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The local contours of scavenging for e-waste and higher-valued constituent parts in Accra, Ghana

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A B S T R A C T

The informal sector in developing countries plays a particularly important role in the overall economic development, yet due to epistemological neglect, its conceptualization focuses on the prism of poverty and social exclusion, hence overshadowing its embedded innovativeness, adaptability and contributions to job creation, poverty alleviation and environmental management. This paper contributes in bridging this knowledge dearth by focusing on how informal e-waste recyclers negotiate the challenges of contemporary political economy contexts. Using an urban mining lens, this paper shows how crucial this sector is for the success of any municipal waste management system and Accra's local economy in general. It is contended that the continuous denial of the sector's virtues in the economy is a poor situational analysis and the research emphasizes instead the need to consider as well as harness the sector's potential in order to create not only employment for the poor but also to bring e-waste recycling into mainstream waste management scholarship.

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Introduction

To the first time visitor to the Agbogbloshie scrap yard, the modus operandi of e-waste scavengers may appear chaotic, disorganized and disjointed, worsened by cacophony of noises from the different metal workshops. It is not uncommon to see workers take metallic goods back and forth and into and out of cars and 'warehouses'. What is carried is not just "waste" of non-value but electrical and electronic equipment (WEEE); computers, televisions, phones, etc., that can have significant value as an amassed constituent part. Informal workers assemble, disassemble and reassemble components allowing labourers to mediate their own poverty, provide valuable inputs to industry and reduce 5% of the volume of materials destined for landfill (Oteng-Ababio, 2012a). The extraction of valuable metals from WEEE is not only a cost-effective substitute for the extraction of primary raw materials but saves energy and protects scarce natural resources. At the same time, local authorities save significant expenses, which they would have otherwise paid to private waste collection contractors. Researchers have also shown e-waste recycling as far less harmful than the extraction of primary materials (Hischer, Wager, & Gauglhofer, 2005; Huisman, 2003).

Increasing knowledge about the negative consequences of the continuous depletion of the natural resources in today's consumerist society has compelled many local authorities to rethink and embrace the concept of recycling as a sound approach to resource use. With society's hunger for raw materials increasing, production has become challenging and economically inefficient (Sparks & Barnett, 2010). Within the electronic industry, its unprecedented growth rate has led to exponential increase in the demand for critical metals and increasing generation of e-waste. One option to abate this dilemma is to incorporate environmental responsibility into the waste management process by encouraging recycling and resource-recovery, albeit with some technological and socio-economic challenges.

Specifically, the last decade has seen an upsurge in the recycling of e-waste as a livelihood strategy and for resource recovery. In Ghana, Agbogbloshie has assumed that notoriety for being the e-waste recycling hub, creating one of the most perplexing conundrums for Accra's development process (Grant, 2014; Grant & Oteng-Ababio, 2012). The process also provides employment and income to most unskilled and semi-skilled workers (African Union, 2008). According to Prakash, Manhart, Amoyaw-Osei, and

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Agyekum (2010) e-waste scavenging plays a pivotal role in the constitution of Accra's economy, employing about 4500 to 6000 people directly and approximately 30,000 within the broader e-waste chain of activities. This generates about $105 million to $268 million annually and sustains the livelihood of at least 200,000 people nationwide. Such findings buttress AU's (2008) position that 90% of Ghanaian workers operate in the informal economy.

Despite the obvious contributions to the economy, policy makers often sideline the challenges for informal recyclers. These workers continue to carry out work that is precarious, low-paid, highly stigmatized and laden with health risks. The sector remains in the shadows of the formal economy and suffers not only marginalization and outright hostilities from city authorities but typically, has poor access to urban infrastructure services including credit with its workers being outside the protection of labour law (World Bank, 2009). Recent scholarship however, tends to question whether the sector should still remain a marginalized, "survival" entity, housing excess "workers", or as a vibrant, entrepreneurial part of the economy, which can stimulate economic growth and job creation (African Union, 2008; Obeng-Odoom, 2011; Sparks & Barnett, 2010).

The authors agree that if the aim of employment is to create jobs and reduce poverty then the so-called informal economy as exhibited in Agbogbloshie, which according to Blacksmith Institute (2013) is among the most toxic dump sites in the world, is no longer a journey but a destination for many (African Union, 2008; Grant, 2009). We document how waste is re-calibrated through the efforts of scavengers that extract precious metals from discarded materials. We profile the role of informal pre-processes in a global e-waste disassembly line that converges on the Agbogbloshie dumpsite.

Moving beyond the consideration of the socio-economic factors that play a part in who becomes a scavenger, our intent is to examine the understudied dynamics of how due to current institutional challenges, e-waste recyclers navigate their way through the physical, socio-political and economic barriers within the urban space. Our paper contributes to geographic literature on resource use (scare) and we contend that moving the framing of e-waste to urban mining can enable national and local policy makers to engage in constructive dialogues to improve the working conditions and the efficiency of metal extraction from e-waste in Accra. It specifically contributes to the e-waste management debate in two ways; first, guided by the official waste management practices, the paper interrogates how e-waste scavengers creatively adapt to and operate within various urban geographies, highlighting the challenges and their coping strategies; and secondly, it illuminates scavenging activities which has virtually assumed permanency and illustrates the local web that connects to gated communities, lower and middle-income communities and the Agbogbloshie dumpsite and slum community. Instead of trying to instrumentalise a standard model, we argue that these processes are complex, multi-dimensional and individually unique and that it is the appreciation of these complexities that policy makers can see value in this part of the disassembly process so that they might initiate more pro-poor recycling policy interventions.

Re-conceptualization of e-waste, informality, and industrial policy

Within the waste industry, informal stakeholders have historically been very active in solid waste collection and recovery worldwide. Earlier studies have revealed that participants work as waste collectors, collectors of recyclable materials in the streets, beaches and transfer stations or even as waste pickers on dumpsites (Osibanjo & Nnorom, 2007). The preponderance (ubiquity) of the practice is indeed, reflected in the proliferation of local names within the industry: waste pickers or *metadors* (Brazil), *moscas* (Peru), *catadores* (Argentina), *pepenadores* (Mexico), *chiffonniers* or *récupérateurs* (France), *Zabbaleen* (Egypt) and *scavengers* (Ghana). All these people make a living by extracting valuable or reusable materials from other people's waste in an informal way. Gunsilius, Spies, and García-Cortés (2011) estimate that approximately 2% of the urban population in low- and middle-income countries, work in the informal waste sector, yet their contributions are often ignored or conceptualized as hindrances to efficient solid waste management (SWM) (Manhart, 2011).

Other scholars (Medina, 2005; Scheinberg, Wilson, & Rodic, 2010) reveal that the informal activities are characterised by low entry barriers, low organization levels, and irregular income streams. Additionally, their working conditions are often bad: exposure to health risks is high, child labour is routine, and there is high vulnerabilities to unfair business relations due to their precarious income conditions (Gunsilius et al., 2011). Hence, they are not officially recognised or charged with SWM, and are often ignored or restricted by responsible authorities for SWM. They, therefore, participate in the industry informally with completely different purposes; that is, to recover valuable materials and not to collect and/or dispose of waste to reduce health hazards and as a service. In other words, they contribute to the recovery and recycling of waste significantly though, but in a self-financing system (Gunsilius et al., 2011).

Melosi Martin argues that in most developed countries the origin of their recycling industry dates back to the very origins of SWM itself and that their urbanisation in the 19th century provided livelihoods for waste collectors, and other urban gleaners, who could remove 'unhealthy waste materials and commercialise them through the then growing industrial and agricultural value chains' (Melosi, 1981: 11). Other studies (Scheinberg et al., 2010; Wilson, 2007) document that series of large-scale cholera epidemics at the time brought sanitary conditions under sharp public scrutiny. The resultant increasing professionalism and environmental awareness, coupled with improved technology created recycling systems in the 20th century that operated as part of the industrial supply chain (Gille, 2007; Scheinberg, 2003; Weinberg et al., 2000).

In recent years, the need for improved environmental management and resource conservation has stimulated a new SWM modernisation process, which virtually represents a return to an improved or updated version of an older paradigm – recycling. Some scholars (Saarikoski, 2006; Scheinberg, 2003) emphasize that the hitherto management practices which removed waste from populated areas and dumped it on or buried it in some unused or faraway ground had metamorphosed into deconstructing waste streams and redirecting them through valorisation, that is, diversion from disposal into the industrial and agricultural value chain for reuse, recycling, composting and related uses. Thus, in the developed North, recycling has become not only a practical strategy in response to rising disposal costs and growing waste streams of increasing toxicity and complexity, but also as Pellow, Schnaiberg, and Weinberg (2000) put it "a symbolic antidote to overconsumption and the throw-away society".

In the developing South, however, this re-conceptualization seems missing in the SWM vocabulary, though recent studies (Scheinberg et al., 2010) suggest that informal recycling may already be recovering between 15 and 35% of generated waste in the cities. In most cases, the visions and plans that this confluence of interests produce stand in dramatic contrast to the lived reality of most urban poor and while their impacts tend to be complex and contradictory. Rather, what seems most likely is that the majority of the vulnerable will find themselves further disadvantaged and

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