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An index of waste: humanitarian design, “dignified living” and the politics of infrastructure in Cape Town

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This article develops a framework for thinking about waste as an index that signals a relational position within contested, historically layered conceptions of human order. It follows two contrasting frameworks for thinking about sanitation infrastructure: a quest to redesign the toilet at a global level for underserved populations, and popular conceptions of rights, citizenship and dignity grounded in the materiality of infrastructure in post-apartheid South Africa. By integrating highly abstract understandings of value with intimately embodied qualities of experience, the problem of sanitation simultaneously connects and divides human populations. It unites them at a species level, only to distinguish them at a social one. From this perspective, human waste is hardly a neutral substance, defined by its chemical properties. Rather, waste actively registers relational human status and position within a political ecology of needs.

Keywords: activism; design; humanitarianism; infrastructure; politics; sanitation; toilets

Over the past decade, South Africa has witnessed violent “service delivery protests” in townships and informal settlements throughout the country (Grant 2014). These protests are testimony to an assertive and insurgent citizenry that continues to expect that the ANC government will improve the quality of their lives and fulfil the promises of its 1994 electoral slogan of “a better life for all.” The post-apartheid state has indeed come some way in delivering on these promises: 2 million low-income houses have been built, 16 million citizens are on welfare grants, 6 million children get free schooling, 2 million people living with HIV receive free treatment and 90% of households now have access to electricity (Statistics South Africa 2015). The idea of democracy, rights and citizenship in South Africa has become tightly tethered to popular demands for access to state services, technologies and infrastructure. The post-apartheid constitution recognises this imperative, and even when failing to deliver, the state insists that it has both the capacity and the political will to “progressively realise” the socio-economic rights of its citizens by providing them with access to the basic infrastructure required to sustain basic needs and a dignified life (Chenwi 2013).

In contemporary South Africa, then, political authority and social expectations are entwined with material infrastructure, an assemblage we refer to in this paper as “the grid of modern life.” Yet, large numbers of South Africans, especially the 26% of the population who are unemployed, appear to have fallen through the cracks. For this population, the limits of liberation (Robins 2005; Marais 1998) are palpable and there remains a vast chasm between their expectations of democracy and their lived realities of grinding poverty. It is this population that has become the target of both humanitarian interventions and state service delivery programmes.

In this paper, we contrast humanitarian and non-governmental organisation (NGO) interventions in “alternative technologies” such as sustainable sanitation solutions with popular demands for conventional modern flush toilets. Whereas state infrastructure in South Africa connotes modern citizenship and “dignified living,” alternative technologies face a legacy of social resistance and are often dismissed by the urban poor as second-class solutions for second-class citizens. Nonetheless, South Africa continues to host a burgeoning industry of NGO-driven
experiments with alternative technologies. Here we focus on one particularly charged category of such experimental interventions — the effort to reinvent the toilet — alongside the tactics by residents of informal settlements in Cape Town to access conventional state sanitation infrastructure and their responses to the provision of “alternative” solutions. We track how these alternative technologies have bumped up against popular conceptions of rights, citizenship and “dignified living” that are grounded in the materiality of infrastructure in post-apartheid South Africa (see von Schnitzler 2016). The paper seeks to develop a framework for thinking about waste as an index of sorts, one that signals a relational position within contested, historically layered conceptions of human order. By integrating highly abstract understandings of value with intimately embodied qualities of experience, the problem of sanitation simultaneously connects and divides human populations. It unites them at a species level only to distinguish them at a social one. The classic formula of anthropology (“everybody does it, just not in the same way”) grows especially fraught in the South African political context and thus, we suggest, particularly revealing about the structures of feeling hidden within infrastructure (Williams 1977).

In positioning waste within an indexical framework, we draw on and seek to extend work in the anthropology of infrastructure. As Brian Larkin (2013, 329) emphasises in a recent review article, infrastructure has powerful semiotic and aesthetic dimensions that invite analysis. Here we address a particularly salient example of this phenomenon: the powerful concerns that surround sanitation and material systems for disposing of human waste. Like roads (Harvey and Knox 2012) or water systems (Anand 2011), toilets and sewers both exert affective force and anchor a complex of material aspiration and political desire. In referring to the term “index,” we wish to recall both the precision of biopolitical measures for sorting and tracking a population, and the favoured tools of development economics, specifically the Human Development Index (HDI). Pioneered in an effort to move economics beyond simple utilitarian measures of per capita income, the HDI combines “component indices for life expectancy, literacy, school enrollment, and income” to compare human well-being between countries and evaluate relative progress over time (Stanton 2007, 4; see also Rist 2008). We wish to suggest that forms of waste disposal can function as something of a vernacular index for human development, a crude but telling register of relative status within local, national and global frames of reference.

We begin with an examination of the complicated relationship between two contemporary ways of envisioning the intersection of technology and human need. The first, humanitarian design imaginaries, is typically associated with saving and improving lives in settings characterised by weak states and an absence of basic infrastructure (Redfield 2013; Bornstein and Redfield 2011). The second, political imaginaries, is associated with popular demands for social justice and access to state resources and infrastructure. In the context of informal settlements in the Western Cape, we examine how these two imaginaries seem to converge around a consensus that current sanitation is problematic and that a different future needs to be developed. However, they disagree on what that future should look like. Such disagreements, we argue, reveal significant tensions related to the material politics of infrastructure. Relations to waste are not only the product of economic position or cultural attitudes, but also reflect relative asymmetries of power between individuals and groups. In the case studies we examine, we are interested in what is at stake in terms of conceptions of dignity, rights, citizenship and expectations of modernity (Ferguson 1999). Through the case studies, we recall a longer history of inequality and distinction (Bourdieu 1984), affectively and sensorially embodied in the humble toilet.

What we describe here as an “index of waste” reflects a longer legacy of categorising populations, colonial techniques of sanitation and biological measurements of public hygiene. The point in excavating this deeper residue of comparative past material distinction is not simply to suggest that alternative technologies fail through their abstraction or technical focus in the face of local specificities and sensitivities. Rather, it is to recognise that the relational qualities of infrastructure extend into social comparison. The index we outline here has more than one axis
and references multiple, sometimes conflicting and evolving desires. It can be read from more than one direction and remains open to potential reconfiguration, even as its historical inertia resists easy reversal. Our effort to describe it here remains a preliminary sketch, and derives less from a singular perspective grounded in ethnographic experience than a transverse interpretation of policy documents and design initiatives on the one hand, and advocacy efforts and moments of public protest on the other. Such a wide-angled view, we suggest, may compensate for any shortcomings in depth of field by bringing a larger horizon into focus.

Toilets and global design
From an anthropological perspective, we first note an obvious, but often forgotten dimension of the problem: that issues of sanitation grew alongside the expansion of human settlements and increasing population density. Whatever stories we might tell about a longer, species-level genealogy, it is clear that, as people lived in greater numbers and closer together, the disposal of waste increasingly became an issue. However thoroughly “natural” such waste may be, the issue of what to do with its accumulation as a by-product of living together becomes an inherently social and political matter. Moreover, scale matters. For people living in cities, the satisfaction of daily physical needs necessarily implicates others, whether or not those relations are directly visible to neighbours or seamlessly whisked away through a complex of smoothly functioning infrastructure. Human excretions, especially faeces, evoke a range of visceral reactions and also constitute a physical substance with particular properties. From the vantage point of both contemporary urban sensibilities in places like Cape Town, it goes without saying that human by-products pollute, and it makes a significant difference what happens to them. Expert knowledge in fields like ecology and public health share this general perspective, even as they calculate pollution in different terms. Rather than degrees of social distinction or the relative development of different human groups, such experts reference measures of population health and ecological balance. Within the field of urban planning, the disposal of human waste is a technical as well as moral problem. This is where toilets and different visions related to their past, present and future come in.

By framing the matter in this relatively distanced and dispassionate way, we follow the logic of a “global humanitarian” perspective, an imaginary held by people who seek to improve the human condition and reduce suffering on a global scale. We begin with them because they too tell a general story, centred in this case on technology. In the best tradition of ethnography, we will step out of the way and allow a prominent native speaker to represent this perspective. What follows is an excerpt from a speech delivered by Sylvia Mathews Burwell, the president of the Global Development Programme of the Bill and Melinda Gates Foundation, on July 19, 2011, at the AfricaSan 3 conference in Rwanda:

In 1775, thanks to his ingenuity, [Alexander] Cummings became the first person to patent a “water closet” or what we know as the flush toilet … No innovation in the past 200 years has done more to save lives and improve health than the sanitation revolution triggered by [the] invention of the toilet. But it did not go far enough. It only reached one-third of the world … At the Bill and Melinda Gates Foundation, asking tough questions like these are at the heart of our work. We are guided by the values of the Gates family, [which] believe[s] that every life has equal worth. We believe that a child’s birthplace shouldn’t pre-determine whether [he or she] will have access to health and opportunity. To that end, the foundation is involved in a range of health efforts in Africa, from vaccines, AIDS, and malaria to mother and child health … What’s clear to us is that existing sanitation solutions — ones based on 200-year-old ideas — are not meeting the challenges we face. Not only is using the world’s precious water resources to flush and transport human waste not a smart or sustainable solution, it has simply proven to be too expensive for much of the world. What we need are new approaches. New ideas. In short, we need to “Reinvent the Toilet.” It should be a toilet for the 21st century — a toilet for the billions whose needs are not being met. It should be a toilet that is pleasant to use and makes safe sanitation available simply and cheaply to people everywhere. It should save children’s lives by controlling disease. It should eradicate the worst job in the world, that of the latrine emptier. It should bring safety and dignity to all people, especially to women and children. And most importantly, it must
be a toilet created in partnership with the people who will use it. This will not be easy. It will demand innovation. Not just new technologies, but new ways of thinking. In this case, it will require turning an age-old problem on its head. We all view human waste as, well, “waste” and nothing more — something to be flushed away, kept in the dark, not talked about — a taboo. But human waste actually contains valuable and recyclable materials such as water, energy, urea, salts, and minerals. What if we viewed waste as a valuable resource to be tapped? What if human waste powered lights and homes? What if it helped farmers grow more crops? What if it generated drinkable water? (Mathews Burwell 2011; see also “The Bill and Melinda Gates Foundation” 2011)

Mathews Burwell clearly outlines one version of why toilets constitute a problem: a once-brilliant invention has grown anachronistic. Not only has the flush toilet failed to reach many in the world’s population, but it also wastes water. At a moment of heightened ecological awareness, this is clearly not a sustainable global solution. At the same time, the lack of sanitation remains a threat to human health and thus a central humanitarian concern. From this perspective, the answer is clear: innovate! Bringing the vigour and initiative of expert knowledge to bear on the problem of sanitation promises not only new solutions, but also a way of reconceiving waste itself. Rather than a threatening substance or taboo, we might transmute it into a recyclable resource.

The Gates Foundation’s dream of recasting waste “as a valuable resource to be tapped” is an old one. Indeed, a desire not just to neutralise human waste — to sanitise shit — but also to turn it into natural fertiliser runs through much of the reformist literature of the last two centuries. The dry toilet was a viable alternative to flush technology in the nineteenth century and the outcome was by no means assured. Baron Haussmann, Victor Hugo and Karl Marx all bemoaned the wastefulness of dumping excrement into sewers, and the French political philosopher Pierre Leroux envisaged a world in which every worker “could live off his own manure” (Laporte 2000, 131; Mårald 2002; Penner 2010). Even the minimal plastic bag, known in urban slums as the “flying toilet,” can be reimagined this way, as Peepoople from Sweden has demonstrated with its alternative, biodegradable sack (see Figure 1)(Peepoo 2016; Redfield 2012).

The Gates vision draws on a mix of humanitarian and ecological values, concerning itself not only with the power of sanitation to save lives and bring “safety and dignity to all people”

![Figure 1](https://example.com/figure1.jpg)

*Figure 1.* The Peepoo system. 2014. Photo by P. Redfield.
(obviating the need for people to empty latrines), but also with the need to reintegrate human waste into a holistic view of recycling. For the Gates Foundation, this proposal is not simply idle speculation, or even a policy study, but an active call for product development (see Figure 2).

Mathews Burwell continued her speech to note that the project of reinvention was already underway, announcing the first set of winners from the many teams that had responded to their funding challenge. Rather than bolstering states or municipal governments, or exploring the history of human traditions and attitudes related to waste, the Gates focus here, as in other global health initiatives, rests on technical innovation and scientific enlightenment (see Rees 2014). Their competition mobilised university-based expertise and private sector technology companies to redesign a 200-year-old invention, and thereby address sanitation problems and water-borne diseases experienced by 2.6 billion people who lack adequate toilet facilities, some 40% of the world’s population. This “40 percent” figure derives from the Gates Foundation’s estimates of global material conditions and is conceived as a uniform, standardised target population passively waiting for solutions to their localised sanitation problems. The Gates Foundation’s innovation-driven vision is surely the most prominent and explicit expression of a technical model of humanitarianism. However, it is far from unique. As we shall see, there are many earnest and clever efforts to create new sanitation technologies. First, however, let us introduce our second imaginary swirling around toilets and its implications for human relations.

Toilet wars in South Africa

In May 2011, two months before Mathews Burwell delivered her speech, an episode known as the “toilet wars” erupted in South African politics. During the run-up to the local government elections, images circulated in the press of exposed flush toilets in poor township settings. These pictures struck a raw nerve: the sight of modern porcelain fixtures without walls offered a mini-spectacle of unrealised infrastructure. Their appearance in the press was not accidental, but part of a larger struggle between the nationally dominant party, the African National Congress (ANC), and its rival, the Democratic Alliance (DA), which had managed to come to power in the Western Cape Province. In 2010, ANC activists came across unenclosed toilets in Makhaza informal settlement in Khayelitsha, outside Cape Town. The activists realised that they had stumbled across a political goldmine and began mobilising around the issue of open toilets, protesting that people had to cover themselves in blankets while using the toilets in public. Meanwhile, the DA-controlled City of Cape Town claimed that it had told Makhaza residents during consultation processes that its limited budget allowed for either enclosed communal toilet blocks or household toilets where residents themselves provided the enclosures. The majority of residents who received household toilets built enclosures, but 51 were unable to do this for various reasons. The activists tore down...
the city government’s hastily erected enclosures, made of timber and corrugated iron, as part of their larger and longer protest against the allegedly ineffectual, racially discriminatory and unequal local government. They also went about destroying the fixtures and demanding their replacement with properly enclosed toilets. When the City brought charges for the destruction of property, the activists took the matter to the South African Human Rights Commission, framing it as a racist violation of black South Africans’ rights and dignity. With the support of the activists, a 76-year-old woman who been attacked while using an unenclosed toilet filed a claim in the Western Cape High Court. The Court found that the City had indeed violated the residents’ constitutional rights to dignity and privacy (Robins 2014b).

When images of these open toilets went viral, the DA leadership in the Western Cape denounced the ANC’s campaign as political opportunism. Journalists then reported on more unenclosed toilets in an ANC controlled municipality elsewhere in the country. The result was general embarrassment on all side (see Figure 3).

As a news report from the time recounted:

The municipal election campaign is in the toilet, literally — the delivery of the most basic service of all has come to dominate what may be the first democratic poll in South Africa fought principally on issues of government performance. A Cape High Court judgment a fortnight ago slamming the Democratic Alliance-controlled City of Cape Town for erecting 50 unenclosed lavatories … gave the ANC an opportunity to attack the twin planks of the DA’s campaign — effective governance and the shedding of racial baggage under the slogan “we deliver for all.” It was a chance once again to portray the party as a voice of privilege in general and white privilege in particular and to fight on the familiar ground of race. But this strategy backfired just 10 days before voting when 10-month-old media reports of about 1 600 open toilets in the ANC-controlled municipality of Moqhaka in the Free State were reprised in the Sunday press … All of this took place against the backdrop of simmering discontent over service delivery in poor areas across the country. (Rossouw and Dawes 2011).

Although the issue subsided following the elections, the demand for “proper toilets” would soon acquire a fertile afterlife.

The problem with unenclosed toilets was the indignity and inequality they materialised. In 2010, the ANC activists’ open letter to the Minister of Human Settlements claimed:

Our complaint is based on the reality that African people residing in Makhaza, Khayelitsha, are forced to shit in full view of the public … This satanic action by the [DA] city council is tantamount to gross human rights violations and undermines the people’s right for their dignity to be protected as stipulated in Section 10 of the Constitution. (“ANC Youth League” 2010)

The apartheid system of government in South Africa had not only emphasised racial purity and separation between different racial groups; it had also constructed separate and unequal forms of infrastructure to serve them. Apartheid had racialised infrastructure. For Africans living in poor township areas without flush toilets, sanitation primarily took the form of the notorious bucket system. In post-apartheid South Africa, the Constitution promised equality as a citizenship right, even as the government struggled to fulfil this mandate in material terms. The High Court judge acknowledged this in his formal finding when he noted that “most of the self enclosed toilets were unsatisfactory to satisfy dignity and privacy” and that “the Constitution asserts dignity to contradict our past in which human dignity for black South Africans was routinely and cruelly denied” (Ntombentsha Beja v. Premier of the Western Cape and Others [2011] No. 21332/10, 14, 21). In this context, sanitation was a national concern and a direct measure of citizenship. Any sign of inequality could appear as a regressive return to the racialised indignities of the past.

The grid of modern life

Efforts to provide adequate sanitation, then, traverse two distinct axes of human concern about needs and services. In the first, the disposal of human waste is a global ecological and humanitarian issue, a problem to be solved through private initiative and technological innovation. In the second,
it is a fundamentally political matter, understood in local and national terms, and ultimately a state responsibility. The specificity of South Africa as something of a frontier zone between norms of the global North and South is revealing in this regard. The Western Cape in particular displays a wealth of impressive buildings, roads, sewers and electrical lines. The dispute over toilets described above is less one of absolute absence than one of uneven distribution. In South Africa, middle class households — in keeping with middle class norms worldwide, directly or indirectly inherited from colonial histories of hygiene — enjoy properly enclosed flush toilets. The absence of such facilities in poorer informal settlements thus reflects a visible contrast between those who live on and off a larger grid of services.

For this discussion, we will use the term “grid” to gloss a wider complex of state administered infrastructures, the material goods they provide and the norms they enable. Toilets are a particularly charged register of this grid, a vital site in the formation of a distinctly modern subjectivity (Dutton, Seth, and Gandhi 2002; Morgan 2002). Put in these terms, a key difference between the global humanitarian view and that of the South African activists lies in their different historical relation to the infrastructural grid and their perception of it. For the Gates Foundation, reworking the sanitation grid to extend the reach of its health norms and increase its ecological sustainability constitutes a technical challenge. Their formulation of the problem floats free of any specific legacy of the past, except for the imperfect design of the talented Alexander Cummings. It focuses on health metrics and norms projected into life expectations at a global scale (Redfield 2012). For ANC activists in the Western Cape, the partial appearance of the grid in settings like Makhaza informal settlement in Khayelitsha only serves to highlight an outrage of continuing inequality. The indignity of unenclosed toilets evokes a history of racial injustice in intimate terms. In the language referenced above, such toilets are not “proper” in the sense of fulfilling a middle-class standard. At
the same time, the thought of going “off-grid” — in the name of ecological sustainability — recalls the bucket system of the past. In contrast to the Gates perspective, the activists’ formulation of the problem remains saturated with specific historical and political sensitivity. To live adjacent to a grid, and yet not enjoy its benefits, vividly renders continuing racialised inequity in material terms. In this sense, for South Africans, the relative “modernity” of service delivery is less an abstract conceptual dispute than a continuing political issue.

It is important to recall that the history of sanitation involves both political will and engineering ingenuity, and that “civilisation” was as much a project of metropolitan reformation and purification as colonial domination (Elias 1982). To cite a famous example, the city of London came to a standstill in 1858 due to the stench oozing from the Thames River. For centuries, the Thames had functioned as a dumping ground for human and industrial waste, as well as dead animals. An extended heat wave that summer boiled centuries of accumulated waste and produced a ghastly and all-pervading odour in what became known as London’s “Great Stink.” Overwhelmed by the stench wafting into the English Parliament and fearful of its miasmic health threats, politicians fled committee rooms shielding their noses (Allen 2007, 56). Dousing Parliament’s curtains with a mixture of chloride and lime had no effect. It was only when Parliament could no longer function because of the stench that legislators agreed to a systemic overhaul of the entire infrastructure of the Thames, acting with record speed.

In political terms then, a landmark sanitation decision at the heart of the British Empire derived less from dispassionate debate about the merits of a collective good or an engineering competition such as that sponsored by the Gates Foundation, than an immediate concern over pollution. Richard Fardon traces Mary Douglas’ famous phrase “dirt is matter out of place” to a comment by Lord Palmerston during the long build-up to the Great Stink (Fardon 2013, 2). As Palmerston pointed out, surplus human waste produced in towns belonged in country fields where it might productively substitute for imported guano fertiliser. Taken up during the sewerage debate, the witticism accurately reflected the essential dynamic at play. Penetrating the symbolic seat of power and threatening the city’s public image, the unbearable smell compelled MPs to cough up the financial resources needed to establish a comprehensive, modern sewage system (Allen 2007, 91). Parliament did not, however, act on Palmerston’s call for national recycling, nor did it attempt to extend the sewer system universally across the empire. Nonetheless, the emergence of a new metropolitan standard would exert influence far beyond its immediate vicinity.

The matter of dignity
The Gates Foundation initiative was not the first humanitarian effort to foster interest in redesigning the toilet, nor the only one to connect sanitation and dignity. In 2007, the Humanitarian International Design Organization (HIDO) sponsored a competition to reimagine “Sanitary Facilities for Africa.” A non-profit entity established under French law and sporting the motto “design for people in need,” the group highlighted three designs submitted to the competition. They included an Italian “WWC” (Without Water Closet) based on a principle of composting, and a Romanian proposal for a modular cabin and bin “based on African native architecture.” The winning entry came from a Canadian company called Cooler Solutions (now known as Bridgeable), under the impressively ambitious name of the “Dignity Toilet.” A clever update on the chamber pot, rendered in stylish green and gray, the design encouraged the user not only to carry the device to an appropriate discard location, but also then to auger the contents into the ground for decomposition. Cooler Solutions saw its invention as addressing sanitation compliance, health and personal dignity (Loveless 2011). In a blog post four years after this conceptual triumph, a member of the team suggested an even more ambitious aim, worth quoting in full:

Beyond its functional benefits the Dignity toilet takes an empathetic approach to its design. The Dignity toilet is a system that relies on community instead of a government built infrastructure, empowering the individuals within the community. Aesthetically, instead of a disposable bag or box, the Dignity
toilet is an attractive product that inspires pride and dignity within its users. It provides a possession for a family and community that they can be proud of, not simply hide or throw away. (Loveless 2011)

Although this design remains conceptual, its name underscores a central thread running through all the cases we have mentioned. Toilets, it seems, have a great deal to do with dignity. Both humanitarian designers and South African activists agree on that, even if they may understand its terms differently. For the designers, dignity is a question of technology and the aesthetics of its individual experience; improvement and empowerment might be found through innovation. For the activists, dignity remains a matter of political relations, and they look to the state to deliver justice. Before returning to those differences, however, we will spend a moment to unravel the connection between dignity and privacy in defecation.

As several anthropologists have noted, this connection is neither a timeless nor a universal assumption. Public toilets take many forms, and the experience of human defecation is not always a matter of embarrassment (e.g. Chalfin 2014; Van der Geest 2002). European history recalls the same, where royal bowel movements could be the concern of high courtiers, including the English “Groom of the Stool.” In his aptly titled book, The History of Shit, Dominique Laporte recalls that in Europe prior to the sixteenth century, human waste was usually dumped in the streets, fields or rivers. A French ordinance introduced in 1539, however, required that human waste be stored in the basement of houses and that “every individual or individual family hold on to personal waste before carrying it out of the city” (Laporte 2000, 29). Laporte then connects this legal watershed to what he terms the “archaeology of the private” and the literal invention of the privy (Laporte 2000, 44). At a critical juncture, privacy in performing bodily functions became powerfully associated with dignity, and coded into architecture. Chris Otter observes that even Jeremy Bentham included screens in his plans for the Panopticon, to preserve the dignity of defecating inmates, and that by 1844 the Metropolitan Building Act in London directed all privies to have a door (Otter 2008, 5, 124). The water closet patented by the celebrated Alexander Cummings only added another degree of distinction, as well as hygiene. Now that excrement could be effortlessly flushed away, the toilet entered the home, first of the privileged and then of the middle classes. The consequence of this privatisation and domestication of human defecation is still with us today. In line with Norbert Elias (1982), we might suggest that the ways in which people deal with shit has long provided a key index of civilisation, understood as a both technical term and a legacy of European and colonial history.

More matter out of place
The history of sanitation in South Africa, like other former colonies, highlights how discourses of hygiene and fears of infectious disease contributed to the making of racially segregated cities by distinguishing between the bodies and subjectivities of white colonial citizens and those of black colonised subjects. Such sanitation histories suggest stories of human matter doubly out of place. The proximity of black bodies (and their bodily waste) to white colonial elites threatened both public health and the urban social order. In other words, both the black body and its products indexed a source of potential danger and contagion for the colonial city (cf. Tomás 2014, 175–186). Warwick Anderson (2010, 169) makes similar observations:

Over the past ten years or more, critical histories of imperial hygiene have established that human waste could make strong and supple material for building corporeal distinctions between colonizers and the colonized. In particular, we have learned how the poetics of defecation structured the late colonial oppositions of purity and danger, asceticism and promiscuity, retention and pollution, virility and femininity, white and coloured. Medical typologies of toilet practice and personal hygiene could be used early in the twentieth century to distinguish the bodies and behaviour of white males and natives.

Writing about the colonial Philippines, Anderson notes how white American health officers portrayed local inhabitants as “promiscuous defecators,” in sharp contrast to the self-control that white men had over their bodily waste. Characterisations like these, we suggest, provide
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an indexical baseline for later comparisons that feature in both humanitarian and social justice discourses on dignity. Although directed toward a post-colonial ideal of equality rather than a colonial assumption of inequality, both recognise the import of waste for social standing.

A South African-inflected “history of shit” could begin with the observations of the historian Maynard Swanson (1977), who underscores how fears of infectious disease fitted with urban native policy in the Cape Colony to lay the foundation of later urban segregationist policy and apartheid. As he notes,

medical officials and other public authorities in South Africa at the turn of [the twentieth] century were imbued with the imagery of infectious disease as a societal metaphor, and that this metaphor powerfully interacted with British and South African racial attitudes to influence the policies and shape the institutions of segregation. (Swanson 1977, 387)

Swanson describes “the sanitation syndrome” that connected the presence of black bodies in South African cities to infectious disease and social disorder, and identifies the active exchange between Britain and its colonies when it came to concepts of social contagion. In Cape Town slums such as Uitvlugt (later known as Ndabeni), early twentieth century metropolitan nightmares of disease and social disorder came home to roost. Hygienic anxieties informed the Medical Officers of Health in their views of Cape Town’s slums as dangerous spaces of disease, crime and vagrancy. These fears coincided with the historical reality of the bubonic plague of the early 1900s, conjuring up frightening spectres of Europe’s nightmarish Black Death. It was in this conjuncture of health threats and social and political anxieties that urban segregationist policy first emerged in South Africa. The rest is history: forced removals from places like District Six, Cato Manor and Sophiatown, the Group Areas Act and the notorious record of the apartheid state (Jeppie and Soudien 1990; Hannerz 1994; Gready 1990).

Although the sanitation syndrome that Swanson writes about for Cape Town in the early 1900s applied to London and Paris in the mid-nineteenth century, the latter cities underwent massive sewer infrastructure programmes subsequent to the panic. ³ By contrast, Cape Town, like so many other South African towns and cities, has largely retained its colonial/apartheid spatial form. While a relatively small number of black (African) middle class Capetonians have, over the past two decades, moved into historically white and middle class suburbs, tens of thousands of black citizens continue to live in informal settlements where they experience the consequences of infrastructure disparities that predispose them to poor sanitation conditions and health problems.

In her critique of late liberalism, Elizabeth Povinelli (2011) analyses Ursula Le Guin’s tale of a fictional city, Omelas, where the happiness and well-being of its citizens depends upon a small child’s horrific confinement and humiliation in a tiny broom closet. ⁴ Le Guin’s story engages with philosophical and ethical conundrums resulting from the inhabitants’ necessary knowledge that their happiness is intimately tied to the child’s enduring suffering. Transforming the reference from a broom closet to a ghetto, Aboriginal reserve, Bantustan, favela, slum, shantytown or township and amplifying the scale from a single child to a population renders the ethical and political relevance of Le Guin’s fictional story directly relevant as well as poignant. Like the inhabitants of fictional Omalas, middle class residents in South Africa and other parts of the world must weigh their relative happiness to the spatial containment and indignity of impoverished others. It is this sense of indexical relation that animates both the proponents of humanitarian design and sanitation activists in Cape Town. Waste disposal is as much a relational as a technical matter.

**The political logics of sanitation activism in Cape Town**

It is against this indexical background that the open toilets of South Africa become a highly charged point of political reference and the polar opposite to the humanitarian designer’s dream object: of the “anti-dignity toilet.” Whereas the Dignity Toilet imagines an Africa of rural landscapes and fields ready for fertilising, the bare installations of Makhaza in Khayelitsha and
Moqhaka in Free State Province expose the harsh inequality of urban slum life. One promises pride and self-empowerment while bypassing state infrastructure; the other evokes outrage over continuing injustice and demands government action.

The South African toilet wars continued to simmer after 2011. In the winter of 2013, Cape Town had its own “Great Stink” when protesters flung faeces at the vehicle convoy of Western Cape Premier Helen Zille, on the N2 highway, on the steps of the Western Cape legislature, in the Cape Town International Airport departure terminal and at the Bellville Civic Centre (see Figures 4 and 5).

These “poo protests” targeted the Western Cape government’s sanitation policies. Unlike the “Great Stink” in London where the Thames River was the lead actor in the 1858 odorous drama, a small group of renegade ANC activists in Cape Town had to make their point about poor sanitation in informal settlements by transporting the smell of the slums on the urban periphery to the sanitised city centre and the seat of state power. Because of the spatial legacies of apartheid urban planning, they had to travel by taxis, trains and cars to literally haul bags of shit from the margins to the city centre. For their trouble, those who dumped faeces at the airport were arrested and charged under the Civil Aviation Act of 2009. Meanwhile, their detractors accused them of political opportunism, ill-discipline and hooliganism. The Health Minister, Aaron Motsoaledi, denounced them for creating a potentially lethal health hazard in their “direct attack against the whole population.” When the leaders of the poo flingers were suspended by the ANC and subjected to disciplinary procedures for their “unruly” political tactics, they established an “independent,” yet ANC-aligned civic organisation called Ses’khona People’s Rights Movement. These poo protesters unleashed a new style of politics in Cape Town that triggered panic over the population’s health amongst the middle classes and state officials.

Figure 4. Mandisa Feni of Site C, Khayelitsha, sits on a portable toilet on the steps of the provincial legislature. She is one of the many poo protesters who, in June 2013, dragged portable toilet containers of human waste from the urban margins to the provincial legislature in Cape Town’s city centre. Courtesy of Independent Newspapers.
In recent years, sanitation politics in Cape Town revealed strikingly different methods for making the slow violence of sanitation disparities politically legible (Nixon 2011). Whereas Ses’khona deployed spectacular poo politics to achieve its objectives, the Social Justice Coalition (SJC), which was established in Khayelitsha in 2008, adopted far less dramatic tactics for challenging the normalisation of these sanitation realities. The SJC sought to address these entangled sanitation and safety issues by deploying technical expertise and scientific data as well as the “politics of the spectacle” (Robins 2014b). For instance, in an effort to render these conditions more legible to state officials and the wider public, the SJC commissioned and disseminated scientific research findings on *Escherichia coli* (*E. coli*) levels in Khayelitsha’s RR Section that demonstrated the high risk of disease from exposure to water contaminated by raw sewage. The SJC’s engagement with matters of safety and sanitation involved a diverse repertoire of action, including the use of statistics, litigation, the media, personal testimonies, civil disobedience and protests. Deploying the vocabulary of expert knowledge alongside visceral confrontation, the SJC and Ses’khona’s combined efforts referenced a common catalogue of the significance of waste.

Concerns over health can either unite or divide, depending on social geography. Whereas MPs in the London Parliament perceived their own lives and interests at risk from the awful stench of the Thames, sanitation activists belonging to Ses’khona and the SJC faced a more difficult challenge in trying to convince the political elite that smells and *E. coli* levels in some of the informal settlements in Cape Town constitute a dangerous and urgent health crisis. The problem of waste and its effects remains unequally distributed across the city, separated by the historical layout of urban planning as well as access to the existing sewer system: some in the city flush effortlessly and privately while others struggle daily to process their own and their neighbours’ waste. Nonetheless, activist pressure succeeded in prompting the City to introduce a form of portable flush toilet. Yet, these “portaloos” offer little privacy and pose their own issues of storage and cleaning. As described in one particularly vivid account, every Monday, Wednesday and

**Figure 5.** A protest in which the containers from portable flush toilets are flung upon cars driving along Cape Town’s N2 highway during protests aimed at drawing attention to inequities in sanitation, July 2013. Courtesy of Independent Newspapers.
Friday workers struggle to empty and clean portable toilets in a warehouse near the airport for a contractor serving Khayelitsha’s Site C, fresh from collection runs on Tuesdays and Thursdays. The smell is overwhelming, and workers are inoculated against disease every three months (Swana 2015). It is a world of improvised housing, contested land and inadequate services that the protesters sought to connect to the centre of power by directly transporting its effluent. Along with broad resentment over the continuing inequality and slow pace of infrastructural development, the recent poo protests have been driven by a number of grievances, including a labour dispute with contractors responsible for sanitation service delivery in informal settlements, the infamous “bucket system,” and the City government’s distribution of portable rather than permanent flush toilets. From this perspective, a solution that serves a population unequally is not a solution at all.

**Intersecting imaginaries of sanitation solutions**

In our account of poo politics in Cape Town, we note that resistance to alternative technologies (e.g. the “portaloos”) is not simply an expression of a modernist aesthetic or a conservative desire for established, conventional solutions. It also reflects a calculated choice and recognition that, with sufficient political pressure, the state might be forced to provide “first-class” technologies, infrastructure and services to poor communities (see Anand 2011 on the politics of water delivery in Mumbai). For example, in 2015, the residents of the informal settlement of Enkanini in Stellenbosch violently rejected the “weak power” of an “experiment” by the Sustainability Institute of Stellenbosch University with the rollout of the iShack solar energy project. The iShack could only be used for lights, television sets and charging cell phones and could not compete with the capacity provided for by the electricity grid to run fridges, stoves and other large appliances (see Visser forthcoming; Zibagwe 2015). By rejecting the NGO’s offer of “weak” solar power, residents could keep up the pressure on the local state to electrify the informal settlement.

Here the two imaginaries we have outlined — both reactions to the shared index of the indignity of absent services and the civilising power of modern infrastructure — come into direct confrontation. Alternative systems of waste management, designed to engage sanitation as a purely technical matter, fail to factor in human sentiment about comparative experience. A common and technically reasonable approach to reinventing the standard privy is the urine diversion toilet (UDDT) promoted by organisations such as EcoSan and AfricaSan. UDDTs are dry and self-contained sanitation systems that are meant to divert urine into a separate compartment from faeces, thereby ensuring that the latter dries out quickly and can be more easily disposed of on-site. This not only addresses concerns about water scarcity, but also has the advantage of allowing human waste to be recycled as compost (see Penner 2011). However, evaluation studies have found that these innovations routinely encounter “local opposition” and users tend to reject these eco-friendly appropriate technologies on “cultural grounds.” Whereas the middle classes in most parts of the world can simply flush away human waste, which instantly becomes the problem of state sanitation infrastructure systems, the recipients of these alternative technologies are called upon to engage more intimately with their bodily products.

As we have been suggesting above, the political dimension of such “cultural” obstacles to the adoption of toilet alternatives becomes graphically evident in South Africa. Studies suggest that the South African poor tend to demand the same toilet technologies that are available in conventional middle class homes and refuse alternatives such as UDDT toilets or portable loos. This observation is confirmed by studies of the low acceptance of UDDTs in Durban’s informal settlements. There a study spells out the implications of a project introduced by the eThekwini Municipality as part of its large-scale, peri-urban and rural sanitation programme (Roma, Holzwarth, and Buckley 2011). The programme provided households with a free basic water supply and sustainable sanitation in the form of UDDTs, serving some 450 000 beneficiaries. In evaluating the programme, the HSRC indicated that the flush toilet was considered a “symbol of social emancipation” and that such aspirations contributed to the low uptake of the UDDTs:
The HSRC study showed that while acceptance of water supply tanks was generally high, user satisfaction with the UDDTs was lower ... Particularly people living in peri-urban areas close to the sewer system aspire to get flush toilets, considered a symbol of social emancipation. Conversely, rural communities showed better acceptance of the UDDTs, as no households with flush toilets were nearby and thus no direct comparisons were made. The greatest challenge in terms of acceptance was the emptying of the vaults. The establishment of local faecal vault clearing services by micro-enterprises in the respective communities was a method of mitigating this ... (Roma, Holzwarth, and Buckley 2011, 9, our emphasis)

Barbara Penner (2010) has insightfully analysed the low acceptance of new toilet technologies in her study of the ambitious rollout of 90,000 units in Durban. Penner found that members of poor communities generally desired the “proper,” modern, flush toilets associated with middle class homes and lifestyles, rather than ecologically friendly dry alternatives like the UDDT toilets promoted by the Swedish-based Ecosan, an organisation that has inspired many dry toilet projects in Africa. Penner exposes the limits of the market-driven framework of Gates Foundation-funded programmes that rebrand users as “consumers” and toilets as “products” without reference to relational perception:

In highly polarized societies like South Africa, toilets convey more than one’s status as a consumer; they convey one’s status as a citizen. And a central reason why improvement projects stumble is not indifference to sanitation, but rather the perception and, crucially, the reality of asymmetrical provision and resource allocation. (Penner 2010)

Penner emphasises how poor residents exposed to UDDT toilets in Durban found it “culturally unacceptable” to engage with faeces and urine, an attitude only heightened by health education following a cholera outbreak in 2002. As she puts it:

South African society is notably fecal-phobic, an attitude encouraged by educational initiatives that seek to end open defecation by stressing the link between feces and disease ... If the main aim of the government is to improve public health, then is it wise to make householders responsible for moving potentially infectious matter? Rather than making public health paramount, this closed system, which puts users in charge of maintaining their own infrastructure and disposing of their own feces, transfers labor and risk from public bodies to individual householders, who tend to be blamed for incorrectly using their toilets if problems arise. (Penner 2010)

Given the low uptake of these eco-friendly “appropriate” toilet technologies, Penner calls for the revision of the entire sanitation system, starting at the top, to address its structural inequities: “Persuading rich people, along with poor ones, to give up waterborne sanitation might prove the hardest — but most essential — sell of all” (Penner 2010).

How to treat sanitation as a collective, rather than individual problem (see Mehta and Movik 2011)? Any return to an expansion of conventional sewers depends on the capacity of a centralised authority to roll out the necessary infrastructure and administer it. This approach has failed to materialise in contexts where weak or dysfunctional states cannot connect citizens to “the grid” of infrastructure systems. Durban does offer one final, potentially intriguing example on this score. The “faecal sludge pelletising machine” is a device aimed at improving sanitation in Durban’s informal settlements by processing the contents of pit latrines. Although designed and developed by a private company, LaDePa Technology, it has been piloted by the eThekwini Municipality’s Department of Water and Sanitation. The technology won a citation for an International Water Association Kuala Lumpur Development Congress Award and outlines the potential magic of its sanitation alchemy:

[The machine] converts this waste into a product that is pathogen free and environmentally safe, making it potentially marketable to the agricultural sector, and thereby reducing the overall sludge disposal costs. The plant is small ... self contained [in a shipping container] and therefore mobile. Capital and operational costs are low and the mechanics are simple and robust which suits low skilled operation and maintenance, and allows access to this technology by cash-strapped Municipalities and/or small entrepreneurs alike. (SuSanA 2011; see also Fredericson 2011)
Like the urine diversion toilet, the “faecal sludge” machine seeks to transmute waste into a culturally neutral substance potentially marketable as fertiliser. However, by operating at a remove, and being integrated into existing state sanitation systems, it does not rely on individual users’ physical interaction with the waste conversion process. If lacking the symbolic prestige of the flush toilet, this approach has the potential of offering incremental systemic improvement in a politically acceptable way. We offer this example less as a potential panacea to the South African dilemma (a claim that would require a specific form of evaluative research) than as an illustration of the kind of considerations that might inform a relational understanding of infrastructure.

Public perception remains key to the success of any such effort, and behind it the wider cultural politics of perceived modernity that coalesce around toilets (Dutton, Seth, and Gandhi 2002; Morgan 2002). This is not only an African concern. As Penner (2010) points out, the run up to the Beijing Olympics in 2008 involved an effort to build “throne-style,” as opposed to squat installations, while images of an immodest “double throne” went viral in advance of the Sochi Winter Games in Russia. For much of the planet’s population, toilets remain a highly charged index of relative pollution, hygiene and civilisation. In this sense, it is welcome to note that the current Gates Foundation webpage describing the Reinvent the Toilet Challenge now contains a crucial fifth element. In addition to removing germs and recovering resources, operating off grid, and cheaply, and promoting sustainable and financially profitable sanitation services in poor, urban settings, the ideal toilet should be “a truly aspirational next-generation product that everyone will want to use — in developed as well as developing nations” (Bill and Melinda Gates Foundation 2016).

Concluding thoughts
This paper has contrasted humanitarian designers’ global plans to redesign the toilet with recent sanitation activism in South Africa, and demands for immediate inclusion within existing infrastructural norms and standards. These different worlds of practice intersect in their common concern over inadequate sanitation, recognising the significance of waste for inherited conceptions of dignity. Nonetheless, only sanitation activists and poor township dwellers fully grasp (and embody) the manner in which the politics of sanitation are inherently relational. We suggest that for many South Africans in informal settlements, any toilet technology other than the modern, porcelain flush model brings to mind the very apartheid past that the new democratic constitution strives to overcome. The flush toilet suggests equal citizenship in a modern democracy in which the disposal of human waste ought to be the problem of modern state-administered infrastructure. This infrastructural norm thus defines the promise and expectation of democracy, and alternative, eco-friendly designs are unlikely to be accepted as substitutes for expectations of rights, dignity and “proper” citizenship. Technical visions of the future must come to terms with people’s egalitarian political desires, along with deeply held sentiments about the colonial past. From such a perspective, human waste is hardly a neutral substance, defined by its chemical properties. Rather, it actively registers human status and position.

To underscore this last point, we will close with an anecdote from the latest episode of sanitation protest. On March 12, 2015, a 30-year old, fourth-year political science student at the University of Cape Town named Chumani Maxwele flung a plastic container filled with human waste at the statue of Cecil John Rhodes on the university’s upper campus. Standing shirtless in front of the massive statue and wearing a bright pink mineworker’s hardhat, he told an assembled crowd of students and journalists that he had chosen his target because he felt suffocated by the overwhelming presence of colonial names and memorials on the campus. Elided in the days and weeks of heated discussion that followed his action was a poignant and deeply personal explanation he gave to a reporter. He said that he had thrown the contents of a portable flush toilet container at the statue to highlight his feelings of shame. As he put it, “We want white people to know how we live. We live in poo. I am from a poor family; we are using portaloos. Are you happy with that?,” he asked the journalists. “I have to give Cecil John Rhodes a poo shower and whites will have to
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see it” (*The Times*, March 13, 2015). By personally polluting the greatest icon of colonial rule in Southern Africa, Maxwele offered a visceral reminder of the continuing indignities experienced by a large segment of the population. He also connected two crucial elements of our story: first disrupting the infrastructural norm by using the plastic container of a modified alternative toilet to carry faeces to his targeted historical landmark, and then deploying its contents to shame the inheritors of Rhodes, demonstrating the indexical power of waste.

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**Notes**

3. The sanitisation of the imperial centres of London and Paris involved similar distinctions between bourgeois cleanliness and the pollution of poverty, effectively indexing the poor as the embodiment of dirt (see Gandy [1999] and Jones [1971]). On the topic of effective post-apartheid examples of social segregation involving similar principles, see Waquant (2001) and Chatterjee (2004).
4. Thanks to Thomas Cousins for alerting us to this aspect of Povinelli’s work.
5. For a recent example of enthusiastic speculation about the potential value of human waste, from its trace metals to faecal transplants, see Pandika (2015).

**References**


