

and sand generated by mining and the devastating effects that this has had on the lungs of workers and neighbouring populations. Hecht also describes attempts by authorities to curb mining dust. These efforts range from inviting botanists from Kew to propose plants capable of growing on mercury-contaminated soil to literally spraying mining dumps with shit (pp. 100–1). Some of these dumps have been re-mined, primarily for uranium, gold and other heavy metals. Or they have become the site for a drive-in cinema, remembered nostalgically by white patrons, oblivious of the carcinogenic consequences for Black South Africans forced to live downwind of them (pp. 116–24). Chapter 4, 'South Africa's Chernobyl?', is a micro-study of community life in such a contaminated landscape, while Chapter 5, 'Land mines', is a macro-study of the impact of mining waste on the Rand as a whole.

Hecht's work is symptomatic of our times, when the impact of incessant, rapacious capitalism on the world we inhabit continues to be dismissed or downplayed. As such, this work will appeal to, and substantiate the arguments of, concerned students and teachers, and will grate with and irritate those who choose to live in a fact-free world in which financial wealth appears to continue to buy absolution.

Hecht is searingly honest. Reading her work is to be pummelled by a heavyweight. It is difficult not to walk away despondent and despairing, the issues she describes are so enormous, the damage so extensive, the evil so pervasive. And yet, such work has to be written, and it has to be read if we are ever to right the wrongs of the past. For, as Hecht puts it: 'The only way to get traction on the complexities of residual governance is intensive empirical engagement' (p. 32). It is difficult to do full justice to the author's writing. Undoubtedly there will be those who will seek to fudge and diminish her findings by drawing attention to the perceived lack of impartiality in her approach, but, in keeping with Hecht, the struggle continues: 'No retreat. No surrender' (p. 207).

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Response by the author

Melusi Nkomo, Lorenzo D'Angelo and Jan-Bart Gewald have reviewed my work with depth and generosity. I am immensely grateful to them, and to the editors of *Africa* for inviting this conversation.

Residual Governance explores how South Africans have lived with – and contested – the wastes generated by a century of mining and the broader system of racial capitalism that created and benefited from those wastes. Gold and uranium extraction turned South Africa's Witwatersrand plateau inside out, producing colossal mine dumps that bisect the city of Johannesburg. Colonialism and apartheid intensified the discrimination wrought by mine dust, placing millions of Black residents downwind of the waste band. Still today, winter winds blow radioactive dust from these

piles into the homes and lungs of some 1.6 million urban residents. Dust mitigation measures were purposefully racist, etching capitalism onto Black bodies.

As Nkomo insists, capitalism is inherently rapacious. Scavenging – at all scales – is one of its driving modes. To better understand how its predation is sustained and legitimated, I home in on the deadly trifecta that I characterize as residual governance: the governance of waste and discards; minimalist governance that uses simplification, ignorance and delay as core tactics; and governance that treats people and places as waste and wastelands. I ask how scientists, community leaders, activists, journalists, urban planners, artists and others responded to the depredations of residual governance. How is it possible that, despite decades of research, dozens of warnings, hundreds of studies and major political upheavals, the residues of mining still pose such a persistent problem?

Nkomo comments that my book implies, rather than directly presents, an answer to this question. Fair enough. Straightforward answers inevitably involve simplification. As D'Angelo suggests, no single book can fully capture the complexity of the predation that has (re)shaped our planet. Refusing to produce a short, quotable response is my way of resisting the solutionism sought by so-called sustainability studies. To reprise Gewald, I prefer to pummel. Which, among other things, requires documenting how South Africans have persisted in their efforts to address these problems in all their complexity.

Residual governance gains traction through accretion. The growing piles of waste, the infrastructures built to accommodate them, the increasingly byzantine institutions that fail to constrain them – these entities represent deliberate forms of power, often hidden in technological form. Accretion is not a side effect. This is why I insist on my original sense of *technopolitics as strategy* instead of Timothy Mitchell's subsequent, looser usage.¹ Each layer of mine waste, along with each regulation that becomes a permit to pollute, puts resistance and repair further out of reach. Residual governance gives racial capitalism momentum. It also saddles repair with inertia.

A key tactic of residual governance is to compartmentalize contamination sources. But people experience contaminants simultaneously, not separately or sequentially. At the informal settlement of Tudor Shaft, situated atop the remains of a uranium mine, radioactive contamination became a technopolitical flashpoint – so much so that some regulators thought they could limit themselves to addressing radioactivity. But residuality at Tudor Shaft extended well beyond radiation, enmeshing a wide range of contamination and governance dilemmas. Combating their own residual status required residents and their allies to engage all possible governance scales: municipal, provincial, urban, national and international.

Mine lands are omnipresent in contemporary debates about land reform and restitution in South Africa. Asbestos, coal, platinum, chromium, iron – all of South Africa's mines have toxic afterlives. Their leakages, debris and emanations continue to time-bomb the future. In Gauteng, planners, policymakers and activists see the land under the tailings piles as prime real estate, ripe for development. This puts

¹ G. Hecht (1998) *The Radiance of France: nuclear power and national identity after World War II*. Cambridge MA: MIT Press; T. Mitchell (2002) *Rule of Experts: Egypt, techno-politics, modernity*. Berkeley CA: University of California Press.

remediation at the centre of debates about urban planning. As mines shut down, revolving doors spin mine officials and engineers into waste consultants who profit from the harms wrought by their former employers. Their resources vastly exceed those of the residents, artists, activists and scientists who seek to remediate the spatial injustices of apartheid. The struggles of South African communities for reparation(s) present a microcosm of the work required to overcome residual governance – not just in Gauteng, not just in South Africa, but everywhere.

Because of this, D'Angelo wonders why I didn't adopt a transnational approach. Such was my original intention. As I dug in, however, I realized that challenging the fictions of 'sustainable development' required detailed empirical engagement (my thanks to Gewald for highlighting this). But I haven't abandoned my original plan. My current research explores how people live with the wastes of the inside-out Earth in four places: South Africa, of course, but also Côte d'Ivoire, Chile and Svalbard. What I have abandoned is the illusion that I could conduct such research alone. The people I write about in *Residual Governance* offer lessons for how scholars, artists and activists can meet the challenges of the Anthropocene together. They show that hope, in the face of desperate predicaments, is not a nebulous sentiment to be freely chosen; it is *work*. I am extremely fortunate that some of those people have agreed to continue this work with me, joined by some of their counterparts elsewhere. We each have a part to play. Resignation is not an option. No retreat. No surrender.

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