Anthropology Book Forum
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The struggle for capacity: a historical ethnography of toxicology in Senegal

NOÉMI TOUSIGNANT. 2018. *Edges of Exposure: Toxicology and the problem of capacity in postcolonial Senegal.* Durham, London: Duke University Press, pp. 224, ISBN: 978-0-8223-7124-3

Keywords: medical anthropology; STS; toxicity; West Africa; temporality.

Exposure to toxic pollution and contamination in Africa has loomed large on the global imagination of the continent since the 1990s adoption of the Basel, Bamako and Abidjan conventions on hazardous waste and environmental pollution. More recently, renewed attention to the afterlives of Western industrial capitalism through the circulation of wide-audience (and at times sensationalist) documentaries on hazardous waste and toxic poisons have reinforced a vision of toxicity in Africa as one of exploitation or "toxic colonialism" abetted by a lack of capacity and regulation. In *Edges of Exposure*, Tousignant turns to the challenges of building and maintaining scientific capacity for poison protection and control in postcolonial Senegal. An important contribution to studies of toxicity, science and public health infrastructure in West Africa, the book offers a painstaking account of local toxicologists' frustrated yet creative efforts at establishing a routine regulatory science – a work fraught by dwindling public investment, deteriorating equipments and facilities, and dependence on foreign assistance.

The book departs from a typical focus on the unequal geographies of waste and the consistent exposure of African bodies and lands to "poisonous global capital" (p. 2). Instead, it documents the struggle for capacity and scientific diligence of Senegalese toxicologists in conditions of chronic underfunding and material scarcity. Against the postcolonial legacies of disinvestment and differential exposure, Tousignant's book pays homage to the "persistence, energy, and hopefulness of toxicologists' pursuit" (p. 6) that attest to "the possibility of and the legitimacy of claims to a protective biopolitics of poison in Africa" (p. 10). Rather than situated from the perspective of

vulnerable communities exposed or at risk of exposure, Tousignant writes from a different "edge" of exposure: scientists' mundane and often-thwarted attempts to "do their job," exercise expertise, and establish a lasting presence in Senegal's public health system.

Tousignant's historical ethnography takes us through the fragmented chronology of Senegalese toxicological science: from the establishment of Dakar's university lab in the immediate post-independence period, and its subsequent deterioration under structural adjustment in the aftermath of the 1970s economic crisis; to the partially successful attempts at constructing a national poison control center in a neoliberal period of privatized healthcare and entrepreneurial science. The chapters are set in three different labs and institutions (a university teaching lab; an environmental chemistry lab; and a national poison control center) and follow scientists' careers alongside the archives of the labs' and center's projects and contracts.

The visions of an ill-equipped science exposed in the book's photographs and descriptions – of a lab in disrepair, in need of renewed supplies, maintenance, and equipments (Chapters 1 and 3), of centers partially built and projects suspended (Chapter 5) – will be familiar to anyone with experience of public institutions and infrastructure in urban West Africa. Yet in tracing how capacity is "made, kept, and lost" (p. 146), Tousignant applies a temporal lens to the problem of capacity, interrogating what it means to have, plan for, aspire to, preserve or indeed do without capacity. To what extent, she asks, does "capacity" translate into a functional and protective science? How does it come to define both the possibilities of and limits to "good science" – who makes or undoes it, and for whom? (p. 27). Going beyond an understanding of capacity as contained by technical and material provision, she situates it instead "within moral economies and imaginations" (p. 57), in scientists' aspirations for a protective science and professional excellence in a context of scarcity and dependence.

In some ways, this is a story that, similarly to the toxins that it treats, is difficult to track – unfinished, uneven, partly invisible, often undetected and disregarded. Influenced by studies of infrastructure and postcolonial critique, Chapter 1 probes the gaps and absences that fill the lab's fragmented archives across periods of investment and abandonment. Machines in disrepair awaiting maintenance or calibration, expired chemicals, dusty glassware and kept samples and documents point to past periods of activity, as well as to hopes for future re-engagement (Chapter

3). Chapter 3 describes the longstanding effects of the 1980s structural adjustment programs' funding cuts to public health on the working of the lab, increasingly dependent on short-lived projects and temporary foreign funding. Subject to irregular funding, routine testing and continuity cannot be maintained, especially as scientific instruments, Tousignant reminds us, require constant calibration and repair and rely on the continuous supply of chemicals and consumables to work effectively. In the absence of reliable provisioning, the possibility of a "protective science" in Senegal appears more and more as a fiction (102), challenging what it means to be a scientist in a context of chronic under-funding.

Chapter 4 describes the case-study of a pilot project (Project Locustox) for ecotoxicological analysis of pesticide spraying for locust and grasshopper control. While the project was granted repeated funding and eventually established a fully-operating environmental chemistry lab, it also exposes the fragility of the public good in the increasing dependence on commercial contracts for its viability (p. 119). Scientists are caught in this tension; striving to provide a public service – that of environmental protection and regulation – they are increasingly forced to turn into "entrepreneurs of public service" (p. 136), seeking commercial contracts and foreign funding (Chapter 4) or using their own personal expenses and networks to transport samples to better-equipped labs in France and elsewhere for analysis or storage (pp. 48-49).

Throughout the book, Tousignant justifies her focus on toxicologists' careers as a way of charting more global histories of science and the unequal process of knowledge production and regulatory capacity in postcolonial locales of the Global South. Occupying positions of "partial privilege" rather than acute poverty (p. 148), Senegalese toxicologists and their professional trajectories (Chapter 2) give us a glimpse into the difficulties of establishing and keeping running a "science of protection" against unequal global geographies of risk and exposure to toxic harm.
But the case could also be made for the neglect and relative privilege of toxicology itself – an implication that is only briefly mentioned at the end of the book and could have been considered throughout. This shifts the question from a problem of capacity to one of concern – or lack thereof. In a revealing vignette from Diagne, the financial manager of the Anti-Poison Centre, toxicology is described as a "luxury" compared to the more pressing public health issues of malaria or AIDS. Capacity is undoubtedly an immense financial and material challenge facing public health

infrastructure in the Global South. But paired with a lack of *concern* (or, indeed, an inability to care, and be concerned), the challenge of establishing an African science of toxicology appears unlikely to be met by simply 'building capacity' – raising different sets of questions for the viability of toxicology as a public good.

Pauline Destrée is a Research Fellow in the Department of Social Anthropology and a member of the Centre for Energy Ethics at the University of St Andrews. Her work engages with resource extraction, infrastructure, climate change and postcolonial politics in West Africa. She is currently working on a book manuscript on offshore oil extraction and carbon justice in Ghana. Her previous research looked at energy infrastructure, urban politics and popular culture in Accra.