objects (minus the guts, which end up in the sea). Their flesh is separated from carcasses and the edible bits parceled out from waste-bits further down the ‘chain’. Much of this ‘work’ surrounding market salmon is done in geographically disparate locales by skilled laborers: fishermen (and women), market traders and porters, and fishmongers and cooks, each of whom occupies a particular locale within a salmon’s ‘life’, and each of whom contributes to the fish’s ‘added value’, values that make the fish more edible through

capturing, filleting, portering and ultimately cooking. Paradoxically these values are rarified into the commodity from as the fish is repeatedly bought and sold in the markets, and the salmon becomes a commodity numerous times from sea to fork (or sea to bin).

Market fish, the ones found at most retail fish markets and fish mongers', are part of a wide variety of commercial fishing operations that range from seine and gill net trawler fishing, line-caught day fishing, to fish farming at a variety of scales. These operations, however, are not as industrialized as the factory fishing model. Seine nets capture entire schools of fish like a big scoop after they are located by sonar; everything in the water is captured, and all fish in the net are ultimately sent to different markets – the valuable fish to places like Billingsgate, and less valuable 'trash' to the wholesalers that supply fishmongers' in markets like Birmingham's. Gillnets only capture fish large enough to become entangled in the nets by their gill plates (hence the name). Smaller fish can swim through while too-large fish such as tuna do not get caught. Setting the net sizes generates a consistent size for fish, and with gillnets it is possible to fish for particular species. All of which makes it possible for fishing boat skippers to more closely control where the fish might end up, such as markets like Billingsgate that promise the highest chances of profitability. Salmon taken off of day boats are caught with individual lines usually end-up in specialty markets (like Borough Market), or they are sold directly to local restaurants where their extreme freshness, and claims to 'wildness', commands premium prices for which restaurateurs are happy to pay. All market salmon arrive in markets packed whole in ice, fresh-frozen and gutted. Once at the wholesale market the entire fish are sold to restaurateurs and suppliers, to fishmongers, or possibly to end consumers based on either a daily market price or through direct negotiation.

Fishmongers and cooks are the ones who display and market the fish to end consumers, and prepare the fish for cooking. At a fishmonger salmon are displayed on ice along with other fish allowing consumers to choose for themselves what they might want to buy. Because whole salmon are usually large, customers tell the fishmonger what cut they want and how they want it. For a filet, the fishmonger removes the main column of bones, the head and the scales, cuts and wraps the flesh. Preparing a salmon to eat creates a lot of waste: skin, bones, heads. The cost of this wastage along with the cost of everything else is bound up in the price of the commodity and passed over the end consumer. The materiality of wastage goes into the bin because they no longer have the part that makes them valuable. In Birmingham's Market this bin is a parts bucket where carcasses and heads await (re)sale and (re)consumption. Other bones, those of white fish might await resale as a value-added

product such as fish stock, but because of their material properties, salmon heads and bones are not desirable for stock, so they sit in bucket until someone buys them to eat, or until the fishmonger puts them out with the rest of the rubbish at the end of the day. When they are in the waste bin salmon heads enter into a kind of liminality, but they might cross back over.

MATERIAL EVALUATIONS: PLACE AND COMMODITIES

We're in Borough Market, London. The market floor is hectic with customers and tourists Borough Market's material and affective commodities. A fishmonger is selling the usual variety of high quality, extremely fresh fish arranged on ice and around a display comprised of driftwood sculptures and fishing bric-a-brac (old nets, lures, lobster pots). Colorful trash-fish are arranged in comic poses around the other bits. A shark's mouth is propped open with plastic diver figurine from an aquarium, a large octopus is wrapped around one of the sculptures and large salmon heads are splayed on hooks and hung from the back of the stall...A couple hours later – its 3:35 and Borough Market has reached a critical moment where customers and vendors are in further frenzy buying and selling. During this time, stuff that doesn't sell ends up in the skips out back, so vendors are keen to bargain, and customers keen to haggle. We stop back by the fishmonger and see the salmon heads placed alongside a rapidly depleting stock of other fish. The ice is melting fast and everything is for sale. 'How much are these?' '£1.50' each. 'What are they good for?' 'Stock,' 'You can't make stock with salmon heads, it goes funny'. 'Okay £1 each'. 'Done! back in 30 minutes, keep 'em here?' 'fine!' We take a walk around the market for about half hour and buy a lemon, some celery stalks, parsley and some green onions. 'Let's see if we can make stock with salmon heads'. It's 2 minutes before the closing bell. The vendor's gone. Only his assistant remains. 'How much for the salmon heads?' She glances at her watch and back at me, 'a quid [£1]'. 'For the lot?' 'Yep,' 'Done!' 'what are you going to do with those?' 'gonna try to make fish stock...' 'Ha!' (excerpt from field diary 2008).

It is tempting to focus solely on the material and just follow the thing, but there are limitations to just following the thing when it comes to salmon heads. The main one lies in identifying which thing to follow. Following salmon does not necessarily lead to a salmon head, because as we have suggested, salmon heads as food signify an unexpected outcome of the commodity relations of salmon as food. Salmon heads are not bound up in the same processes as the commoditization and fetishization as salmon. Rather their commoditization happens within the peculiar yet all too normal relations of the markets that make salmon heads available for sale as foodstuff, or subsequently and specifically do not. When it comes to the processes that define an object, such as those that define commodities, or those that delimit waste and food, the question of 'where' is often (and ironically) overlooked in

geographical (Castree 2004). This is despite Appadurai's (1986 (2005):13) argument that alongside other 'aspects of commodity-hood', such as 'phase' and 'candidacy', 'commodity context' requires 'explication'. For Appadurai (pg 15) 'context refers to the variety of social arenas, within or between cultural units, that help link the commodity candidacy of a thing to the commodity phase of its career'. The commodity processes that help to define salmon and salmon heads happen in markets, and they do so for good reason. Markets are produced as people, things and ideas come together. They are sites of commodity transaction that are governed by 'laws' shaping the ways in which their components can interact (Callon, 1998). These laws however, are not based solely on the supply and demand logic of neo-classical economic orthodoxy. Their own culturally contingent complexities, nuances and rituals also define not only what happens in the market, but the market itself (Abolafia, 2002; Caliskan, 2007; Geertz, 1978; Taussig, 1980). This possibility makes markets extraordinary places where people, things and ideas not only interact but collide and places where new matter and new materials – the most significant of which is the commodity – are created.

Internal and external market relations mediate the commoditization of particular objects. From the vignette, any other more, valuable type of fish requires payment once the price had been negotiated, but because the salmon heads in Borough Market had already been paid for by whoever purchased the rest of the fish the fishmonger is indifferent to their sale. Had the authors not returned, they would have gone into the bin; had they returned and paid the negotiated price, the fishmonger would have made an extra profit of £7.25 on top of whatever he made on the original fish, and as it stands the fishmonger still made about £1 extra (assuming his employee did not take her cut). This field encounter suggests a different trajectory for leftover fish. The salmon heads in London's Borough Market are cast aside, 'liberated' as rubbish and hung on hooks as part of the display (Min'an 2011). They are not to be eaten unless a customer really wants them. In this vein anything in a market is negotiable. The fish monger in Borough Market the stall uses salmon carcasses and other 'trash fish (sharks, eels, octopus, among others)' as decoration along with lobster traps, old fishing nets and other bric-a-brac associated with fishing to produce some kind of geographical knowledge or imagination of 'fishing'. He will sell the heads. He even recognizes an option for their use, but mostly, to him, the value of salmon heads is to make his stall look more like a fish stall so he can sell more valuable parts of the salmon. Rubbish, after all is not normally consumed here.

Market relations do more than make commodities. They also obscure, truncate, and, as in the case of Borough Market, produce an imaginative geography of what agents in the market think consumption ought to be. Borough Market is a high-end London retail food market that positions itself as an 'alternative' and otherwise 'ethical' market place that specializes in retailing foodstuffs that are rich in provenance. The foodstuffs in Borough are variously 'local', 'fair', 'organic', and each have some kind of geographical story or knowledge associated with them evoking a kind of 'double' commodity fetish where the value of the commodity is partially derived from production of geographical knowledges (Cook and Crang 1996). Vendors in Borough Market produce these knowledges by 'revealing' some narratives of production through devices such as labels designating geographical origin, small object biographies, stall displays and other materials that assemble into a material-semiotic that locates Borough Market and its foods into idealized geographical imaginary of food consumption that only includes partial and mediated geographies (Coles forthcoming-b, Coles forthcoming-a). These imaginative geographies do not include the market's own waste, except during critical moments such as near the end of the trading day when the relations holding the market together are already unstable. More significantly, these imaginary geographies may or may not aid consumers in unveiling the commodity fetish that obscures production, but they certainly do not allow consumers to see or imagine the effects that their consumption might have on what others might consume. The market for salmon in Borough means the production of salmon waste, which has to go somewhere else. Eating salmon in Borough Market means that someone else has to dispose of its head.

MORAL EVALUATIONS: WASTE, OBJECTS AND GEOGRAPHY

Recent literatures have problematized waste in interesting and useful ways. In particular, these literatures focus on the ways in which wasting and rubbishing are active processes of disposal bound to the maintenance of social and cultural order (see: Douglas 1994 (1966), Douglas and Isherwood 1996, Hetherington 2004) and on the ways that processes of disposal are often incomplete, conditional and otherwise fraught (Munro 2001). These efforts have complicated 'typical' production/consumption narratives of objects and commodities, and they have highlighted processes of material as well as ephemeral production implicit within these processes. Hetherington (2004: 159) for instance disrupts such linear narratives of production, consumption and disposal by suggesting that 'waste'

signifies too final ‘an act of closure’, and he argues that disposal does not necessarily represent some ‘final state of rubbishing’ but rather an act that signals the ‘closure of a particular sequence of production-consumption events’. This allows us to consider the binning of salmon heads as not a final act of rubbishing but a suspension of their ‘lives’ into a liminal period of possibility. They might become food, should they enter into particular geographical relationships, or they might still go into the bin, where they are waste.

The relationship between consumption and waste and their liminal possibilities are further problematized by examining and understanding the ways in which consumers variously produce, consume and produce again objects that might be classed as waste. Notions of ‘second hand cultures’ suggest that disposal is the transference of value rather than a final act of rubbishing that signifies a complete devaluation (Gregson and Crewe 1999, Gregson and Crewe 2003). And, reconfiguring and theorizing spaces of consumption and to challenge the discourses of so-called ‘consumersim’ broadens the ways in which rubbish and waste are and can be spatialized to provide fuller accounts of initial production to presumed ‘end-of-life’ and ‘final’ burial (Gregson, Crewe and Brooks 2002, Gregson, Metcalfe and Crewe 2007) (Gregson et al. 2010a, Gregson, Watkins and Calestani 2010b). The (re)negotiation of salmon heads in Birmingham, and likewise the negotiation of salmon in Billingsgate, works within these broader spatial margins.

Working from the perspective of material entropy and decay both Edensor (2005) and DeSilvey (2006) conceive of the affective and ephemeral as well as material productions that come alongside waste and wastage. Both deploy notions of material memory and monument. Edensor (2005) drawing from Neville and Villeneuve’s (2002) work, for instance, considers the absent presences contained within ‘ruins’. Specifically, Edensor comments (pg. 317) that whilst ruins ‘disassemble and rot’ and ‘seem to have lost any value they may once have possessed...ruinous matter has not been consigned to burial or erasure, and still bears the vague traces of its previous use and context’. Salmon heads contain value as food because they bear traces of its previous material assemblages and contexts. One way to consider a salmon head is to consider its absent salmon-body – if the body is edible, then why not the head? DeSilvey (2006) examines the ecological processes of ‘disassemblage’ and decay and argues that waste as well as being destructive can be also be a part of productive processes leading to new life. For her, as for us with salmon heads, notions of ‘new life’ can be taken literally as organisms ingest ‘waste’ as part of their own bodily reproduction. From a perspective that seeks to increase geographical awareness, we are not convinced that eating

waste is acceptable – even if it is edible and fulfils basic biological requirements for bodily reproduction. We argue that it only happens because place-making in markets obscure the full material circulation and therefore possibilities of salmon and their heads. This positions the consumption of salmon as part of a broader narrative of consumerism because eating salmon in this context necessarily wastes some parts that are edible. Thus understanding the place-making and the geographies that make eating such waste possible is vitally important.

Aligning aligns debates about waste with those of food and food consumption (and disposal) Evans (2011b, 2011a, 2012) examines food's 'conduits' as it moves through the household and the practices of consumers as they simultaneously reproduce and contest a discourse of a 'throwaway society'. Evans (2012), drawing from various anthropologic and ethnographic notions (such as representations of death, gift giving, commodity exchange, liminality, etc), convincingly considers first and second 'burials' of food in refrigerators, and positions food waste as existing in a kind of liminal space as its consumers decide its fate: the rubbish bin, a gift, or a material transformation into compost. Crucially this work acknowledges that food and food-stuffs are different from other objects that might one day become waste. One difference is that food does more than merely provide biological nourishment. It is a site where politics and ethics are contested and contestable (Goodman, Maye and Holloway 2010). Food also differs from other objects because it has a definite shelf-life where its ability to sustain life not only diminishes quickly when it ages, but should aging not be managed properly, e.g. through refrigeration, preservation, etc, food can transform into a poison and take life away. Food's material properties make their values as foodstuffs fragile. If not ingested foodstuffs are destined to become waste, and only through some kind of material reconfiguration and respatialization, such as that which Evans's (2012) description of composting relates, can some value be (re)claimed from food-waste. Though the value of waste in this case is not in that it is/was food, per say, but that compost itself has some value as organic matter, which can be employed as fertilizer – in a roundabout way this links back to DeSilvey's (2006) commentary about organismal reproduction, and to arguments about micro-ecology and the 'force of things' (see: Bennett 2004, Sage 2007).

Effectively prolonging the 'life' of the object and highlighting the particular ways that old objects can be reconfigured into new with new values and new conduits that may or may not bare spectral resemblance to the old, these debates centre on the reconstitution of value to reclaim objects from their normative categorization as waste and to place them into new material and social contexts. Central to these accounts is that material reconfiguration follows

a period of decay, depreciation and value extraction. Reconfiguration necessarily precedes revaluation. 'Waste', however, still remains at the end of an object's life, and the moment of waste, its space-time when the absolute value of the object's material substance is completely diminished, is only displaced with the object's material reconfiguration and reconstitution. Waste still occurs at some point. Our critique is that its moment effectively respatialized waste without necessarily considering the geographical disturbances that respatialization might have, or that respatialization itself is based on material and geographical preconditions are already in place: the demand for salmon in one place leads to the valuation of its heads in another.

A more expansive understanding of these material and geographical conditions is especially important to debates about the relationships between value, decay, reconfiguration and revaluation, when they are applied to salmon. For one, because of its bio-physical properties, salmon, like all foodstuffs, are already in a state of decay. Once fished and killed, the biological processes that keep them alive and fresh are disrupted, and the materialities that make them a potential foodstuff only have a short time when they are fresh enough to be applicable as foodstuff before they dissolve into other stuff. Much of the food industry in fact is organized around preventing, slowing, or otherwise managing decay to preserve freshness and allow foodstuffs as much time as possible before they 'die' (again) (Godley and Williams 2009, Freidberg 2009). Also, while salmon will become waste should they not be first configured into a foodstuff and then eaten, salmon heads are already waste products that have some possible uses should the geographies be in place to exploit them. Salmon heads, however, are neither surplus nor oversupply. They just happen because salmon are valuable, and they happen to become commodities because traders seek to exploit their value after the value of the salmon flesh has already been extracted.

Salmon heads may just happen, but their revaluation and eventual consumption as food comes near the end of a geographical 'life' that is enveloped by interconnecting politics of production and politics of consumption. Food is valued for its ability to sustain life and reproduce the body. This makes it along with its production and consumption intensely political. However, much of what we eat circulates as part of a commodity system that works to obscure these same political relations behind the fetish a commodity fetish that hides the social conditions of production from consumers. Harvey (1990: 423) uses this as starting point to encourage researchers to uncover, unravel, or otherwise 'to get behind the veil, the fetishism of the market and the commodity, in order to tell the full story of social

reproduction'. Consumption and production of food may well be political, and these politics can be traced by 'following' consumption to production (and production to consumption) (Cook et al. 2006, Cook 2004). Unveiling the fetish that hides these relations does not account for all of the relations of that allow for waste to turn into food nor the types of places where such transgression can occur. 'Standard analysis of the commodity fetish sets out to lay bare the process of production, but this is only the first step. The really effective trick of the commodity fetish is to suggest that it is enough to stop at this point, to conclude that by unveiling the mystery of the content of the commodity then the mystery of the commodity has been dispensed with' (Page 2005: 304). Engaging just with the commodity 'fetish' overlooks what happens after the commodity is consumed, and cannot account for waste and wasting. Consuming salmon produces salmon heads, and this waste goes somewhere. Understanding salmon heads and their geographies becomes a matter of starting where the salmon ends, particularly when exploring the geographies required to bring objects back from the dead and when these 'dead' objects are then used to feed the living.

One way to start is to reconsider the geographies of commodities so that they incorporate the life of the object before commodification, and, particularly in our case, consider the lives that the object might have after it has been consumed. Page (2005: 298) suggests 'that there is no single momentous shift from non-commodity to commodity, but there is, in addition, the suggestion that there are endless other narratives that could be traced through the biography...'. He goes on to identify a 'new geography of commodities' that considers such broader narratives (Page 2005) (for an example of these 'new' geographies, see: Cook and Crang 1996, Whatmore and Thorne 1997, Leslie and Reimer 1999, Hughes 2005, Castree 2001, Castree 2004, Jackson, Ward and Russell 2006, Jackson, Ward and Russell 2009, Cook et al. 2004, Cook et al. 2006). The life of the salmon is traceable from fork to sea and its fetish can be unravelled by turning back and examining this trip. Salmon heads, however, are only part of this journey. When it comes to aligning questions of waste with those of their materiality and their geographies, insights into the commodity fetish must also take into consideration the mutability of the object, and the possible futures that the object might become. Likewise questions of becoming, such as old ships becoming 'new' 'chocky-chocky furniture' (Gregson et al. 2010a) or old food becoming compost (Evans 2012), are centrally important, but their geographies that got them there should also be worked out.

MORAL EVALUATIONS: CLOSING PROCLAMATIONS

Whether we like it or not, much of the food we eat is the result of industrial food production where foodstuffs are produced for profit and circulated as commodities in a market economy (Goodman and Watts 1997). As a result, when thinking about food and waste, it is tempting to focus an analysis and critique of waste as something systemic and structural within industrialized capitalism. Such analysis might consider the tonnes of food discarded each year (Godfray et al. 2010); the ecological and ethical cost of particular foods, like meat in terms of ‘lost’ (or wasted) trophic energy and environmental degradation (de Bakker & Dagevos), or the material resources mobilised to produce and transport foods as part of an internationalised system of trade (Marsh and Bugusu 2007, Pretty et al. 2005). At the centre of such critique, something that Evans (2011b) seeks to problematize in his examination of the complex politics that bind food consumption, waste and blame in such a system to consumers in the home, is a sense of moral outrage around waste where wasting food becomes tantamount to all that is wrong with capitalism in the first place. This is not to say that we think that there should be no moral outrage when it comes to issues of food, waste and wasted food, but, following Sack (2003: 23), better awareness of their geographies will lead to more complex and therefore better understandings of their realities, which will allow us to condemn the bad, whilst also articulating the good.

The transformation from waste to foodstuff to food means reaching into the bin in order to, reclaim, revalue and (re)consume its contents. This account of salmon and salmon heads suggests that reaching into the bin ‘happens’ because of the ordering of place into a geography. The transformation of waste into food is further complicated when it takes place within the market. Markets are sites where market-relations define the use and exchange-values of objects. They are effectively where, amongst other things, objects become commodities and where commodities are consumed. As places markets do not allow for a complete view of the geographic processes that bring objects to markets, nor do they facilitate an understanding of the processes that send objects away. One important facet for salmon heads to be sold as food in Birmingham’s market is that they are ‘things’ caught up in the relations of the market; they are normalized as commodities, valued as foodstuffs, and they are sold to become food. Missing in their narrative in Birmingham, however, is that salmon heads are also caught up in the relations of other markets, such as Billingsgate, or Borough. More significantly their consumption demonstrates the troubling realization that ‘the outcome of disposal is placing rather than rubbishing’ (Hetherington 2004: 163). What is

more troubling, and perhaps missing in our account thus far is that the protagonist at the beginning of this essay is unwittingly and unknowingly fashioned into a pariah because through the necessity of poverty and hunger he eats waste. Although aided by ambivalences of the market, the man negotiating the price of salmon heads in Birmingham, and in process negotiating whether he afford one or two and therefore to have enough to eat or not, is the one reaching across the boundary between food and waste, and he is the one excluded from a culture and society that has already determined what is food and what is waste.

This troubling encounter compels us to join in with others to contradict or otherwise ‘queer’ the normalizing discourses and interpretations of economic practice: (Pollard et al. 2009: 138). Such geographical perspective permits multi-sited gazes and engages with the multiple spatialities and temporalities that come with objects in motion. Part of this queering is to momentarily suspend the uncomfortable encounters (Rosenberg 2011, Butler 2006) that an analysis of eating waste such as salmon heads necessarily entails in order to trace out the ways in which the geographies that lead to such encounters come into line their underlying and unequal materialities. This takes the ‘rhizomic’ nature of ‘thing-power’ at face value to consider the ways in which power reverberates through a geographical assemblage of places (Bennett 2004). Articulating a ‘multi-sited’ geographical account that brings together a concern for the material with a concern for their geographies interrogates not just the places where the object goes or has been, but also, the places where the object has not been, will not or should not go, yet somehow ends up anyway – and we argue that objects like salmon heads end up in certain places based partly on their valuation in one place and partly on their valuation(s) in others. Even this is incomplete until it goes so far as to examine why the materialities of these objects-in-motion happen the way they do. This means ‘following the thing’, but it also means following the geography, and following geography to unexpected, unsavoury and uncomfortable places where other things, like salmon heads might be.

REFERENCES

- Abolafia, M. Y. 1998. Market's as cultures: an ethnographic approach. In *The Laws of Markets*, ed. M. Callon, 69-85. Oxford: Blackwell Publishers.
- Abolafia, M. Y. (2002). Making Markets: Opportunism and Restraint on Wall Street. In B. Nicole Woolsey (Ed.), *Readings in Economic Sociology* (pp. 94-111).
- Appadurai, A. (1986((2005)). *The Social Life of Things*. New York: Cambridge University Press.
- Appadurai, A. (1986 (2005)). Introduction: Commodities and the Politics of Value. In *The Social Lives of Things: Commodities in Cultural Perspective*, ed. A. Appadurai. Cambridge: Cambridge University Press.
- Bennett, J. (2004) The Force of Things: Steps toward an Ecology of Matter. *Political Theory*, 32, 347-372.
- Butler, J. 2006. *Precarious Life: The Powers of Mourning and Violence*. London: Verso.
- Callon, M. (1998). Introduction: The Embeddedness of Economic Markets in Economics. In M. Callon (Ed.), *The Laws of Markets*.
- Caliskan, K. (2007). Price as a market device: cotton trading in Izmir Mercantile Exchange. *Sociological Review*, 55(2), 241-260.
- Castree, N. (2001) Commentary: Commodity Fetishism, Geographical Imaginations and Imaginative Geographies. *Environment and Planning A*, 33, 7.
- Castree, N. (2004) The Geographical Lives of Commodities: Problems of Analysis and Critique. *Social and Cultural Geography*, 5, 15.
- Coles, B. & P. Crang. 2011. Placing Alternative Consumption: Commodity Fetishism in Borough Fine Foods Market, London. In *Ethical Consumption: a Critical Introduction*, eds. T. Lewis & E. Potter, 87-102. London: Routledge.
- Coles, B. F. forthcoming-a. Consuming Coffees & Producing Places: From the Intimate to the Global – and Everywhere in Between. In *Why We Eat How We Eat*, eds. E.-J. Abbotts & A. Lavis. London: Ashgate.
- (forthcoming-b) Making the Market Place: A Topography of Borough Market, London. *Cultural Geographies*.
- Cook et al., I. (2004) Follow the Thing: Papaya. *Antipode*, 36, 642-664.
- (2006) Geographies of food: following. *Progress in Human Geography*, 30, 655-666.
- Cook, I. (2004) Follow the Thing: Papaya. *Antipode*, 36, 21.
- Cook, I. & P. Crang (1996) The World on a Plate. *Journal of Material Culture*, 1, 22.
- DeSilvey, C. (2006) Observed Decay: Telling Stories with Mutable Things. *Journal of Material Culture*, 11, 318-338.
- Douglas, M. 1994 (1966). *Purity and Danger: an analysis of the concept of pollution and taboo*. London: Routledge.
- Douglas, M. & B. Isherwood. 1996. *The World of Goods: Towards and Anthropology of Consumption*. London: Routledge.
- Edensor, T. (2005) Waste Matter: The Debris of Industrial Ruins and the Disordering of the Material World. *Journal of Material Culture*, 10, 311-332.
- Evans, D. (2011a) Beyond the Throwaway Society: Ordinary Domestic Practice and a Sociological Approach to Household Food Waste. *Sociology*, 46, 41-56.
- (2011b) Blaming the consumer – once again: the social and material contexts of everyday food waste practices in some English households. *Critical Public Health*, 21, 429-440.
- (2012) Binning, gifting and recovery: the conduits of disposal in household food consumption. *Environment and Planning D: Society and Space*, 30, tbc.

- Freidberg, S. 2009. *Fresh: A Perishable History*. London: The Bellknap Press of Harvard University Press.
- Geertz, C. (1978). The Bazaar Econom: Information and Search in Peasant Marketing. *The American Economic Review*, 68(2), 28-32.
- Godfray, H. C. J., J. R. Beddington, I. R. Crute, L. Haddad, D. Lawrence, J. F. Muir, J. Pretty, S. Robinson, S. M. Thomas & C. Toulmin (2010) Food Security: The Challenge of Feeding 9 Billion People. *Science*, 327, 812-818.
- Godley, A. & B. Williams (2009) Democratizing Luxury and the Contentious "Invention of the Technological Chicken" in Britain. *Business History Review*, 83, 267-290.
- Goodman, D. & M. Watts. 1997. *Globalising Food: Agrarian Questions and Global Restructuring*. London: Routledge.
- Goodman, M. K., D. Maye & L. Holloway (2010) Ethical foodscapes?: premises, promises, possibilities. *Environment and Planning A*, 42, 1782-1796.
- Gregson, N., M. Crang, F. Ahamed, N. Akhter & R. Ferdous (2010a) Following things of rubbish value: End-of-life ships, 'chock-chocky' furniture and the Bangladeshi middle class consumer. *Geoforum*, 41, 846-854.
- Gregson, N. & L. Crewe (1999) Beyond the Highstreet. *Area*, 26, 261-267.
- . 2003. *Second Hand Cultures*. London: Berg.
- Gregson, N., L. Crewe & K. Brooks (2002) Shopping, space and practice. *Environment and Planning D: Society and Space*, 20, 597-617.
- Gregson, N., A. Metcalfe & L. Crewe (2007) Identity, Mobility, and the Throwaway Society. *Environment and Planning A*, 25, 682-700.
- Gregson, N., H. Watkins & M. Calestani (2010b) Inextinguishable fibres: demolition and the vital materialisms of asbestos. *Environment and Planning A*, 42, 1065-1083.
- Harvey, D. (1990) Between space and time: reflections on the Geographical Imagination. *Annals of the Association of American Geographers*, 80, 418-434.
- Hetherington, K. (2004) Secondhandedness: consumption, disposal, and absent presence. *Environment and Planning D: Society and Space*, 22, 157-173.
- Hughes, A. (2005) Geographies of Exchange and Circulation: Alternative Trading Spaces. *Progress in Human Geography*, 29, 9.
- Jackson, P., N. Ward & P. Russell (2006) Mobilising the Commodity Chain Concept in the Politics of Food and Farming. *Journal of Rural Studies*, 22, 13.
- (2009) Moral economies of food and geographies of responsibility. *Transactions of the Institute of British Geographers*, 34, 12-24.
- Kopytoff, I. 1986. The Cultural Biography of Things. In *The Social Life of Things: Commodities in Cultural Perspective*, ed. A. Appadurai. Cambridge: Cambridge University Press.
- Leslie, D. & S. Reimer (1999) Spatializing Commodity Chains. *Progress in Human Geography*, 23, 201-220.
- Malpas, J. 1999. *Place and Experience*. Cambridge: Cambridge University Press.
- Marcus, G. E. (1995) Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. *Annual Review of Anthropology*, 24, 95-117.
- Marsh, K. & B. Bugusu (2007) Food Packaging—Roles, Materials, and Environmental Issues. *Journal of Food Science*, 72, R39-R55.
- McGee, H. 2004. *On Food and Cooking: The Science and Lore of the Kitchen*. New York: Scribner.
- Min'an, W. (2011) On Rubbish. *Theory, Culture & Society*, 28, 340-353.
- Munro, R. (2001) Disposal of the Body: Upending Postmodernism. *Ephemera*, 1, 108-130.

- Neville, B. & J. Villeneuve. 2002. 'Introduction: in Lieu of Waste', . In *Waste-Site Stories: The Recycling of Memory*, eds. B. Neville & J. Villeneuve. Albany, NY: State University of New York Press.
- Page, B. (2005) Paying for Water and the Geography of Commodities. *Transactions of the Institute of British Geography*, 30, 14.
- Pollard, J., C. McEwan, N. Laurie & A. Stenning (2009) Economic Geography under Postcolonial Scrutiny. *Transactions of the Institute of British Geographers*, 34, 137-142.
- Pretty, J. N., A. S. Ball, T. Lang & J. I. L. Morison (2005) Farm costs and food miles: An assessment of the full cost of the UK weekly food basket. *Food Policy*, 30, 1-19.
- Roe, E. (2006) Things Becoming Food and the Embodied, Material Practices of an Organic Food Consumer. *Sociologia Ruralis*, 46, 104-121.
- Rosenberg, S. 2011. Facing Losses/Losing Guarantees: A Meditation on Openings to Traumatic Ignorance as Constitutive Demand. In *The Future of Memory*, eds. R. Crownshaw, J. Kilby & A. Rowland, 245-264. Oxford: Berghahn Books.
- Sack, R. 1997. *Homogeographicus: A Framework for Action, Awareness and Moral Concern*. Baltimore, MD: Johns Hopkins University Press.
- . 2003. *A Geographical Guide to the Real and the Good*. London: Routledge.
- Sack, R. D. (2001a) The geographic problematic: empirical issues. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 55, 107 - 116.
- (2001b) The geographic problematic: moral issues. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 55, 117 - 125.
- Sage, C. 2007. 'Bending science to match their convictions': Hygienist conceptions of food safety as a challenge to alternative food enterprises in Ireland. In *Alternative Food Geographies: Representation and Practice*, eds. D. Maye, B. W. Ilbery & M. Kneafsey, 203-222. London: Elsevier.
- Tuan, Y.-f. 1998. *Escapism*. Baltimore, MD: Johns Hopkins University Press.
- Watson, M. & A. Meah (forthcoming) Food, waste and safety: negotiating conflicting social anxieties into the practices of domestic provisioning. *Sociological Review Monographs*.
- Whatmore, S. & L. Thorne. 1997. Nourishing networks: alternative geographies of food. In *Globalising food: agrarian questions and global restructuring*, eds. D. Goodman & M. Watts. London: Routledge.

ACKNOWLEDGEMENTS

The authors would like to thank European Research Council (ERC), The University of Leicester, The University of Western Michigan and the University of Sheffield for supporting this research project. In addition we would like to thank Peter Jackson and Nicky Gregson for comments on an earlier draft of this paper and an anonymous reviewer for commentary on a later version. We would especially like to thank David Evans, Hugh Campbell and Anne Murcott for both their insightful comments and endless patience. Mistakes, omissions and all other shortcomings are ours and ours alone.