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RESEARCH ARTICLE



What counts as infrastructural labour? Community action as waste work in South Africa

Kathleen Stokes ^a and Mary Lawhon ^{b,c}

ABSTRACT

Studies of waste work have largely focused on labourers who collect and process materials in exchange for money, including informal waste reclaimers and those now working precariously due to neoliberalization. Researchers have also drawn attention to who sorts waste in and beyond the household. Here we examine voluntary clean-ups as well as waste education in South Africa. State discourse encourages people to engage with the wastescape without framing this participation as work. Yet such engagements require people to act, and changing existing practices and expectations of who does what (and who is paid what) to make waste flow. We argue that understanding such activities as infrastructural helps to explain how the state seeks to enrol citizens into waste configurations, and understanding them as labour enables more capacious politics and claims to waste's value.

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KEYWORDS

South Africa, waste, labour, work, infrastructure, community

摘要

什么算是基础设施劳动力? 在南非, 社区行动作为废物处理工作。 *Area Development and Policy*. 对废弃物处理工作的研究主要集中在那些收集和加工材料以换取金钱的劳动者身上, 包括非正式的废物回收者和那些由于新自由主义而工作不稳定的人。研究人员还注意到是谁在家庭内外对垃圾进行分类。本文考察了南非的自愿清理和垃圾教育。国家话语鼓励人们参与废物排放, 而不是将这种参与视为工作。然而, 这样的活动需要人们采取行动, 以及改变现有的做法和谁做什么 (谁得到什么报酬) 的期望, 以使废物流动。我们认为, 将此类活动理解为基础设施有助于解释国家如何寻求将公民纳入废物配置, 并将其理解为劳动力, 从而实现更广泛的政治和对废物价值的主张。

关键词

南非, 废弃物, 劳动力, 工作, 基础设施, 社区

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RESUMEN

Los estudios sobre las tareas vinculadas a los residuos se han centrado sobre todo en trabajadores que recogen y procesan materiales a cambio de dinero, incluyendo recicladores informales y los que ahora trabajan de forma precaria debido al neoliberalismo. Los investigadores también han prestado atención a las personas que se ocupan de separar residuos en sus hogares y otros lugares. En este artículo analizamos las limpiezas voluntarias así como la educación sobre residuos en Sudáfrica. Los discursos estatales estimulan a las personas a participar en el ámbito de los residuos, sin plantear esta participación como un tipo de trabajo. Sin embargo, tales participaciones requieren que las personas actúen y cambien sus prácticas habituales y sus expectativas sobre quién hace el trabajo (y quién lo paga) para que la gestión de residuos sea más fluida. Argumentamos que al enmarcar tales actividades como un trabajo infraestructural podemos explicar de qué forma el Estado quiere que los ciudadanos participen en la gestión de residuos, y al entender que se trata de un trabajo es posible crear políticas y reivindicaciones más amplias con respecto al valor de los residuos.

PALABRAS CLAVE

Sudáfrica, residuos, mano de obra, trabajo, infraestructura, comunidad

АННОТАЦИЯ

Исследования работы с отходами в основном были сосредоточены на рабочих, которые собирают и перерабатывают материалы в обмен на деньги, включая неофициальных утилизаторов отходов и прекариат, возникший из-за неолиберализации. Исследователи также обратили внимание на то, кто сортирует отходы в домашнем хозяйстве и за его пределами. Здесь мы рассматриваем добровольные субботники, а также образование в области обращения с отходами в Южной Африке. Государственный дискурс поощряет людей заниматься отходами, не выдавая это участие за работу. Тем не менее, такое участие требует от людей действий и изменения существующих практик и ожиданий в отношении того, кто что делает (и кому сколько платят) относительно переработки отходов. Мы утверждаем, что понимание такой деятельности как инфраструктурной помогает объяснить, как государство стремится вовлечь граждан в работу с отходами, а понимание их как рабочей силы позволяет проводить более емкую политику, а гражданам – претендовать на часть стоимости отходов.

КЛЮЧЕВЫЕ СЛОВА

Южная Африка, Отходы, Труд, Работа, Инфраструктура, Сообщество

1. INTRODUCTION

Infrastructure has long been understood as central to development and enabling collective livelihoods (Pieterse et al., 2018; Turok, 2016). Within critical infrastructure studies there is growing attention to the human activities that make infrastructure. Many have examined changing labour dynamics in a global context of increasing precarity, most notably contesting the perceived shift from unionized, waged, government jobs to outsourced, private and insecure contracts (Strauss, 2020a). Others have explained how people, particularly in the Global South, act to uphold or enact infrastructural flows, whether walking to pipes to collect water or manually digging latrines; this also includes domestic reproductive labour to manage materials that enter, and exit, homes (e.g., Alda-Vidal et al., 2018; Baptista, 2018). Further, residents may also create economic opportunities within and through infrastructures, whether through providing non-piped water, collecting waste or building pay toilets (e.g., Nakyagaba et al., 2021; Sseviiri et al., 2022). Such studies have usefully demonstrated a diversity of human activities that make infrastructure and how they contribute to infrastructural processes and flows.

Yet recent scholarly attention to the labour of infrastructure has largely elided an important and under-examined set of activities: community actions, often called for in the name of active citizenry, well-being and local benefits. For waste, participatory schemes have often encouraged voluntary action to reduce litter and clean the local environment, including separating materials for recycling. From monthly clean-ups to community enterprises, ‘community’ has become embedded within governmental urban household solid waste management discourses and practices in many countries of the Global South (Kubanza et al., 2021; Malik et al., 2015; Muller et al., 2002). These activities are increasingly prominent in the context of constrained state finance, localization and participation, in which governments are struggling to satisfy their service provision obligations. Scholars have widely documented the centrality of changes to labour in response to these constraints, including outsourcing and associated neoliberal strategies, as well as cross-sectoral responsibility and community participation in service provision (Fredericks, 2018; Sinthumule & Mkumbuzi, 2019). Community participation, however, is often neither framed nor compensated *as labour*, raising questions as to how states enrol such participation.

In this article we consider the implications of examining community action as *infrastructural labour*. We examine two state initiatives that encourage participation as key components of waste management and sustainability in South Africa: public clean-ups; and education and awareness campaigns. The state encourages residents not only to correctly dispose of waste, reduce consumption and separate recyclables, but to also seek out ways of supporting and participating in public cleaning and greening. State discourse at times obfuscates the labour associated with specific activities, celebrating voluntary community participation without framing it as waste work and urging entrepreneurialism without a clear sense of how associated work might contribute to secure and decent livelihoods.

Broadly, we suggest that viewing this work as *infrastructural* helps us to explain why the state was, to some extent, successful in its efforts to enrol community action. Viewing it as *labour* helps us to see its undervaluation. While it would be easy to simply view community participation as another version of neoliberal ‘outsourcing’ of state responsibility to citizens – it is, surely, an example of this – we suggest there is a different politics to infrastructural labour. We are cautious about the discourse that promotes responsabilization and reduces the role of the state in providing services to citizens. Yet we also recognize the political utility of citizens directly engaging with infrastructure, including acting to ensure that materials flow, particularly in the context of calls for the democratization of infrastructure (Sorman et al., 2020; Van Veelen et al., 2021). Participation can improve residents’ livelihoods, reducing the cost of services, increasing their quality and even generating income. Viewing community actions *as infrastructural labour* that contributes to collective welfare also has implications for politics, reworking ideas of rights and responsibilities of infrastructural citizenship (Lemanski, 2019, 2020). In this context, rather than provide a conclusive judgement on the politics of these activities, we reflect on the significance of considering community waste actions *as infrastructural labour* and how this can help us reconsider possible relationships between work, livelihoods, responsibility, democracy and infrastructure.

2. WHAT COUNTS AS WORK IN WASTE INFRASTRUCTURES?

Critical studies of infrastructure have disrupted how they are conceptualized, emphasizing their diverse forms, processes, politics and socio-technical dimensions (e.g., Furlong, 2011; Graham & McFarlane, 2015). No longer viewed as inert, blackboxed material outputs of human processes, scholars increasingly emphasize infrastructures as assemblages that are at once political, performed and lively (Amin, 2014; Larkin, 2013; Silver, 2014). Within this scholarship there is a growing attention to the human activities that make infrastructure. In

this section we outline key themes in the study of infrastructure and labour before briefly reviewing studies of waste labour and point towards ongoing areas of emphasis and omission.

2.1. Infrastructure and labour

Only a few years ago, scholars noted a gap in infrastructure studies and labour. This has prompted burgeoning attention to the various dimensions, conditions and politics that surround infrastructural work (cf., Buckley, 2018; Graham & McFarlane, 2015; Strauss, 2020b). Studies have expanded on Simone's influential coinage of 'people as infrastructure' (Simone, 2004, 2021) to put forward an array of conceptual notions of performing infrastructure, including patchwork (De Coss-Corzo, 2021), bricolage (Munro, 2020) and incremental infrastructures (McFarlane, 2011; Silver, 2014), alongside broadening theorizations of social infrastructure (Hall, 2020; Latham & Layton, 2019; Meehan & Strauss, 2015).

This article does not review this growing body of scholarship in its entirety (see De Coss-Corzo et al., 2019, for emergent collaborative discussions surrounding infrastructural labour). Instead, here we provisionally suggest three areas of emphasis: changing conditions of those working for pay, the ways in which entrepreneurial actors redress infrastructural 'gaps' and those that emphasize domestic activities that are uncompensated. These activities, and studies of them, are important and continue to require additional empirical and theoretical consideration. Thinking across these different types of activities can also help us to see what is distinct about infrastructure labour, for it contributes to everyday material flows and holds material and symbolic significance. Further, the recent pandemic has emphasized the centrality of much infrastructural labour as 'essential' necessary to be undertaken even when there are risks.

Identifying these themes helps us to see underemphasized forms of infrastructural work, including the unpaid activities of residents that support and create infrastructure processes and ensure materials flow. It also helps us to see new questions, including consideration of who is called to do what infrastructural work, as well as how and why certain people become enrolled into infrastructural configurations.

Of course, it would be easy to critique all forms of unpaid work, instead insisting on counting and compensating for it. Yet there are two important points we raise here that complicate such this perspective. The first is ongoing demands to democratize infrastructure in response to widely documented concerns with state provision, raising questions of how labour ought to work in more just and collective configurations (Sorman et al., 2020; Van Veelen et al., 2021). What kinds of roles and responsibilities might come into being in a more democratic infrastructural citizenship (Lemanski, 2019, 2020)? The second is wider shifts in the meaning of labour and its relationship to fraught histories particularly in postcolonial contexts (Barchiesi, 2011, 2016; Ferguson, 2015). Normative imaginations of work and labour tend to focus on – and valorize – wage labour within formal economies, which leads to diverse forms of work becoming ignored or viewed as deviations. As Monteith et al. (2021) note in their recent edited volume examining 'ordinary work' of diverse economies, 'The discourse of wage employment thus stops us from asking important questions about the forms of value produced by people subsisting outside of wage employment, impoverishing debates on [the future of] work' (p. 4).

In this context, drawing on feminist labour scholarship (Federici, 1975; Weeks, 2011), our insistence in widening the scope of 'what counts' is meant to spark more capacious political conversations, considering limits and possibilities involved with various configurations of infrastructural labour and value. Understanding what constitutes infrastructural labour is thus not simply a matter of semantics: emphasizing the importance of infrastructural activities *as work* has political and subjective significance, enabling claims to alternative values and configurations. In the following section we consider how scholarship has engaged with waste

work to date, and point to the analytical value of deepening our analysis of the infrastructural qualities of certain forms of community-based waste work.

2.2. Studying infrastructural labour in the wastescape

Waste offers a productive context for examining conceptualizations of infrastructural labour, and how different actors are enrolled into infrastructural configurations. These questions take on increasing significance amidst growing emphasis on waste as a resource (Gidwani, 2013; Oelofse et al., 2018; Schindler & Kanai, 2018) and priority sector for job creation in South Africa, particularly in support of emerging green development and just transition politics. Here and elsewhere, automation and upgrading have reworked but not eliminated the role of people in collecting, sorting, transporting and transforming waste materials (Gregson et al., 2016; Zapata Campos & Zapata, 2014). Instead, the range of activities underpinning waste infrastructures has been transformed and indeed expanded, all the while being recast through a prism of competing discourses, material conditions, subjective framings, and socio-economic and political relations (Lawhon et al., 2018a, 2018b, 2021).

Waste scholarship in the Global South has offered significant insights, with a particular focus on experiences of salvage-based livelihoods and the implications of neoliberal political economies, such as outsourcing or devaluation (Inverardi-Ferri, 2017; Millington & Lawhon, 2019; Thakur & Nel, 2021). For instance, scholarly attention to informal or subsistence-based waste work has emphasized how such work becomes its own infrastructure or economy, its ecological and economic contributions, and persistent entanglement hegemonic, exclusionary, and extractive politics and logics (Sseviiri et al., 2022). Studies have furthermore interrogated how such work is targeted and dispossessed through formalization and integration policy agendas (O'Hare, 2020; Samson, 2020; Tucker & Anantharaman, 2020), while others have questioned the potential and challenges faced by waste cooperatives (Alene, 2018; Godfrey et al., 2017; Gutberlet, 2008, 2012).

Meanwhile, scholarly investigations into waste governance also point to changing relations and conditions for associated workers within and beyond the 'standard employment' ideal (Cornea et al., 2017; Gidwani, 2015; Tuçaltan, 2020). In particular, Gidwani has independently (Gidwani, 2015), and along with co-author Reddy (Gidwani & Reddy, 2011), drawn attention to the heterogeneous forms of labour that underpin waste's infrastructure. By arguing that heterogeneous and non-standardized forms of work constitute a form of infrastructural labour, Gidwani emphasizes the porosity of so-called formal and informal work within infrastructural economies and processes and challenges presumptions around what work counts as infrastructural within the diverse, hybrid, unequal rhythms urban life: 'urban middle classes are frequently disdainful of the city's poor, it is arguably the latter's labour that underwrites their lifestyles' (Gidwani, 2015, p. 590).

Some scholars have sought to connect wider notions of infrastructural labour to waste politics. For instance, Thieme suggested that youth-run community-based waste collection and recycling in Mathare, Kenya, exemplified 'a vibrant grassroots effort to contest the failure of the state while providing a valuable service to their communities' (Thieme, 2010, p. 348). More recently, Fredericks has framed waste management as a vital infrastructure of labour, where:

a complicated network of paid municipal trash collectors, community-based volunteers, below-the-radar pickers and recyclers, and household members, especially women, ensures the steady, orderly disposal of the city's waste, converts discard into use and value, and vigilantly wards off the ever-present threat that the city might drown in its own detritus. (Fredericks, 2014, p. 532)

Fredericks's framework for considering the social and material dimensions of waste management looks to 'bridge a cultural politics of labor with a materialist understanding of infrastructure' (Fredericks, 2018, p. 4). This argument has served as a premise for unpacking the changing relational, material and political nature of waste work in Dakar amidst the wider backdrop of neoliberal governance, including waste schemes drawing upon voluntary and community-based labour. Our reading is that Fredericks does view diverse forms of waste work as infrastructural, but this perspective is only briefly touched upon to build her wider arguments around disposability, burdening, governance and politics (Fredericks, 2018). We look to build upon Frederick's attention to consider more deeply what constitutes infrastructural labour, how it comes to be, and how it works.

Scholars have investigated different dimensions of community participation in solid household waste management; however, such research has largely focused on descriptive accounts (Kubanza et al., 2022, 2021; Muller et al., 2002; 2021; Rathi, 2006; Rayon-Viña et al., 2019; Sinthumule & Mkumbuzi, 2019; Zambezi et al., 2021). Scholars have also usefully investigated the motivations for participation and effects of specific types of community-based waste interventions, such as clean-ups (Mackenzie et al., 2015; Rangeti & Dzwauro, 2021; Ryan & Jewitt, 1996; Wyles et al., 2017). While recognizing and indeed often adopting an encouraging narrative regarding community participation, there remains considerable scope to deepen our understanding and theorization of such activities. This includes explicit consideration of whether different activities and efforts constitute work and are infrastructural, as well as their relation to broader governance arrangements and livelihood strategies.

Research into South African waste work has also made significant contributions surrounding governance and logics (Makina, 2020; MirafTAB, 2004a), enclosure, accumulation and devaluation (Samson, 2015), livelihoods and precarity (Bala et al., 2021; Schenck et al., 2019; Yu et al., 2020), contestations over the right to undertake work (Samson, 2020), and outsourced, entrepreneurial and community-based waste work (Millstein & Jordhus-Lier, 2012). Of particular relevance for this article is MirafTAB's research into the neoliberalization of waste management services in Cape Town amidst municipal restructuring in the early 2000s. MirafTAB has similarly argued that schemes promoting community participation and voluntarism contributed to the decentralization, stratification and outsourcing of services, along with the casualization, racialization and gendering of waste work in Cape Town (MirafTAB, 2004a, 2004b). Furthermore, MirafTAB points to the socially reproductive nature of waste work and suggests that this status is leveraged to justify privatization and informalized labour by the public realm (MirafTAB, 2005). Community and voluntary schemes, thus, have been promoted by state actors for over two decades as a means of devolving governmental responsibility for waste labour, either through the invocation of empowerment, active citizenry and community responsibility or the promises of future financial gain through entrepreneurial opportunities (MirafTAB, 2004a). Despite this discursive framing, below we argue that the work and activities undertaken within these schemes constitute an underrecognized form of infrastructural labour. We view our contribution as extending this argument to explicitly recognize the infrastructural nature of such work, and how this enables the state to call upon citizens to work.

These various interventions have offered substantial insights around waste work and its wider relations, conditions and impact for urban infrastructures and governance. Yet, in the context of ongoing change and uncertainty over the role of work in waste infrastructure, it remains pertinent to consider waste labour practices and politics and in different contexts. More specifically, this paper considers what forms of work specific policies and practices call for, and how these different forms are framed and valued – and potentially contested and reworked by those who undertake infrastructural labour?

3. METHODOLOGY

Data analysed in this paper are part of a research project on livelihoods and waste in South Africa. We began with a preliminary review of waste management legislation, announcements, policies, plans and strategies for relevant municipal, provincial and national governments in the decade leading up to fieldwork in 2017–18. In addition to identifying and analysing prevailing state discourses related to community responsibility and active citizenry, [the first author identified governmental programmes, campaigns or initiatives which emphasize and encourage the participation of communities and residents in three metropolitan municipalities (Cape Town, Johannesburg and Ekurhuleni; the latter two are part of the Gauteng region). Having identified a comprehensive list of over 25 programmes, campaigns and initiatives from all three spheres of government, the first author subsequently sought to ascertain the nature of involvement and expectations surrounding responsibility for work. This article complements and advances our work on the relationship between waste and livelihoods by examining types of community participation and involvement less commonly described as work both within policy discourse and amongst scholarly literature: voluntary clean-ups and waste education.

The first author then selected primary initiatives within each metropolitan region for further analysis, while also conducting a brief review of projects and campaigns which have proceeded, coexisted and followed on from the primary cases. Initiatives for further investigation were identified through a review of policy and public documents and followed up through interviews and site visits, secondary source analysis, and tracking of updates through social and public media sources during fieldwork. Additionally, the first author conducted semi-structured interviews over 2017–18 with 45 different stakeholders involved in the governance, planning, delivery, and assessment of such initiatives and waste management politics more generally. Interviewees included government officials in local, provincial and national government, waste business owners and managers, cooperative members and entrepreneurs, programme coordinators and facilitators, as well as community participants. This paper is also informed by the second author's engagements with WasteWise from 2011 to 2012, including participant observation in project team meetings and providing support for a survey used for internal evaluation of the project.

In this paper, our analysis focuses on the logic of the state, not participants in waste work. This is not to discount the important perspectives of community participants, but to instead address questions of politics, framing and the reasons behind the initiatives. Interviews sought to gather further insights into the logics and imperatives that underpinned these programmes, how they fit within wider waste management plans and strategies, how the delivery and execution of such programmes occurred in practice, and finally, how they related to participant livelihoods and informed state/society relations more broadly. Analysis was conducted using NVivo for coding of key cases and themes to assess each initiative's context, aims and impact, as well as the broader discursive, political and material implications of community waste initiatives. This paper outlines these schemes as well as their commonalities and differences with a view to analysing how such initiatives frame and value different forms of waste work.

4. THE GOVERNANCE OF WASTE AND WASTE WORK IN CAPE TOWN, JOHANNESBURG AND EKURHULENI

This section briefly outlines the political context of waste work in South Africa, with a focus on state actions and initiatives (for more detail, see Lawhon et al., 2021). The state is responsible for ensuring waste management services are provided to all citizens. Over the last 20 years, responsibility for waste management has encountered several significant areas of

pressure and potential transformation, resulting in an array of legislation, policies, programmes, standards and initiatives (again, see Lawhon et al., 2021, for more detail). These are largely aimed at transforming waste management infrastructures away from landfill disposal and towards higher rates of material recovery, separation, and redirection into recycling and secondary resource supply chains. Meanwhile, political constraints and ideological shifts have contributed to a growing governmental predilection for private sector partnership and outsourcing of state service provision. Consequently, notions of the ‘enabling state’ are leveraged to call upon all spheres of society to become more active in democratic processes and practices, including service provision. And so, responsibility for different aspects of waste management have gradually become more multifaceted and situated than the official legislative imperative of state authority.

Waste collection is mandated and overseen by municipal governments, while the broader recycling economy includes municipal workers, outsourced workers and companies, and waste pickers or reclaimers (Godfrey & Oelofse, 2017). The work of cleaning streets and public spaces is overseen by municipal governments that either directly employ or outsource this work. Littering and dumping are often considered significant problems for waste management governance, and while there may be recyclable materials to sell, cleaning can be an expensive undertaking. Public works programmes have been used by all three municipalities to recruit casual, part-time and temporary workers to conduct public cleaning. This work has been reframed as a ‘work opportunity’ rather than a job (government official, Expanded Public Works Programme, Tshwane, 8 August 2017); the programme provides financial compensation for the work undertaken, albeit at roughly half of the National Minimum Wage (Department of Employment and Labour, 2022). The relationship between littering and employment is undoubtedly fraught and multidimensional: that littering creates jobs continues to make intuitive sense to many and arises frequently as an explanation for South Africa’s problem with litter. Yet the ongoing visibility of poorly managed waste and calls for voluntary action to clean challenge any easy assumption that more littering will result in more jobs, or that voluntary cleaning will necessarily lead to disemployment of waste workers.

5. COMMUNITY WASTE WORK IN SOUTH AFRICA

The South African government has launched an extensive variety of initiatives promoting community involvement in waste management. From national public employment programmes to municipal clean-ups and enterprise support programmes, these take place in particular locations but respond to multi-scalar pressures. The following sections illustrate two types of community waste management initiatives that have gained traction amongst state actors over the last decade. These initiatives have featured significantly within public perception and political investment and are the most high-profile instances of state-led community waste management. Their objectives and outcomes provide a strong indication of the broader dispositions concerning responsibility and community labour within waste management infrastructures in Cape Town, Johannesburg and Ekurhuleni. Crucially, as we emphasize in the conclusions, each of these has a significant impact on the flow of waste and the need for action elsewhere in the wastescape.

5.1. Public clean-ups

Clean-up campaigns – in which people are assembled to voluntarily clean-up a public space – are one of the most widely publicized and visible examples of community participation in waste work. As events, they serve the dual purpose of immediately cleaning a designated site of any unwanted refuse while raising public awareness of problems with improper disposal, environmental sustainability and the importance of maintaining a clean environment. They

can also serve as spectacles, generating publicity and media coverage particularly when public figures participate. Community clean-ups can result from the private sector¹ or grassroots organizing, but those we examine here are initiated, coordinated or promoted by state actors as part of broader efforts towards civic pride and environmental sustainability.

South Africans have participated in International Coastal Clean-Up Day, which has been running internationally since 1986, with efforts nationally coordinated by Plastics SA (an industry association). This scheme is aligned with the national Department of Environmental Affairs' Clean-up and Recycle SA Week, which reportedly had over 120,000 volunteers participating in clean-ups across the country in 2016 (Department of Environmental Affairs, 2017). The 2018 announcement of both events called on 'all South Africans to take responsibility for keeping their communities and natural environment free of litter – as well as to reduce, recover, re-use and recycle their waste' (Department of Environmental Affairs, 2018). Instead of emphasizing the ways these activities contribute to the work of public cleaning, participation is framed as taking responsibility for one's community and environment.

While annual and one-off clean-ups have a longstanding history within South Africa, recurrent monthly clean-ups have risen in popularity across several cities as part of municipal public engagement strategies. Indeed, monthly clean-ups have been referenced in municipalities' waste management plans and strategies. For instance, the City of Johannesburg's 2011 Integrated Waste Management Plan specifically refers to 'clean-up campaigns where members of the community are encouraged to participate in cleaning up a particular identified area in the hope of cultivating a sense of responsibility for community members to clean their surroundings' (2011, p. vii). Such clean-ups are reportedly inspired by Rwanda's Umuganda Day, although it is worth noting an important difference: participation is encouraged but voluntary in South Africa, whereas it is mandatory for able-bodied adults in Rwanda (Joburg, 2019; Mashaba, 2019).

Enacting this strategic imperative, the City of Johannesburg and waste management corporation, Pikitup, launched a monthly clean-up campaign called *A Re Sebetseng* in 2017. In the bid to encourage residents to do their part, the campaign invokes environmental sustainability, civic duty and community pride, suggesting the city will become cleaner as a result. Clean-up days occur each month and operate as part of a broader education and awareness strategy, with promotional and informative material circulated through social media, broadcasting and print campaigns. Loosely translated as 'let's work' in seSotho, *A Re Sebetseng* calls upon residents to self-organize and select an area to voluntarily clean. In exchange, the city provides refuse bags available for collection at municipal sites, such as libraries (City of Johannesburg, 2018). At the close of the day, community groups bring their amassed waste to local collection points. Participation rates and intensity have differed month to month and across neighbourhoods, with between 800 and 3300 participants each month ('About A Re Sebetseng', 2018). Residents who participate are celebrated through social media for their contribution towards the public good, accompanied by calls for further participation.

While *A Re Sebetseng* calls on communities to organize local events, high-profile public officials also regularly take part as a way of building public support. In the months and years following the programme's launch, then Johannesburg Mayor Herman Mashaba and other high-profile municipal councillors appeared in high- and low-income communities across the metropolitan region each month, resulting in videos and new stories about their efforts to work alongside residents towards a cleaner, greener Johannesburg. At the launch of the *A Re Sebetseng* campaign in August 2017, Mayor Mashaba was photographed alongside local workers, residents and Miss Earth South Africa. According to the mayor:

The wider clean-up will be supported by councillors and ward committees as well as businesses across the city. This is why we have different stakeholders involved, from religious institutions, sporting personalities, civil society, community groups and political organisations, because we want everyone to be involved and become responsible for fighting grime. . . . We are looking forward to seeing residents come out in numbers, taking ownership of their city and supporting this campaign to clean our environment. (Vilakazi, 2017)

Conveying a gesture of inclusion coupled with expectations of collective ownership, clean-ups have been framed as an invitation and call for residents to help maintain a tidy and clean environment. Widespread compliance would cultivate a sense of collective pride and responsibility – and implicitly, alleviate pressures on existing services (possibly even reducing state spending).

What is written out of such accounts is that public cleaning is already part of municipal waste management services, and that this aspect of waste management is never-ending, labour intensive, and less likely to offer valuable recyclable materials than household collections. In other words, public cleaning is an important aspect of infrastructural labour which ensures waste materials in public space are collected for disposal into mandated infrastructural flows and processes.

And so, the promotion of voluntary cleaning as a means of encouraging community responsibility has been subject to such critiques, raising questions over the role and contribution of recurrent clean-ups within municipal waste management plans. In the years following *ARe Sebetseng's* launch, questions were raised around the utility of promoting voluntary action by residents in the face of waste infrastructure and service inadequacies. Two former board members of Pikitup, for example, publicly bemoaned the lack of cleanliness within the city's most impoverished communities and its limited attempts at improving infrastructural capability and service quality. Concerning the clean-up campaigns, they note, 'To state the obvious, littering arising from lack or inadequate basic infrastructure cannot be resolved by campaigns . . . clean-up campaigns that are mere public engagements cannot be a substitute for proper waste management' (Hanekom & Nyabeze, 2019). Others complained that voluntary clean-up campaigns take away jobs from the waste sector, a concern that resonates with wider opposition to neoliberal outsourcing of services and the conversion of paid work into *unpaid* action (union representative, SAMWU, Johannesburg, 27 July 2017; see also above on 'work opportunities').

Invoking recurrent, state-sanctioned clean-ups as a means of encouraging citizen participation is not particular to Johannesburg. Neighbouring metropolitan municipality Ekurhuleni also ran monthly community clean-ups in 2015–17 under the banner 'Clean Neighbourhood Fridays'. As in Johannesburg, the campaign was publicly framed as an invitation for communities to join the mayor and senior officials to 'uphold a culture of clean environment by cleaning their respective areas every last Friday of the month' (City of Ekurhuleni, 2016). The clean-ups were intended to complement the broader transformation of Ekurhuleni's waste management services. Clean Neighbourhood Fridays differed by explicitly targeting lower income settlements and public areas; the campaign did not invite universal participation but focused on 'eradicating litter in informal settlements in the region' (City of Ekurhuleni, 2016). Whereas Johannesburg had officially targeted all parts of the municipality, Ekurhuleni was explicit in only targeting lower income communities to voluntarily clean public areas. The suggestion that higher income suburbs would instigate and run their own community waste cooperatives was dismissed by government officials during our interviews: service provision (paid for by the state or private actors) was assumed to be sufficient.

While Ekurhuleni's monthly clean-up campaign held several public clean-ups in targeted areas such as taxi ranks and bus stops, it struggled to build momentum and maintain public

turnout. One professional associated with the campaign complained that communities did not usually continue regular clean-ups after an initial high-profile event. However, additional public cleaning is sometimes needed after public events to collect materials like flyers, leading some to question their utility (project manager, GladAfrica, Midrand, 12 September 2017). Despite these struggles, Ekurhuleni's campaign did not officially end. Instead, officials suggested it had unofficially halted in 2017 and would be incorporated into provincial clean and green efforts (ANA, 2016; Qukula, 2017). Thus, despite struggling to maintain longstanding participation, community clean-ups were not dismissed but relaunched or incorporated into new campaigns and strategies, to continue promoting community participation in voluntary public cleaning.

In sum, we see the move from sporadic or annual clean-ups organized by private sector or civil society actors towards their inclusion as a recurrent public cleaning event within governmental campaigns and waste management plans as normalizing voluntary action within the flows and rhythms of infrastructural processes. While campaign names have changed or been relaunched, clean-ups are becoming a regular feature within government efforts to change ordinary behaviour towards disposal and encourage greater community involvement in waste management more generally. The blurring of public information and action, and pointed calls for participation, makes clean-ups a particularly potent means of making waste everyone's business. By encouraging residents to take part monthly, community clean-ups are intended to highlight the collective need and power of civic involvement and reiterate communities' responsibility in keeping their neighbourhood tidy.

In this context, it is because this labour is infrastructural – enabling collective wellbeing through public cleanliness and sanitation – that the state calls citizens to undertake it. At the same time, by not framing these activities as 'work', the state justifies not paying participants. This effort to normalize voluntary action has not occurred without contention: there is pushback over the lack of compensation amidst broader struggles over the conditions and security of waste labour, and labour more generally. What might it mean if recurrent community clean-ups were to become an even more significant or regular component of municipal waste work? What might this mean for those already paid to manage waste? As mentioned above, the promotion of voluntary clean-ups has resulted in the need for additional public cleaning following launch events, and yet widespread participation remains a consistent struggle within these campaigns. What kinds of claims might communities make to infrastructure if their labour was understood as essential to it? We return to such considerations in the conclusion.

5.2. From anti-litter education to waste entrepreneurialism

Often accompanying clean-ups, education and awareness initiatives are a common feature of government waste management plans and strategies in all spheres of government. From billboards to radio advertisements, school events to door knocking, education and awareness is deployed on the premise that an informed public will behave appropriately and contribute to improvement of waste management. While such initiatives have most frequently been run at the municipal level, provincial spheres of government run campaigns to supplement or amplify municipal efforts, such as longstanding clean and green campaigns and creating targeted waste education programmes for schools. These programmes are increasingly expanding beyond advertising and information-sharing alone to encourage community involvement in supporting or instigating local efforts and projects aimed at addressing approved behaviours and activities. In other words, education and awareness is not simply looking to encourage residents to stop littering and dumping and adhere to the approved disposal and separation practices, but to also instigate their own efforts and activities to manage waste and cleaning in their communities.

Waste campaigns that seek to combine education with community action require additional time and effort and a very different skill set to information-based campaigns. In our interviews, municipal officials frequently suggested there was insufficient internal capability to effectively design and deliver programmes, so they had to contract outside professionals. Another argument provided for such schemes was the need for community buy-in, where residential facilitation of education awareness would provide legitimacy and lead to greater compliance and participation in desirable waste behaviours and participatory activities.

While the impact of information-based campaigns was difficult to ascertain amongst the people we interviewed, waste education and awareness campaigns were increasingly understood to need to be integrated into other state initiatives to have direct material benefits. As we detail below, there are some efforts to link waste education to paid work, but education and awareness campaigns continue to primarily focus on encouraging voluntary activities and behaviour change.

For example, the City of Cape Town ran the WasteWise from 2001 to 2013 gradually expanded expectations and strategies related to community responsibility for waste (Jeffares & Consortium, 2012). While initially described as ‘a holistic and integrated anti-litter/anti-dumping campaign’ (City of Cape Town, 2002, p. 158, 2013), the campaign evolved over time to also incorporate more active strategies for promoting community and agency. At its core, WasteWise sought partnerships with schools, communities, and businesses to reduce waste and encourage communities to take responsibility for their local environments. In its last cycle (2010–13), WasteWise undertook a rather different, experimental approach to more conventional waste education by selecting three lower-income sub-council areas on the Cape Flats to serve as intensive ‘Green Zones’ pilots for encourage community-led waste education and projects.

Community facilitators were recruited to establish and run projects that would respond to waste problems in their respective communities. Facilitators were also expected to champion pro-environmental behaviour by sharing information and encourage local participation in cleaning and greening activities by running local volunteer circles and conducting door knocking. It should be noted that facilitators’ roles were always expected to be limited to the three-year period, and not advertised as employment or paid. However, several facilitators indicated that local officials told residents the scheme might lead to future opportunities and a stipend of 1200 rand (around £70 at the time of research) for facilitators for the duration of the pilot. Thousands applied and approximately twenty facilitators were appointed, the vast majority of whom were women, and mothers.

Over the three-year pilot, community facilitators were encouraged to map their community, gather local support, develop projects that would respond to their local needs, seek out local support and resources, and complete regular reporting to the project. To achieve this, facilitators received intensive training and ongoing support from project coordinators and met regularly to reflect and share experiences. Ultimately, officials and contracted project managers we spoke with in our interviews noted that facilitators were expected to be self-starting and find their means of sustaining themselves beyond the pilot’s three-year timeframe:

Although WasteWise was an awareness project, it went a little beyond that. It was about creating people’s ability to sustain themselves and also eventually identify, after the project, a potential idea that they feel they could sustain themselves with. So, it was giving them the skills despite the issue that we wanted to deal with. We dealt with the waste as an environmental issue, but we took that just as a mode for them to be empowered in other fields, and other aspects of survival, sustainability. (municipal official, Cape Town, 9 March 2017)

By the pilots' end, community facilitators started recycling businesses and composting schemes from their homes, created community gardens, and organized clean-ups in areas with considerable litter or pollution. While these projects were wide-ranging, they represented small-scale efforts that addressed gaps and absences identified by the facilitators and their communities within the communities existing waste services and infrastructures. For instance, composting schemes and recycling projects diverting organic waste create new, alternative flows for waste materials, thereby fulfilling state efforts to divert waste from landfills.

Furthermore, the creation of such initiatives and projects through the Green Zone pilots meant that that municipal financial support for waste was being allocated towards community capacity building with the intention that such projects would become financially self-sufficient. Once again, implicit here is that one of the main costs of municipal cleaning is the cost of paying people to do this work, and that this is one of costs the campaign seeks to curtail. Likewise, this model did not have to cover the labour costs of establishing and running recycling services. Unlike the voluntary clean-ups, WasteWise was explicit that this campaign was both about civic participation and curtailing escalating municipal costs through encouraging self-sustaining projects.

However, no facilitators were able create a secure and sustainable income directly through their projects. Professionals and government officials associated with the programme generally referenced success cases where individuals went on to other forms of employment or started enterprises, including a facilitator who did gain employment from a partner charity organization that had provided training. They also acknowledged that not everyone could establish and maintain long-standing community waste projects. Only one project stemming from WasteWise was reported to have received continued support from the city: a satellite drop-off facility in Bonteheuwel (municipal official, Cape Town, 9 March 2017). No longer receiving stipends, most of projects eventually halted, although some facilitators did attempt to continue their efforts voluntarily in their spare time. For some, it increasingly became clear to participants that any money that could be made from waste was limited, especially when time is accounted for: there was very little to sell (beyond a few materials that can be recycled), additional resources (such as transport and storage space) were needed to take projects to a financially sustainable scale, and there was no particular audience willing to pay a secure wage for services provided. When asked about the legacy of the Green Zone pilots, interviewed facilitators had mixed sentiments. While grateful for the experience and believing their efforts had momentarily contributed positively to their communities, many also felt that their work has not been valued or supported sufficiently to establish a secure livelihood through their waste work.

Yet, these activities are clearly understood by state actors to be important, and continually invoked through an ongoing cycle of initiatives and campaigns. Municipalities and provincial governments alike have embraced information and education campaigns as key aspects of their strategies. Learning from the limits of information-based campaigns, the final iteration of the WasteWise campaign exemplified a different approach. Waste education was no longer about teaching 'proper waste management' but imparting a wider set of skills and positioning residents to identify, establish and run their own waste, cleaning and greening, and information activities to fulfil the shortcomings of existing waste management services. Not surprisingly, this participatory model proved to be a difficult undertaking, for a variety of reasons beyond the scope of this paper. Here a different approach was subsequently taken in Cape Town. At present, skills development continues to inform community waste education, although it relies on voluntary work to demonstrate interest and capacity. Although there have undoubtedly been changes to particular dynamics, the wider pattern of garnering public involvement and support to reduce pressures on the state to directly provide services shows no signs of abating.

In the years following the WasteWise Green Zones, the City of Cape Town's public awareness and education team continued to work with communities but shifted their approach to focus on targeted, shorter-term interventions or working communities which

had already instigated their own projects to help them transition them to self-sustaining business models:

[That is] mini-projects with shortterm, quick outcomes and going in and just doing either general awareness-raising or getting people to understand the new aspect of resource markets, of what is the recyclability, of the value of the recyclable, how they can start their own businesses, looking at waste as a resource. (municipal official, Cape Town, 9 March 2017)

Raising the threshold does likely increase the success of state-supported projects, but it also indicates an expanded expectation that communities must get to the point of ‘proof-of-concept’ before dedicated support from the municipality is provided, and that such support will be orientated towards entrepreneurial and self-sustaining modes ways of growing and continuing their community-based waste initiatives. In both cases, community champions are expected to assess and respond to waste problems in their communities and subsequently create projects, schemes, and initiatives that address these needs. Yet, when these efforts are framed as both an empowering form of active citizenry and gateway to future economic opportunities, the work and its infrastructural contribution are distorted.

As with the community clean-ups discussed above, the waste education of WasteWise emphasizes the importance of community action for waste management. Here, too, it is because this labour is infrastructural—enabling collective wellbeing through public cleanliness and sanitation—that the state calls citizens to undertake it. Citizens, here, however are called to do more than just show up for low-skilled work of picking up rubbish. How the state characterizes these activities is blurry: they are clearly not considered workers in the conventional sense of waged activities. Yet the payment of a stipend, like the funding for ‘work opportunities’, creates new albeit fuzzy categories. By treating these stipends as temporary, the state insists on not normalizing payment for such labour, insisting that participants in WasteWise find alternate sources of funds to underwrite activities for the long term. This relationship is not uncontested, and there is some uncertainty as to what actually had been implied about the future for participants. Further, the unsustainability of WasteWise projects and the shift towards other models suggests the limits of such an approach, yet as with public clean-ups it is reasonable to anticipate that WasteWise will be replaced by new state funds and projects. The point here, importantly, is not so much to investigate the viability of particular models so much as to call attention to waste labour, how it is framed and reconfigured by state action.

6. IMPLICATIONS OF EXPANDING THE GAZE OF WASTE WORK

This article has called attention to waste work that is often hidden behind narratives of community participation, including diverse, yet interrelated forms of work elicited through state-led waste initiatives in urban South Africa. Such work, we show, is often recast as either a civic duty or encouraged based on future livelihood opportunities. However, this framing does not diminish its contributions to the formation of waste management practices, processes and flows. These community activities undoubtedly contribute towards the wider functioning of waste management’s infrastructural assemblages and processes.

These overlapping but distinct framings suggest that state actors recognize the positive contribution of community waste activities, but do not view these activities as work that requires compensation (at least, not as secure waged employment). The types of activities reviewed here have been observed in the scholarly literature on waste, but recognition of these efforts as *infrastructural labour* has been brief and often a premise for demonstrating service neoliberalization and labour precarization. We are broadly in agreement with such arguments but wish to return attention to the premise upon which these claims are made. Infrastructures are underpinned by human activities of a range of types, yet explicit consideration of what

constitutes infrastructural labour and how it is called into being, governed and compensated remains relatively limited. Why does it matter for policy and theory that community participation in state-led waste initiatives constitutes infrastructural labour?

First, we suggest that recognizing these activities as ‘work’ responds to ongoing scholarly efforts to more accurately reflect the diverse labour practices, relations, conditions, and motivations of those who participate in infrastructural labour. Second, it points to the need for analysis of the multiple ways in which different actors are enrolled into performing, creating, and maintaining infrastructures. Most studies of waste reasonably presume waste workers act in exchange for some kind of financial compensation (wages or through the sale of materials), and domestic labour is undertaken to ensure a clean home. But neither of these answers work in the cases we examine here. Instead, state initiatives emphasize community involvement, civic duty, and future economic gains, which discursively dissociates the work undertaken within these initiatives from questions of labour value, working conditions, and livelihood politics. Third, there is political and economic power in recasting such contributions as *infrastructural labour* and asking who is required and requested to perform what work, and under what conditions. Answers to this question vary across the programmes and contexts: some are asked not to litter (a mundane everyday activity of putting litter in a bin), while others are asked to dedicate time to cleaning. They also vary across different spaces, communities, and classes: even with wider municipal-scale initiatives, not everyone is actually the audience of calls for participation.

Our intention in calling these actions ‘infrastructural labour’, however, is not to make a normative claim to monetary compensation or to turn these into waged relationships: putting our argument in conversation with increasingly heterogenous understandings of labour and work, there are limits to the political possibilities opened through such demands (Federici, 1975; Weeks, 2011). Instead, we consider a two-dimensional provocation: there is no doubt a pragmatism to the state’s efforts to convince communities to directly and without/with minimal pay undertake state responsibilities. Yet there is also something to the idea of infrastructural citizenship in which citizens have rights and responsibilities which might, at times, include work.

Our goal in this paper is not to resolve concerns over who ought to do what infrastructural labour or how such work ought to be compensated by suggesting what ought to be. These are crucial questions but answering them first requires widening the scope of what ‘counts’ as work within ongoing scholarly and political discussions surrounding infrastructural development, maintenance, and provision. Furthermore, a broadened recognition should not be understood as a celebration of the labour underpinning infrastructures in their present form. Cognizant of infrastructures’ histories and presents of oppression, exclusion, and violence, a broader reading of infrastructural labour can equally inform critical assessments of existing infrastructural configurations with a view to devising imaginaries and strategies for more just and sustainable alternatives. For now, we modestly urge more careful attention to the plurality of work and labour contributions that underpin infrastructures including consideration of why some activities are tacitly and explicitly not framed as such. Doing so, we suggest, is part of the project of critical studies of infrastructure *and* work which may, ultimately, help us to reimagine new and more just modes of collective life in and beyond labour.

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NOTE

1. For instance, supermarket chain Shoprite held 'Africa's biggest clean-up' in 2018 with over 6000 volunteers from nine countries across the continent (Shoprite Holdings, 2018).

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