

Accepted version of the paper:

Seth Schindler & Federico Demaria (2020) “*Garbage is Gold*”: Waste-based Commodity Frontiers, Modes of Valorization and Ecological Distribution Conflicts, *Capitalism Nature Socialism*, 31:4, 52-59, DOI: [10.1080/10455752.2019.1694553](https://doi.org/10.1080/10455752.2019.1694553)

“*Garbage is gold*”: Waste-based commodity frontiers, modes of valorization and ecological distribution conflicts

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Abstract: Waste is increasingly viewed as a resource rather than an externality. However, new waste management regimes must be introduced in order for value to be created, enhanced and captured. We refer to these regimes as *modes of valorization*, and they establish the conditions that allow waste to become a commodity frontier. The production of waste-based commodity frontiers is often accompanied by dispossession, and this explains why conflicts surrounding the ownership over and control of waste have proliferated worldwide. This article introduces a special section that includes papers focused on the establishment of new modes of valorization and concomitant impacts in India, South Africa, Turkey and the U.S.

Keywords: world ecology, environmental justice, discard studies, political ecology, social metabolism, environmental conflicts

“I don’t sell drugs anymore. I have another business. We make more money and moreover, there is much less risk. It’s called garbage. Because for us, garbage is gold.”

Nunzio Perrella
Italian mafia boss (1992)

When Italian authorities caught up with mafia boss Nunzio Perrella in 1992 the scope of his criminality came as a surprise. He explained that he and his associates had trafficked waste since the 1980s, and they specialized in helping clients bypass environmental regulations and avoid disposal costs of hazardous materials. Business in waste trafficking boomed because there was little risk – if caught the punishment would be lenient. This so-called ‘ecomafia’ dumped waste illegally throughout Italy (most notably in the so called ‘Triangle of Death’), discharged it in the Mediterranean and sometimes farther field in the Global South¹ – the Somali coast was a favorite dumping ground (Bueger, 2013).² This gave rise to numerous conflicts in relation to the environmental, health and livelihood concerns (Armiero and D’Alisa, 2013; D’Alisa et al, 2017), yet ecomafias have not been deterred. Indeed, a complex web of criminals, unscrupulous entrepreneurs and corrupt politicians continue to engage in waste trafficking and the business is worth billions of euro per year (Legambiente, 2018). Thus, Perrella’s pronouncement rings truer today than ever before: *garbage is gold*.

This special issue shows how value is created and captured from waste in a number of ways, and it also demonstrates that these activities are not the preserve of criminal syndicates. Governments and multinational corporations increasingly seek to capture value from waste matter and its processing, and these efforts routinely spark

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¹ “Toxic waste dumping by the ‘Ndrangheta”. Available at: <https://ndranghetanews.wordpress.com/2017/03/18/toxic-waste-dumping-by-the-ndrangheta/>

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² See the case in the EJAtlas: “Somalia toxic waste dumping”. Available at <https://ejatlas.org/conflict/somalia-toxic-waste-dumping-somalia>

fierce contestations worldwide. The Environmental Justice Atlas³ shows over 200 illustrative waste related conflicts around the world (21 on e-waste, 124 on municipal solid waste and 146 on industrial waste). These show heterogeneity across the wastescape in terms of its materiality (composition, volume and density), and socio-technical management systems. These ecological distribution conflicts⁴ demonstrate that waste represents a commodity frontier whose exploitation offers strategically positioned stakeholders the opportunity to accumulate capital. We draw on insights from Jason Moore's (2015) conceptualization of Cheap Nature, who argues that the absence of commodity frontiers constitutes a terminal crisis of capitalism. We argue that it is precisely because of the absence of a single 'great' frontier, whose exploitation could fuel an expansionary phase of global capitalism, that investors have identified solid waste as an untapped resource that can be freely appropriated.

The papers in this collection reflect on a range of waste conflicts that spans across the Global North and South (see Millington and Lawhon, 2018). They focus on *modes of valorization*, that is, the regimes through which value is created, enhanced and captured. Taken together the papers in this issue demonstrate that the imposition by public authorities, private corporations and sometimes even criminal organizations of a new mode of valorization typically requires a socio-metabolic reconfiguration. This involves changes in the flows of energy and materials (i.e. the social metabolism), that are directly related to the materiality and political economy of waste. Put simply, powerful actors must typically impose new institutions (e.g. waste ownership) and/or introduce waste-management technology (e.g. incinerators), which reworks the material flows of waste. Furthermore, power relations related to waste management are altered, and some powerful actors are able to create, enhance and capture value (see Coe et al., 2004) by

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³ The Global Atlas of Environmental Justice (EJAtlas) is a unique global inventory of cases of socio-environmental conflicts built through a collaborative process between academics and activist groups which includes both qualitative and quantitative data on thousands of conflictive projects as well as on the social response (Temper et al. 2018). See <https://ejatlas.org/>

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⁴ The term refers to conflicts over access to natural resources and services and the burdens of pollution or other environmental impacts that arise because of unequal property rights and inequalities of power and income among humans (both international and internal to each state). For an elaboration of the concept see Martinez-Alier, 2002; Armiero, 2008.

strategically positioning themselves in relation to competitors over flows of waste. As socio-metabolic configurations are transformed, power relations change and new actors are able to capture value. The papers in this collection demonstrate that the transformation of a mode of valorization tends to provoke conflict over value creation, enhancement and capture. In some cases the point of contestation surrounds exposure to waste as people seek to insulate themselves from environmental hazards. In other instances people struggle over the control of solid waste flows, the introduction of new waste processing technology or over rent capture.

We begin this editorial by introducing Jason Moore's notion of commodity frontiers and 'Cheap Nature.' We endorse his overall theoretical framework but we argue waste represents a commodity frontier that he tends to overlook. We situate our argument in the burgeoning field of critical waste scholarship, and we argue that an understanding of waste conflicts must account for attempts to establish a *mode of valorization* through socio-metabolic reconfiguration. This is fundamental to understand who – if anyone – will promote environmental justice, how and why.

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Jason Moore conceives of capitalism as a set of *socio-ecological* relations dependent on the availability of freely available resources – labour-power, energy, food and raw materials. According to Moore capital accumulation is dependent on the availability of these 'four cheaps' – and 'Cheap Nature' in particular – whose incorporation into the capitalist world-ecological system results in their commodification. Once resources are commodified their reproduction constitutes a cost, so in order to avoid a long-term falling rate of profit, hitherto non-commodified resources must be located and appropriated. Drawing on the work of Giovanni Arrighi, Moore demonstrates that historically this has been achieved by the transgression of commodity frontiers. In short, the history of global capitalism is one of successive regimes of accumulation, each anchored by a hegemon that is able to secure 'Cheap Nature' by maintaining a favourable balance of appropriated/commodified resources. Moore's analysis culminates with the provocation that under extant socio-technical conditions there are no commodity frontiers remaining. In other words, according to Moore the planet's finite resources have been

accounted for and subjected to capitalism's laws of value, so he posits that we have arrived at the 'end of Cheap Nature.' Moore's understanding of the importance of commodity frontiers is not without its critics. For example, Bellamy Foster (2016) concurs that this is "ecology seen from a capitalist perspective." Similarly, Salvatore Engel-Di Mauro (2014: 148) argues that it suffers from an "impoverished view of ecology" that strips the natural world of its complexity and portrays capital as overly dynamic and omnipresent. Engel-Di Mauro's (ibid.) criticism is in line with scholarship focused on the tendency of capital to be de-/re-territorialized in response to crises of accumulation (Harvey 1982; Smith, 1984; Brenner 2019) and it highlights the alacrity of capital and its ability to re-incorporate places into value chains in new ways. This is indeed one way to interpret the constitution of waste as a commodity frontier. Bellamy Foster (2016) concurs that this is "ecology seen from a capitalist perspective."

Waste occupies an important – yet immutable – position within Moore's theoretical framework, "dialectically bound" with value (p. 279). He argues that the appropriation "of new streams of unpaid work/energy implies a disproportionately larger volume of waste" (p. 279) whose internalization into the capitalist world-ecological system is increasingly unavoidable and this constitutes a cost. Indeed, the planet is inundated with various forms of waste – plastic has accumulated in the oceans and the atmosphere is saturated with carbon dioxide. In contrast to Moore whose emphasis is undeniably on production, Armiero and De Angelis (2017: 347) argue that "the contaminating nature of capitalism" is its overriding characteristic. They call our era the *Wasteocene* due to the unavoidable "accumulation of externalities inside both the human and the earth's body." In contrast to the Anthropocene's abstract register of geological time, Armiero and De Angelis emphasize the intimate nature of bodily contamination. They argue that it produces revolutionary subjects and "resisting communities, recalcitrant to the governmentalizing project" of capitalist world ecology (p. 354). Neither of these perspectives – the unavoidability of (1) internalizing the cost of waste, and (2) bodily contamination – allows for the wastescape to be a site of valorization.

It is precisely because of these two conditions – waste has historically been externalized and it is ubiquitous – that waste constitutes a commodity frontier. It is important to note that most discarded materials are wasted – one recent assessment

concluded that a mere 6% of waste is recycled globally (Haas et al, 2015). While not all waste material has a use-value a significant amount of recyclable and usable material is simply discarded and represents potential source of value. Critical waste scholarship tends to highlight the differences between waste management, the composition of waste and struggles in the global North and South. Research on the global South has been sensitive to the fact that waste management can offer an important source of livelihood, and hence, a site of value creation (Gidwani and Reddy, 2011; Demaria and Schindler, 2016; Inverardi-Ferri, 2017; Fredricks, 2018). The papers in this collection cut across the South/North divide (see Millington and Lawhon, 2018), and demonstrate that waste in a range of diverse locations represents latent value. Attempts to capture and enhance this value animate contemporary politics surrounding waste worldwide.

The politics of waste management are best understood when viewed through a ‘metabolic lens’ (McFarlane, 2013). Rather than a metaphor that likens the social use of resources to a metabolic system, human societies are actual metabolisms whose reproduction is dependent upon the continual use of energy and materials in various forms (Gerber and Scheidel, 2018). The consumption of energy and materials generates waste, the management of which is contingent on a range of factors such as the availability and nature of particular inputs and outputs, politics, human capital, technological know-how and capital. Thus, metabolisms are inherently social because their configuration is highly contingent and often contested. While the throughput of energy and materials necessitates an element of stability in the configuration of a socio-metabolic system, they can undergo periods of rapid restructuring and reconfiguration (Demaria and Schindler, 2016). The papers in this collection highlight the contested nature of socio-metabolic systems, and they demonstrate that during these periods of reconfiguration actors seek to (re-)position themselves vis-à-vis other actors and flows of waste. What is often at stake in these socio-metabolic conflicts is the establishment of a *mode of valorization*, in which some actors are able to leverage their strategic position within the socio-metabolic system to create, enhance and capture value (see Coe et al., 2004).

Material that was viewed as waste one day and a resource the next constitutes potential value, but for this value to be realized discarded material must be managed by

human labor (e.g. collected and processed). This newly created value can be enhanced through the introduction of more productive modes of organization or technology. For example, in Delhi value is created by the labor-power of workers who manually collect and segregate waste, and enhanced by the incineration of waste and subsequent generation of energy (Schindler and Kanai, 2018). The papers in this collection demonstrate that rather than a technocratic exercise geared toward enhanced efficiency, the creation and enhancement of value in the wastescape is a political process that often provokes fierce contestations as a range of actors compete to capture value. One fundamental fault line is between those whose labor creates value or are exposed to waste, and more powerful actors who, by virtue of their strategic position in the socio-metabolic system, can exercise control over flows of waste and demand rents. To return to waste management in Italy, powerful mafia-run companies capture rents by arbitraging their strategic position straddling the legal and illegal. In effect they act as gatekeepers and they charge a hefty fee to switch flows of waste from legal to illegal circuits.

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The quote in the epigram – “garbage is gold” – indicates that there is a long history of realizing value from waste. The papers in this collection demonstrate that attempts to reconfigure socio-metabolic systems in order to create, enhance and capture value from waste are continue to take place around the world. They also show that this is typically a conflict-ridden process. Samson (this issue) presents an initiative to integrate ‘reclaimers’ or ‘waste pickers’ who manually collect discarded material, into the city’s formal waste management system. Rather than the inclusion of reclaimers, she interprets this initiative as a colonization of the regime of valorization that the reclaimers had established. This shows that although waste in Johannesburg represented a commodity frontier to private-sector elite, it was already a dependable source of value-capture for reclaimers. This attends to the dispossession that consistently accompanies the reconfiguration of wastescapes. Tuçaltan (this issue) also focuses on dispossession in Ankara, but crucially she shows that what is at stake is urban land. She recounts how an area of Ankara, Turkey, that was associated with waste management, was rehabilitated

leading to an increase of land value and redevelopment. This demonstrates that waste conflicts have far-reaching consequences.

Value can also be created and/or enhanced through the introduction of regulations that govern the wastescape. Krones (this issue) introduces an example of the introduction and evolution of regulations in the U.S. that commodify food from cradle to grave. Krones mobilizes Moore's (2015) conceptualization of the 'four cheaps' and explains that the realization of value from food waste is one way to offset the higher cost of food production. This shows how factors that may seem exogenous, such as global commodity prices, can influence whether materials are wasted or valued. Corwin (this issue) provides another example in which material that was historically overlooked by interests representing global capital is now at the center of an ecological distribution conflict. Drawing on extensive fieldwork in Delhi, she argues that e-waste now constitutes an 'urban mine,' and is subject to resource conflicts typically associated with virgin mines in distant hinterlands. Importantly, she shows that national regulations, international conventions, and commodity traders territorialize an extractive regime in cities. This multiscalar process is inherently contested, and she documents intense struggles surrounding accumulation of valuable metals and discarded electronic devices.

In conclusion, we have argued that waste constitutes a commodity frontier. Indeed, garbage is gold, and various mode of valorization grant opportunities for value to be created (i.e. through labour), enhanced (i.e. through a new technology, method or organizational structure) and captured by powerful strategically-situated actors. Each *mode of valorization* requires changes in how materials and energy are appropriated, transformed and managed. This constitutes what we call a socio-metabolic reconfiguration, and in this context actors rearrange their position in relation to competitors and flows of waste. This often results into ecological distribution conflicts over value creation, enhancement and capture. Therefore, what is at stake in these socio-metabolic conflicts is the establishment of a *mode of valorization* that transforms garbage into gold.

Acknowledgements

We are thankful to the contributors to this special issue, the editors at CNS Marco Armiero and SAED, the reviewers and the participants of the sessions held at the Conference of the American Association of Geographers in 2017. Federico Demaria acknowledges the support of the European Research Council for the EnvJustice project (GA 695446) and the Spanish Government for the project COSMOS (CSO2017-88212-R).

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