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Materiality and waste: inorganic vitality in a networked world

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At a first level, the papers in this theme issue provide a contribution to the diversity and vitality of current waste scholarship. At another level they are a means to moving waste scholarship to a fuller engagement with materiality.ⁱ Our starting point here is a paradox. Waste is intrinsically, profoundly, a matter of materiality and yet – notwithstanding a sustained engagement with materiality in certain areas of the social sciences of late – much of what is most readily identified as waste research remains staunchly immaterial. Just as much as societies have sought to distance themselves from and hide their wastes for fear of contamination, so academia has been shy of the *stuff* of waste. Predominantly, social science work identifies waste in terms of waste management; a move which ensures that waste is defined by, and discussed in terms of, ‘disposal’ technologies, or – more correctly – waste treatments, and their connection to policy. The stuff of waste therefore is translated into treatment technologies - principally the established ones of incineration and landfill but also emergent technologies such as anaerobic digestion. Or, it is reconfigured as resource recovery, that is, as recycling, re-use and re-manufacturing. Thence, for the most part, it is translated into metrics – tonnes and targets. To modify Zygmunt Bauman’s paraphrasing of Marx, with waste all that is solid (or indeed liquid) tends to melt, if not into air, into the register of the categorical. Further, the radical separation of waste as material and matter from a policy world of tonnes and targets inscribes itself into clear academic divisions of labour. Hence, waste in the social

sciences has hitherto been the primary concern of environmental policy and urban planning, whilst stuff and its treatment remains the preserve of the technical and thus the domain of engineering. The matter of waste becomes fixed and limited through management. Caught within a teleological fix, that which is managed as waste is waste, and that which is waste is what is managed.

Waste's identification with waste management, specifically its translation into the categories and policies of waste management, is a manoeuvre which places the field firmly in accord with Latour's 'moderns'. In keeping with that we find much work that problematises waste does so at the level of the categorical rather than opening out its ontological politics. So, albeit that there are considerable differences between work which seeks to evaluate policy outcomes (Davoudi, 2000; Petts, 2000, 2004) and that which has moved waste debate into the conceptual terrain defined by governance (Davoudi, 2009) and governmentality (Fagan, 2004; Bulkeley *et al*, 2007), these two force fields within waste scholarship remain firmly in the realms of humans acting on the world (cf. Hillier, 2009). In the first body of work, the field is defined by end-of-pipe policy, and focuses on the identification of 'barriers to' as the primary means to engage with waste policy. Policy outcomes are what matters here, but - as Bulkeley *et al* (2007) remark - such thinking perpetuates a 'linear, techno-economic model' of the policy process, divorcing policy making from policy intervention. It also, we argue, works to locate waste policy research at the furthest remove of all 'end-of-pipe' policies. In Bulkeley *et al*'s own work these difficulties are addressed by turning to the literature on modes of governing, with its focus on governmental technologies as deployed by agencies in institutional relations. Through their analysis of UK municipal waste authorities, Bulkeley *et al* identify four modes of acting on the world with respect to UK waste – disposal, diversion, eco-efficiency and resource. Yet, notwithstanding its conceptual sophistication, in this work, as in the

earlier work of Davoudi and Petts, waste just is: it is the stuff that is being governed, or that which is the outcome of policy. Black-boxed, manipulated, treated, distributed, and contested, it is policy, its categories, governing and campaigning which are the primary agents here, and where all the interest lies.

The focus upon governance can be inverted, to ask how it is that various forms of matter have different affordances and become governed differently under different regimes (Gille, 2007).

Alternately the different incarnations of waste can be used to suggest the situational and relational character of the category 'waste.' Far from being fixed in advance, waste is seen as historically mutable, geographically contingent and both expressive of social values and sustaining to them.

Symbolic analysis from Mary Douglas onwards has shown how waste and dirt is defined as impure and reputationally damaging. Judith Williamson (1987) elegantly demonstrated this around the adverts for a vacuum cleaner, that offered to clean 'all three kinds of dirt' – where the technology miraculously became the solution to problems posed by its own advertising's classification of uncleanly matter. Here the symbolic comes to define various materials more or less arbitrarily as waste in ways that suite society. But, what is polluting waste in one society may not be treated so in another time and place. From this it flows that categories and social orders use materials but are not determined by those materials. This liberating move from waste as a self-evident category to waste as a social construction therefore begs the question of how different matters matter differently.

The symbolically polluting effects of different forms of waste to register and mark social distinction have been richly explored in work drawing on the psychoanalytic tradition. Here work has revealed a relational ontology, where the normal and healthy is set against the expelled and abject material.

However, that expelled material both reels and fascinates (Laporte, 2002), it has a political charge made possible by its transgressive presence (Hawkins 2003). Conventionally, social organisation is about distancing 'decent' society from its wastes, through technologies that hide, remove and expel (Lupton & Miller 1992). The reappearance of waste, in its very social unacceptability thus offers potential, so that 'When a World Bank official has to examine the virtues of a public toilet and discuss the merits of this form of shit management with the shitters themselves, the condition of poverty moves from abjection to subjectivation. The politics of shit [...] presents a node at which concerns of the human body, dignity, and technology meet' (Appadurai 2002, page 39).

The tradition of work on environmental justice combines the sense of reputational and physical danger from wastes in a different way. Here it is not just matter out of place that matters, but waste matter in whose place that counts. From the pioneering African-American homeowners in Houston who fought to keep the Whispering Pines landfill out of their suburban middle-income neighbourhood, through Love Canal and beyond, studies have shown that the location of waste sites and industrial discharge in the US was disproportionately proximate to areas with high numbers of people of colour (Bullard, 1990; Collin and Collin 2005). Environmental justice's emphasis on the hazardous nature of various wastes, then, brings back in the material properties of different forms of waste. Those hazards, though, are rendered through cultural (mis-) understandings and interpretations, which relate physical risk with social noxiousness in complex ways. Yet often this becomes a matter of overlaying social analyses on top of physical sciences, whilst preserving their domains of knowledge.

Taking up the mantle of how to connect the social and the physical within waste scholarship, Gay Hawkins draws on Jane Bennett's vital materialist perspective, with its emphasis on thing power, assemblage and enchantment, to animate thinking waste through materiality (Hawkins, 2006,2009; Bennett, 2004a, 2004b). Thinking with that icon of contemporary consumer waste and environmental degradation, the plastic bottle, through a set of advertising campaign imagery, Hawkins shows how analysis can move beyond the object as an inert bad thing to see plastic bottles as the stuff of politics. Here, the bottle's materiality proves critical to different political associations. Whereas the identification of bottled water with healthy lifestyles, hydration and safe water rests on blocking out the bottle's connection to rubbish and to waste, other political associations foreground the bottle. One campaign works from plastic's connection to waste and environmental and ecological degradation to make the link to technologies of convenience and the constitution of the ethical self, whilst another mobilises the molecular, turning the bottle and its contents to oil, thus emphasising both a narrative of unsustainable production in an over-packaged world and effecting an affective disturbance of the act of drinking bottled water.

In focusing on the package Hawkins manoeuvre is identical to that of Don DeLillo in *Underworld* whose character Nick Shay observes:

“Marian and I saw products as garbage, even when they sat gleaming on store shelves, yet unbought. We didn't say, What kind of casserole will that make? We said, What kind of garbage will that make? Safe, clean, neat, easily disposed of? Can the package be recycled and come back as a tawny envelope that is difficult to lick closed? First we saw the garbage, then we saw the product as food or lightbulbs or dandruff shampoo. How

does it measure up as waste, we asked. We asked whether it is responsible to eat a certain item if the package the item comes in will live a million years.” (1999, p. 121).

This is to decentre the object of commodity fetishism, by thinking not with the point-of-sale commodity but through what enables its distribution. But packaging too is a commodity, and the bottle, whilst molecular, is still a thing. Hawkins’ bottles, then, show the potency and the capacity of things to capture humans, but they largely stop short of a more radical politics of stuff. Where stuff makes an appearance is in the turn to the molecular, and in the affective capacities of an advertising campaign that both reverses chemical processes and performs alchemy, by transmuting water into oil.

The four papers gathered here share an engagement with Hawkins’ emphasis on the materiality of waste and how it is part of a socio-technical complex – not an asocial material remainder, nor simple social convention. More strongly, they all insist that waste is a long way from stuff that ‘just is’, but rather that it becomes. In Tim Cooper’s paper we see this becoming in historical perspective. Focusing on England between 1920 and 1960, Cooper provides a carefully crafted narrative of the emergence of controlled tipping (or landfill) as the dominant municipal waste disposal technology for the UK in the twentieth-century, showing how this emerged both from the incinerator-led Refuse Revolution of 1880 – 1914 and a period at the end of WWI in which recycling and salvage were strongly promoted as alternatives to incineration. A historical perspective shows that established disposal technologies – or treatments – are not one-off interventions in the governance of discarded and leftover matter but rather politically stabilised technologies which work to reproduce and normalise particular disposal practices, be these located in households, communities, municipalities, regions or indeed, the nation state. Stabilisations though are always

contingent. The significance of this insight from the perspective of the present moment is as follows. The end of the twentieth-century has seen landfill de-stabilised as the UK's twentieth-century political settlement with waste, and the waste hierarchy established as the dominant mode of thinking about disposal. Waste policy has demonised landfill and promoted recycling, and increasingly re-use, but in a manner not dissimilar to the period at the end of WW1 a pre-eminent disposal technology has yet to emerge for the early twenty-first century. Further, the waste hierarchy may have transformed waste to resource, but it has done so by performing a vanishing trick upon the physical remainder of waste. Alongside the secondary raw materials diverted from landfill via recycling technologies and goods with extended social lives, waste still remains; and it does so because treatment technologies are not, in material terms, disposal technologies - as they are presented - but rather transformative technologies and storage/containment technologies. As Gabrys (2007), drawing on Benjamin and Buck Morss, reminds us, the residues of treatment technologies endure; the stuff that is corralled as waste in cells in landfills, incinerated, or just openly dumped, comprises the fossils of the contemporary age.

The specific properties of these residues matter intensely to Zsuzsa Gille's paper. But this stuff is not municipal waste, upon which disproportionate public concern is lavished. Rather, what figures empirically here are the wastes of industrial production processes; metal and chemical waste. This turn in the direction in waste scholarship is critical. The overwhelming focus in waste research is on municipal waste, yet this is but a small fraction of the amount of waste produced, most of which is generated by industry, agriculture and construction activities (Gregson *et al*, 2007a; O'Brien, 2008). An emphasis on industrial waste or, more graphically, the 'shit end of capitalism', is one of the points that bind Gille's paper to those of Gregson *et al* and Crang. All insist that such 'shitty' parts of

production may have been distanced or overlooked but their abject materials return to haunt us. Another link is an insistence on the merits of the concrete specificity of what Gille identifies as micro-level waste scholarship, which she sees as key to the future development of macro-level waste studies. The distinction between micro and macro is not one that is shared by all four of these papers, and indeed a very different scalar imaginary infuses the papers of Gregson *et al* and Crang. But, as a sociologist, Gille wishes to retain this distinction, and she uses it to develop the concept of the waste regime; a means through which the social sciences can acknowledge the production, circulation and transformation of wastes as physical materials. At the heart of Gille's paper, then, is a critique of the theorising that has informed social scientific understandings of economies. On the one hand, she exposes the vanishing trick in economists' models which 'make a waste abundant reality conform to a waste-free theoretical world' - when they factor in waste as either products of zero value or useful by-products as outputs with zero inputs – a view which invites comparison with Donald Mackenzie's work on derivatives (Mackenzie, 2006) and the arguments of Daniel Miller (2002) on the virtualism of economic markets driven by models divorced from material process. On the other hand, she challenges political economy understandings, which envision economies on the basis of value begetting value.

If Cooper and Gille's papers underscore the point that waste becomes – that it is socially, politically and economically generated, and that this is a contingent process – our second pair of papers connect waste with unbecoming things; in this instance, ships being broken-up at the end of their economic and militarily useful lives, in the EU and in Bangladesh. Rather than emanating from within the field of waste scholarship, these papers take their cues from the wider debate on materiality within the social sciences and in cultural and aesthetic theory respectively, and push this

work into a fuller engagement than hitherto with industrial waste. The work of Gay Hawkins and Tim Ingold is critical for one manoeuvre, that of Deleuze for another.

Whilst sympathetic to the arguments of Hawkins and Bennett, in their paper Gregson *et al* bring these arguments into conversation with the work of Tim Ingold, in particular his insistence on the importance of materials rather than materiality (Ingold, 2007). Ingold's argument with much of the work on materiality is that it refuses to engage with materials, particularly the corporeality of working practically with materials. Whilst objects capture all the attention, for Ingold materials do not just disappear in the fabrication of the object, indeed their properties and capacities continue 'to mingle and react as they always have done, forever threatening the things they comprise with dissolution or even de-materialisation' (2007, p 9). Ingold's examples are classics in the genre of material culture studies – stones and silk. In Gregson *et al*'s paper, though, we see these insights turned to creative destruction, or demolition – the violent, intensely physical work of purposefully breaking-up large, heterogeneous fabricated things, as an economic activity. Here, things – in this instance ships - are literally unbecoming, reverting to materials as the object de-materialises. But – as the paper shows – materials, in this instance asbestos, have profound effects on demolition as an activity; they perform, corporeally and economically. In demonstrating this, Gregson *et al*'s paper resonates with some of the points made by Gille, even whilst it differs in its conceptual positioning. Detailed ethnographic work in ship breaking yards is the type of work that Gille's paper highlights as a notable absence from current waste scholarship. This paper takes the methodological approach that has enhanced understanding of both consumer disposal practices (Gregson *et al* 2007a, 2007b) and waste management work (Reno, 2009) and puts this to work on demolition. In so doing, the paper shows that materials, and particularly materials classified as wastes, matter

profoundly to demolition, to the bodies and lives of those who do this work, and to the geographies of this work. Whilst things, in principle, can un-become anywhere, within the EU the transformative acts of demolition animate asbestos, conjoin it with classificatory schemas that define it as hazardous waste, that entail codified practices for its removal, and modes of governing its disposal to make ship breaking a marginal economic activity. It is this economic logic which ensures that the vast majority of commercial ship breaking continues to occur on the beaches of South Asia.

If Gregson *et al*'s focus is on the less than enchanting stuff in unbecoming things, Crang's paper takes as its primary vehicle a set of images which aestheticise the same category of unbecoming thing, ships, but on a beach in Bangladesh. Construing these as counter images of globalisation, Crang identifies two key traditions of depicting the wasting processes of global capitalism; a photo-documentary tradition focused on the labour worlds of creative destruction, exemplified by the work of Sebastian Salgado, and an industrial sublime encapsulated by the remarkable images of Edward Burtynsky, in which the emphasis is on an aestheticised materiality. Following Deleuze, Crang reads these latter images as time images; not time through movement, or indeed the decay that characterises work on the ruin, but time as transformations between material states.

Paralleling Gregson, Crang *et al* (2010), this aesthetic move is argued to mark a move away from a focus on the static object, to see objects as the stilling of relations, rather than – as here in Burtynsky's images – things coming into being but also coming apart. And so, in both papers becoming waste is a means to break the focus on the object, to work with a politics of stuff, and to move beyond the identification of becoming and materiality with the affirmative, to insist that becoming is also un-becoming, literally and adjectivally as well as corporeally, that unbecoming

things may be less than enchanting stuff, and – more politically - that this unbecoming world is the world on which our comfortable lives depend.

Collectively, then, the papers gathered here show not just that materiality matters to the development of waste scholarship but that a focus on industrial waste matters to the development of work on materiality. Ranging across diverse geographically imaginations – scalar national, scalar local, scalar regulatory and scalar globalised – they show too how the geographies of waste scholarship might move beyond their traditional locus of the municipality, the region and the nation state. Thus Cooper tells a story of flows of knowledge sequestering noxious materials in spaces that can successfully symbolically, if not always materially, contain them; Gille speaks of national level policies that use economic categories to try to fix what is waste and thus create new problematic residues; Gregson et al. look at the localisation produced by categorisation, skills, and sequestration in handling hazardous materials in ways to prevent their unleashing; while Crang charts the flows of those very same materials across boundaries, to where different assemblages of categories, skills and economies do unleash those hazards and sees their transformation not only into new stuff but also into icons and images that travel back. To focus on unbecoming things foregrounds sequestering, unleashing, the transgression of boundaries and borders, and positions waste firmly within a scalar world of fixings and flows. As significantly, it signals the vitality of the inorganic within a networked world.

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ⁱ The genesis of this theme issue is with the session 'Cultural political economy: new materials and the world of waste', held at the RGS-IBG Conference 2008, organised by Nicky Gregson, Mike Crang and Catherine Alexander as part of the ESRC-funded The Waste of the World programme (RES 000 -23-0007). Two papers from that session (Cooper, Gille) appear here; a third (Hawkins, 2009) was already committed to another journal, but since it formed a key part of that session we discuss it here. To that suite of papers we have added two further papers, from work conducted under The Waste of the World programme.