



***Compass Interdisciplinary
Virtual Conference***
-19-30 Oct 2009-

**Recycling Modernity: Towards an Environmental History of
Waste**

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Abstract

This article examines recent writing on the concept of waste from a range of disciplinary perspectives, and highlights some of the analytical work that the concept of waste can do. In particular it looks at the work of two authors, John Scanlan and Zsuzsa Gille, who in different ways have articulated the operation of waste within modernity both as a residue of progress and as the subject of disciplinary techniques of government. The article then suggests some of the ways in which environmental historians have already taken up the study of waste as a theme, and some of the possibilities which the insights of Scanlan and Gille contain for the further development of a critically engaged historiography of environmental transformation.

Introduction

Waste has recently become a subject of considerable fascination in both academic and popular literature.¹ A number of books and articles have been published which seek to investigate waste both as a material and a cultural phenomenon. It is becoming axiomatic that waste was one of the characteristic products of modernity, and one way in which modernity can be subjected to critical analysis. This fascination is, of course, partly a consequence of the central position that discourses of waste have found within contemporary narratives of environmental decay. There is, however, far more to waste than the post-modern concern with environmental decline. Waste should not be seen merely as the *product* of material and intellectual

¹ R. Girling, *Rubbish: dirt on our hands and the crisis ahead* (London, 2005); H. Rogers, *Gone tomorrow: the hidden life of garbage* (New York, 2005); T. Stuart, *Waste: uncovering the global food scandal* (London, 2009)

progress, an epiphenomenon of modernity, but as foundational to European (and particularly Anglo-American) practices of modernization. The category of 'waste' is bound up with, and enables, the imaginary elimination of all that is defined under its aegis as either 'useless' matter or 'inefficient' practice. Anything, once named as 'waste', therefore becomes potentially subject to whatever practices of disposal or recuperation may be deemed appropriate. Waste has therefore been a critical category in legitimating all kinds of social and ecological interventions, and despite a tendency to dismiss waste as a question for the urban historian, this makes it a topic of some importance to the environmental historian.²

On the other hand, waste is equally a question of materiality, and bodily relations with the material world. It could even be said to be the paradigmatic problem of contemporary human relations with the material world. The question of what we throw out and what we keep, of what we choose to value and give permanence to and what we dispose of, has become particularly pressing in the age of the environment.³ Concern with waste, particularly with the disposal of household refuse, is reflected in the contemporary media's obsessive interest in question of refuse disposal, tipping, waste exports and recycling. Simultaneously, there has arisen a strong governmental impulse to discipline citizens' relations with their own wastes. Dominique Laporte has suggested, for instance, that concern with the ordering of bodily relations to waste is one of the originating points of western 'civilization'. This interest in the social relations and representations of dirt has been carried into the 'post-structural' turn towards the history of subjectivities, famously exemplified in Corbin's influential book *The Foul and the Fragrant: Odour and the French Social Imagination* (1986). The governance of relations between the body and waste (pollution?) has also been investigated as one of the central moments in the emergence of liberal bourgeois governmentality.⁴ The other side, then, of the use of waste in the legitimation of global environmental transformations was its disciplinary employment (as dirt) in the making of human subjectivities.

In this paper, I shall discuss what I think are some of the most pertinent issues arising from recent analysis of waste. This is not an attempt to methodically review the entire corpus of work within the social sciences on waste, a task that would require a much longer contribution, and for which others are more qualified. Rather this paper seeks to highlight why I believe that waste

² T.C. Smout *Exploring Environmental History: selected Essays* (2009), p. 18.

³ N. Gregson, A. Metcalfe, and L. Crewe, 'Identity, mobility and the throwaway society' *Environment and Planning D: Society and Space* (2007)

⁴ See for instance: C. Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain 1800-1845* (Cambridge, 1998); C. Otter, 'Making Liberalism Durable: Vision and Civility in the Late-Victorian City', *Social History*, 27, 1 (2002); P. Joyce, *The Rule of Freedom: Liberalism and the City* (2003), see chap. 2.

constitutes an interesting problem for historical investigation in general, and suggests some of the questions and problems that emerge from critical studies of waste for environmental history in particular. Firstly, I will survey a number of key works that have studied the meaning of waste, and that raise useful conceptual distinctions that make the category analytically useful. Secondly, I shall address the work of authors who have looked at the disciplinary operations that have ideas of waste, and its disposal. These, I believe, have particular relevance to our understanding of environmental history and politics. Finally, I wish to point to the opportunities which new theoretical understandings of waste offer for the further development of a critical historiography of global environmental change.

Waste or Dirt?

It is important to elaborate the conceptual distinctions that exist between 'waste' and 'dirt'. This elaboration is necessary not so much to draw artificial lines of comparison, but to open up a richer understanding of similarity and difference between the two categories. The distinctions between waste and dirt have, in fact, become increasingly apparent from the evolving critical literature on 'waste'. In contrast to the category 'waste', there is a strongly established tradition of analytical and critical engagement with dirt, filth, refuse and shit, which followed in the wake of M. Douglas's classic anthropological study *Purity and Danger*.⁵ Despite their apparent analytical proximity, however, dirt and waste remain firmly distinct categories providing the conditions of possibility for different ideas and practices. For Douglas, dirt, or 'matter out of place', was implicated in social practices which served to establish inside-outside distinctions between clean and unclean. Famously, Douglas asserted that this binary was an important means of establishing social order. Pollution and taboo not only constituted communities on the basis of what and who was excluded from them, but also operated to order those communities internally. For Douglas, then, dirt serves as a category of abjection that enables and valorizes social relations. Douglas does not, however, draw distinctions between the dirty and the clean that are static. Indeed, as she concludes in her analysis of ritual cleansing, the movement between dirty and clean is a process of identification whose ultimate end is the loss of the identity of dirt in the processes of decomposition. Dirt ultimately always returns to the cycles of matter, becoming once more undifferentiated from the rest of matter. Dirt therefore comes into being and goes out of being through social procedures of identification.

⁵ M. Douglas, *Purity and danger and analysis of the concepts of pollution and taboo* (London, 1966)

In Laporte's *History of Shit*, in contrast, the role of dirt in ordering the social is used in an ironic manner in order to bring the workings of European civilization itself under critique. For Laporte the history of the European state is a history of the effort to colonize and control the social procedures of dirt identification. The ultimate legitimation of the state is its unique claim to be able to create a cleansed social vision, in which, following Freud and Lacan, 'civilisation' itself lies. These procedures find their most ruthless and cruel apotheosis in the totalitarian state, as cleansing procedures are applied to forms of human identity (Laporte's example is that of 'blackness'), which cannot be reduced in the cleansing procedure and negate the state's ultimate claim to produce a clean, homogenized reality. For Laporte, bringing dirt back into European narratives of progress and improvement emphasised the prior presence of filth in all claims to the superiority of European civilization. Laporte thus effectively reduces all so-called 'civilizing' practices to acts of refuse disposal, demythologizing and exposing European history in the process, representing it as a history of the sewer.⁶

The influences of Douglas and Laporte's approaches to dirt have been profound. In a recent collection of essays *Filth: Dirt Disgust and Modern Life* (2005), for example, the contributors employ dirt in a range of Victorian contexts to illustrate the essentially dirty character of modernity.⁷ In most of this volume the influence of both Douglas and Laporte is apparent in the critical work to which filth is put. The fascinating and important essays contained in this volume cover a diverse range of material, but are in general closely concerned with the body, sensory experience and colonial imaginings of filth. In general, however, waste is noticeably absent from these discussions. Although it emerges as a topic, it is clear that this is usually in the context of 'waste disposal' or as a synonym for dirt. The editors suggestively remark on the Janus-faced character of dirt as inhabiting both the 'unregenerate' but, *when thought of as waste*, becoming 'conceivably productive'.⁸ Although this observation is not really followed through decisively in the rest of the contributions to the edition, I would strongly concur that it is in being thought about as waste that dirt is pulled out of the realm of the abject and brought back into the realm of value. The ultimate end of dirt does not, as Douglas suggests, always have to be the disintegration into non-identity, but can be a remaking of identity through dirt being named as waste. Equally, that which is not dirt can undergo this same process, separating the operation of waste from that of dirt. It is at this moment of *revalorization* then that a historicised understanding of the distinctive qualities of the category of waste becomes possible.

⁶ D. Laporte, *History of shit* (Cambridge MA, 2000 edn.), see particularly chap. 3.

⁷ W.A Cohen and R. Johnson, *Filth: dirt, disgust and modern life* (Minnesota, 2005)

⁸ Cohen and Johnson, *Filth*, x.

In pursuing this understanding of the distinctive qualities of waste as a category, I wish to suggest that current work indicates that 'waste' should be seen as a peculiarly European product of peculiarly European practices of valorisation. Waste is a category that has emerged from the European history of capitalism. Where, following Douglas, dirt or filth can be seen as a geographically and historically universal set of social practices, 'waste' is distinctly European. The word 'waste' itself has roots in the Latin *vastum* or *wastum*, and was applied in the early mediaeval period (in the English context in pipe rolls of the Royal Exchequer) to describe devastated land from which no tax revenues could be expected.⁹ It also signified those uncultivated lands surrounding the cultivated spaces of the manorial village, which had particular uses for the members of village society. The very earliest meanings accorded to waste were therefore bound up with the ecology of pre-modern agricultural production. This is one reason why there is such a distinctive difference between pre-modern understandings of waste and the breadth of meanings available to its modern equivalent. A key problem that emerges from the literature is how 'waste' eventually evolved into its modern meanings of neglected value, or unrealised productive forces. These were eventually applied widely, and particularly in colonial contexts to legitimate ecological transformations. By this I do not wish to suggest that waste can only be applied analytically in a European context. Rather, that 'waste', as a product of the European colonial gaze, legitimated ecological transformations that were, of course, at a grass-roots level strongly contested.¹⁰

On Garbage: The Meaning of Waste

The essential starting-point for any effort to address the changing meaning of waste historically should be J. Scanlan's definitive *On Garbage*. Scanlan establishes many of the parameters for a meaningful engagement with waste as a category at the heart of modernity and in a wide range of fields of enquiry. Throughout Scanlan's book waste presents us with the inescapable remainder of processes of modernisation. The Enlightenment project of producing improved knowledge, and, subsequently, the attempt to capture and improve the waste spaces of the natural world, inscribed a binary between 'waste' and 'value' that has been repeated throughout subsequent thought and practice. One of the most compelling of Scanlan's contentions is that the modern understanding of 'waste' is bound up with the making of an Enlightenment 'moral economy'.

⁹ A.E. Amt, 'The Meaning of Waste in the Early Pipe Rolls of Henry II', *Economic History Review* 44, 2 (1991), pp. 240–248.

¹⁰ D. Arnold, *The Tropics and the Travelling Gaze: India, Landscape and Science, 1800-1856* (2006)

Clearly, then, the meaning of 'waste' carries force because of the way in which it symbolises an idea of improper use, and therefore operates within a more or less moral economy of the right, the good, the proper, their opposites and all values in between. In other words, all talk about waste – as we shall see – generally foregrounds a concern with ends, outcomes or consequences, and the recognition of waste indicates a need for attention to what usually remains unknown.

This recognition of the morality (and temporality) of waste establishes a key distinction with dirt, which Douglas explicitly argues has no kind of moral content. Scanlan moves towards an explanation of the unique ways in which the category of waste is produced, hinting at the politicized and contested nature of this production.

For the historian the idea of a moral economy of waste is particularly striking. Scanlan gives us a glimpse of the history of this 'moral economy' in tracing the modern meaning of waste to the scientific revolution of the seventeenth century and the emergence of the accounting methods of early political economy. This is an account that sits alongside C. Merchant's narrative of the gendered redefinition of 'nature' during the scientific revolution as an unruly female object to be mastered through scientific practice.¹¹ It is notable that one of the key turning-points in Merchant's critical history is the redefinition of waste spaces (in particular the fens and forests) as undisciplined and unproductive. Scanlan convincingly establishes the point that 'waste' changed its meaning in the seventeenth century, becoming the much richer and more powerful linguistic system of valuation characteristic of the late seventeenth to eighteenth centuries.

Scanlan points us to a critical period in the remaking of European understandings of waste in the seventeenth century. He does not, however, address the contestation of these new meanings to waste. In this respect it is worth considering the critical importance of waste in the political contest between the radicalism of the late 1640 and early 1650s in England and emerging liberal understandings of property and the possessive individual. That radicals like Gerrard Winstanley saw the English wastes as the potential basis for a democratic, communistic form of 'improvement', in contrast to the Hartlibian vision of improvement through private property and a strong state, is suggestive of how open the meanings of waste remained at this period.¹² Ultimately, the contestation of waste, which as David Underdown

¹¹ C. Merchant, *The Death of Nature; Women Ecology and the Scientific Revolution* (1989 edn)

¹² J. Holston, *Ebud's Dagger: Class Struggle and the English Revolution* (2000), chap. 9; T.C Cooper 'Modernity and the politics of waste in Britain', in P. Warde, S. Soerlin (ed), *Nature's End: Reconsidering Environmental History* (2009), pp. 247-72.

has shown has a longer history even than the one I mention here, suggests the critical importance of Scanlan's periodization.¹³

In a subsequent, important essay, Scanlan's focus moves from the moral economy of waste, and its philosophical and aesthetic consequences, to an investigation of the temporality of waste in the work of Henry Mayhew on the nineteenth-century London poor. For Scanlan, Mayhew's interest in the relations between poverty and dirt demonstrate the continuing presence of 'the leftover and elusive, the filthy and waste, as well as the people places and phenomena that seemed to have escaped the rational time of modernity'.¹⁴ The world of the 'idle' nineteenth-century poor of the metropolis is here seen at odds with the temporality of bourgeois reason, establishing 'an exclusion zone that became a kind of dump for failures, defects and the dead'. For Scanlan, Mayhew's fascination with the 'wasted' explores the temporal and teleological dimensions of the devalued, and reveals the ways in which the bourgeois telos enabled various projects of exclusion and abjection. Simultaneously, the continuing presence of forces of decay and decadence, the 'lasting-on' of waste, offered to negate bourgeois promises of progress and improvement. It is apparent in this essay that the temporality of waste is itself a site of contest between competing systems of value. Waste and the crisis of modernity are consequently never far apart.

Scanlan's work establishes key points of departure that are suggestive of an urgent need for historical engagement with waste. Although in some respects waste is presented by Scanlan as epiphenomenal, a residue of enlightenment and improvement, it is apparent that waste also makes the idea of progress operative, and this reflexivity occasionally gives waste a foundational importance. On the one hand progress produces waste, while, on the other, one cannot contemplate progress without waste or wasting. There must be an object that is first rendered 'waste' before the idea of 'improvement' is thinkable. The idea of 'waste' should therefore be seen as a dialectical symbolic process in which there is a simultaneous *production* of that which must be eliminated or *disposed of*. The legitimation of radical ecological transformations was far easier if the natural world could be seen as an over-productive space that needed to be ordered and disciplined. However, the very ordering and production of productive spaces itself threatened to create new wastes. The detritus of consumption, the scarred and depleted landscapes of a man-made world, and the consumption of human life, themselves all wastes, were all constitutive of productive spaces.

¹³ D. Underdown, *Revel, Riot and Rebellions: Popular Politics and Culture in England 1603-1660* (1985), esp. chap. 1.

¹⁴ J. Scanlan, 'In deadly time: the lasting on of waste in Mayhew's London', *Time and Society* 16, 189 (2007), p. 190.

'Refuse Revolutions' and 'Waste Regimes'

Although, as I have indicated, dirt and waste are distinct categories, waste and *disposal* still retain important ties. Indeed, the category of waste may be said to logically infer disposal, either in the most literal sense of throwing something away, or in the sense of redistributing or reorganising something in order to valorize and capitalize it. Disposal is the point at which the category 'waste' becomes embodied in practice. In this section I wish to look at some of the ways in which our understanding of disposal has advanced recently, and the implications of this for a history of the politics of waste.

Bill Luckin has argued that late nineteenth-century Britain saw the beginnings of a process of professionalization of waste disposal that ultimately radically transformed the way in which government dealt with urban refuse. He has termed this process the 'Refuse Revolution'.¹⁵ That processes of waste disposal in Britain underwent significant transformation after the Public Health Act of 1875 cannot be doubted. Urban household waste, in particular, was becoming a social and political question among urban reformers in ways that it had not been before. But there are also problems with the teleology underlying the idea of a professionalization of waste disposal. The contradictory nature of technological interventions in environmental problems is well attested in the work of historians of technology like J.A. Tarr and M. Melosi.¹⁶ Often the attempt to solve urban environmental problems through the application of one technology has led to unforeseen consequences, or the mere displacement of pollution to new areas. Recent work by J.F.M. Clark and T. Cooper has also suggested that the 'Refuse Revolution', if that remains an adequate term, remained a contested and incomplete phenomenon, and that its processes were deeply entwined with cultural and environmental politics.¹⁷ The introduction of incinerators in early twentieth-century Britain (when seen in terms of environmental justice, for example) was decidedly uneven in its consequences. Furthermore, the technologies applied to waste disposal were subject to constant transformation within changing economic, political and scientific contexts. These fact, therefore, question any attempt to represent the 'Refuse Revolution' as a transformational event in the history of urban or environmental policy. Rather, it suggests a much more contested, contingent and open-ended set of processes.

¹⁵ B. Luckin, 'Pollution in the City', in *Cambridge Urban History*, iii, 207-28, p. 221.

¹⁶ J.A. Tarr, *Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron OH, 1996); M. Melosi, *The Sanitary City: Urban Infrastructure in the American City from Colonial Times to the Present* (Johns Hopkins, 2000).

¹⁷ J.F.M. Clark, 'The incineration of refuse is beautiful': Torquay and the introduction of municipal refuse destructors' *Urban History* 34, 2 (2007), pp. 255-277; T. Cooper, 'Challenging the 'refuse revolution': war, waste and the rediscovery of recycling' *Historical Research*, 81, 214, pp. 710-732.

As I have already indicated, there is a crucial difference to be drawn between the disciplinary functioning of the categories of 'dirt' and 'waste'. One of the most ambitious and instructive attempts to delineate the disciplinary functioning of waste in the context of disposal practices has been made by Zsuzsa Gille.¹⁸ Like Scanlan, Gille emphasises the symbolic morality involved in the production of waste. She rejects definitions of waste that take no account of the socio-spatial context of its production, and is concerned to deal particularly with the 'material agency' of waste as matter resistant to human intervention. Like Scanlan, Gille is interested in the temporality of waste, but this temporality is strongly historicized. Her study of the evolution of waste production, recycling and disposal through various economic transitions in twentieth-century Hungary is embedded in this sense of the historicity of waste production.

To give coherence to the relationship between the changing meanings, practices and materialities of waste, Gille has developed the concept of the 'waste regime'. The waste regime is a social and political constellation which enables the production of certain kinds of material waste and pursues the recycling and disposal of that waste through distinct modes, disciplining producers and consumers alike:

Waste regimes differ from each other according to the production, representation and politics of waste. In studying the production of waste, we are asking questions such as what social relations determine waste production and what is the material composition of wastes. When we inquire into the representation of waste, we are asking which side of the key dichotomies waste has been identified with, how and why waste's materiality has been misunderstood, and with what consequences. Also to be investigated here are the key bodies of knowledge and expertise that are mobilized in dealing with wastes. In researching the politics of waste, we are first of all asking whether or to what extent waste issues are a subject of public discourse, what is a taboo, what are the tools of policy, who is mobilized to deal with waste issues, and what non-waste goals do such political instruments serve. Finally no waste regime is static, thus we must study them dynamically, as they unfold, as they develop unintended consequences and crises.¹⁹

The concept of the waste regime provides an excellent dynamic model for the study of modern systems of waste disposal and their political constitution. It suggests the possibility of a political, as well as a social/cultural, history of waste.

¹⁸ Z. Gille, *From the Cult of Waste to the Trash Heap of History: The politics of waste in Socialist and Post-socialist Hungary* (2007)

¹⁹ Gille, *Cult of Waste*, p. 34.

Susan Strasser's *Waste and Want: A Social History of Trash* already contains elements of the kind of history of waste regimes that Gille points toward. Investigating how social responses to the uses of waste have changed since the early nineteenth century, Strasser locates key points of transformation in the shift from a domestic culture of handicraft (with its focus on recycling and *bricolage*) to a culture of consumption founded on advertising the supermarket and the hygienic merits of disposability. For Strasser the key to the transformation of America's historic 'waste regime' founded on recycling and domestic creativity was the changing nature of capitalism itself, and the emergence of the consumer society. Strasser's history complements Gille's picture of communist and post-communist waste regimes in Eastern Europe, by adding to it the history of the consumer-capitalist state. Again, what is apparent is the contestability and politics involved in the remaking of human relations with waste. Strasser argues that older traditions of reuse were challenged through the intervention of capitalist propaganda efforts. The construction of the 'clean', dirt-free subject, whose self-disciplining became bound up with the consumption of certain types of hygiene, of which the sanitary towel provides an important example. The gendered nature of exposure to waste is also highlighted by Strasser, who observes the progressive sidelining of female domestic skill and creativity through the promotion and consumption of objects in the domestic sphere produced by male techno-science.

Waste: A Critical Project for Environmental History?

In what remains of this paper, I wish to suggest some ways in which waste can contribute to the further development of a critical global environmental history. As a discipline, environmental history appears to be constantly troubled. As P. Warde and S. Soerlin have recently observed in an extensive review of the field, there is a diversity of historical work stretching from historical ecology to geography to environmental history, but it has struggled to find an identity and define a problem. Warde and Soerlin suggest the need for environmental history to recognise how closely allied it is with standard historical research in political and social history. They argue that a fuller engagement with political and social theory that recognises that 'Society's nature is a political product' should be part of the next phase in the development of environmental history.²⁰ While agreeing with this, I wish to suggest that, if environmental history is to respond meaningfully to the politically constructed character of 'social natures', it needs to do more than adapt itself to social theory. It also needs to rediscover the kind of self-consciously critical edge presently informing contemporary environmental

²⁰ S. Soerlin and P. Warde, 'The Problem of the Problem of Environmental History: A Re-reading of the Field and its Purpose', *Environmental History*, 12, 1 (2007) pp. 107-130.

studies in other fields.²¹ This critical edge needs to go beyond recognition of the culturally constructed nature of scientific knowledge and social understandings of nature, and seek to address the practices of ecological and social transformation that are enabled by certain imposed patterns of thought.

Much current environmental history appears suspicious of the avowedly critical approaches that distinguished early work in the field, such as D. Worster's *Rivers of Empire* and C. Merchant's *The Death of Nature*.²² The trend away from overtly critical environmental history is perhaps most apparent in the much-invoked 'interdisciplinary turn' that environmental historians are constantly claiming to have made.²³ This has tended to emphasize an eclecticism of approach to the detriment of critical and theoretical coherence. Waste, I would argue, offers a field of study within which it is possible to re-establish a clear critical path for environmental historiography.

One way in which waste has previously been employed by environmental history is in the study of conservation and the origins of environmentalism. This reflects the importance accorded to waste in many of the classic texts of the early North American conservation movement, of which G.P. Marsh's *Man and Nature* is the most notable.²⁴ Subsequent studies of the progressive conservation movement, in particular, have demonstrated the close connections that lay between waste, inefficiency and technological rationality in conservation discourse. Waste, however, within American conservationist discourses was applied less to the destruction or permanent degradation of nature than to the failure to fully realize, or capitalise, nature's production. Waste therefore signified the failure of science, industry or 'civilization', rather than over-exploitation. As S.P. Hays writes: The conservationists 'emphasized expansion, not retrenchment; possibilities, not limitations...Conservationists envisaged, even though they did not realize their aims, a political system guided by the idea of efficiency and dominated by the technicians who could best determine how to achieve it.'²⁵ Conservation, and the meaning attached to the conservationist's understanding of waste, consequently shared much with traditional notions of improvement. Indeed, in D. Blackbourn's recent book *The Conquest of Nature*, the kinds of attitudes towards uncaptured nature found in

²¹ A. Agrawal, *Environmentality: technologies of government and the making of subjects* (Duke 2005)

²² D. Worster, *Rivers of Empire: Water Aridity and the Growth of the American West* (Oxford, 1985); C. Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (1989 edn.) See also, M. Davis's *Late-Victorian Holocausts: El Nino Famines and the Making of the Third World* (London, 2001). G. Mitmann, 'Where, Ecology, nature and Politics Meet: Reclaiming the Death of Nature', *Isis*, 97 (2006), 496-504.

²³ M. Carey, 'Latin American Environmental History: Current Trends, Interdisciplinary Insights, and Future Directs', *Environmental History*, 14, 2 (2009), pp. 221-252.

²⁴ G.P. Marsh, *Man and Nature: Or Physical Geography as Modified by Human Action* (orig. 1864)

²⁵ S.P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (1999 edn.), pp. 2-3.

American conservationism are discovered to have parallels in the efforts of eighteenth-century German engineers to re-engineer and valorize German rivers and waste lands.²⁶

In this context we again see a return to the story of the enlightenment moral economy of waste found in Scanlan. However, although waste is clearly at work in these cases, particularly in the envisaging of nature as insufficiently productive, neither Hays nor Blackburn bring the operation of waste as an idea into explicit critical scrutiny. Wilderness is the operative term in both cases. However, Marsh's *Man and Nature* reveals the crucial importance attached to the word 'waste' in many different contexts, not least in its application to natural phenomena, such as rivers, that were untapped sources of power, or to natural products which offered to become raw materials. Similarly, Marsh's employment of the imagery of 'waste' as a desolate, post-productive space opens up another meaning to waste that has not really been explored. This is significant because it is indicative of the bifurcation of waste, its ability to signify both potential for improvement and the consequences of uncontrolled or undisciplined development. This bifurcation, which I argued above is already identified in Scanlan's *On Garbage*, is critical to waste's capacity to legitimate the possibility of sustainable capitalist development.

Waste thus offers a means of critically analysing two key ideological movements in the earliest phases of capitalistic ecological transformation. It has long been clear that 'improvement' and 'progress' were crucial concepts in the armoury of those arguing for the rationalisation of nature, especially in the early nineteenth century.²⁷ The insights of thinkers like Scanlan suggest that the way in which an uncapitalized nature is constructed as an object of legitimate transformation is more problematic and complex than this. Global ecological transformation, in the interests of the capitalist model of development, was made thinkable in the first instance by the European Enlightenment's imagination of much of the globe as a fecund, but waste, space. European claims to scientific and technological progress created spaces within the 'waste' zones of the world, where free reign could be given to the forces of rational historical development. This authorized any number of human interventions in the environment from colonization itself to the transplantation of new plant and animal species, and ultimately the manipulation of plant and animal life to make existing environments more productive. From enclosure to the technological appropriation of nature's products, the assumption that the world was full of unused or decaying waste

²⁶ D. Blackburn, *The Conquest of Nature: Water, Landscape and the Making of Modern Germany* (2006).

²⁷ R. Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (Yale, 2000)

matter made operative the expansive, transformational ideology of capitalistic improvement.