UNIVERSITY OF CALIFORNIA,
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Postcolonial Objectivity: Reaching for Decolonial Knowledge Making in Nairobi

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Anthropology

by

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Dedication

Aspiring to see and do beautiful, humble, kind things together
Build a future for and with our kids
A world beyond nation-states
A world where they won't be boxed in,
boxed out
for who they are.

This dissertation is dedicated to
my children:

Dedan Tomo Okune and Aya Lesia Okune

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Vita

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FIELD OF STUDY

Knowledge Infrastructure Towards Decolonial Knowledge Production

PUBLICATIONS

Edited books (full peer review)
2019   Chan, Leslie, **Angela Okune**, Becky Hillyer, Denisse Albornoz, Alejandro Posada (Eds.). *Contextualizing Openness: Situating Open Science*. Ottawa: University of Ottawa Press. https://www.idrc.ca/en/book/contextualizing-openness-situating-open-science.

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Abstract of the Dissertation

Postcolonial Objectivity: Reaching for Decolonial Knowledge Making in Nairobi

by

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Based on work over the last decade within Nairobi's tech-for-good sector, followed by a year of ethnographic research within organizations in Nairobi's research landscapes, "Postcolonial Objectivity: Reaching for Decolonial Knowledge Making in Nairobi" traces the contours and edges of what is considered to be good knowledge within an emergent regime of scientific representation in Kenya. I show how this regime, which I call *postcolonial objectivity*, can be better understood by drawing out how histories haunt the problem space; the idealized figures that shadow the problem space, how rising diversity expectations have played out, and modes of care and stewardship are practiced and idealized. A recurrent argument and goal of postcolonial objectivity is robust contextualization of knowledge. "Postcolonial Objectivity: Reaching for Decolonial Knowledge Making in Nairobi" scales between analyses of the geopolitics of translocal knowledge production and ethnographically rich descriptions of Kenyan histories of imperialism and post-war Development. These geohistories established the knowledge infrastructures that have created conditions where everyday research amongst particular communities in Nairobi are often experienced as extractive, externally-driven, and extroverted for a Western audience. If methodology is a way of being in the world, ultimately, my argument is enacted through my methodological approach of archive ethnography as well as collaborative authorship of the final textual form. In these ways, I demonstrate my own attempts

towards postcolonial objectivity, working to build supporting technical infrastructure as an experimental space for collaborative effort to figure out what kinds of questions can be asked under postcolonial objectivity going forward.

Introduction

In 2019, when I moved back to Nairobi to conduct my doctoral fieldwork, the city was significantly different from the Nairobi I had first encountered in 2010. The sleepy malls with vast empty parking lots that my friends and I used to drive right into now had parking barriers, security checks for both vehicles and people, and required payment for parking. The road infrastructure had been significantly invested in since 2010, although Nairobi's infamous traffic was still a big problem. Ride-share apps had arrived to the city in a big way in 2015 and Uber-branded cars and orange-vested Safeboda *boda bodas* (motorbikes) could now be seen all over the city. The cost of living felt higher. People complained all the time about the cost of ugali flour (a staple in Kenyan cooking), cooking oil, car petrol. Some things hadn't changed: corruption, which had been the issue of the day in 2010 was still seen as the underlying problem by everyday Kenyans who attributed their rising cost of living and the problems of Kenya with corruption. A national sense of hope for an aspirational future that I had felt in 2010, seemed extinguished, replaced by a hardened cynicism and skepticism.

The overall focus of the dissertation is on the contemporary landscape of research actors in Nairobi, with an emphasis on changes since around 2010, the year in which I began to work in earnest as part of the Kenyan research landscape. 2010 was an important year for the nation as a new constitution that had been over 20 years in the making was signed into effect, a moment that political leaders at the time hailed as "the birth of the second republic." The country's first undersea cable to bring high-speed internet access to East Africa had only gone live the previous year (2009) and in 2010, mobile telephony operators were still laying down much of the Internet infrastructure in the country. 2010 also marked the opening of the first tech hub in Kenya, the

iHub, short for Innovation Hub. In close partnership with iHub, the Kenya Open Data Initiative would be launched the following year in 2011 largely due to the advocacy of charismatic government official, Dr. Bitange Ndemo.

From 2010-2015, I worked as a research project manager at the iHub, where recent university graduates and self-taught techies came to meet others working on technology products for Kenyan users. What was initially a very "geeky" community of young Kenyan male coders, became increasingly diverse as the iHub's reputation grew and iHub and start-up leaders alike recognized that skill sets other than computer programming were needed to grow a robust tech ecosystem.

Since I left iHub in 2015, my research focus has detoured and developed but remained grounded in the years that I worked there, partly because I came to recognize that in the decade since there have been key shifts in the way people in Nairobi think about, practice, experience and—importantly—*evaluate* research. This shift and the growing concern with what makes research *good and ethical* became the key focus of my research. Over the last decade, stimulated by continuing frustration with developmentalism, experiences of being over-researched, and waves of anti-racist reckoning around the world, more and more people in Kenya are reaching to figure out what it would look like to decolonize research and knowledge writ large. I came to think about this as work toward "postcolonial objectivity." Through interviews, participant observation, a growing number of collaborations and work to design and build new, Kenya-grounded research infrastructure, I've learned how understanding and practices supporting postcolonial objectivity are taking shape—in different ways in different Nairobi organizational settings. I've also learned of the many ways that efforts to decolonize research in Kenya are haunted by imperial ghosts. Understanding how postcolonial objectivity is taking shape in Kenya

today thus requires both historical perspective and organizational comparisons (recognizing both the density of research organizations currently operating Nairobi, and variation between them). It also calls for collaboration. Postcolonial objectivity is, in its very nature, aspirational, reaching for something new, more inclusive, and better. I, too, have been drawn to it, wanting to not only document and analyze but also help advance it. As I'll describe further, I've worked as much alongside as on postcolonial objectivity.

Backstories

Figure 1. Kenyan techies working out of the iHub, circa 2011. Source: iHub.

I first worked in Nairobi from 2010 - 2015 as a research project manager at the newly established iHub.[1] The iHub was one of the first of its kind on the continent, an open-plan community space with communal tables for young technologists to use for free as they worked

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[1] I was introduced to then-community manager Jessica Colaço a few days after I moved to the city in October 2010, and we quickly became friends talking research over some chai at the eatery next to the iHub. As I conducted my ten-month Fulbright research fellowship, Jessica and I would meet infrequently and run informal research training sessions at the iHub. We developed a research project proposal and when its funding was approved, I became the first hire for the new research department which was launched officially in March 2011 at the iHub's one year anniversary. I worked as an iHub staff member until April 2015 when I began preparations to move from Nairobi to southern California.

towards developing technology-focused companies. Co-founder and public face of the iHub, Erik Hersman recounted how, when the iHub was first launched in March 2010, community members were told, "Listen, here is the foundation, what gets built on top of this is up to you. Now it's over to the rest of the community to help make this community what it is," (Hersman 2017, 47). Hersman has said that the magic of the iHub was that it was centered around the idea that "we, as a community, need to be connected to each other and we need a space. We need a place, a meeting space that will

Figure 2. Core members of the iHub Research team, taken from one of our brochures, circa 2015.

allow us to almost accidentally find each other from time to time, which will draw us in and connect us in ways that would not exist if we did not have it," (Hersman 2017, 48).

This original articulation of the value of the iHub as a space for community (and whatever the community decided to be important) attracted a dedicated and diverse group of supporters. In a social and political context used to top-down imposition of what *should* be done, to have an open space (literally) where the only thing that "should" be done was to discuss and figure out what people wanted to be done, held and continues to hold promise in my eyes. Representing a notable break from dominant expectations of work in Kenya as formal and hierarchical, at the iHub, I would sit with recent graduates from Kenyan universities in our jeans and sweatshirts and think about how we might better make and study technologies in and for Kenya. We truly believed in and were excited by the possibilities for positive social change afforded by growing access to mobile technologies for Kenyans from all walks of life. As the

community of technology entrepreneurs associated with the iHub became increasingly well-known globally, media and researchers came frequently to Nairobi to document how creative, innovative Kenyan technology experts were developing solutions for "African problems." iHub's popularity can be explained as part of the rise of mobile phone technologies in Africa in the late 2000s. The uptake of mobile phones surged in Kenya from around 2008, the year of the Post-Election Violence (PEV) (see Figure 3), and by 2010, the year that iHub was founded, more than half of Kenyans had access to a mobile phone (ITU 2019). Today, the latest figures suggest that the vast majority of Kenyans have mobile phone access (Kibuacha 2021).[2] The organic uptake of these devices for communication was latched onto by the

2008 Post-Election Violence in Kenya
In December 2007, Kenyans took to the polls to vote in the fourth multi-party election to be held in the country. An unprecedented number, over 14 million Kenyan voters were registered and the early polling results showed that opposition leader, Raila Odinga would become the new president. But following a hasty, evening swearing-in of Mwai Kibaki for his second term, calls of election fraud quickly grew and violence exploded in many parts of the country. Over a two-month period, targeted violence led to the death of over 1,500 people (Koinange, 2019). Much ink has been spilled by academics, NGOs, and humanitarians on Kenya's post-election violence, most trying to understand what went wrong.
Up to that point, Kenya had been widely perceived as East Africa's most stable, democratic center. Although the crisis that followed PEV officially ended in early 2008, when Kibaki and Odinga signed a power-sharing agreement, the reverberating effects of PEV have haunted Kenyan politics and society for now over a decade. PEV became justification for an influx of development projects to "strengthen Kenyan democracy" including supporting various e-government services. In the months leading up to the 2012 elections, international worry about a repeat of PEV led to another surge in international humanitarian aid, with various development tech projects funded in donor attempts to stymie potential violence.

Figure 3. 2008 Post-Election Violence in Kenya

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[2] There are challenges with identifying unique mobile phone subscriptions because of the widespread phenomenon of ownership of multiple SIM cards. A study conducted by Pew Research in 2017 found that 80% of adults in Kenya reported owning a mobile phone (Kibuacha 2021).

An iHub Research study conducted in 2012 on mobile phone usage of Kenyan users who live on less than $2.5 USD/day found the highest percentage of mobile acquisition amongst study respondents as well as in the nationally representative data was in 2009.
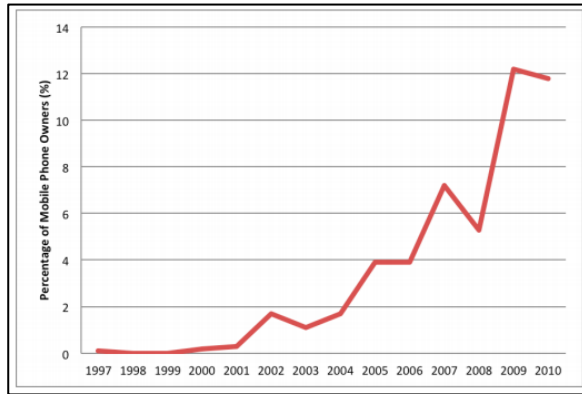
The study attributed this surge to the drastic fall of prices after the Kenyan government exempted Value Added Tax (VAT) on mobile handsets in June 2009 (GSMA 2011). It is also interesting that in 2007, there is another spike in acquisition of mobile phones, and this is the same year that the third mobile network operator (Orange Kenya) entered the Kenyan mobile telephony market. It appears that very few members of the Kenyan base of the pyramid were interested in or could afford to acquire phones between 1997 and 2001, when the cost and service charges were beyond the reach of most people in the country. But by mid-2012, over 60% of the Kenyan base of the pyramid owned a mobile phone (iHub Research 2012). Today, that figure is closer to 80% (Kibuacha 2021).

Figure 4. Trends in Kenyan mobile phone ownership. Source: iHub Research 2012.

Development aid industry as the answer to older problems of poverty and government corruption and the potential of these technologies *for social good* gained circulatory power and was heavily invested in by non-governmental organizations and development aid. Academic fields like Information Communication for Development (ICT4D) and mobiles for development (m4d) emerged to promote and study the uses of technology for development problems. But within a few years it had become increasingly clear that there was much more required than just mobile phone apps.

One of the globally recognized tech success stories from Kenya, crowdsourcing platform Ushahidi, emerged from the ashes of the 2008 Kenyan Post-Election Violence (see Figure 3). The next elections, in 2013, were an important milestone to demonstrate globally and to Kenyans themselves, the progress that the country had made since 2008. However, techies began to

realize that their busy attempts to build tech products for local users had not meaningfully changed deeper societal structures. That two of the country's political leaders—informally recognized to have stoked the flames of the 2008 violence—not only ran for president and vice-president, but that they won was a wakeup call for progressive techies who expected the Kenyan citizenry to have voted otherwise. The impunity of these two current government leaders and the fact that they still reign in power sheds light into Nairobians' diminishing trust in each other and growing cynicism about holding those in power to account.

As Nairobi cynicism about a government responsive to citizen needs set in, so too did disillusionment with the Kenyan tech sector and techno-solutionist narratives to solve local societal problems. The iHub had been founded on Erik Hersman's ideals of tech meritocracy: "The iHub is about doers, not talkers," (Hersman 2012). But less than five years later, the realization that technology and the tech sector too harbored injustices, bias, exploitative relations, and racism pulled the rug out from many who had been idealistically promoting it. In 2015, the first of what would be multiple scandals rocked the Nairobi tech sector. iHub members and Kenyan co-founders of Angani, a cloud infrastructure start-up, were forced out of their own company after ugly disagreements with new investors who included two of the iHub advisory board members, notably, Erik Hersman. The entire ordeal was closely watched by the tight-knit Nairobi tech community.[3] This was just the beginning of what would become even uglier exchanges. In 2017, an Ushahidi employee raised an accusation of sexual harassment against upper management (Kabari 2019). While the incident alone was grave, the botched way it was responded to and handled became the bigger subject of critique. The scandal came to be covered

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[3] Find full details of the ordeal here: https://www.iafrikan.com/2015/11/23/angani-saga-2015/.

by multiple Kenyan mainstream news outlets[4] and led to board members of the NGO resigning. Fraught accusations—of racism, sexism, tribalism—divided a previously collegial tech sector. In a public post, a former co-founder of Ushahidi, Ory Okolloh, stated: "we as a tech community must examine the series of events that led us to a point where an organisation and community that is well placed to do better has failed," (Okolloh 2017). Through all of this, it became clear that connections mattered more than the merit of a good tech idea. A serial Kenyan entrepreneur, for example, summarized the state of attracting financial capital in Kenya: "You'd be surprised by how this ecosystem works. Me and four locals trying to nail a partnership would take years. But just bring in a non-local, we just need to have them in the meeting and then we look more serious. It's a reality," (de la Chaux and Okune 2017, 281).

Meanwhile, beyond the upheavals within the tech sector, crime, impunity, and the cost of living in the city all continued to rise under the leadership of a known criminal who was elected as the city's governor in 2017 to the disbelief of the educated elite minority.[5] In recent years, Nairobi cynicism and distrust has not waned, with one resident explaining on Twitter: "Since I came to the city, my faith in people has been diminishing," (Duncan (@annnbelduncan) 2019) and another in agreement: "I have stopped shaking hands with people I don't know," (Syan (@bobsyan) 2019). This is the backdrop against which Nairobi researchers are now striving for alternative ways to do research better.

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[4] See for example this article: https://www.researchdatashare.org/content/mumo-m-2017-july-14-ushahidi-spotlight-over-sexual-harassment-claims-business-daily.

[5] Learn more about Mike Sonko's background and rise (and recent fall): https://www.bbc.com/news/world-africa-56269628.

Shifting Research Design

I arrived at my original object of study, Nairobi research data ideologies, motivated by first-hand experiences with research fatigue. Having participated as a research subject in numerous studies while working for five years at the iHub—with everyone asking very similar questions—I came to realize that the quotidian practices of making research field data produced much more than the data itself, including fatigue and sometimes even a sense of exploitation. While research can hold the possibility of being therapeutic, as several of my interlocutors told me in describing our own research encounters, that research in Nairobi is so often experienced as extractive is revealing of the ways in which it is often conceptualized and executed, as well as the structures of its production. This sense of research exploitation is not unique to Kenya or Africa,[6] but the effects of extroverted scientific practices[7] appear particularly acute in many postcolonial contexts.

I began my fieldwork wanting to understand how Nairobi-based researchers think about qualitative research data, what counts as ethical data sharing to them and how that has shifted in the recent past. However, as my fieldwork went on, I came to understand that qualitative research data was in fact a response to a larger question that my interlocutors were grappling with. How can scholarly knowledge in postcolonial contexts be made in more ethical, decolonial[8] ways? This question, which has haunted knowledge production in postcolonial sites

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[6] I have noted such sentiments being expressed in other work including Cal Biruk's book in Malawi (2018); Maria Torres' (2019) shared interview data from a Mexican context; Sukareih and Tannock (2012)'s work in Lebanon; Cath Traynor et al. (2019) in South Africa; and Tom Clark (2008)'s observations in Hackney, UK.

[7] I rely heavily on Paulin Hountondji's conceptualization of scientific extroversion (1990) which he describes as scientific activities that respond primarily to issues of interest to a Western public located elsewhere and relevant to the state of knowledge in the West.

[8] Decolonization is a fraught term today, with some scholars even calling for the decolonization of decolonization (Opara 2021). Such critiques note that scholarly discussions about decolonization have come to be

since the end of the colonial empire, looks to understand how to break from established research infrastructure while nonetheless continuing to conduct research in globally legible and credible ways.

A vibrant movement of African decolonial scholars in the 1960s led the original charge in thinking about how to decolonize institutions—which had been up to that point led by settler colonialists—as well as the minds of former colonial subjects. For example, Ngũgĩ wa Thiong'o is well known for his seminal work on "Decolonising the Mind" (1986) and his activism in the early 1970s with Henry Owuor Anyumba and Taban lo Liyong within the University of Nairobi to abolish the English Department to make space for literary forms and aesthetics rooted in Kenya rather than outside (Musila 2019; Gikandi and Mwangi 2007). Soon after independence, parastatal and independent indigenous publishing houses were also established, that broke from formerly extroverted models of "collecting good manuscripts and forward[ing] them to London for vetting and publishing," (Bgoya and Jay 2013, 18). Pan-African research and publishing organizations such as the Council for the Development of Social Science Research in Africa (CODESRIA) established in the 1970s helped to support and grow social sciences research in Africa (Bgoya 2014; Amin et al. 1978; Ghai 1974).

In spite of the incredible achievements of this period, the movement's decolonial ambitions were seriously derailed in the 1980s and 1990s as many of this generation of activist

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appropriated by existing dominant powers and usually do nothing to dismantle colonial Land relations (Tuck and Yang 2012; Liboiron 2021). However, as Liboiron mentions, there are many colonizations and decolonizations. I recognize the often problematic and excessive uses of the term, but nonetheless use it to recall an intellectual activist tradition that comes out of Latin America and parts of Africa and refers specifically to knowledge. I also use "decolonial" rather than "anticolonial" to capture a sense of the future possibility that many of my interlocutors were aspiring for: a more hopeful future space where knowledge is rooted outside of the colonial logics and extractive relations that still structure today's academic institutions and the global research world. In the words of Foluke Ifejola: "Decolonisation is impossible, but we must make her possible, if we wish to survive this wretched night that this wretched earth has been plunged into by humanity. We must make her possible," (2019).

scholars were forced into exile abroad under the Moi dictatorship. Under this period, the university, which had been the heartbeat for student activism and a lively reimagining of the pursuit of scholarly knowledge in and for Africa (Amutabi 2002; Klopp and Orina 2002), became the subject of harsh crackdowns and a gutting of institutional capacity, racked by the double assault of structural adjustment programs and the Moi dictatorship. This period established the grounds for the figure of the entrepreneurial Kenyan that emerged in the 2000s with new president, technocrat Mwai Kibaki promising the rise of Kenya as a "world-class" technology leader. With new government openness to pursue the promises of technological progress, the 2010s marked Nairobi's move towards becoming "Silicon Savannah," a hub for technological innovation and the research-busy activities that accompany such a budding "knowledge economy."

The lingering questions regarding knowledge production, circulation and use value for society however remained unanswered. By the time I returned for my fieldwork in 2019, almost 60 years after flag independence was achieved, the question of epistemic freedom and decolonization of knowledge was increasingly coming into public articulation again. Widespread critiques were being made within the Nairobi tech scene about the lack of impact of the billions of dollars invested in technology solutions, combined with growing calls of racism evinced by the uneven distribution of capital skewed to particular companies led by white expatriate immigrants. Coming off the "Technology-for-Development"[9] high as Uhuru Kenyatta, the youngest son of the first President transitioned into a two-term presidency, many of the tech

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[9] More widely known as ICTD or ICT4D which stands for Information Communications Technology for Development.

researchers I met were increasingly jaded and unsure about the "good" that their work was actually doing.

Literature in the anthropology of development has shown that when practitioners turn social problems into technical problems, they end up missing what is at stake (Li 2007; J. Ferguson 1990). My work adds to this argument to point to the ways that these technical problems (and the ways such problems are studied and "solved") also contribute towards a fundamentally cyclical redundancy that is worth parsing out. A repetitive, cyclical nature of Development[10] and its accompanying research points to a larger set of structural and social forces at play that are not just about making knowledge for social good. The conditions for "postcolonial objectivity" are laid by growing recognition that the current production of research in Nairobi is and has not been about developing insights "for social good," even if it has been justified as such.[11] Jaded researchers are increasingly realizing that the development research complex must produce the conditions necessary for it to continue to be a viable operation. Disenchantment with what research is or is not doing—as expressed by the "jaded researchers" I referred to above—may very well be an effect of misidentification with what research is supposed to do, by researchers themselves and subsequently, their research participants. "I have asked my research participants what they want to learn from my research, and they tell me they want a development project," a tenured American university professor who works in a rural Kenyan community dejectedly told me. "It's made me realize that the kind of relationships they

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[10] I use the capitalized term "Development" throughout this dissertation to refer specifically to the development aid industrial complex as studied and discussed by critical studies of Development (Ferguson 1990; Mosse 2013b).

[11] This echoes Joanna Crane's point in her book *Scrambling for Africa: AIDS, expertise and the rise of American global health science* (2013) in which she describes "valuable inequalities" where the very poverty and inequality that American public global health studies and programs aspire to remedy is also what makes their global health programs both possible and popular.

want aren't research relationships and the types of things that they want to benefit [from] and they want to come out of these projects are not things I can do. … Most of them are looking for some kind of development project that they can earn money from."

There are deeply embedded assumptions that there is public good to be derived from research conducted in and on Africa. Peeling away the developmentalist language and looking at the *longue durée* of research in the country begins to reveal the capitalist logics underlying the conduct of research. This sits uncomfortably with promises of knowledge to improve life. Community-based research, especially, often sits at odds with the dynamics of the Development research complex within which it is often ensconced.

"Do you ever say there can't be any intervention? Must there always be an intervention?" I asked Freeda, the Akamai qualitative research director one day towards the end of my fieldwork. "Hmmm, there almost always is. In the two years that I have been here, we've always had an intervention," she replied. She twirled her curly hair absent-mindedly in thought. "What about if the issue is a structural one?" I probed. "Then we would say that in the report, but then do something like, 'If that structural issue wasn't there, then we would suggest this behavioral change,'" she explained. Her explanation matched what I had observed at Akamai, an assumption that there is *always* some sort of individualized behavior change that can be done.

Postcolonial objectivity is intentionally broad so as to include both those whose attempts to do research "otherwise" reproduces their own structural conditions and viability, as well as others that are more radically attempting to undo the industry. Without being naive about the structural conditions of the production of research, this dissertation pays attention to these hegemonies while also making space for figuring out what emergent, better forms of research could look like. Here I seek to balance the structure-agency dichotomy. As Ugandan intellectual

Mahmood Mamdani has aptly written: "if our agency is structured and blunted by history, is it possible for us as historical subjects to recoup agency through an understanding of the nature of these structural constraints so we may reshape that very structure and rethink and remake the future?" (2021, 2). This dissertation is part of my own ongoing attempts to answer this question.

Reaching for Postcolonial Objectivity

The details of a growing articulation of a need for decolonizing knowledge production in Kenya are specific and place based. But my return to the academy to better understand personal experiences of being "over-researched" led me to learn that similar questions regarding extractive knowledge practices have preoccupied many scholars in feminist and indigenous STS, development studies, and African studies across time and locations. Work by indigenous scholars like Linda Tuhiwai Smith (1999) have critiqued the persistent colonialism in academic teaching and research while African philosophers have identified the ways in which "Africa" has continued to be the site of "epistemic imperialism" (Nyamnjoh 2006; Mudimbe 1988), the site of postcolonial intervention and study. Amina Mama wrote in 2007 that "…we might choose to design engaged methodologies that set out to demystify, question, and perhaps challenge global hegemonies, or we might choose to remain dis-engaged and reject any such responsibility. This, I would argue, is an ethical choice," (2007, 7). Mama's framing marks a move from earlier regimes of objectivity,[12] which scholars like Partha Chatterjee[13] and Achille Mbembe have

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[12] Galison (2000) characterizes a pictorial regime of objectivity he calls "genial depiction" (pre-1820); a mechanical objectivity (1820-1920) marked by the image as a visual signature of the natural object; and judgmental objectivity (after 1920) where trained expertise is deployed for scientific assessment.

[13] Partha Chatterjee (1993)'s argues that the universalist claims of modern Western social philosophy are themselves limited by the contingencies of global power. "'Western universalism' no less than 'Oriental exceptionalism' can be shown to be only a particular form of a richer, more diverse, and differentiated conceptualization of a new universal idea," (1993, 13).

critiqued as " …a certain rationality, claiming to be universal but in reality, mired in the contingent and the particular…" (2001, 8) towards what I am gesturing at with the notion of *postcolonial objectivity*.

Under a regime of postcolonial objectivity, scientists begin to recognize their own methodological choices are not solely informed by scientific choices but also moral choices, that is to say, to consider the implications of our identities, locations, and institutional affiliations, as well as the epistemological and methodological constraints and choices that inform such studies.[14] This shifting frame of the ethical scientific self appears to be in part because of growing uptake of African critiques of inequities in knowledge production (both academic and in various publics); support and allies around the world for the Movement for Black Lives; and more public understandings of the ongoing effects of imperialism around the world.

A major shift today in discussions about decolonizing knowledge as compared to the 1960s is the incorporation of the question of the digital. With the rise of internet technologies, the "global" and "local" inextricably meld and converge in a broadening middle register.[15] Nonetheless, questions of governance and who benefits from a digital global scientific knowledge commons need to be attuned to local histories, power asymmetries, structures of marginalization, and categories of difference. Digital scholarly knowledge and data, theoretically and materially, are designed to travel globally.[16] But how such data and knowledge are made,

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[14] This draws heavily from Donna Haraway's concept of "situated knowledges" (1988), Nancy Hartsock's work on feminist standpoint theory (1997), Kimberle Crenshaw's contributions regarding intersectionality (1991) and other feminist scholars of science who have helped revolutionize understandings of science and epistemologies.

[15] Here I am building on Homi Bhabha (1994)'s notion of hybridity which emphasizes that an analysis of colonizer/colonized relations underlines how the subjectivities are co-constituted and interdependent.

[16] But, as Max Liboiron has explained in *Pollution is Colonialism* (2021), not all ideas travel effortlessly and easily root in other places.

accessed, and governed within specific places is important to pay attention to in attempting to tackle the question of what more decolonial knowledge practices could look like.

There has been a growing chorus of voices calling for the decolonization of research and the advancement of public interest technologies (*see, e.g.*, The Nest Collective 2021; Roll 2021; Pailey 2019). People and organizations in Kenya—especially in Nairobi—have been particularly vocal and articulate, reaching to understand and enact what I call *postcolonial objectivity.* Here I draw together rich bodies of work in the history of science on how scientific objectivity "is a multifarious, mutable thing, capable of new meanings and new symbols," (Daston and Galison 1992, 123) and postcolonial studies, which have demonstrated "decoloniality" is not only a political project but also an epistemological one: to delink from structures of knowledge imposed by the West, and then reconstitute ways of thinking, speaking, and living (Mignolo and Walsh 2018).[17] As postcolonial objectivity came into focus as my object of analysis, I realized that reaching for postcolonial objectivity is a way to question and work out the types of knowledge, knowledge production practices, and knowledge infrastructure (social and technological) needed.

For some of my interlocutors, I found postcolonial objectivity was being pursued by aiming for greater African representation in scientific knowledge production; for others, postcolonial objectivity required more explicitly tying research activities to the everyday needs of those being studied. Across diverse approaches to pursuing postcolonial objectivity in Kenya, I found robust contextualization of knowledge to be a recurrent argument and goal of postcolonial objectivity. Through work over the last decade within Nairobi's tech-for-good sector, followed by a year of ethnographic research within organizations in Nairobi's research

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[17] Walter Mignolo and Catherine Walsh write of decoloniality as a praxis of "undoing and redoing" (2018, 123)

landscapes, I've traced the contours and edges of postcolonial objectivity in Kenya. In this

dissertation, I describe key actors and what postcolonial objectivity looks like in practice, while

also developing an analytic framework for understanding how postcolonial objectivity takes

shape in different settings, in context-specific ways. Developing an analytic framework for

drawing this out is a way to enact and demonstrate the potential of postcolonial objectivity in my

own research practice. I've also worked to build supporting technical infrastructure, both to

support the research and as an experimental space for collaborative effort to figure out what

kinds of questions can be asked under postcolonial objectivity going forward.

What Did I Do

> "Finally! I am so glad someone is interviewing me!" Abena exclaimed to me during our first meeting. On that hot February morning, we did not know that we would end up meeting many more times over the course of my fieldwork year and that she would in fact become an active member of the RDS working group and a good friend. But in the first few minutes of meeting, Abena, a Kenyan woman who had worked for several years as a development research consultant, exclaimed how glad she was to be included in my research. "I am so tired of researching other people, I am glad to finally be telling someone about it." When we did eventually have an "official" interview together, she would afterwards tell me it was cathartic.

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This vignette illustrates how those who became interlocutors and project collaborators—

mostly researchers of different backgrounds—were drawn to my project for its "meta" or

second-order quality. Most found my research to be unusual in its focus on the conduct of

research in the country. In this section, I point to ways I am both entangled within the systems I

study and, like my interlocutors, also reaching for postcolonial objectivity. I entered the field

expecting to follow and thereby understand how qualitative research data was being produced in

Nairobi. Positioning qualitative data as my object of study allowed me to work across diverse

<p align="center">17</p>

institutional types (libraries, archives, companies, individuals) since it was a legitimate object of concern shared by individuals and organizations working at various nodes within the Nairobi research landscape. I quickly learned that most if not all the researchers—from short-term field officers to upper-level management—were already familiar with critiques about certain populations in Kenya feeling "over-researched." As a result of these critiques, all the organizations that I ended up working with were keen to understand how, if at all, they could better address the critiques.

But despite this shared interest in making more ethical qualitative data,[18] something that I quickly observed during fieldwork was that there was an overall lack of established qualitative data sharing infrastructure. This was surprisingly true of both the well-resourced multi-national company as well as the small start-up. As a result, I offered to work alongside several research organizations to support them to begin developing their own organizational data archives as well as learn together about the kinds of infrastructures needed for more ethical research, reconfiguring my role as an ethnographer to include working with people to make things while also seeking to document and understand the processes at play.

Archive as Method | Infrastructuring for Collaborative Ethnography

Aware of the widespread lack of qualitative data archiving and sharing infrastructure in Nairobi research organizations, when I first learned about the Platform for Experimental and Collaborative Ethnography (PECE), I was quickly drawn to it. An open-source software platform

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[18] For most interlocutors, "more ethical research (data)" was understood as research (data) that responded to the needs of community and did not feel extractive to them. For a small handful, more ethical data was understood as adherence to global "best practice" data laws such as the European Union's General Data Protection Regulation (and Kenya's version, the 2019 Data Protection Act).

built by ethnographers of science, I was particularly impressed by the explicit epistemological values embedded in its design.[19] Using PECE enabled me to collaboratively play with ethnographic artifacts and conduct analysis at varying scales and with multiple layers of resolution. Thus, as my knowledge of PECE and its possibilities grew, I decided to develop my own instance of PECE, which I called "Research Data Share" (RDS). I conceptualized the development of the RDS qualitative data archive under three distinct rationales. First, I saw it as an elicitation device and grounds for collaborative discussion and engagement, imagining that the deliberations about the archive that I would have with those in the field would be a basis for my learning. Second, it was an attempt to produce something of value to informants and respond to the ethical questions about research fatigue that my project had started with. At the very least, I could give a transcript and/or audio recording from the research encounter back to my interlocutor. Third, I anticipated that key questions would emerge through my own process of building and studying that would be valuable.

By intentionally forming an ethnographic data platform to both study and use myself, I reconfigured my relationship with the topic as well as my relationship with interlocutors, enacting a new form of collaborative ethnography that took my own complicity in the structures of knowledge as a starting point for theorizing how researchers might better navigate, organize and re-mix existing collections of data. Focusing on an object—data—that resulted from but was not of the researcher/researched relationship opened up discussions beyond critique and set in

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[19] For example, the platform articulates that its design logics include explanatory pluralism (https://worldpece.org/design-logic/explanatory-pluralism), citing feminist scholar, Evelyn Fox Keller's work (1995), and juxtapositional logics (https://worldpece.org/design-logic/juxtapositional-logics), citing anthropologist James Clifford (1981). For more on this aspect of PECE, see Fortun, Fortun, and Marcus (2017); Poirier (2017); Poirier, DiFranzo, and Gloria (2014).

motion a new set of social relations to study. It also situated me squarely as a participant in the production of the very things I was studying.

Prior to the start of my fieldwork, in addition to establishing the technical platform itself,[20] I also developed textual devices for the relational infrastructure of qualitative data sharing. Inspired by the work of Max Liboiron and collaborators (2018) and Cath Traynor and collaborators (2019), I developed two draft working documents—a data circulation form (Okune 2019b) and a collaboration agreement (Okune 2019a)—to reflect my current thinking and also with which to continue to think. After sharing the collaboration agreement with the three research groups within the first few months of fieldwork (January through March 2019),[21] I was given access to a variety of qualitative data, especially digital transcripts of one-on-one interviews and group discussions; photographs; coded summaries of data; final reports; and interview guides. Of this data, I selected one sample from each of the three organizations, anonymized the text (if it was not already), and uploaded it to the RDS platform with any available context as meta-data. I then used this data sample as an elicitation device for initial interviews (Okune 2019c). I found the exercise helpful to ground what can often end up as an abstract conversation about what is ethical research.

In addition to one-on-one interviews with individual researchers including American academics, Kenyan academics, Kenyan research staff and consultants, and research business management and founders, I conducted nine months of participant observation at the offices of

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[20] This included purchasing a server and domain name and installing the open-source software on the new server, with the volunteer support of Brian Callahan and Renato Gomes.

[21] I circulated the collaboration agreement draft to all three organizations when I reached the stage of requesting access to their (private) data. The agreement, as predicted, allowed us to articulate expectations for each other. For one organization, there were several rounds of iterative feedback. Interestingly, none of the organizations actually signed it into force before sharing data with me, highlighting the document's value not necessarily as a legally enforceable document, but rather as a vehicle for the clarification of expectations and collaboration norms.

Nyagaard Research, Akamai Research, SDI,[22] and in the Kenyan National Archives. I established particular days of the week where I worked out of each of the different sites and then adjusted my schedule based on the various activities taking place in any given week.[23] Through these interactions, I set out to understand how research data was being made in diverse ways and where opportunities for collaboration and sharing might be. I learned that investment of time and money were front-loaded in data processes, with heavy investment in the design and collection of data, and little to no care for data analysis and storage. STS scholars Estrid Sørensen and Laura Kocksch have introduced the concept of data durability, that is, "the period in which scientific data can operate in a socio-technical apparatus and uphold their capacity to make claims about the world," (2021, 13). Their notion of data durability draws attention to durability as an *achieved* quality of data rather than one inherent in data. I found that across the Nairobi research landscape, few if any of the organizations were working to make their data durable.

As part of my fieldwork, I also conducted a landscape analysis and initial mapping of the various archives and libraries available in Nairobi and through this work came to collaborate with Book Bunk, and Ukombozi Library. Towards the conclusion of my fieldwork, I co-organized a public event entitled "Archiving Kenya's Past and Future: Management, Access and

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[22] These are pseudonyms.

[23] I ended up spending the most time at Akamai because of the multitude of in-office events and initiatives that I was drawn into including weekly reading groups, qualitative research office hours, and regular staff training. I was also invited to participate as an external expert on their hiring panel for new qualitative research staff. Towards the end of my fieldwork, Akamai also facilitated a focus group discussion with some of their most regular research participants. I followed Nyagaard Research into their field to understand how their survey research was conducted. I also sat in on client meetings, in-person presentations and staff update meetings. SDI was most interested in my support in establishing their organizational open data policy, which I co-authored with an SDI interlocutor after hosting a staff consultation meeting where we discussed existing organizational data types and collection practices. SDI came the furthest in establishing their own open data infrastructure, using the RDS instance to host a handful of interview transcripts and artifacts related to open data in Kenya.

Responsibilities of Open Data and Collective Knowledge Production"[24] at one of the oldest

libraries in Kenya. The event laid the groundwork for what would turn into three collaboratively

written dissertation chapters: Leo Mutuku, co-author of Chapter 2 was my event's co-host;

Syokau Mutonga, co-author of Chapter 4 was a panel speaker at the event; and at the conclusion

of the day-long event, the Research Data Share KE working group (which co-authored Chapter

6) was formed to continue the discussion that had started.

Layered Analysis

Returning to my desk in Richmond, California in January 2020 after a year of fieldwork,

I began to sort through the variety of data I had collected: extensive field notes from 12 months

of fieldwork from 2017 and 2019; interview data; photos; organizational data shared with me;

multimedia artifacts; and physical and digital research reports and newspapers. After organizing

these materials around an initial scalar set of analytic questions,[25] I began to write out some of

the initial arguments that were emerging. As I wrote, I also went back to the literature for

guidance as I tried to interpret and understand what is transpiring in Nairobi. While closely

examining the variety of materials I had on hand, I developed another set of analytics[26] that were

more granular to the text. A last analytic set emerged as the frame of the dissertation began to

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[24] Find archived workshop proceedings at https://www.researchdatashare.org/content/proceedings-archiving-kenyas-past-and-futures.

[25] Find the questions at https://www.researchdatashare.org/structured-analytics-questions-set/analytics-across-scales-and-systems-qualitative-data-capacity.

[26] Find the questions at https://www.researchdatashare.org/structured-analytics-questions-set/thematic-analysis-qual-open-data.

stabilize. This set[27] was used to query how different actors in Nairobi are attempting more decolonial knowledge practices.

Collaborative Authorship

> "I think we talk more frequently now than we even did when I was in Nairobi!" I half-jokingly laugh to Syokau, co-author of chapter 4, during one of our weekly writing calls. "We definitely do," she agreed, "Nairobi is just too busy."

* * *

The idea of co-authoring parts of my dissertation offered a way to extend what had already become a process of collaborative learning, with people I had met through fieldwork or even earlier engagements.[28] Research-busy Nairobi often feels too frantic for collaborations that exist outside of funded project formations, with barely enough time to finish consultancy projects, let alone find time to work on exploratory, unfunded, and undefined projects together. But I found something important about collaborative writing where co-authors and I met[29] not as interviewer and interviewee, or researcher/researched but as friends, former colleagues, co-authors, and collaborators.

Co-authoring the chapters shifted the stakes and further deepened my relationships with interlocutors, who were now enrolled in the project as co-authors. After a first draft was developed based on multiple virtual discussions (drafted in a google doc where all members had editing privileges), we had additional conversations about the draft and further edits were made. Here recursivity hit the digital pavement as the lines between speaker, interlocutor, author, and

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[27] Find the questions at https://www.researchdatashare.org/structured-analytics-questions-set/pursuing-decolonial-knowledge.

[28] Several of my ongoing collaborators have been interested in this project prior to the beginning of my dissertation project and have been key interlocutors for me since 2015. Others were enrolled into the project through our interactions during my fieldwork in 2019.

[29] Our meetings were all virtual via Zoom or WhatsApp audio.

expert blurred. Regularly scheduled virtual meetings over nearly nine months of the writing

process allowed us as co-authors to express "this is where I am speaking from and why I

understood it this way, what do you think?" which facilitated deeper understanding of

perspectives. Through such processes, both in the field and post-field, I learned that

collaborating, on data and on writing, not only refreshes the social contract of qualitative work, it

can also enhance the robustness and validity of the knowledge produced. Through such on-going

processes undergirded by investments in and a commitment to the relationship, ethnography is

made more robust, increasing not only its ethical validity (by increasing researcher

accountability and representations of those we engage with), but also strengthening its research

validity. This is a marker of what I describe as *postcolonial objectivity*, a variegated process

through which knowledge is developed, evaluated, legitimated, and used in postcolonial

contexts.

Argument

Today, an increasing concert of voices is calling for the decolonization of research and

the research sector in Africa. People and organizations in Kenya—especially in Nairobi—have

been particularly vocal and articulate, reaching to understand and enact what I call "postcolonial

objectivity." In what follows, I describe how this work has taken shape in Nairobi, the problems

it is meant to address, the histories and conditions that underlie it, and aspirations for the future.

Reaching for postcolonial objectivity, I've learned, is a way to question and work out the types

of knowledge, knowledge production practices, and knowledge infrastructure (social and

technological) needed. The frustrating and fraught history of "development" and development

research in Kenya sets the stage, as does the more recent emergence of Nairobi as "Silicon

Savannah" and hub of "tech for good" (as well as profit, with African consumers at the "bottom

of the pyramid" seen as business opportunities). More recent (c.2010) investment (by funders, companies and NGOS) in having African researchers "at the table" and in leadership positions in research initiatives has also been important.

Postcolonial objectivity turns out to be more than an endpoint (a characterization of a particular construct of objectivity). Instead, it points to a variegated process through which knowledge is developed, evaluated, legitimated, and used in postcolonial contexts. Postcolonial objectivity is something worked out in a historically weighted field of contestation. While aspiring to be decolonial, postcolonial objectivity is always haunted by imperial ghosts. It also is shaped by political economic dynamics, technological capabilities, and infrastructure, and deeply rooted institutionalized ideas about the kinds of knowledge that should be mobilized for "development." Importantly, postcolonial objectivity is also reflexive, creating spaces for questions about the subjects, purpose, and value of research, about how and why research should be put in context (in turn, prompting questions about how "the local" is transnationally produced), and about the kinds of research practice and infrastructure needed to move beyond colonial and commercial over-determinations.

Chapter Summary

In the chapters that follow, I trace the contours of postcolonial objectivity in Nairobi, Kenya, identifying constitutive aspects of the knowledge production process. The writing is organized in two parts. The first part is a triptych of chapters that set the stage for understanding the emergence of postcolonial objectivity in Kenya. In the second part, I focus on aspects of postcolonial objectivity demonstrated by various research actors in Nairobi. My multi-sited study design (Marcus 1995) revealed that postcolonial objectivity encompasses multiple discourses and

tactics, some more promising than others. An in-depth look at three enunciatory formations

illustrates some of the widely different tactics that fall within what I characterize as postcolonial

objectivity.

Drawing on an analytic framework developed to draw out specificities of postcolonial

objectivity in Kenya (see Appendix A: Analytic Framework for Postcolonial Objectivity), this

dissertation can also be read through a pairing of the chapters. The first chapter of Part 1 pairs

well analytically with the first chapter of Part II and so on as I describe in more detail below.

Lastly, if this work is being read on the Research Data Share platform itself (which I highly

encourage!), there are also multiple layers of data that are linked within the text through which

you can explore the underlying source data. I am excited to see what kinds of new insights might

be gained through such first-hand exploration of the data layer embedded in this text and invite

you to explore, annotate and dig into the materials yourself.

How does history haunt the conduct of contemporary Kenyan research?
Beginning in chapter one, I examine several historical convergences that illustrate the particular ways that the British colonial legacy and then post-war investments in "Development" in Kenya continue to have effects on knowledge production today. An approach towards national memory of "forget and move on" makes the pursuit of social and epistemic justice difficult, but librarians, archivists, and creatives in the city are attempting to disentangle from a colonial past towards a more liberatory future through radical remembrance and digital library work as Syokau Mutonga and I detail in chapter four. Such *progressive librarianism* illustrates postcolonial objectivity in its desire to move past a regime of neutrality, viewed as having been a tool of information imperialism of the past.
What idealized figure shadows Kenyan research ecosystem, threatening the reproduction of existing structures and limiting radical change?   **How have rising diversity expectations played out in the Kenyan research ecosystem?**
In chapter two, Leonida Mutuku and I unpack the conditions that gave rise to the idealized figure of the tech entrepreneur in the 2000s with new president, technocrat Mwai Kibaki promising the rise of Kenya as a "world-class" technology leader. The 2010s marked the beginning of Nairobi becoming "Silicon Savannah," a hub for technological innovation accompanied by the research-busy activities required for such a budding "knowledge economy." We touch on more recent growing reckoning with the unequal distribution of

venture capital tech funding by race and nationality which has prompted new discussions about racism in Kenya, a discursive context where, until recently, "race" was not thought to be a locally resonant concept. I discuss in chapter five the ways these shifting expectations of diversity play out within research companies striving to be ethical. Studying the ways research businesses are attempting more ethical research reveals how easily these attempts slip into new business models and opportunities. New ethical expectations (for diversity; for better qualitative methods) create need for new experts (of diversity; of contextualization). This holds radical potential, but also illustrates how under postcolonial objectivity there remains a substantial risk that existing structures and status quo will simply be reproduced, with a more ethical sheen.

What modes of care and stewardship are practiced and idealized in the Kenyan research ecosystem?

Heterogeneous actors, data, and data ideologies shape the Nairobi research ecosystem and also have effects far beyond Kenya's national borders. In chapter three, I highlight how imperial forces are not necessarily external to everyday life in Nairobi but are in fact co-produced by the "local." Disentangling the imperial from a romanticized regime of "local," as many current research funding protocols adhere to, may therefore be a moot point. Instead, developing analytic frameworks for better tracking and describing the multiple, hybrid, trans-local Kenyan cosmopolitanisms appears more helpful. I offer a heuristic for understanding the multiple data ideologies at play and a sense of the swirl of research actors that work in the city. In the final chapter (six), I write with some of these diverse Nairobi research actors who have become collaborators through the Research Data Share KE working group. We offer another take on the kinds of research practices that can emerge within a paradigm of postcolonial objectivity, highlighting the importance of pursuing social and technical infrastructures that can foreground the relationality of making research data and enable engagement across and beyond multiple boundaries.

The state of scholarly publishing has changed dramatically in the decades since the world wide web became widespread. Despite the growing encroachment by commercial entities into public knowledge commons, there continues to be a real opportunity to democratize access and enable diverse contributions to a global knowledge commons for the greater good. But, as scholars of development and open science have now recognized, for that to be realized requires more than technology.

To reach for postcolonial objectivity—especially a decentering of the production of scientific knowledge from historical centers—requires a simultaneous investment in decentralizing technologies that are interoperable and can speak to each other across difference.

There is need to invest in technical capacity as well as social capacities to design and leverage such technologies, investing in people and the technologies through which we can collaborate with each other across difference. Postcolonial objectivity has become the empirical focus of my ethnographic research and the focus of the analytic framework I've developed to understand postcolonial power | knowledge in different settings. Together with others both in and outside of the academy, I hope to have begun to take small steps in this direction and look forward to many more years of continued engagements on this front.

Part I

Setting the Stage for Postcolonial Objectivity

Pursuing Decolonization				
Character, practice, mode and ideals of decolonized Kenyan knowledge producer in different periods	**1963 - 1988** Freedom fighter turned entrepreneur	**1988 - 2008** Developmentalist, structurally adjusted one-party state	**2008 - 2015** tech entrepreneur, wired	**2015 - …** Cosmopolitan turned anti-imperialist
Aspiration				
Context				
Persona				
Practice				
Image				
Ontology				
Eso-Enunciatory Formation				
Exo-Enunciatory Formation				
Techno | Infrastructure				
Tools				
Relevance				

* I developed this table while reviewing my ethnographic materials to draw out a more nuanced understanding of the pursuit of postcolonial objectivity grounded in its location. Some of the left-hand columns borrow from Peter Galison's work (2000), but additional rows were added based on my own empirical observations. I offer this empty frame here to evoke a sense of what is to be described in the first Part I of this dissertation and a filled-in version of the table can be found at the close of Part I to summarize what I hope to have conveyed. For more description of the content in the left-hand column, see the conclusion.

Chapter 1

Kenya's Scientific Extroversion: A Genealogy of the Present

Introduction

Histories of imperialism and post-war "Development"[30] in Kenya and the sociotechnical infrastructures established as part of these histories have created conditions where everyday research amongst particular communities in Nairobi are often experienced as extractive, externally driven, and extroverted for a Western audience. A staccato genealogy[31] of research engagements in the country can help to better understand why these sentiments exist in Kenya. In this chapter, I pursue a brief history of research in Kenya to illustrate how today's aspirations to build decolonial knowledge cannot be separated from earlier moments in time when the pursuit of knowledge was driven by imperialist, colonial logic. Attending to these histories matters because they form the imperial structural holdovers that layer into the contemporary.

This approach aligns with what STS scholar Max Liboiron has written, that "[r]esearch and change-making, scientific or otherwise, are always caught up in the contradictions, injustices, and structures that already exist, that we have already identified as violent and in need of change," (2021, 22). Postcolonial objectivity needs to be attuned to histories of the present. This chapter helps us to better understand how colonial and Development knowledge has been made under earlier regimes of scientific representation in order to understand what Postcolonial Objectivity is pushing against as I will describe in Part II of this dissertation.

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[30] I use the capitalized Development throughout this dissertation to refer specifically to the development aid industrial complex as studied and discussed by critical studies of Development (Ferguson 1990; Mosse 2013b).

[31] Here I am using Foucault's sense of a genealogy of the present (Garland 2014), as a way to question our assumptions about the present. While I lack the depth of inquiry that a historian would bring, I nonetheless turn to history in order to gain some insight into our present circumstances. Part of my argument regarding postcolonial objectivity is that all scientific inquiry must attend to place-based and translocal histories to gain an understanding of the structural holdovers that persist into the present. Until we learn to see the imperial ghosts that haunt all attempts at postcolonial objectivity, these attempts will be shallow.

I open with a quick snapshot of some of the many contemporary research actors in Kenya before describing the troubled ground laid by some of the first scientific inquiries in the British colony of Kenya, established in 1920. I note a brief but influential period in the 1930s where European settlers in the colony proposed a eugenics research program to understand African biology towards supplying "objective" answers to colonial questions surrounding racial difference and intelligence. I next jump to the post-World War II science for development and development of science before spotlighting the important emergence of a rich African body of scholarship that stemmed from the politics of liberation in the 1960s. This generation of activist scholars is a continued source of inspiration for anticolonial activist scholars today.

I then turn to the effects of another war, the Cold War, during which time significant investments in area studies were made. Specifically, I detail a particular example, a partnership over a microfilm collection of colonial government documents, between Syracuse University and the Kenya National Archives. Analysis of this partnership helps highlight that discussions about the ownership and value creation of research artifacts are not new. Since independence in the 1960s, Kenyan scholarly materials have been politicized over questions of ownership, value creation for "global" publics, and institutionalization and preservation. Finally, I describe a shifting emphasis on cost-effectiveness as the scientific study of poverty and poverty interventions became increasingly marked by a procedural objectivity (Daston and Galison 2010).

Amongst the many approaches and theories covered in brief in this chapter, from scientific racism, African liberation theories, to development economics, there are certain sets of ideas and theories which have gained prominence and circulatory power over others. I have likely perpetuated certain marginalization myself in selecting what is included and excluded

here; I apologize in advance for that. I hope that others will expand on this work and supplement it with additional his and herstories. You may notice that the research genealogies I include are primarily of dominant science rather than endogenous knowledge making and Kenyan science. This is because the chapter aims to deepen understanding of why particular places and people feel the continued effects of scientific extroversion (Hountondji 1990), an effect, I argue, of layered histories of colonialism, Development, structural adjustment and technosolutionism. African sciences have often been more intentionally designed for regenerative effect rather than extraction and therefore do not feature heavily in this particular genealogy of research. That said, I do not wish to create a stark dichotomy between local and foreign, regenerative and extractive but rather, to illustrate how these differently hegemonic projects have been built, fractured, appropriated and pushed by local and non-local actors alike.[32] Understanding contemporary research relations across Kenya's *longue durée* is, I hold, an important tactic of postcolonial objectivity.

Research, Headquartered in Nairobi

Over the last century, Kenya has experienced time-delineated, and often one-off[33] investments in research that come from outside of the country. This appears to have resulted in

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[32] To this point, historian of science Helen Tilley (2011; 2010) has underscored just how often ideas and practices from other cultures have been assimilated into scientific epistemologies and appropriated by various specialists, raising questions about just how "Western" Western science really is.

[33] This is both at the level of donor-funded research regimes as well as individual projects. Donor funding tends to operate in 5-to-10-year increments with funding priorities often set at headquarters in American and European cities and then trickling out to program implementation around the world. There may or may not be continuity in funding priorities. Increasingly, I have observed that funder priorities and implementing programs must articulate how and which UN Sustainable Development Goals they contribute to (see for example: https://www.idrc.ca/sites/default/files/sp/strategy2030.pdf). I will discuss in subsequent chapters in more detail the short length of time of individual research projects which usually span between 3 to 9 months. A multi-year project is considered extremely long.

heavy silo-ing of research groups in the city, with established clusters of projects, institutions,

and people working in their own worlds. Sporadic, uncoordinated efforts to understand poverty

and build capacity have resulted in a sense of fragmented knowledge that often travels back to its

funding origin with little trace remaining in the country of collection. This echoes postcolonial

scholar Raewyn Connell who wrote:

> [a] crucial fact in the history of the knowledge economy is that the circulation of knowledge between cultures and regions—which had been going on throughout history— was restructured by empire as an unequal global division of labour. While the colonies became a vast data mine, the imperial metropole (to use the French term for the colonizing centre) became the main site where data were accumulated, classified, theorized and published. This business was handled in the scientific societies, universities, botanic gardens, museums, research institutes and publishing houses of London, Paris and eventually Boston and New York. In effect, the labour of research was divided geographically and socially, separating data collection, the encounter with materials, from theory and interpretation, the work of patterning. Further, in the laboratories and lecture halls of the metropole, research-based knowledge was turned into applied sciences or technologies, such as engineering, pharmaceuticals, medicine, agronomy, and geological mapping. In this form, knowledge was re-exported to the colonized world, and applied in colonial administration, mining and plantation economies. (2019, 75)

Today, residents in the city that have participated in research continue to have a sense that

research is conducted on them but not for them. Simultaneously, there is a thriving research

landscape, headquartered in Nairobi, that cuts across fields of study, populations, and regions of

the country.

Public health and tropical medicine research programs are well-established in Kenya[34]

and key actors including the African Population and Health Research Center (APHRC) and

Kenya Medical Research Institute (KEMRI). A flurry of activities, capital, and people follow the

United Nations complex whose United Nation Environmental Program (UNEP) is headquartered

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[34] For example, see Wendel Geissler's extensive work on the making of global public health in Western Kenya (2013; 2013; 2012; 2011).

in the leafy Gigiri suburbs of Nairobi county. Similarly, research initiatives parallel many of the World Bank, Development aid, and humanitarian-funded programs as a way to ensure Development initiatives have "impact." This work is often done by individual research consultants. Market research companies are also in the mix and run the gamut from small one- or two-person operations to huge groups that include nearly a hundred staff. These market research groups—many of which are run by Kenyans—manage the country's political polling, media discourse tracking, and surveys of changing tastes of African consumers.

Kenyan universities, which have exploded in number in recent decades, as well as foreign academics and students are also conducting research in and on Kenya. A growing phenomenon since around 2015 has been the establishment of physical offices of American universities in Nairobi, including Georgetown University's Gui2de and Columbia University's Global Center. Most recently, a new cluster of research has landed in Nairobi in recent years. The push for technology innovation, which I will describe in more detail in the next chapter, has fueled a growth in human centered design research and technology innovation research more generally. Actors in this space include IBM Research; Google; Microsoft Research; IDEO.org; and Dalberg Design, who seek to better understand their end-users.

State-funded research institutes such as Kenya Institute for Public Policy Research and Analysis (KIPPRA), and Kenya Medical Research Institute (KEMRI) are one of the many actors moving in the space rather than a leading organizing or coordinating body. Kenya's National Commission for Science, Technology and Innovation (NACOSTI) would be best placed to serve as a research coordination body with a mandate stating that "[t]he objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and

advise the Government in matters related thereto."[35] But with such a limited purview framed narrowly around science and technology, I have found they do not see themselves as coordinators of the widely diverse kinds of research actors as I have described above. Humanities for example are not seen as falling within their mandate and many of the research actors I have worked with including SDI, Nyagaard, and Akamai[36] are not understood by NACOSTI as research-conducting bodies. The director of SDI relayed to me how they tried to become certified by NACOSTI as a research organization to make obtaining an Institutional Review Board (IRB) ethical research clearance easier. But they did not receive it because they were not legible to NACOSTI as a research body. "They couldn't figure out what we [SDI] was because we aren't a traditional research organization. They came even for a visit to our offices, but because they didn't see a traditional lab, they did not certify us as a research organization. They didn't understand the advocacy angle of it. So, for now, we just apply for an IRB for each project on a project-by-project basis." This is also what private research companies in Nairobi do since Kenyan universities are the only ones officially recognized by NACOSTI as research-conducting organizations in the country.

Why Kenya?

In an interview with Caydin, then Vice-President of Research at Akamai Lab, I asked explicitly what the significance of being in Kenya was for the organization. His answer was that it was important for the research to actually be done on the poor rather than just setting up

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[35] Find the NACOSTI website here: https://www.nacosti.go.ke/mandate-functions/. Last accessed August 23, 2021.

[36] Pseudonyms for research organizations that I studied with. I will describe these organizations in more depth in subsequent chapters.

hypothetical scenarios where rich people speculated as if they were poor. Sidestepping the question of why the particularity of Kenya, his answer could have been about any other place in the global South. The question remained unanswered: but why Kenya?

To be fair, this is not necessarily an easy question to quickly answer. For many who move to live in the capital city of Nairobi, Kenya, the location is significant but not in conscious or explicitly articulated ways. In my informal conversations and observations, I have found that non-Kenyans and their offices are often headquartered in Nairobi because of:

a highly educated population of English speakers
a beautiful, comfortable climate
ability to lead a privileged life (for low-cost relative to other parts of the world) including expat comforts like coffee shops; diverse food eateries; malls; comfortable housing; lush green colonial era housing compounds; international schools for their children
political stability and peace
strong road, utility, internet infrastructure
international airport hub
experiences available by being in an "exotic" "global South" location

Of course, such reasons are not sound justification in a research proposal or concept note. Rationale and justification given in concept notes and grant proposals instead often cite the incredible flurry of activities related to mobile-based innovation and technologies to address poverty-related challenges. "Inclusive finance," "agricultural innovation," and "capacity building and improved education" are just some of the buzz words that continue to hold currency in Kenya's developmentalist research ecosystem. Many of these proposals are strengthened when the research organization or individual is located in Kenya itself. A local researcher! This is a breath of fresh air in stark contrast to the droves of "fly-in/fly-out" researchers that migrate to the

country every Euro-American summer (Kenya's winter) or the diaspora who flock to enjoy the city's warm sun in December.

But working towards decolonial knowledge practices needs more than just being physically located in a place. Reaching for postcolonial objectivity, I have learned, needs an understanding of the specific histories that have shaped the pursuit of scholarly knowledge in and on a community and place. Without understanding these histories, it is difficult to identify where deeply entrenched habits and expectations come from and our tactics towards decolonial knowledge too may be shallow and tokenizing.

In this chapter, I respond to the question of how history haunts the conduct of contemporary research in and on Kenya. I examine several historical convergences that illustrate the particular ways that the British colonial legacy, post-war investments in Development, and Cold War investments in area studies in Kenya continue to have effects on knowledge production today. However, in paying attention to the historical structures that have led to the contemporary, I do not wish to come across as framing a kind of agency-less historical subject. My focus on historical structures in this chapter is aligned with what Ugandan historian Mahmood Mamdani has stated as a central concern in his own work: "When it comes to the dialectic of structure and agency … if our agency is structured and blunted by history, is it possible for us as historical subjects to recoup agency through an understanding of the nature of these structural constraints so we may reshape that very structure and rethink and remake the future?" (Mamdani 2021, 2). This chapter is part of my own ongoing attempt to understand how the historical processes of imperialization, Development, colonization, and the Cold War have become mutually entangled structures, which have shaped and conditioned intellectual knowledge production in Kenya.

The Colonial Project

In "The History of Kenya Agriculture," Cone and Lipscomb (1972) explain what attracted settlers to Kenya: "Many of the Europeans who had visited Kenya, including travellers, missionaries, and others, had been impressed by the good soil, adequate rainfall and healthy climate, and most important for settlement, the apparent amount of unoccupied land… Also new areas for raw materials and markets for British industries might be established," (1972, 55–56).

This gives a sense of the mindset of the settler colonialists who built the city of Nairobi on what Maasai people called *Enkare Nyirobi*, which translates to "the place of cool waters." A phrase in the above quote— "apparent amount of unoccupied land"—highlights a key part of colonialism, that is, settler access to land for settler goals. Building on work in Indigenous and Black Studies, I understand colonialism not (only) as a period of time, but as "a set of specific, structured, interlocking, and overlapping relations" to land and people that treat it / them as a usable resource that produces value for settler and colonizer goals and "that allow certain events [and things] to occur, make sense, and even seem right (to some)," (Liboiron 2021, 16). In other words, colonialism is not an event, a structure, or an intent. It is, according to Tiffany Lethabo King, "a milieu or active set of relations that we can push on, move around in, and redo from moment to moment," (2019, 40).

Understanding colonialism in this way, postcolonial objectivity then is not just about objectivity in postcolonial contexts but also about the kinds of relations and world view through which such objectivity is achieved. "Postcolonialism" is not just the historical period after colonialism but also an analytical and methodological location. "Postcolonial" situates my work within the rich body of scholarship that has developed out of parts of Africa and Latin

America,[37] to understand the experiences of living under and struggling against colonialism. Here I am referring to the rich body of work by African scholars who have looked at the legacy of late colonialism and how it has lived on in postcolonial Africa long after the dismantlement of the physical empire (Mamdani 1996; Mbembe 2001; Mama 2002; Imam et al. 1997; Oyěwùmí 2011). Postcolonialism here may also include (but does not seek to subsume or flatten) diverse work on decolonization[38] and anti-colonization.[39]

The city of Nairobi, Kenya's contemporary capital, was a colonial project.[40] Located on swampy wetlands used by Maasai, Akamba, and Kikuyu people, today's bustling city was originally a railway depot established as the British colonial railway project expanded inland from the coastal town of Mombasa (Anyamba 2011). As British imperialism established in the region, the depot expanded and by 1905, it was the capital of British East Africa. That is not to say this was the first time Kenya hosted foreigners. The first foreigners to visit East Africa had come almost 400 years earlier when Vasco da Gama and his crew, including Roman Catholic missionaries, arrived in Mombasa in 1498 (Olinga 2017). For this genealogy of scientific

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[37] Parallel discussions are also ongoing in parts of Asia, spurred by Chen Kuan-Hsing's influential notion of "Asia as Method" (2010), which has inspired, for example, discussions about "Queer Asia as Method" (https://queerasia.com/qamethod2021/), "Asian Theatre as Method" (Ferrari 2017) and the newly established TransAsia STS Network (https://stsinfrastructures.org/content/transasiasts).

[38] Indigenous studies of "conquistador-settler colonialism" (King 2019) in the US and Canada have come out strongly in denouncing the appropriation of "decolonization" within the university where academics often "decolonize" an academic syllabus or panel while colonial land relations remain firmly in place. Those working within this thought community argue that "decolonization is not a metaphor" (Tuck and Yang 2012) and decolonization means "re-patriating land to sovereign Native tribes and nations, abolition of slavery in its contemporary forms, and the dismantling of the imperial metropole…" (2012, 31).

[39] See (Liboiron 2021, 26–27) for a helpful description of CLEAR as an anticolonial lab rather than a decolonial lab.

[40] The city of Nairobi from the beginning was an appropriation of land without consideration for local and indigenous land uses. For example, Anyamba (2011) explained the 1899 plan for the railway town of Nairobi only took into consideration European employees of the railway and European and Asian traders. The plan completely ignored the Asian and African railway workers.

research in the city, however, the establishment of British colonial systems marks an important start to what would support waves of interested investigators looking to answer scientific questions through study of the region's artifacts, people, and environment.

Colonial Research in Sub-Saharan Africa

The British settler colonialists considered provision of raw materials for their industries an important colonial issue. To enhance this role, improvement of agriculture in the colony was deemed necessary and so a scheme to settle ex-British soldiers who had participated in the Boer War (1898-1902) was established (Beye 2002). British agricultural research in Kenya was formalized in 1903 when the colonial government established the first experimental station at a government farm in Kabete, near Nairobi. This research station marked the beginning of what would be the establishment of additional research centers and field sites, especially focused on agriculture and health research.[41] In 1924, several individuals began working on a proposal to establish a government-sponsored Institute of Research in Kenya whose central purpose was to support efforts to develop the region economically (Tilley 2011). Historian Helen Tilley (2011, 230) wrote:

> …as a result of the political and economic attention Kenya attracted in the early 1920s, East Africa came to be conceived in the minds of humanitarian and imperial advocates alike as an ideal arena for social and scientific experiment. Kenya's problems, although atypical in several respects, were viewed as a stand-in for those of Britain's African empire as a whole. The pressing need, advocates argued, was to define and investigate these problems systematically.

Slightly tangentially, I want to insert a mention of religious missions in Kenya since Kenya has a long history as a host as mentioned earlier. Religious missions have had a long

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[41] Find more details on the establishment of other research stations in colonial Kenya in this Kenya case study within a 2002 FAO report: https://www.researchdatashare.org/content/excerpt-colonial-research-systems-kenya-fao-2002-report-impact-foreign-assistance. Additionally, Laura Mann and Gianluca Iazzolino (2021)'s work offers an insightful intellectual history of development policy to historicize contemporary tech-centered investments in Kenya's agricultural sector.

footprint in Kenya, including Catholics, Protestants, Methodists, and Mormons, as well as more recently para-church organizations such as World Vision. These missionaries gave colonialism a respectability it would likely not have attained otherwise (Nthamburi 1991). White Kenyans descended from colonial settlers also continue to play an influential role in the country. Co-founder of the iHub and son of American missionary linguists, Erik Hersman, who goes by the Twitter handle @WhiteAfrican is one notable example. Erik will re-emerge in the next chapter as a key figure in the making of Nairobi's "Silicon Savannah," a term he coined. An older example is Louis Leakey, born in 1903 in Kenya to missionary parents. Louis Leakey would go on to marry Mary Leakey and the two would become some of the most well-known researchers of human origins. They supported a subsequent generation of British scholars in Kenya and on the continent more widely, including Jane Goodall, Birute Galdikas Brindamour, and Dian Fossey (The Leakey Foundation 2018). The Leakeys were key figures in the institutionalization of archaeological research on Kenya and the wildlife and environmental conservation movement in the country.[42]

Eugenics: the scientific bulwark of Imperialism

A eugenics movement in Kenya flourished in the 1930s, led by a tight-knit group of settler doctors and scientists and supported by governors as well as district commissioners. In her work tracing the transportation and mutation of British eugenic thought as it moved through the imperial conceptual network, Chloe Campbell (2007) detailed how eugenics and imperialism were intimately connected. Campbell argued that eugenic theories from Kenya had, for a time, a wide base of support, including amongst those considered "pro-native" and progressive, because

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[42] A colonial white-savior complex remains in contemporary discourse about environmental and wildlife conservation in Africa. See this critique by Christine Mungai (2017).

of its promise of using scientific reason "to take the poison out of the debate on race" (2007, 6). Eugenicists in Kenya were mostly urban professionals and government officers eager to establish what they saw as an intellectual movement and tasked themselves with exploring the mental capacity of the East African, seeking explanations for African "backwardness" in innate, inherited differences in brain structure.

While race was not initially a primary concern for the Eugenics Society in Britain; in contrast, eugenics in Kenya was distinct for its deep belief in racial differences in mentality. Strong social consensus amongst the white settler population on the question of race and racial difference meant that the agenda of the eugenics movement in the colony was uncontroversial. The underlying shared settler consensus about the reality of African backwardness as a colonial problem made the intellectual project of eugenics in Kenya possible. This was a moment in Kenyan history where settler ideas about African "backwardness" merged with growing belief in the objectivity and progressiveness of science. The result was a project framed in the language of science, that could include both those who pursued progressive rationalism as well as those motivated by fundamental racial hostility (Campbell 2007).

Although there were no radical changes to settler attitudes to race, by the late 1930s, the Kenyan eugenics movement was swiftly displaced. This was in large part because European eugenicists in Kenya were dependent on funding from the British government and scientific racism was increasingly being undermined in the metropole for political and intellectual grounds. Thus, at the end of 1934, the British government rejected a proposed research group in Kenya to expand studies over the question of East African brains. Colonial Kenya's dire financial situation at the time meant that without metropolitan backing, the ideas of the eugenicists in Kenya could not be transformed into a major research program. Following World War II, racial difference as

discussed in the 1930s became framed in cultural and religious rather than biological terms (Campbell 2007).

Nonetheless, while the eugenicist research institute was never realized, it helped catalyze a set of other projects such as a trial project in Kenya, sponsored by the Carnegie Corporation, to experiment with mental testing as an aid in selecting individuals for higher education and government service in Africa (Tilley 2011). Understanding this brief period in the 1930s of the new scientific project of eugenics in Kenya is important to reveal the kinds of scientific questions that were first undertaken on Kenyan soil. These are the troubled grounds on which scientific research in Nairobi began.

Science for Development and Development of Science

Helen Tilley (2011) has detailed the history of the African Research Survey, which she argued was the most important intelligence-gathering project of the interwar period and the roots of the ways in which science and development became so intertwined in British Africa. According to Tilley, the African Survey led to the passage of the 1940 Colonial Development and Welfare Act that shifted British policy away from expectations that each colony was to generate its own revenue and stressed the role of research and scientific expertise as necessary components of any development plan. Tilley wrote: "The African Survey, in this sense, played a central role in consolidating British Africa's status as a development laboratory," (2011, 73).

Historians of Africa and development have argued that following World War II,[43] knowledge and expertise became prime vehicles through which colonial power was exercised. The international discourse of development in the 1950s pitched itself as a depoliticized process,

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[43] Many Kenyan colonial subjects were forced to fight in the war and returned to Kenya disenchanted. This disenchantment eventually led to the emergence of radical nationalism in the form of the Kenya Land and Freedom Army ("Mau Mau"), which formed in 1948 (Gikandi and Mwangi 2007, xv; Durrani 2006, 99).

the job of professional experts and bureaucrats. It supposedly had no politics and belonged to the realm of reason (Escobar 2001; Ferguson 1990). Around this time, discourse about development moved away from state agencies and governments and to the universities and specialized research institutes who became the sources of "objective" development discourse.

So while the project of Development was originally initiated with the British Development Act in 1929, the discourse of development was bolstered in the decades that followed the collapse of the British empire, with Development aid remaining a way for the former colonial power to keep connections to newly independent nations (Cooper and Packard 1997). I want to mention that despite wide critiques about the industry, from Kenyans and non-Kenyans alike, the industry is still heavily rooted in the country. Most Development aid programs maintain their in-country office with Nairobi serving strategically not only because of the already established expatriate infrastructure mentioned earlier, but also due to Kenya's strategic military location south of Sudan and Somalia.[44]

African Resistance and Liberation Ethic

In a chapter describing various histories of science in Kenya, there is a key strand of work that needs to be mentioned, that is of an African intellectual culture that emerged out of the politics of liberation in the 1960s. As Amina Mama has explained, the early to mid-twentieth century saw little separation between politics and intellectualism. The first generation of Africa's modern intellectuals were all involved in the anticolonial and nationalist movements. Mama names for example men like George Padmore, Kwame Nkurumah, Julius Nyerere, Nnamdi

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[44] See work on the merging of Development and security (Duffield 2001) and the so-called "War on Terror" in Kenya by scholars like Samar Al-Bulushi (2021).

Azikiwe, and Obafemi Awolowo, and then later the work of Eduardo Mondlane, Mario Andrade, Amilcar Cabral, and diaspora scholars Frantz Fanon and Walter Rodney (2007). In Kenya, these foremothers and fathers also include Dedan and Mukami Kimathi, Micere Githae Mugo, Ngũgĩ wa Thiong'o, Wangui wa Goro, Maina wa Kinyatti, Mukaru Ng'ang'a, Bethwell Allan Ogot, and Willy Mutunga. These scholars were in conversation with others around the continent and in the diaspora like Joseph Ki-Zerbo, Djibril Tamsir Niane, Jacob Ajayi, Adu Boahen, and Ali Mazrui who played an important role in addressing the wider ignorance about African history, in particular through the UNESCO's General History of Africa, launched in 1964 (UNESCO 2019).

Mama notes that "[t]he activist scholarship of such thinkers did not conform to the notions of impartiality or scientific neutrality, or to the disciplinary organization of knowledge that was at that time being introduced in the new universities," (Mama 2007, 9). The concept of postcolonial objectivity then recalls this genealogy of activist scholarship that did not strive for "scientific objectivity" but rather science for liberation. As I will describe in chapter four, these are some of the African intellectuals today being read by small informal groups hosted by socialist libraries and Pan-Africanist students in Nairobi.

A Cold War legacy: the birth of African Studies

There is a grim period in the 1980s when many Kenyan radical thinkers were jailed without trial and/or exiled. This was especially true following a 1982 coup attempt on then President Moi, which will be discussed further in chapter four. For now, I move to the ways the Cold War re-invigorated the Development project, this time led by Americans who worried that if poverty was not ended in Asia and Africa, people would move toward communism. An overall push for creating area studies within universities was a product of this post-WWII order couched

in the Cold War conflict and U.S. interests in learning about "other" areas. As African historian and philosopher Paul Tiyambe Zeleza put it, two versions of African studies emerged in the American academy after WWII: a Euro-American African Studies, and an older tradition of "Afro-American African Studies" (2006, 7). Zeleza explains the triumph of the "Euro-American African Studies" not because of its superior intellectual products but "because of the greater support it received from the federal government as part of National Defense Act of 1958 that launched funding for area studies programs at American universities," (2006, 7).

Other historians have noted how the rapid expansion of scholarly social research during this Cold War period was intimately tied to relations with extra-university funding sources. Describing what he calls the "the politics-patronage-social science nexus," Mark Solovey (2015) for example, lists federal patrons like the US military, propaganda, and intelligence agencies; civilian science agencies such as the National Science Foundation;[45] and the large private foundations created with the fortunes of Carnegie, Rockefeller, and Ford.

There has been growing internal criticism and self-reflection, especially within some of the institutions established during Cold War-era investment in knowledge of the "Other." The field of (Euro-American) African Studies[46] has grappled with the continuation of colonial and postcolonial divisions of research labor and expertise that fall along familiar geopolitical lines (Nolte 2019). For example, despite critiques of global North dominance in the study of Africa, centers of study of Africa continue to be established outside of the continent such as the Centre

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[45] See also Solovey's more recent work (2020) focused on the history of inclusion of the social sciences in the National Science Foundation's funding mandates.

[46] The "Euro-American" qualifier is my addition and usually left unmarked. The scholarly society based in the United States, established in 1957, is simply called the "African Studies Association" (https://africanstudies.org/). The ASA annual meeting has nearly always taken place in the United States, and it primarily serves Americans and Canadians academics studying Africa. In contrast, the African Studies Association of Africa (https://www.as-aa.org/index.php/about-asaa), established in 2013 and headquartered in Ghana, (has to) mark its location due to the already established reputation of the ASA.

for Public Authority and International Development (CPAID) established in 2017 at the LSE Firoz Lalji Centre for Africa, funded by a £5 million, five-year grant from the Economic and Social Research Council. While CPAID works with local researchers, critiques have noted that funders continue to invest in centers of knowledge about Africa hosted outside of Africa, rather than primarily support institutions and scholarly infrastructures based on the continent and focused on African audiences. In a blog post, political scientist Rachel Strohm asked: "Why are Northern academics so good at studying inequality and uneven post-colonial power dynamics in the South, and so bad at recognizing their own role in perpetuating inequality within the international scholarly community?" She concluded: "We must be missing so many interesting voices, so many valuable contributions to knowledge, because we're systematically underinvesting in African academics. Spending £5 million to set up a research centre in the UK rather than somewhere like Accra or Nairobi (or Tamale or Eldoret or Kisangani) only perpetuates the problem," (Strohm 2017).

Responses to Strohm's post highlighted that initiatives attempting to rectify such inequalities in investments in African research already exist. Edwin Adjei mentioned the long-standing work of the Council for the Development of Social Science Research in Africa (CODESRIA) since its founding in 1973 towards remedying the unequal circulation of African scholarship, as well as more recent work from the African Studies Association of Africa (ASAA), an Africa-based association which promotes Africa's specific contributions to knowledge about the peoples and cultures of Africa and the Diaspora. But as a recent special issue of the *Journal of African Cultural Studies* on "ethical collaboration" between global North and global South researchers highlighted, contributors across different locations on the African continent made clear that the keywords "ethical" and "collaboration" continue to be "hot spots of

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contestation, disillusionment, and complaint," (Coetzee 2019, 258). The collection as well as a rich body of work in medical anthropology,[47] have intervened in any kind of "checkbox" approach to collaboration or ethics, highlighting a need to reckon with the structural ways that white privilege and hyper-mobility make certain researchers able to continue to retain their place as experts on Africa. This is of course entangled with continued questions of who financially supports who to do research in and on Africa.

I turn now to a specific example of what I mention often throughout this dissertation, "extroverted science" (1990) in Paulin Hountondji's sense of the term. I observe how this kind of extroversion is reproduced through Euro-American funding regimes, imperialist logics, and assumptions about capacity and expertise, especially technical.

A Soured Partnership: Syracuse University and the Kenya National Archives

In 1962, a year before Kenya's independence, Syracuse University located in upstate New York (U.S.A.) inaugurated their Eastern African Studies Program.[48] Two years later, the program head proposed to partner with the newly independent Government of Kenya on a microfilming project with a grant from the American National Science Foundation (NSF). Historian Robert Gregory,[49] who would later join the project, wrote up a detailed history of the

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[47] Studies of American global health science and its often-intertwined relationship with international development have shed light on how incentive structures and processes structure the terms of transnational collaboration and research engagement. See for example Kris Peterson and Morenike O. Folayan's analyses of the tenofovir PrEP trial controversy in Nigeria (2015; 2017; 2019; 2020) where they point out that concerns over science rationales and assumptions were never addressed and should be treated as ethical concerns deliberated at host sites before medical trial protocols are finalized. Adia Benton's analyses of racialization within humanitarian institutions working in Africa also reveal how institutions embody and reproduce inequalities (2016).

[48] This was a Cold War program in the spirit of the Southeast Asia studies programs run out of Yale and Cornell in the 1950s and 1960s through which, for example, Clifford Geertz's first forays into Indonesia were funded (by the US State Department). Thank you to Sylvia Nam for sharing this comparative insight during an early review of some of this writing.

[49] Robert G. Gregory (1924-2014) was a professor of history in the Maxwell School at Syracuse University from 1966 to 1995. He was the creator of the Kenya National Archives at Syracuse University, an extensive microfilm collection of documents and records pertaining to the British colonial government in Kenya.

partnership and the public interest that accompanied the establishment of the Syracuse University Program of Eastern African Studies (Gregory 1984). This program was part of the growth of African Studies in America that, as later scholarship by Christopher Simpson (1998), Mark Solovey (2015), Joy Rohde (2013) and others would establish, was part of Cold War politics.

In his article penned in 1984, Gregory explained that financial support for the Syracuse program and its many projects came from a variety of sources including the Ford Foundation; the U.S. Agency for International Development; the U.S. Office of Education; the New York State Department of Education; and the National Science Foundation. This list of funders gives a sense of the many public and philanthropic agencies involved in establishing African Studies within an American university.

After being established on the eve of national independence in 1963 and formalized through an Act of Parliament in 1965, the National Archives in Kenya (KNA) were just coming into their own as well, albeit without such substantive funding support. The holdings of KNA include documents generated from the 60-70 years of Kenya's colonial administration and government documents and research generated in the postcolonial period (although archival materials are only made public after 30 years have passed). The Kenya National Archive would later become one of the few on the continent that would successfully migrate its archives back from Britain in the 1970s.[50] The Archive's ebbs and flows are well documented by scholars like Nathan Mnjama (2003) and Musila Musembi (1986).[51]

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[50] Find an annotation of Nathan Mnjama (2003)'s article related to why Kenya embarked on retrieving its archives at https://stsinfrastructures.org/content/ao-successful-migrated-archives-retrieval-programme (Okune 2019d).

[51] You can also see many of these materials and scholarship about the archive assembled into a digital exhibit I and Trevas Matathia made here: Okune, Angela and Trevas Matathia. 2019. "The Kenya National Archives." In Scholarly Memory in Nairobi, Kenya: Care for Sites and Sources, created by Angela Okune, Trevas

But in the 1960s when Syracuse was pursuing the microfilm collection of documents and records pertaining to the British colonial government in Kenya, the National Archives was just beginning to get organized. Only a few years prior to the partnership, in September 1961, the East African Standard newspaper had reported that many classified documents, including reports compiled during the "Mau Mau emergency" period (when the colonial administration established internal detention work camps[52] around the country) were already burnt by the colonial government because they contained valuable, sensitive information which the colonial administration did not wish to hand over to the African government (Musembi 1986). So, according to Musila Musembi, the chief archivist and then Director at Kenya National Archives (KNA) from 1984 to 2004, the first National Government archivist, a Briton by the name of Derek Charman was therefore trying to quickly develop an effective archives service. But in his haste, Musembi critiqued Charman for entering into a partnership with Syracuse University that led to what Musembi labeled "a great disservice … to Kenya," (1986, 219). Musembi and other Kenyan archivists have argued that the partnership was unequal and that the benefits of the program to the Archives were "completely false," (1986, 219).

In his article penned two years before Musembi's written critique, Gregory adamantly attested throughout his essay that the partnership benefited both parties, making sure to include in detail the technical assets left to the Kenya National Archives as part of the NSF grant ("a Kodak 35 millimeter microfilming camera, a film processor, and a new Ford station wagon") and the terms of the cooperative agreement ("In accordance with the arrangements, the Archives

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Matathia and Syokau Mutonga. In Innovating STS Digital Exhibit, curated by Aalok Khandekar and Kim Fortun. Society for Social Studies of Science. August. https://stsinfrastructures.org/content/kenya-national-archives/essay

[52] The Museum of British Colonialism has a rich repository of information about the camps erected during the "emergency" period in the 1950s as well as oral histories from those who experienced the camps. Find it here: https://www.museumofbritishcolonialism.org/emergencyexhibition.

would retain not only all the documents, but also the master negatives for all film produced. Syracuse, as its quid pro quo, was to obtain a duplicate negative from which it could produce a positive copy for research purposes at Syracuse") (Gregory 1984, 36–37). The detailed account appears in part to be a response to an already steady flow of critique raised by both American scholars of Africa in America and African scholars in Africa which Gregory mentioned himself in the article:

> Some of the Kenya faculty [at the University of Nairobi] believed that a country's archival records were a natural resource like gold or silver and that a country was weakened to the degree that it lost control of its archives. Syracuse, they charged, was guilty of a neocolonialist exploitation. Other Kenya faculty members, who valued free access to records by the international community of scholars, were disturbed by the fact that whereas Kenya, like Britain and many other countries, prohibited access to records that were not more than thirty years old, Syracuse was imposing no restrictions. (Gregory 1984, 38)

Despite the wide critique, Gregory (1984) boasted that this initiative was exemplary in its focus on Eastern Africa: "Although it had not received the attention of other parts of the continent," Gregory wrote, "eastern Africa was a fertile subject for study," (1984, 30) and "[t]o scholars interested in Africa or development in the Third World generally, the collection was invaluable," (1984, 37). Gregory repeatedly justified the project in terms of its value to international scholarship. "Those involved in the projects like to think that the microfilming work and the microfilms themselves have promoted, and will continue to promote, international scholarship as well as much needed international understanding, especially between the African countries and the United States," (Gregory 1984, 37). Gregory explained how this project was, by design, not meant to be extractive since the original copy was to remain in country.[53] He did

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[53] "Implicit in the agreement was the idea that a duplicate negative at Syracuse would be a safeguard to Kenya against the destruction of the master negative by some disaster. At a time when many valuable records were being taken secretly from Kenya to build the Africana collections of European and American libraries, the project had a special appeal in that it was designed to collect, preserve, and duplicate Kenya's records rather than remove them," (Gregory 1984, 36–37).

not know it at the time, but Kenya's original microfilms would eventually, for reasons I cannot trace, be no longer.[54] Thus, the fact that Syracuse University today appears to be the only organization retaining the microfilm collection[55] has the appearance of being precisely a case of, as Gregory described in his 1984 article, an extraction of the records from the country.[56] Even if none of the partners had any intent to "steal things," ultimately that is how many Kenyans feel about it. No matter what the original intentions, today, the controversial KNA - Syracuse University collaboration, whose story is mostly discussed amongst archivists and historians informally by word of mouth, appears like another example of an extractive project undergirded by logics of preservation (for whom the experts reside outside of Africa). Even beyond the problematic optics, this case should be read more as a warning of what can happen when external partners are tasked with a country's memory.

Poverty Knowledge and the Poor as Business Opportunities

The cooperative ventures between American state/federal research and corporate philanthropy so clearly illustrated in the example of investments in the establishment of Syracuse University's East Africa Program have made possible what American historian Alice O'Conner

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[54] Despite attempts, I have been unable to find out what happened to them.

[55] See the live site here (https://surface.syr.edu/archiveguidekenya/) which states on the homepage: "This work is the property of Syracuse University. It may be used freely by individuals for research, teaching and personal use as long as this statement of availability is included in the text."

[56] Under a sub-header stating, "A Critique of Syracuse University's Acquisition of the Kenya National Archives," the Syracuse University research guide site (https://researchguides.library.syr.edu/kenyanarch/history), offers a link to Musembi's article. However, it is—either intentionally or unintentionally—extremely hard to then access an actual full copy to read through the site. Interested public can access a preview here (https://stsinfrastructures.org/content/musembi-musila-1986-%E2%80%9Carchives-development-kenya%E2%80%9D-information-development-2-4-218%E2%80%9322) but the entire article is unfortunately behind a paywall with SAGE Publications.

(2002) has called "poverty knowledge." Her work has detailed how up until the 1980s, there was a steady expansion of the American state in the production of social scientific knowledge, and simultaneously a tendency to embrace the values of the private market in the organization and production of knowledge. With the devolution of federal welfare responsibility since the 1980s, she noted that the competitive pulse of American poverty knowledge thinktanks and entrepreneurial research groups has sped up. Rather than being a guarantee of independent thought, such entrepreneurial research has tied poverty knowledge more closely to a contract market defined by agency needs and to a narrowly construed policy agenda.

O'Conner's description of a growing contract-driven research culture in the US resonates with the way that research in Kenya over the last 30 years has also shifted. In the remaining space, I touch briefly on more recent ways that Development research, previously critiqued as being top-down and hegemonic, shifted to assigning agency to the previously figured supposedly "helpless poor" by transforming them into agential consumers. As the private sector and public sector increasingly collaborated on Development schemes, research—funded by both sectors— also helped to revitalize the Development agenda. Postcolonial scholar Ananya Roy has described how at the start of the new millennium, a concern for poverty shaped not only social life but also a remaking of the global economy. She calls attention to the renewal of the Development project through "reconstruction, humanitarianism, and bottom billion capitalism" (2012, 105). Her mention of "bottom billon capitalism" is a nod to the title of the influential book, "Fortune at the Bottom of the Pyramid" (2005) by C.K. Prahalad, which had great circulatory power amongst International Development funders, policy makers and corporate actors. In it, Prahalad laid out how new business models targeted at providing goods and services to the poorest people in the world ("the bottom billion") could be a win-win situation: meeting

the material needs of the poor while also growing new markets and entrepreneurism. This framing helped construct and turn global poverty into a frontier of new profit and accumulation (Roy 2012).

If the 2010s had the Development sector and researchers debating and experimenting with "bottom billion capitalism," the debates of 2020s have been over technoscientific "rentier capitalism" (Birch 2020) where income is derived from control of scarce assets, including interest, fees, and licensing (Christophers 2020). A recent explosion of mobile phone-based applications lending in Kenya, for example, uses digital phone data to create credit scores for millions of low-income borrowers. Proponents of such so-called "financial inclusion," located in technophilanthropy as well as private sector, extend the bottom billion argument from a decade prior, arguing that such an industry reflects the possibility of using private business for public good, allowing poor who previously could not access capital because they were considered too risky or unprofitable to now have access to capital to improve their lives. Critics push back against these systems arguing that although they are marketed (and supported by donor funding) as so-called financial "empowerment," they are in fact based on the "profitability of perpetual debt," (Donovan and Park 2019). Thus, mobile-phone-based "Development" activities in Kenya and the research evaluating them shift and change but continue to thrive.

The "Credibility Revolution:" randomized control trials and experimental methods

In step with a turn to innovation and entrepreneurship for and by the poor, the aid sector around the start of the new millennium also began relying more heavily on the language of science as justification. With critiques of top-down, politically motivated Development ramping

up in the 1990s, neutral and objective studies of the impacts of aid projects grew increasingly important to bolster belief in the continued power and need for Development. To answer the politicized questions of what worked and what didn't work, national governments and international aid turned to the (objective) scientists of poverty, who carefully located themselves as distinct from (subjective) practitioners.

According to the website of one of the leading scientists of poverty, which I discuss in much more depth in chapter five: "If we want to know how effective a program is, we need to have a comparison group. Without a comparison, we are limited in our ability to know what would have happened without the program. And the only way of having an equitable comparison group is with random assignment," (Innovations of Poverty Action 2015). Proponents of randomized controlled trials in development evaluation, which begin in the 1990s, align themselves with medical laboratory sciences, explaining that they use the "same methods frequently used in high quality medical research." Their procedural objectivity (Galison 2000) is said to remove subjective bias and errant results. Pioneers of the methodology of Randomized Controlled Trials (RCTs) in development economics, MIT economists Abhijit Banerjee and Esther Duflo and Harvard economist Michael Kremer frame experimentation as the authoritative means of understanding what works to reduce global poverty. This economic evaluation of poverty continues to hold power and as I discuss in chapter five, their flexibility has now led them to begin to explore more qualitative methods.

Technology Research

A recent news article titled: "How Google quietly funds Europe's leading tech policy institutes" discussed how the search giant has provided tens of millions of pounds of funding to

academics investigating issues closely related to its business model (Clarke, Williams, and

Swindells 2021). Although the funding usually comes with guarantees of academic

independence, the article flags the ethical quandary where the subject of research is also often the

primary funder of it. If you track funding related to research on technology in Kenya, similarly, it

is often traced back to an American technology company, or a technophilanthropist. In my

interview with a tenured American academic, he recounted his funding sources as largely being

the National Science Foundation, Google, and Facebook. "And these come in as gifts to the

university," he explained, referring to the money from the technology companies. He compared

these research "gifts" to grants:

> Grants have more… you have to… send a report to the NSF documenting how you spent
> all your money. With gifts, it's sort of like, you can do whatever you want, well, within…
> you can't buy alcohol… [laughs]. There's a little more flexibility and wiggle room. …
>
> The gift is awarded to the individual…but it comes through the university [for tax
> purposes]. And there is no overhead with gifts. You know, if you get a grant from the
> NSF, roughly half of it goes to the university. But gifts don't typically pay overhead so
> you just get that lump sum to do whatever you want to do with it.

He critiqued the need to constantly be framing his work within a developmentalist frame

for grant funding: "There's always an amount of spinning, particularly to places like USAID

which I always find challenging. My work is deeply qualitative, and I am not interested in

measuring things [laughs]…I'm not especially good at evaluation and I'm not interested in

scalability, and I'm not interested in all the things they are interested in." So hence, an untethered

"gift" from a tech company is viewed positively. But as recent scandals in tech research have

also highlighted, who funds the research heavily influences what research is allowable.

Timnit Gebru, an Eritrean American computer scientist who worked as an AI ethics

researcher at Google was fired in early 2021 for an academic paper that surveyed the known

pitfalls of a type of AI software that Google's own version of the technology was using for its

search engine. Although Google's head of research had encouraged Gebru to think about the approach's possible downsides and the paper had sailed through the company's internal review, a group of product leaders inside the company had later deemed the work unacceptable, and demanded she retract it. There are many details to the story. But at the end of it all, Gebru's experience points to obvious limitations to the kind of research work possible under existing tech research funding regimes. A recent WIRED article ends by quoting Gebru as saying she's raising money to launch an independent research institute: "We need more support for external work so that the choice is not: 'Do I get paid by the DOD [Department of Defense] or by Google?'" (Simonite 2021a).[57]

There is no comprehensive dataset that I have been able to locate that reveals all the funding and funders that have channeled money towards research in Kenya. Nonetheless, as I hope has been made obvious, over the last 100 years since Kenya was made a Crown colony in 1920, huge sums of money have flowed to various groups, largely led by non-Kenyans, to study Kenyans and report back to the metropoles they come from, whether London, Paris, Rome, Washington, DC, or San Francisco.[58] In this chapter, I sought to provide groundwork for understanding how imperial forces since the early 1900s have influenced and shaped production of scientific knowledge in Kenya. The next chapter picks up from here to describe the recent past of Kenya's tech research and the pursuit to understand and innovate for greater uptake of technology in Kenya.

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[57] On December 2, 2021, the day before this dissertation was submitted, Dr. Gebru launched the Distributed Artificial Intelligence Research (DAIR) institute (Simonite 2021b).

[58] And nowadays, also Tokyo, Seoul, and Beijing.

Chapter 2

Becoming Silicon Savannah:
The Production of an Investable Techpreneur

By: Angela Okune and Leonida Mutuku

Introduction

The electricity and lights went out just as the final 2008 Kenyan election results were about to come in. It was already getting dark outside, and you could hear people beginning to celebrate, with the opposition candidate, Raila Odinga, in the lead and only a few thousand votes left to tally. But when the power returned, the news cut to the incumbent, Mwai Kibaki, about to be sworn in for his second term. What had just happened? The country quickly descended into chaos as what was seen as an illegitimate election outcome was widely contested in the streets. Unprecedented country-wide violence would eventually take 1,500 lives.

The mainstream media did not cover much of the violence taking place around the city and so to fill this gap in reporting, a handful of 20- and 30-something year old computer scientists and bloggers, both in country and in the diaspora, responded with a crowdsourcing application. Ushahidi, Swahili for "testimony," was developed by this ad hoc group of techies who built a quick prototype application that allowed people to send in reports of violence and other news in Kenya as the post-election violence unfolded. As the story goes, the techies realized that there were much wider use cases for this technology and set up a social enterprise in 2008 to provide crowdsourcing technologies ("helping people raise their voice and those who serve them to listen and respond better"). This was quickly picked up by donors and became one of Kenya's most well-known technology success stories.

By 2010, Ushahidi needed a workspace for their growing team, and with the support of Omidyar Network and Hivos, Ushahidi founders established the first co-working tech space in the country, the iHub. It quickly became the unofficial "Kenyan tech headquarters," an informal space with open seating for technologists, entrepreneurs, venture capitalists, and researchers to come network, collaborate and work on new ideas. We (Leo Mutuku and Angela Okune), joined in 2010 as one of the first handful of iHub staff, hired to establish a research arm that would conduct qualitative and quantitative studies to better understand technology uptake in the region.

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As founding members of iHub Research, the research department of Nairobi's flagship co-working technology space, where we both worked from 2010 - 2015, we were structurally positioned to see the emergence and production of "Silicon Savannah," the moniker used by many to describe Nairobi's start-up technology sector. Our position as researchers and iHub staff led us to experience both researching and being researched.

In December 2007, Kenyans took to the polls to vote in what felt like the first time in national history that the citizen vote mattered. This was the fourth multi-party election to be held in the country; the first, in December 1992, resulted in the second President of Kenya, Daniel Arap Moi (1924-2020) being re-elected with a large majority. The next elections in 1997 were the same. Constitutionally barred from seeking a third term, on a momentous day in 2002, the country watched with bated breath as the authoritarian ruler of twenty-four years peacefully handed over to an economist trained at the London School of Economics, Mwai Kibaki. The roots of Kenyan democratic rule seemed to be deepening. In 2007, an unprecedented number, over 14 million Kenyan voters were registered. The early polling results showed that opposition leader, Raila Odinga would become the new president. But following a hasty, evening swearing-in of Mwai Kibaki for his second term, calls of election fraud quickly grew and violence exploded in many parts of the country. Over a two-month period, targeted violence led to the death of over 1,500 people (Koinange 2019).

Much ink has been spilled by academics, NGOs, and humanitarians on Kenya's post-election violence, most trying to understand what went wrong. Up to that point, Kenya had been widely perceived as East Africa's most stable, democratic center. Post-Election Violence, or PEV as commonly referred to in Kenya, was interpreted as illustrating the "problem of African tribalism." The 2007-08 Election Crisis officially ended on February 28, 2008, when Kibaki and Odinga signed a power-sharing agreement and created a coalition government. However, the reverberating effects of PEV have haunted Kenyan politics and society for now over a decade. PEV became justification for an influx of development projects to "strengthen Kenyan democracy" including supporting various e-government services.

In the months leading up to the 2012 elections, international worry about a repeat of PEV led to another surge in international humanitarian aid, with various development tech projects funded in donor attempts to stymie potential violence. Although the 2012 elections were luckily not marked by any significant violence, some argue it was at the cost of open public debate and discourse (Gathara 2013). Others within the tech community critiqued the redundancy and lack of coordination of various crisis mapping initiatives (Iacucci 2013), and this post 2012 period, loosely marked the beginning of internal questioning and critiques of and by the start-up tech sector in Nairobi. Was it over-hyped? Bad business? How much "social good" was it really doing anyway?

In this chapter, we chart the emergence of an idealized figure that shadows Kenya's contemporary research ecosystem, the Techpreneur. Through an analysis of the production of an investable Black "Techpreneur" in Kenya, we demonstrate how imperial logics and structures continue to underpin apparently independent initiative, pointing to the limits of thinking in simple binary identity terms. Transnational geopolitics and capital heavily shape what happens within the bounds of the nation-state and the

"local" Kenyan tech scene in such a way that differentiating between the local and imperial seems a futile exercise. Attending instead to the nuanced ways that local histories and actors are entangled in wider transnational forces and "topographies of power" (Ferguson 2006), we see need for inventive, cosmopolitan constructs of Kenyan entrepreneurism. Postcolonial objectivity needs place-based strategies for tracing how the "local" is tied up with enduring imperial formations of neoliberal development.

In working on this chapter, we came to realize that much of what we describe here appear as structural holdovers from enduring imperial formations. As "polities of dislocation, processes of dispersion, appropriation, and displacement," McGranahan and Stoler (2007, 8) write that imperial formations are not steady states but states of becoming. Rather than clearly fixed and marked by firm boundaries, in McGranahan and Stoler's understanding, imperial formations are marked by "inequitable treatment, hierarchical relations, and unequal rule," (2007, 11). Thus, we find the conceptualization of imperial formations useful for understanding our experiences over five years of strategizing and developing iHub Research. We interweave our first-hand experiences with critical analysis of policy documents, research reports and funder narratives to offer an analysis of the figure of the African technology entrepreneur ("Techpreneur")[59] and its production in Nairobi. Bringing into greater focus this idealized figure that shadows the Kenyan research ecosystem is important to better understand the forces that might lead to the reproduction of existing structures and limit desired radical change.

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[59] At times throughout the text, we use both "Kenyan Techpreneur" when we believe it is something specific to the Kenyan tech ecosystem and "African Techpreneur" when we believe it is their Black "Africanness" that donors and others are interested in (as opposed to their being specifically Kenyan).

Building on a rich literature in development studies on expertise[60] and by critical

technology scholars on the entanglements between philanthropy, development, and

technoscience (Philip 2004; L. Irani 2019; Avle and Lindtner 2016), in what follows, we tie

particular political moments in Kenya's history, to articulations of entrepreneurship and business

more broadly. First, we note how Kenyan business entrepreneurship emerged in step with post-

colonial activist resistance. Then, we track the emergence of a new figure of the Kenyan

Techpreneur during a moment of crisis within the 2008 post-election violence. With the advance

of multi-party democracy and the technology policymaking that follows, we observe how this

trope of the Techpreneur came to be latched onto by the state and development sector and has

gained its own circulatory power. Without purporting to present a comprehensive history of

technology or business in Kenya, instead, this historicizing is intended to attune interested

readers to visions or practices of alternatives to the seemingly inevitable logics of neoliberal

governmentality. In recent years, Kenyans figured as Techpreneurs have contested the narrow

construction of its parameters, which ironically appear to disproportionately benefit non-Africans

working in the Kenyan tech sector. We point out some ways that racial, ritualized inequities lurk

under seemingly standard government policies and funder relations before posing some

opportunities for future research.

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[60] Including for example Timothy Mitchell's (2002) work on the project of economic reform in Egypt and the ways in which economic discourse works to format and reproduce the exclusions that make the economy possible; Julia Elyachar's (2012) work studying the ways that the "bottom of the pyramid" poor are reconfigured as the next source of new profit-making opportunities for corporations; David Mosse (2011; 2005)'s ethnographic work looking at development aid policy, practice, and professionals; and Michael Goldman's (2006) work on the project of development as generated through the World Bank.

From Kenyan Freedom to Kenyan Entrepreneurship

We begin our discussion about technology entrepreneurship in Kenya with the newly postcolonial period where we note an entrepreneurial citizenship[61] that is tied to Kenya's independence movement. In one of the first monographs on the topic, Marris and Somerset (1972) drew on over 800 interviews conducted in 1966 and 1967 to argue that Kenya's entrepreneurial talent was essential to African development. Their work described how at independence, many African men shifted their patriotism towards entrepreneurship, eager to materially demonstrate the arrival of the African Entrepreneur on equal standing with European former colonial powers, for example by establishing a business until its headquarters stood on the same main street in Nairobi beside European companies. Notably, many of these early Kenyan entrepreneurs were also deeply involved in the Kenya Land and Freedom Army (KLFA)—popularly known as Mau Mau—Kenya's independence movement. Upon national independence in 1963, rather than pursuing careers in politics, they turned towards building the national economy which they viewed as a continuation of the nation-building project. According to Marris and Somerset (1972), these early Kenyan entrepreneurs framed their interest in pursuing entrepreneurial ventures in terms of freedom, the value of autonomy, and being independent. These entrepreneurs emphasized their contribution to national development, to

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[61] In Lily's Irani's ethnography of entrepreneurial citizenship in India, she points to its seductions, limits, and contradictions. "Entrepreneurial citizenship," she explained, "promises that citizens can construct markets, produce value and do nation building all at the same time," (2019, 3). However, as she learned in her study of technology designers and entrepreneurs, in fact only some projects and people are invested in and cultivated. "So who becomes an innovator and who becomes the innovator's other? … Who modernizes whom, and towards what horizon?" (2019, 3). Irani's notion of entrepreneurial citizenship gives us the language to talk about the ways that diverse and sometimes opposing actors in Nairobi tech nonetheless share a belief in entrepreneurial innovators as a vehicle for national growth and the promise of a better future for all. The way that entrepreneurial innovation becomes a shared interest across diverse actors echoes earlier work by historian of development, Frederick Cooper who pointed out that "unlike other justifications of empire, development came to have as strong an appeal to nationalist elites as to colonizers," (1997, 64).

modernization and the growth of knowledge, purposes that businesses could claim to share with political leaders, administrators, and the professional elite.[62]

Such early studies of entrepreneurial culture and "African business creed" highlight a Kenyan articulation to leverage entrepreneurship to overcome Africa's historically peripheral global position. This early research work suggests that today's Kenyan pursuits for national development through entrepreneurial projects go back at least fifty years. However, we note that the Kenyan entrepreneurial citizenship we are discussing today is of a different sort.[63] Rather than a revolutionary figure, turning to business for radical liberation, the growing entanglement with Silicon Valley's "venture philanthropy," have deconstructed the "freedom-fighter-turned-businessman," and reconstructed a patriotic African Techpreneur, a celebrated figure that can live well with global capital.

2008 Crisis Point

In the late 1980s and early 1990s, International Financial Institutions (IFIs) called for overhauling of state institutions in much of the global South to align with neoliberal ideas about how to create the necessary conditions for greater economic development. While these Structural Adjustment Programs (SAPs) would later be heavily critiqued by development scholars and practitioners and even the IFIs themselves, a close look at today's national Information

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[62] This project of Kenyan nationalist entrepreneurship should be contextualized within the broader development ideology of the 1950s/60s, which was centered on bourgeoisie working towards national development. For instance, in Latin America, leftist thinking as well as the UN-related Economic Commission for Latin American Development (ECLAC) relied on this idea as well. Thank you to Noela Invernizzi for sharing this point with us.

[63] We want to note that Kenyan tech entrepreneurs are a relatively small sub-set of a much larger and heterogenous population of Kenyan entrepreneurs, including the many that work in the informal economy. It is outside the scope of this chapter to discuss how notions of Kenyan entrepreneurial citizenship hold outside of the tech sector.

Communication Technology (ICT) policies reveals that the logics of structural adjustment, especially the promotion of "international competitiveness" and neoliberal individualism remain in place. The economistic language of international technocracy inscribed during the period of coerced adoption of SAPs was a shift from the moral language of legitimation used by African socialism and its critics in the early postcolonial period (Ferguson 2006). It was during the period of this new regime of "economic correctness" that the Kenyan government was drafting its first National ICT Policy in 1997 (Waema 2005). At the time, the Moi government saw Internet technologies as a threat to its dictatorial regime and sought to keep it under control (Mureithi 2017). These factors coupled with expensive access to satellite internet infrastructure limited the growth of ICTs in Kenya in the twentieth century. The 1997 policy was never publicly published and despite growing official recognition of the Internet, the state-owned incumbent operator held a monopoly until 2007.

In early 2008, the elections securing Mwai Kibaki's second term ended in wide-spread violence that killed well over a thousand people. Post-Election Violence, widely referred to amongst most Kenyans as "PEV," became a crucial part of the origin story for Ushahidi, a crowdsourcing platform to share information sourced from citizens on the ground and one of the most celebrated Kenyan technology success stories.[64] 2008, the year of PEV, was also the year that Kenya's most popular mobile network operator, Safaricom, launched its now globally renowned mobile phone banking service, M-Pesa.[65]

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[64] As mentioned earlier, Ushahidi's founders later went on to establish the iHub which also came to be widely promoted as another "African tech success."

[65] Safaricom's power, boosted significantly by the uptake of the service by a majority of Kenyans, is one example of how corporations, usually in close relationship with the state, shape the intimacies of everyday life in Kenya (Park and Donovan 2016).

With the 2008 post-election violence and the rise in "technology for social good," the figure of the Kenyan Techpreneur also began to crystalize. The growth of technology innovations like M-Pesa and Ushahidi redirected attention away from what was seen widely around the country as a stolen election that brought Kibaki into his second presidency term. Kenya's "world class" technology sector emerged not only as the fix for an economy still struggling in the aftermath of structural adjustment policies, but also as the mediator of national unity and development. This techno-optimistic vision that brought together the rationalities of state desires to "improve" society with personal ambitions (Avle et al. 2020) is clearly articulated in the Kenya Vision 2030 document.[66] Launched under President Kibaki's administration in 2008, the document calls for the use of science, technology and innovation to "raise productivity and efficiency levels" (Government of the Republic of Kenya 2008, 8), and in the years following, becomes a key reference point for researchers, planners, and state officials alike.

Kenyan Techpreneurs

In this section, using analysis of Kenyan policy documents, we walk through how the "local" techpreneur is in fact heavily tied up with an imperial formation of donor international organizations who expect the Kenyan Techpreneur to perform as the continent's technical savior, solving Africa's poverty "problems."[67] Without diminishing the agency of individual techprenuers themselves, we nonetheless want to assert that it is a certain kind of nationalism and

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[66] Vision 2030 promised the construction of "Konza Technopolis," a technology city (later to be rebranded as a "smart city") that was to be the hub of technology innovation (Perry 2011).

[67] Because "Kenya" alone is not wide enough "scale." See Avle et al. (2020) for more on scale.

patriotism authorized under dominant entrepreneurial computing parameters that structure what is and isn't possible for Kenyan computing.

The Kenya ICT Master Plan is a policy document of significance for scholars of information technologies in Kenya and further substantiates the arrival of an individualist, market driven Kenyan Techpreneur. Published in 2014, the document illustrates a pivoting away from Business Process Outsourcing (BPO) oriented notions of what a technology business should look like towards "small and medium enterprises" (SMEs). Images included in the Kenya ICT Master Plan call attention to this shift from call-center oriented technology work of the "masses," towards the individual Kenyan worker. Images used early in the 2014 report depict the Kenyan tech worker as a call center laborer, sub-contracted and a replaceable member of the hundreds that make up the workforce. See Figure 5 for example, from page 22 of the Master Plan (Kenya ICT Authority 2014).

Figure 5. Image from the 2014 Kenya National ICT Masterplan Policy Document (2014, 22)

Figure 6 from page 38 of the report similarly depicts passive technology users working on desktops and laptops that appear not to be their own, likely in a cybercafé, evinced by the stacked plastic chairs common at such sites and evenly spaced computers on the communal desk.

Figure 6. Image from the 2014 Kenya National ICT Masterplan Policy Document (2014, 38).

By the end of the report, we begin to see images of the emerging figure of the Kenyan Techpreneur (see Figure 7). The report mentions Kenya's emergence as an ICT innovator, identifying M-Pesa, Kenya's mobile money transfer services as well as the "explosion of local ICT development groups such as iLab, iHub, Nailab, University of Nairobi's C4DLab and infoDev's mlabs," (Kenya ICT Authority 2014, 34). Page 121 of the report includes an image of one such user of these spaces, a young man peering through his glasses at what is clearly his own mobile phone and his own laptop computer. The figure is captioned: "a citizen making use of an incubation centre" (Kenya ICT Authority 2014, 121), passive voice positioning him as a passive technology subject using services provided to him.

a citizen making use of an incubation centre

Figure 7. An image from the 2014 Kenya National ICT Masterplan document (2014, 121). The image was captioned in the original policy document with "a citizen making use of an incubation centre."

But these young technologists are part of a new precarious workforce that unlike call center laborers, are not on anyone's payroll unless consulting or "gigging" to make ends meet. Many of the young people working in these spaces increasingly contest their construction as passive technology subjects and view themselves not as development subjects (taken care of by state or donor actors), but as autonomous, self-sufficient actors. As these individuals began to position themselves as individual change agents, development projects to improve their skills and capacities also proliferated.[68]

In response to critiques of big Development projects as oppressive, universalizing and out of touch with on-the-ground realities, scholars have noted a move towards investing in entrepreneurship (Irani 2015; Avle and Lindtner 2016; Ndemo and Weiss 2017; Friederici, Ojanperä, and Graham 2017). Finance capital expanded into countries in the global South first with the growth of microlending projects that invested in cohorts of entrepreneurs in the early

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[68] See Avle et al. (2019) for more on "upgrading skills."

2000s and more recently directly to individuals through digital micro-lending apps like Tala and Branch. An emphasis on technology entrepreneurship has grown over the last decade as philanthropies deriving wealth from the American technology sector like the Bill & Melinda Gates Foundation and Chan Zuckerberg Initiative have moved into the development sector. The growing promotion of the individual Techpreneur falls comfortably within a neoliberal development paradigm where problems are narrowly defined in ways that can be fixed through western-style scientific and technical solutions. Under such a paradigm, it is imagined that the problems related to poverty can be addressed if the right people are given the right tools— rendering development highly individuated and establishing responsibility for oneself on oneself.

Policymakers, international donors, investors, and media have reified and held up this figure of the patriotic, friendly-to-the-West, African Techpreneur, celebrating his alterity and individual genius and creativity, applied towards solving "Africa's problems." Nicolas Friederici et al. (2020) offer examples of visits to the iHub by the likes of former UN secretary general Ban Ki Moon who stated that iHub techies were "the hope of Africa" (Wakoba 2014) or Mark Zuckerberg, Facebook's founder and CEO, who told us that iHub was "where the future is going to be built" now that "things [in Africa] are moving from a resource-based economy . . . to [an] entrepreneurial, knowledge-based economy" (Shapshak 2016). This is nearly a verbatim quote of both the rhetoric in the Kenya National ICT Plan as well as the World Bank's planning for Kenya. Toussaint Nothias (2014) and other scholars have described the proliferation of media stories about how "Africa's tech generation is changing the continent" (Draper 2017).

However, it is a certain kind of nationalism and patriotism which is authorized under dominant entrepreneurial computing parameters. For example, in August 2020, the Kenyan Presidential Digital Talent Program (PDTP) hosted its fourth Innovation Award ceremony at the

completion of a year-long training program which includes an internship in public and private

sector, mentorship and multiple trainings. The 2020 award winner devised a system that uses

camera surveillance around the city to capture images of speeding vehicles, sending the

information to a database (presumably a centralized government database of license plates linked

to mobile phone numbers) and then a text message to the driver's mobile phone instructing them

to pay a speeding fine or be summoned to court. While it is unclear the data and infrastructure

necessary to actually establish such a system are in place, that these are the kinds of ICT

solutions being awarded and celebrated illustrates the kinds of acceptable "innovative" solutions

authorized and supported by the state and private sector. At the event, Kenya's ICT Authority

CEO congratulated the winners and thanked the Chinese multinational telecommunications

technology company sponsor saying: "Huawei has been a key partner in the DigiTalent program,

showing their strong commitment to *supporting local ICT talent and local innovation*; we

appreciate the support from them as well as other private sector partners who are critical to the

success of this public-private collaboration that *expands the ICT talent pool in the country,*"

(Techish Kenya 2020, emphasis added).

Here we see that "local innovation" is in fact a euphemism for an ICT project that

extends government surveillance and furthers tax collection from citizenry. "Local ICT talent"

refers not to entrepreneurs with radical ideas that disrupt existing dominant systems, but to an

African workforce that can code. The Deputy CEO of Huawei Kenya also spoke at the event:

"Huawei is very committed to supporting local ICT talent in as many ways as we can. The PDTP

is a fantastic initiative *benefitting the government and the private sector*. We are delighted that

we can not only provide our world-leading innovative products to the government, such as in the

Konza Data Center, but also provide support for local innovation wherever possible," (Techish

Kenya 2020; emphasis added). Here we find the answer to the question of who benefits from investments in "local innovation" clearly stated; the banner of supporting local talent provides the necessary foil for multinational foreign firms to operate as normal.

Such local talent building programs and awards appear part of a broader system of corporate social responsibility (CSR) that defuses and preempts critique about the state's close business relationships with foreign technology companies. Anthropologist Dinah Rajak has noted the growth of "empowerment through enterprise" where corporate capitalism catalyzes grass-roots capitalism with promises to uplift and empower the marginalized (2011, 185). The elevated status of corporations as vehicles of social improvement is based on their supposed ability to transcend local politics of national government and leverage the efficiency of business to offer goods and services to all people including those impoverished and excluded in the margins. But moving the onus of "development" from publicly elected government to nondemocratic and unaccountable international institutions like the IMF, World Bank, Gates Foundation, and Chan Zuckerberg Initiative, not to mention corporations like Huawei or Alphabet/Google, is in fact profoundly anti-democratic and emphasizes how transnational geopolitics and capital heavily shape what happens within the bounds of the nation-state and the "local" Kenyan tech scene. The "local" then is in fact heavily tied up with an imperial formation of donor international organizations who expect the Kenyan Techpreneur to perform as the continent's technical savior, solving Africa's poverty "problems."

This influence is particularly overt when exerted by institutions such as World Bank and the IMF who have, in several instances, placed explicit conditions on offering loans to Kenya, tied to policy changes. For instance, the Kenya Open Data initiative was a result of a World Bank conditional grant and technical assistance to invest in ICT infrastructure in Kenya.

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Similarly, the move to impose VAT tax on previously zero-rated mobile phones and computing equipment in 2013, was a direct push from the IMF. The first documented ICT policy guidelines developed in 1997 were as a result of funding from UNESCO (Mwololo Waema 2005). And USAID initiated KENET, a network of educational and research institutions that worked closely with the government in the early 2000s to flesh out an agenda to use ICTs for national development. We find both the conceptualization of the problem space (Scott 2004) as well as the expected standards, and practices to be heavily determined by project funders and often—not unlike critiques of earlier generations of development interventions—out of sync with the perceptions and lived experiences of Kenyan citizens.

Kenyan Techpreneurs, Entangled

Thus far we have described the growth of Kenyan business entrepreneurship from visions of post-independence national development. A new figure of the Kenyan Techpreneur emerged during a moment of crisis within the 2008 post-election violence and in the previous section, we noted how representations of this figure began to gain circulatory power through technology and national development policies. In this section, we turn now to discuss how the framing of the African Techpreneur as a subject of and for development ironically has disproportionately benefited non-Africans working in the Kenyan tech sector. In the previous section we asserted that it is a certain kind of nationalism and patriotism authorized under dominant entrepreneurial computing parameters that structure what is and is not possible for Kenyan computing, in this section, we assert that it is a certain kind of expert authorized under dominant computing parameters.

A fundamental assumption in neoliberal rhetoric is that everyone has the potential to prosper in a capitalist system. But this belief, challenged by scholars and activists alike, ignores how inequalities grow under a regime of neoliberalism (Decker and McMahon 2020; Rodney 1972). As we will discuss in this section, in Nairobi, these growing inequalities are undergirded by racist and classist undertones and justified by national policies. Through brief policy analysis, we look at particular friction points in the smooth narratives articulated by the state and multinational organizations that project an individuated Kenyan Techpreneur as an ideal, more independent and productive citizen that can successfully work out their own futures.

In the early 2000s, Kenya moved out of a twenty-four-year Moi government into a multiparty democracy. In step with the expansion of market liberalization, a paradigm of competition emerged—competition between political parties and competition between businesses. Despite government rhetoric about supporting "local businesses" to be "globally competitive" (Government of the Republic of Kenya 2008), their actions indicate otherwise. Instead of supporting the growth of Kenyan businesses, there is continued preference for non-Kenyan businesses, a move justified by the number of jobs created (regardless of the type). For example, the architectural master plans for the Kenyan government's flagship Konza "smart city" project were produced by American New York-based firm SHoP Architects (SHoP Architects n.d.). Such continued reliance by the state on external "expertise" makes calls for "local innovation" ring hollow. It is important to recognize here that the Kenyan government is often limited to procure from certain vendors when they receive particular Development funding. For example, if a company receives money from a USAID grant, third party vendors must be approved in advance and are usually required to be American companies.

Ironically then, contrary to the image of an independent, local innovator who understands and serves the most marginalized African citizens (and in so doing also develops himself to be self-sustaining), we find the figure of the Kenyan Techpreneur in fact requires constant intervention from and legitimation through the external, Western expert. Rhetoric about the Kenyan Techpreneur's autonomy clashes with the reality that most of these individuals are in fact either directly or indirectly reporting higher up the hierarchy to foreign Venture Capitalists, private philanthropists, or international Development aid instead of listening to their Kenyan customers. This kind of reporting to the "outside" replays a decades-old critique of development projects as giving excessive power to donors and international institutions instead of holding national governments accountable to their citizens (Ferguson 2006; Alawattage and Azure 2019; Goldman 2006).

For instance, in one of the first high profile news pieces by *The New York Times* entitled "Inside Nairobi, the next Palo Alto?", the author wrote that Google's establishment in 2007 of a development office in the city was "Nairobi's highest-profile validation" (Zachary 2008). Since 2008, Nairobi has seen a spike in the establishment of regional headquarters for multinational technology companies like IBM Research, Google, and Microsoft. These technology giants join humanitarian agencies also headquartered in Nairobi and the two sectors—one for profit and the other ostensibly for the alleviation of human suffering—increasingly work together towards the shared goal of "solving Africa's problems."

One of these "problems" is the lack of an appropriately skilled labor pool. A 2018 press release by the World Bank boasted of $50 million USD International Development Association (IDA) credit made available for Kenyan enterprises in order to "increase scale, innovation, and productivity" (World Bank 2018). The press release stated: "Currently, Kenya lacks the adequate

skills that can produce a solid pool of internationally competitive, technology enabled businesses. SMEs, which are key drivers of the economy, face difficulties in improving their productivity due to poor managerial practices and information failures around how to upgrade," (ibid). Such narratives about the under-skilled African Techpreneur have led to a multitude of programs run by a variety of actors to "improve" the Kenyan Techpreneur. These calls to "skill up" African Techpreneurs are the latest in a long history of capacity building projects over the last thirty years. Like the earlier programs, capacity building programs for the African Techpreneur configure the issues as a technical fix and establish a new entourage of foreign "experts." The notion of capacity building indexes the assumption of white superiority and expertise (Pierre 2020; Kothari 2006) and continues to depend on the construction of the incapacity of Africans and African countries. Like the many contradictions rife in humanitarian development industry[69] rather than investing in national public systems (of education and science and research, for example), that individualized bootcamps, trainings, workshops, and are seen as the solution reveals a continued neoliberal imperialism.

Key figures in the Kenyan tech scene have also emphasized a narrative about the deficits of the African university system. For example, Erik Hersman, co-founder of several companies viewed as business successes including Ushahidi, iHub, and BRCK and a leading voice in African tech, has raised his disenchantment with Kenyan universities: "I do not think universities will be the answer; at least, I have not seen them work for technology education. Graduates fresh out of university are, in general, not prepared to work in a technology company. They are not coming out of these institutions with the necessary skills" (2017, 52). Interviews conducted with

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[69] See an important piece by Cecelia Lynch (2017) of the CIHA Blog on the appropriation of "resilience" in humanitarian action, for example.

tech venture investors (mostly foreign) in Nairobi again also echoed this sentiment. In an interview that de la Chaux conducted in 2015 in Nairobi, one investor mentioned:

> …you ask yourself, how does [this person] have a Master's in finance…or in management…but [they] can't present [their] idea! And you know, that's all you have. When we make our investment decisions, we don't have…the time to look at the company for a long time…you see them and you have to make your decision…quickly. So if they…cannot communicate their idea…if they cannot…sell it to us, then we can't give them the money. (de la Chaux and Okune 2017)

Such narratives about the deficit skills of Kenyan Techpreneurs have made them particularly attractive new subjects for familiar capacity building development projects. As one Kenyan tech start-up founder complained: "Kenyan tech entrepreneurs are probably some of the most 'capacitied' people in the world."

So when a Village Capital report[70] was released in 2017,[71] it made waves amongst the Nairobi tech community because it explicitly debunked some of these long-standing narratives about the lack of skills and capacity of Kenyan entrepreneurs. The researchers found that "cultural bias might be driving the perception of lower entrepreneurial skills" (Strachan Matranga, Bhattacharyya, and Baird 2017). The report highlighted that investors' claims that emerging market entrepreneurs lacked experience was contrary to the evidence. The report concluded that investors use patterns as a proxy for potential: "Did the founder attend a prestigious university? Is the company affiliated with highly selective business networks? Were they recommended to the investor by a trusted source in their network?" The report found that

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[70] Referred to by some working in the Kenyan tech scene as "The" Village Capital report because of its widespread circulation and impact.

[71] While the full Village Capital report can be found here (https://www.researchdatashare.org/content/strachan-matranga-h-bhattacharyya-b-baird-r-2017-breaking-pattern-getting-digital-financial), the medium post that appears to have been circulated more widely is here (https://medium.com/village-capital/why-do-investors-continue-to-shortchange-entrepreneurs-in-emerging-markets-f57a8bf4a7d8).

more than 90% of funding for East African startups went to expat founders and the authors took issue with the "one-size-fits-all, Silicon Valley-style approach to investing," (Strachan Matranga, Bhattacharyya, and Baird 2017).

An effect of this "Silicon Valley-style approach" to investing is that expat-founded technology start-ups in Nairobi continue to be the most successful in raising venture capital funding. For example, Sokowatch, Kasha and Branch International have all received recent additional capital investments. Co-founders of these companies—considered to be some of the latest African tech "successes"—include Daniel Yu, Joanna Bichsel, and Matthew Flannery.[72] Many of these founders and other non-Kenyan Techpreneurs working in Nairobi have faced the growing ire of Kenyan Techpreneurs who have critiqued them for double dipping: representing "Africa" because of where their companies are headquartered while also gaining exclusive access to Silicon Valley funding in large part because of their nationality, existing social capital networks and embodiment of the expert and authoritative Silicon Valley Techpreneneur.[73]

Keen to appear responsive to critiques that foreigners disproportionately succeed in the "local" Kenyan tech sector, the government introduced a Start-up Bill in 2019 to ostensibly support the Kenyan Techpreneur. However, this legislation has been critiqued as supporting only incubator hubs and those incubated (rather than entrepreneurs more generally). Labeled by many

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[72] We do not want to assume the nationalities of these individuals but based on the location of their undergraduate educational institutions, we would venture to guess that they are American and Canadian citizens.

[73] Over the last year, perhaps in response to the growing pressure from Kenyan techies as well as increasing pressure from funders and donors also seeking to respond to these shifts in discourse about racial justice and critiques of continued foreign extraction, white foreign (co)founders of many of the successful tech start-ups have stepped back and the faces representing these companies are increasingly Black African men, reminiscent of the period of "Africanization" that occurred during decolonization in the 1960s when white faces were replaced by black faces. Important to recall, many postcolonial scholars have critiqued (Fanon 1952; 1963; Ngũgĩ wa Thiong'o 2011) the fact that despite the change in leadership, many of the underlying colonial systems of extraction and racial oppression were not dismantled.

as a protectionist measure, the Bill only allows those startups that are "majority-owned by one or more citizens of Kenya" but does not address the underlying issue of channeling more funding towards Kenyan entrepreneurs (Sakaja 2020, 405). The bill mentions that it seeks "to provide a framework to encourage growth and sustainable technological development and new *entrepreneurship employment;* to create a more favourable environment for innovation; to attract Kenyan talents and capital; and for connected purposes," (Sakaja 2020, 399; emphasis added).

The bill's use of the term "entrepreneurship employment" is revealing; the bill largely centers on certifying and registering start-ups,[74] a means of categorizing and regulating them through incubation hubs in a highly prescribed relationship. But the fallacy of the government's interest in "helping" its local tech entrepreneurs was revealed when around the same time, the Digital Services Tax (DST)—a 1.5% tax payable on income derived or accrued in Kenya from services offered through a digital marketplace—was announced, another way for the government to further tax residents and non-residents alike.

The latest in what has been called a regime of "over-taxation" can be attributed to poor economic performance in recent years and a general shortfall in government funding from tax revenues. The introduction of taxes like the DST in addition to other taxes and licenses that entrepreneurs are subjected to is widely viewed by Kenyan start-up founders as creating an increasingly hostile environment for them. While such measures are ostensibly meant to ensure that global big tech companies such as Uber pay their fair share of taxes, the net effect is that it also creates a new burden for Kenyan Techpreneurs with fledgling businesses who also come under this new tax bracket regime.

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[74] Or as one critical article wrote, "double registering" (Bonyo 2020).

The latest National ICT Policy (2019) includes a clause called "equity participation," where only companies with at least 30% substantive Kenyan ownership will be licensed to provide ICT services in Kenya. We read this as a response to the growing influence of non-Kenyan individuals and companies in the Kenyan ICT sector but argue that attempting for such a "local" form of belonging misunderstands the already transnational character of the technology sector in Kenya. Scholars of globalization have written about the politics of belonging and growing claims of autochthony (literally meaning "born from the soil") mobilized in response to the increased movement of people, goods, and ideas across borders. As Peter Geschiere wrote a decade ago, "[a]n increasing obsession with localist forms of belonging seems to be the flipside of such globalization in many contexts, despite all their differences," (2011, 322). This statement holds true today with an interest in promoting the "local" technology sector appearing as a response to take-over of the industry by foreigners.

With growing public critiques of the raced hierarchies and uneven distribution of tech capital in Nairobi, investing in the figure of the Black African Techpreneur (constituted as the Other to the hegemonic figure of the White Silicon Valley Techpreneur) has subsequently been positioned as the answer. But bringing in Grace Musila's critique of the concept of "Afropolitan" offers an important lens here. Musila points out that combining the terms "Africa" and "cosmopolitanism," only serves to negate the original meaning of the notion of cosmopolitanism by signaling a particular location in the world. Musila provocatively asks: "Why the need to qualify one's cosmopolitanism? The very necessity of qualifying Africans' being in the world only makes sense when we assume that, ordinarily, Africans are not of the world. … [I]n qualifying our belonging to the world, Africans effectively reiterate our non-belonging; our qualified access to a cosmopolitan identity as already marked in particular normative grammars

that single us out as wanting—in both senses of the term," (2016, 112). Instead of turning a critical gaze on the underlying logics and commitments to scale, competition, and "creative" "entrepreneurial spirit," it becomes again the responsibility of the entrepreneurial citizen (Irani 2019) to refashion himself in the mode of what is required by shifting demands of investors (donors, the state, venture capitalists).

We argue that rather than simply raising up individuals, thereby continuing to extend an imperial formation based on neoliberal logics of market-driven, individualist "development,"[75] more focus is needed on unraveling the systems and structures that perpetuate inequality. For example, we must look at the travel and immigration policies that shape the internal raced hierarchies of who is considered to be and compensated as an expert. Under the Kenya Citizenship and Immigration Act 2011 of Laws of Kenya,[76] a class D work permit is issued to a person who can offer evidence that the "organization failed to fill the vacancy from the local labor market." This means that a foreigner is not supposed to be hired for skills that you can find in Kenya. I (AO) saw this play out in particular at one of my fieldwork research sites, Akamai,[77] a research lab with Nairobi-based staff of approximately 50 people, half Kenyan and half immigrants primarily hailing from Europe and North America. The Kenyan immigration policy—that foreigners must be experts with rare skills that cannot be found in-country—was used to justify why all of the executive level directors and upper rung of the organizational hierarchy were non-Kenyans and why below a certain "line" in the org chart, all staff were Black

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[75] By "development" we refer to the intellectual and capital apparatus that projects a particular ideological framework for producing subjects and objects (Escobar 1995).

[76] Find the full Act here: https://www.researchdatashare.org/content/kenya-citizenship-and-immigration-act-2011 (Government of the Republic of Kenya 2021).

[77] A pseudonym

Kenyans. Combined with naturalized assumptions that those at the top of an organization earn the most, the Kenyan immigration policy—ostensibly in place to protect local Kenyans from losing their jobs to foreigners—paradoxically justifies why foreigners are paid significantly more than many Kenyans.

That foreigners are paid more not necessarily because of the quality of their work, but because of their nationality has been noted elsewhere by anthropologists of global capital (Appel 2019; 2018). It is also of little surprise to many Kenyans in Nairobi: "Foreigners cannot be hired at the analyst level" an associate explained to me when I (AO) tried to tactfully ask why there was such a noticeable divide between those who occupied positions of upper management and those lower in the organizational hierarchy. Tracing the capital, policies, and discourse around tech entrepreneurship in Africa allows us to focus not only on what kinds of projects are authorized because they fall within the normal parameters of "computing," but also how different populations are asked to contribute to those projects—as experts, students, workers, research subjects, and sources of "local" knowledge. Towards postcolonial objectivity, greater analytic tools and techniques are needed to analytically understand such nuanced place-based co-constitution of the "local" and "imperial."

Conclusion: Complicating the Kenyan Techpreneur

Some of the most successful Kenyan tech entrepreneurs, many who are not on the "hackathon" circuit or did not emerge from being incubated within a technology start-up hub, developed products that were sparked from their own first-hand experiential knowledge of issues in the city and country. Many of these businesses do not have venture capital backing nor are they at international scale. However, as Nicolas Friederici et al. (2020) and Tayo Akinyemi and

Osarumen Osamuyi (2021) point out, these are some of the most impactful because they have their own notion of "success" that are not tied to Silicon Valley metrics of scale. The capacity building programs, and funding schemes described in this chapter positioned the figure of the African Techpreneur as deficient subjects, in need of expert guidance and correction. Members of the Kenyan and wider African technology community are increasingly positioning themselves as defiant subjects, political actors challenging the authority of those who presume to improve them. Nevertheless, it is important to take heed of lessons learned by feminist scholars who have long discussed how a willingness to live for and through work still renders subjects "supremely functional for capitalist purposes," (Weeks 2011, 12). We therefore suggest that until the legitimating discourse of the technology entrepreneurship work itself is challenged, the Techpreneur is at risk of being a subject in their own dispossession.[78]

In spite of this risk, scholars should not simply cynically disregard the figure of the entrepreneur. With the growing informality of world economies and increasing importance of entrepreneurs of all kinds in many different sectors, scholars will need to think well about this contradictory figure. There is need to follow its many different trajectories. For example, one of the first computer science graduates in Kenya was 33-year-old computer science lecturer at the University of Nairobi, Kariuki Gathitu. A little-known figure in national history, not only was Gathitu one of the first Kenyan computer scientists, we learned from a small footnote in a thin history booklet that Gathitu was also a key social activist in the fight for Kenyan democracy. He joined with activist scholars Ngũgĩ wa Thiong'o, Maina wa Kinyatti, and Willy Mutunga as part of the Kenyan progressive socialist Mwakenya movement (*Muungano wa Wazalendo wa*

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[78] This builds on recent work by scholars of labor and technology like Gray and Suri (2019), Sarah Roberts (2019), and Irani and Silberman (2013) who have looked at growing subcontracted "gig" work and the informalization of labor.

Kukomboa Kenya or the Union of Patriots for the Liberation of Kenya) and as a lead recruiter for the Mwakenya, Gathitu mobilized students and faculty at the university for Kenyan multi-party democracy (Friedrich-Ebert-Stiftung and Citizens for Justice 2003). A generation later, Gathitu's son, also named Kariuki Gathitu, became a technology entrepreneur in Nairobi, based at the iHub.

In this chapter, we looked at the popularized figure of the African Techpreneur as a celebrated citizen-subject. But African (tech)entrepreneurs, like all people, have multiplex subjectivities (Rosaldo 1993) and intersectional identities (Crenshaw 1991). This complexity is flatted and often lost in attempts to generalize "African Techpreneurs" and have them perform the appropriate "investable" Silicon Valley standardized pitches which focus on the success of their business idea without recognizing the other areas in which tech entrepreneurs may also be active. Processes of racialization have "served to fix social subjects in place and time, no matter their spatial location, to delimit privilege and possibilities, to open opportunities to some while excluding the range of racialized others" (Goldberg 1993, 206). As Lilly Irani and Kavita Philip (Irani and Philip 2018) have emphasized, capitalism regulates some differences profitably while violently suppressing and disciplining others. It will take sustained work to disentangle some of the important calls for autonomy and self-reliance from the tech industry to carve out cross-disciplinary spaces protected from co-optation to explore futures that go beyond individual profit and gains.

We have sought to tell a story that situates postcolonial objectivity within a broader context of Kenyan technology policy and investments by donors, the state and venture capitalists. This is the context that research on technology lives with and contends with in Kenya. In illustrating how imperial logics and structures continue to underpin apparently independent

initiative in Kenya, we call attention to the limits of thinking in simple binary terms and point to a need for inventive, cosmopolitan constructs of Kenyan entrepreneurism. Understanding how the local is in fact heavily tied up with enduring imperial formations of neoliberal development is an important prompt for those working towards postcolonial objectivity to bring new, more complex subjects into relief.

Chapter 3

Enunciatory Formations
Shaping Nairobi's Research Data

Introduction to Nairobi's Contemporary Research Landscape

"Ugh, I would rate us at like a zero," Caydin, the research lead at Akamai admitted. Caydin was responding to my interview question about how much Akamai Lab has interacted with the rest of the research ecosystem in Nairobi. He explained how an internal team had been working on a funding proposal and realized they didn't know any of the other research groups doing work in the city with whom they could partner. "I don't know if it's hubris, if it's just being hand-to-mouth for the last five years—or if you're generous, call it focused... But no, I don't think we've been very good at it..."

Based on observations across different research groups and my work experience in Nairobi, I responded by telling Caydin that Akamai didn't seem to be unique in this regard. "I think what you've said is true of a lot of research organizations. Other than partnerships that are brokered by funders, often people are so caught up in the day-to-day work, that they don't often end up actually meeting others doing research in Nairobi," I explained. "Ironically, you find that many Nairobi researchers more frequently partner with foreign organizations and individuals than with each other."

* * *

While the capital city of Kenya headquarters numerous research groups, a great many of them do not know or interact regularly with each other. Nairobi's research landscape cuts across different sectors and topics including health, education, health, access to capital, elections and governance, and most recently, technology. And though this research frequently shares funding sources—whether it is Gates Foundation, USAID, or the World Bank—many of the Nairobi-based research organizations are not in close conversation with one another. The size and scope of these research organizations varies widely from one- or two-person consultancy outfits to companies with over one-hundred workers. Bigger research offices tend to be concentrated in the north-western part of the city in what is commonly referred to as "green leaf" estates (so named because the neighborhoods—many of which are former colonial estates and compounds—include green and lush manicured "green-leaf" gardens).

Figure 9. An example of a "green leaf" estate, this photo is of a residential area in Lavington, Nairobi. Some research offices are located within former residential houses. Source: Author, 2019.

Figure 8. Roadside shops along a major road in Kibera, widely thought of as one of the largest informal settlements on the continent and a frequent site of field research. Source: Author, 2011.

In contrast, "field sites" where data is collected are often either in adjacent informal settlements (such as Kibera and Kawangware which border upper class estates like Lavington) or estates in the south-eastern section of the city, characterized by dusty roads and a sense of informality. These sites of data collection are heterogenous, each with their own local histories and politics. For example, Kaloleni, located in Eastlands, was once a model estate built by the British colonial government for African clerks and government workers, one of the first public housing estates in Nairobi aimed at African families. By the 1960s, Kaloleni was home to a growing urban middle class in Nairobi and was the most well-to-do of the African estates (Smith 2014). But from the 1980s, corruption and mismanagement at both municipal and national levels led to declining maintenance of the estate, and today there is almost no formal state presence in the estate at all. Despite still being council tenants, residents are now largely left to fend for themselves (Samora 2015).

Such nuanced community-level histories are often not viewed as relevant for understanding individual behaviors and therefore not captured within the frames of present-day market research instruments. Instead, for contemporary research data collection, participants are

identified and categorized based on economic and social measures that can easily travel. For

example, studies on the "base of the (economic) pyramid" use World Bank classifications to

determine if one is eligible to participate in the research based on income level (makes less than

250 Kenyan Shillings or $2.50 USD a day). *If potential participant makes less than 250 Kenyan

Shillings a day, then ask the next recruitment question. If not, move on.* Sampling locations are

usually determined not because of their histories and place-specificity but based on assumptions

of socioeconomic demographics and likelihood of having residents who agree to participate.

Table 1. Nairobi research actors organized by institutional type/activity. Source: Author

Type	Description	Examples
Research non-profit and for-profit companies	boutique Kenyan think tanks and service-providers; market research outfits; multinational companies	IPSOS Synovate; IDEO.org; IDinsight; McKinsey & Company; GMaurich Insights
Research funders	governments; philanthropy; businesses; International Organizations	World Bank; UN; Gates Foundation; Mastercard Foundation
Government research	Kenyan public research	Kenya Institute for Public Policy Research and Analysis (KIPPRA); National Commission for Science, Technology and Innovation (NACOSTI)
Universities	international and local, and increasingly local internationals	University of Nairobi; Daystar University; Strathmore University; Kenyatta University; Georgetown University Gui2de; Columbia University Global Center; Arizona State University Thunderbird School of Global Management
Consultants	Individuals (Kenyans and non-Kenyans) who work for various organizations on an ad-hoc contract-by-contract basis	

Academics	Individual (Kenyans and non-Kenyans) students, faculty
Journalists and media representatives	Community, national, regional, and international media are located in Nairobi and report at various scales.

The global research assemblage in Nairobi includes actors of widely different organizational size, politics, mobility, international reach, and capital. They could be categorized by institutional type and activity in a widely recognizable manner as I have offered in table 1. These actors produce and contribute to data and data ideologies that circulate both within the Nairobi research ecosystem and also have effects far beyond the national borders. To pay attention to this circulation, I look at the making of digital research data.

In this chapter, I open by describing my observations in Nairobi of how field research data is made. In my own fieldwork, I learned that instead of losing context through the "cleaning" process, born-digital research data, that is, data that is collected via a digital device, is missing context from its birth, explicitly designed to scale and travel immediately. Assumptions—of what data is important to collect as well as of the people from whom the data is to be collected—inform the survey designs which are often conceived of far away from locations where the data is eventually birthed. Any processes of "localization" of survey instruments are not meant to attune research to the particular people engaged and their lived experiences, but rather to ensure that the instrument and the data it produces are legible in ways that allow claims of commensurability across vastly different sites to be viewed as credible.

As I have argued across all three chapters in Part I, instead of then thinking about the "local" and "imperial" along the lines of nation-state formations, which, as historians Calhoun, Cooper and Moore (2006) have pointed out, is a form that has actually been generalized for only a brief period of history, developing analytic frameworks for better tracking and describing multiple, hybrid, trans-local formations may be more helpful. I close the chapter by offering an

alternative heuristic for better understanding the multiple data ideologies at play and a sense of

the swirl of research actors that work both in the city and are part of global enunciatory

formations. Through this work, I hope to contribute to conceptual tools to better understand how

the local and imperial are co-constituted without losing track of asymmetrical power relations.

Making Digital Data
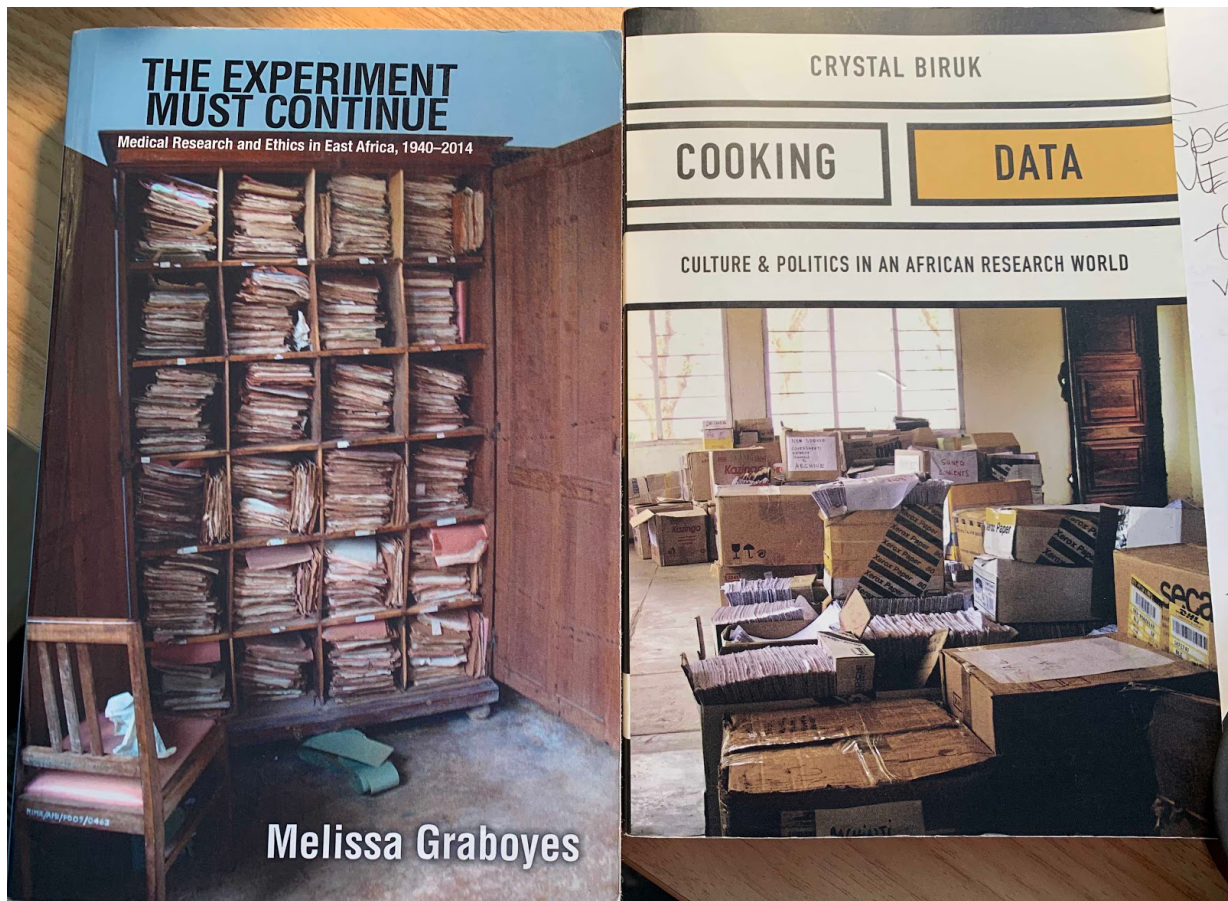
Figure 10. Book covers offer a glimpse of the sheer amount of paper generated through research production (Graboyes 2015; Biruk 2018). Source: Author, 2020.

Many of the local Kenyan-owned market research companies were established in Nairobi

in the 2000s.[79] Ten years ago, when I first began managing market research projects in Nairobi

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[79] An interlocutor, a Managing Director at a Kenyan market research company, recounted her first memory of qualitative research entering the market research landscape in Kenya in 2000. This interlocutor noted a growing "paradigm shift" in her words, from quantitative research to qualitative after client realization that despite all of the

with the iHub,[80] paper-based surveys were the norm. Mobile-based surveys were a new and upcoming innovation and were still considered experimental. Cal Biruk (2018) and Melissa Graboyes' (2015) cover images depict what I also experienced while running iHub's market research projects: the sheer volume of paper generated by large scale surveys. Biruk, for example, described their experience with boxes full of musty papers yellowing and dusty, the "raw" data, which undergoes data cleaning, becomes converted into codes in a digital database and transformed into information in reports. I had assumed that there would similarly be a process where messy textual paper data becomes cleaned and made quantitative. But today, digital surveys are now the norm. Rather than lugging hundreds of survey pages to the field, enumerators bring a tablet or mobile device (provided by the research organization) to the field to collect the data. While this shift towards producing "born digital" data has reduced the amount of paper used in data collection, it comes with other new considerations.

Prior to fieldwork, enumerators must ensure the device has sufficient battery and that the latest version of the survey has been updated on their device. The Internet is not necessarily required while collecting data since the device can store survey results locally until the device is back online, at which point it then uploads the saved survey data to cloud storage. As soon as data is saved to the cloud, a data analysis team anywhere in the world can review the data collected. In practice, the data is usually reviewed by the data analysis team in the Nairobi office,

data collected, they still don't understand *why* something is transpiring. The interlocutor mentioned the recent establishment of the African Market Research Association (AMRA) in 2016, which emerged from a decision by African delegates at the global ESOMAR Congress 2015 who wished to form a pan-African market research, social research and opinion polling organization. AMRA is a non-profit membership association for market, social and opinion polling research associations and organizations in Africa (https://africanmra.com/).

[80] For more details about my background and history with the iHub, see Introduction and chapter two.

and sometimes by the client who is in an office in Washington, D.C., New York, or another urban capital.

The issues and potential that arise when thinking about qualitative data—that is, textual and multimedia data either generated through fieldwork methods or captured in digital
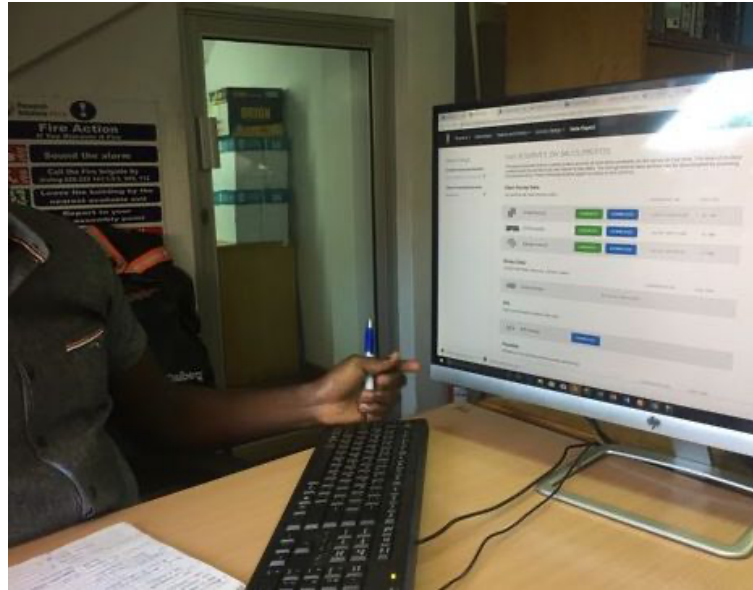
Figure 11. The lead data analyst at Nyagaard Research shows me one of the software they use to analyze data from the Nairobi office. Source: Author, 2019.

spaces like social media platforms—have become particularly widely discussed in the years since I conducted my fieldwork, after research moved online during the 2020 global pandemic. The move to digitized data comes with an increased potential to share and circulate this data. But, unless this data is carefully handled and contextualized, there is also great potential for harms. In response to decades of harms caused by extractive data collection[81] for example, in recent years, indigenous groups have organized. Indigenous communities such as the San[82] groups of Southern Africa and North American and Australian aborigine communities have devised various ways to push back against exploitative research practices including the

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[81] See for example, an instance where DNA samples donated by members of the Havasupai people in 1989 were in fact being used beyond the scope of the original projects by researchers at Arizona State University (Garrison 2013). The case was an important challenge to the definition and use of "informed consent," particularly with vulnerable populations.

[82] I use the term "San" here, but would like to acknowledge and flag the ongoing debates over the terms of reference for the groups: San, Jun/oansi, "bushmen," "hunter-gatherers," BaSarwa, etc. For example, in Namibia, Jun/oansi call themselves "bushmen" when speaking Afrikaans, but otherwise call themselves Jun/oansi. Find more on this topic in a blog post I wrote for the blog *Critical Investigations into Humanitarianism in Africa* (http://www.cihablog.com/responsible-research-reducing-risk-improving-well/).

development of indigenous research ethics codes and guidelines,[83] community-researcher contracts (Traynor and Foster 2017), and community peer review (Liboiron, Zahara, and Schoot 2018), among other things.[84]

The risks of digital data collection as perceived by research companies are of a different sort. Figure 12 is an example of research data quality control mechanisms used by Nyagaard Research, as requested by their client, an American nonprofit institute that provides research, development, and technical services to government and commercial clients worldwide. This client had sub-contracted Nyagaard
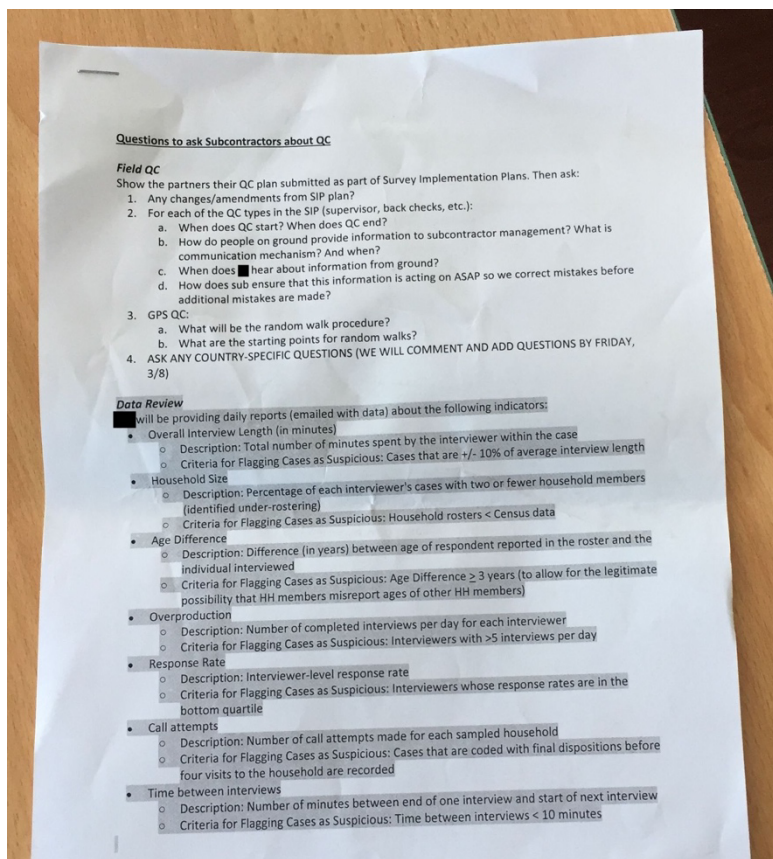
Figure 12. This image of a found artifact at Nyagaard Research (photo taken with permission) illustrates the kinds of questions used as part of Quality Control (QC) of field data collection. Client name redacted in black by author. Source: Author, 2019.

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[83] See for example the First Nations principles of OCAP® (http://fnigc.ca/ocap.html) and the Alaska Federation of Natives' Guidelines for Research (http://www.ankn.uaf.edu/IKS/afnguide.html).

[84] There is growing scholarly work and political power behind the concept of Indigenous Data Sovereignty, a global movement concerned with the right of Indigenous peoples to govern the creation, collection, ownership, and application of their data. This work may offer important lessons for understanding how "indigenous data sovereignty" (Kukutai et al. 2016; Lovett et al. 2019) could translate for communities not necessarily organized around a frame of indigeneity. These literatures also highlight the tensions between desires for repatriation of data (in digital form) to the communities from which they originate and worries that full access of digitized community data to diverse online publics may not in fact always be in the community's interests (Christen 2011). The question of governance of digital data also hinges on understanding processes of digitization and how digital data is made.

Research to collect field data for them and Nyagaard had then sub-contracted individual consultants to do the data collection. It appeared that the American non-profit had also been contracted by a Silicon Valley company. Multiple layers of subcontracting are common in market and development research projects and increases the complexity of the issue of ownership and governance of research data (see Figure 13 for an example of the kinds of hierarchies of research outsourcing). Usually, the organizations along the research sub-granting chain, especially those at the top and bottom are not aware or in contact with others in the chain of sub-contracting.

Figure 13. Example of the kinds of outsourcing hierarchies in research. Source: Author, 2021.

Candida, the Kenyan field researcher I've been paired with, jumps into the first demographic and usage questions. She knows the survey, which we are piloting in parts of Nairobi before it gets scaled up across various other Kenyan cities, can take even longer than the one hour she promised to participants if she doesn't rush through the questions.

"How long have you been using a mobile phone?"
"15 years"
"How long have you been using the Internet?"
"10 years"
"Which mobile phone applications do you use?"
"Facebook, Instagram, Twitter"
"How long have you been using Instagram?"
"4 years"

I peer over Candida's shoulder. All of these questions are close-ended on the survey so the data being collected is already losing what little nuance there is. The scale available on the data collection tablet is only "over one year" so for each response, she just presses "over one year."

Candida raises her voice to be heard over the buzzing and hammering sounds made by the *jua kali fundis* (informal mechanics) soldering metal gates outside the cyber cafe. The cyber cafe is cool and dark, but outside it is a typical hot March day. The rains have come late this year so although March usually marks the start to the long rains, the Nairobi summer heat is still out strong, and the dust is kicked up by *bodabodas* (motorbikes) zipping back and forth along the busy road outside. The sound of nursery children laughing from the next-door school floats in.

Candida wears a short-sleeve green top revealing a black tattoo on her arm that reads in Latin script "Carpe Diem" (Seize the Day). "Nice tattoo!" I had mentioned as we chatted over tea. "It's the way I like to live my life," she had shared. Candida is working on getting her accounting degree at a college in town. She doesn't do much fieldwork ("the last time I did one was exactly a year ago"), instead she mostly does translation of research surveys from English to Swahili and works from home on her laptop. She has a friend who owns a company that does outsourcing work with market research firms, and he gives her the work. When jobs are low, she had told me, she asks her parents for money.

Candida has moved from the initial demographic questions now to the literacy test and I shift uncomfortably in my chair, anticipating the participant's reaction at being treated as if he cannot read. This is the third pre-test of the survey that I have been observing and the literacy test has already proven to be experienced by participants as particularly patronizing. Country statistics note that over 80% of Kenyans are literate; in the capital city of Nairobi where there is a high concentration of urban professionals, I am sure it is even higher. "Now that you have read this passage aloud for me, please answer a few comprehension questions." Candida is finishing up the literacy test. "What did Kamau say was his favorite food? Why did he like it?"

The respondent initially has a lot of "it depends on what you are using it for" responses to Candida's questions. "'Using Facebook on my phone is expensive.' Do you agree with this statement, not at all, a little, somewhat, or a lot?" "It depends…" he tries to say… "Okay, so is that 'somewhat'?" She attempts to back him into one of the four options. She only has four options that she can choose from on the tablet in order to move on to the next question on the electronic survey. She can't skip a question or insert something else because there is no open-ended text box. "I guess so…" he resigns.

"I don't trust text messages I get from unknown phone numbers. Do you agree with this statement a lot, somewhat, a little or not at all?" "It depends on the context and what the message is about…" He is ready to explain why it depends, but Candida doesn't want to hear it because it won't fit into the survey boxes she is supposed to fill. From her perspective, she only has one close-ended box per question to insert the response into. No matter what the respondent says, she has to just type in a number or one of the grading scales. So to save time, she'd rather not get into the details with the respondent.

After a while, the respondent also seems to get it. If he wants to finish this survey quickly, he just needs to fit into a category. His "depends" begin to turn into responses legible for the survey: "Somewhat"… "Not at all"… "A little." He has now learned the grading scales and makes his answers fit the choices.

The remainder of the survey comprises of a pattern of primarily "yes," "no," "yes," "no" responses layered with the sounds of the electric machinery outside and bodabodas still passing outside. A young man walks in, seems to be a friend of the cyber cafe research participant, and shakes our hands in greeting and sits down and listens in to the remainder of the research survey being administered. "Okay, I'm done, thank you for your time." Candida concludes.

Figure 14. "Closing": a vignette of field data collection illustrating how respondents learn to fit into close-ended surveys.

Whereas previously with paper surveys, a survey would pass through many hands, often indicated by different colored pen marks and initials on the pages,[85] born-digital data rely on new technologies of surveillance to produce robustly plausible respondent answers. Some Akamai respondents download an application on their mobile phones that tracks their movements; Nyagaard Research enumerators must record their GPS coordinates at each interview site before they can even begin to enter survey responses. But if digital data was supposed to be made more robust by such additional layers of external validation, I found that, ironically, it was less so because of the restrictive means of production. Instead of producing a better representation of what was going on, I found the opposite. I will never forget observing a young mother surfing her personal phone on Facebook and Whatsapp while she waited for Candida who had to pause and scroll through the extensive tablet questions to ask questions about social media usage.

"Do you use Facebook?"

"Yes." The mom responded absent-mindedly as she texted her friend through the Facebook Messenger app.

She's using it right now!! I yelled, in my head. It took all my self-restraint to keep from interjecting out loud.

If Candida had been empowered to use direct observation as data, she would not even have needed to follow the script, only to look up from the company tablet and notice what the person she was talking to in front of her was already doing on her phone. Again, this is not to critique Candida, who was doing her job just as she was supposed to, but rather to point out that the data being produced was out of sync with what was in fact going on. The critique that

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[85] Biruk also mentioned this in their ethnography of the production of demographic data in Malawi (2018, 145).

research in Nairobi is largely extractive could very well also relate to the experience of participating in global research surveys as well; devoid of local nuance, the questions are repetitive, boring, patronizing, and are experienced as overly generalized for some abstracted "global South" user.

Who wrote these questions? The survey had been designed by someone named Eduardo[86] who was back at the company headquarters in Silicon Valley. His colleague, José, had come to Nairobi to do the training of the Kenyan enumerators, together with Daniella, a Ghanaian-American representative from the intermediary research company who had flown in from Washington, DC. The two of them were noticeably frustrated by the detailed questions being asked by the Kenyan enumerators throughout the training and piloting. "We don't want to fundamentally change the meaning of the question, we just want to translate it into the local language as closely as possible," José exclaimed at some point. Frequently, José tried to explain the justification behind the construction of particular questions but, sometimes, he just wrote down the issues raised, saying that he would talk to the survey designer back at corporate headquarters, Eduardo, to see if a slight tweaking of the question might be possible. It seemed even José didn't have full control of the survey design. Perhaps because of his own limited agency, by the end of the training, I sensed that José and Daniella, his co-trainer, wished the enumerators would just stop asking questions and perform the survey as they were being instructed.

But even as we pilot tested the questions in the field, it was clear they contained many assumptions about the respondent. For example, to the question of "how often do you buy data bundles?" the young mother replied: "weekly." An analyst in Washington, DC might think this

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[86] All names used are pseudonyms.

respondent cannot afford the more expensive daily data bundle options. But such an assumption

would be incorrect because as this mother explained to us, she has WiFi at work and at home, so

she does not need a lot of data bundles. This explanatory information was not entered into the

survey because there was no available space to type in the qualitative insights that were so freely

offered to us. This key information, which completely changes an understanding about why

someone buys a certain data bundle, was completely missed because of the survey design and

data collection instrument.

The research company was not concerned about double-checking its own survey design

assumptions. The questions it included in its quality check list (listed in Figure 12) reveal the

kinds of risks that the company worried about. The listed "Criteria for flagging cases as

suspicious" focuses on dubious actions of the African enumerator like "number of minutes

between end of one interview and start of next interview" and "percentage of each interviewer's

cases with two or fewer household members."[87] This echoes a point made by Cal Biruk (2018) in

their ethnography of demographic data production in Malawi: reflections on data in Africa often

implicitly place responsibility for poor data quality on the figure of the African enumerator, a

trend that dates from the colonial period.

The use of digital devices for data collection and a close-ended survey design seemed to

be some of the ways that research companies aimed to minimize erroneous data. My

observations of data produced through these tools and methods revealed that they instead forced

simplification of responses at the point of data collection (see Figure 14 for an ethnographic look

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[87] Many anthropologists have critiqued the household as the standard unit of enumeration, suggesting that it fails to account for patterns of residence, kinship and economic organization (Yanagisako 1979; Guyer and Peters 1987; Biruk 2018). I mentioned these critiques to interlocutors who were interested to learn about them. Notwithstanding, the household continues to be a standard unit of enumeration in market and development research in Kenya and elsewhere.

at this simplification). Such simplification, collecting only what was deemed necessary for analysis,[88] meant there was little to no "cleaning" required[89] and the data could go straight into being analyzed, saving time and thereby money. Making data digital directly in the field in this way was also convenient given the multiple layers of outsourcing noted above; it ensured that "middlemen" research companies did not have to "touch" the data extensively, thereby reducing opportunities for human error and manipulation.

In many cases, data analysis did not deal with any textual data. "The less text, the better," I was told by the Nyagaard scripting lead responsible for managing the creation and quality assurance of the digital surveys. By the time fieldwork enumerators return from the field, the "born digital" data has been already uploaded to the cloud, eliminating any review or interpretation of textual data, and ensuring that the data analysis team only needs to run statistical analysis of numbers. A score is assigned to each level of the scale selected and those numbers can be aggregated and analyzed across surveys and contexts. In this way, one survey, translated into different local languages, can be used across the globe. After accompanying Candida to the field, I learned that the survey I had observed her administer (in Figure 14) was to be conducted in Indonesia, Kenya, India, and China.

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[88] This "collect only what is necessary" approach to data echoes the EU's General Data Protection Regulation (the "GDPR") which was approved by the European Council and Parliament in 2016 and came into force beginning 2018. GDPR (https://gdpr.eu/), also commonly referred to as the "right to be forgotten" established more stringent requirements on those entities handling personal data. Rather than collect as much data on individual consumers as possible, GDPR has brought about a paradigm shift towards collection of only the most critical data on individuals. In 2019, Kenya passed its own Data Protection Bill, which many have compared to the GDPR. Though some consider the bill in a positive light, others see improvements that could be made, for example, as raised during one of the November 2019 panel discussions on data localization and server infrastructures (https://www.researchdatashare.org/content/video-proceedings-panel-3), many smaller organizations do not have the capacity to adhere to the various GDPR compliance requirements.

[89] Data "cleaning" as anthropologist Cal Biruk (2018) has ethnographically described, refers to processes where survey responses collected from the field are reviewed, checked for inconsistencies and missing information, and—after those have been corrected by returning to the field or calling the participant—logged and entered into a bigger (usually digital) database.

Once Candida has finished administering the survey, I take the opportunity to chat with the young cyber cafe manager. "How is business going as a cyber these days?" I ask. "Do people still come? I remember we did a research project in 2010 with cybers and even back in those days people were already starting not to come because they were using mobile phones instead."

"Nah, we still get lots of people." He has begun to be more animated now that he knows the official survey is over and we are having an open conversation. "There are certain things they like to do on a computer rather than on mobile, like betting." He explains that he makes 5,000 Kenyan Shillings (roughly $50 USD) every day off the betting sites. "What??" I remark, surprised. "That much?!" I knew that betting was becoming a big thing in both urban and rural parts of Kenya after it was recently legalized but hadn't realized how much people could make just in a regular day. The long iconic Safaricom green paint branding buildings (paid for by the company) has recently given way to newly painted blue of Sportspesa and other betting sites. During the "official survey," I had noticed that a betting website was up and open on one of the cyber's computers. "Yeah, I have a way of gaming the system." He explains. He then begins to talk about how he did his master's degree in India in computer science and we launch into a conversation about his experience schooling abroad. Twenty minutes later, I buy 3 CDs for 90 shillings on our way out of the shop. "I've been wanting to buy these anyway for my son to make some CDs of his favorite music," I explain. "Asanteni, thanks you guys."

Candida and I leave the young men in seemingly much better spirits than they were at the conclusion of the "official survey." I doubt it was for the 90 shillings and hope perhaps it is because of our engaging conversation. "Wow, I can't believe he makes that much money from betting." I remark to Candida as we walk along the road, "I learned so much after the survey ended." "Yes, definitely," she nodded. "Should we grab some lunch before the next one?" I ask her and we decide to duck into a small shop along the road. I order pilau and she orders beef stew with rice and we end up talking for an extended period about how she got into research.

Figure 15. Surprising learnings after the survey is over

Like Biruk (2018), who found in their study of demographic research data in Malawi that comparability was an end in itself, I noted at both Nyagaard and Akamai the ways that different methods were used to make commensurate the seemingly incommensurable. At Akamai, this was done by tweaking a bare-bones form of a question (imported from "best practice" questions developed in Western contexts) and inserting culture through local names and locally resonant scenarios.[90] At Nyagaard, the approach towards comparability was translating one survey into multiple local languages to be administered by native speakers. Sitting in on some of over 16

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[90] See chapter five, Figure 23 for a specific example where the "Linda Problem" is contextualized into a "Mary Problem" for greater local resonance in Kenya.

hours of the enumerator training which prefaced three-weeks of survey administration across

Kenya, I noted the heavy emphasis put on translation of the survey into locally legible terms. The

survey, which had already been designed and finalized back at the Silicon Valley headquarters,

was translated from English into Swahili, Kikuyu, and Luo local languages.

While I was embarrassed to be seen as associated with what I found to be a paternalistic

survey (see Figure 14), I was nonetheless grateful to have been offered the opportunity to

observe data collection in the field with Nyagaard Research. For many months, I had been

politely asking those at Akamai if I might be able to go with them to the field as part of their data

collection team, but each time they politely declined, saying that my presence as a *mzungu*

(foreigner) would affect their results too much. When I posed this issue as a question to the

Project Manager at Nyagaard Research, she had shrugged her shoulders: "*Wewe ni mwenyeji,*

hakuna shida," which loosely translates to "you are local, no problem."[91]

This stark difference between Akamai's sensitivity to the number of *wazungu*

(foreigners) explicitly involved during data collection and Nyagaard Research's indifference to

who exactly does the data collection became clearer to me once I joined Nyagaard in the field.

"Objectivity" for Akamai required controlling for external factors and stabilizing any variables

that might influence responses. So, if there were more *wazungu* in the room for some

respondents than others, that could change results across participants, rendering a study invalid.

Or if an Akamai research respondent believed they should answer a certain way because there

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[91] By local, she was likely referring to my understanding of local customs, language, and the city. This could have also been in reference to my marriage to a Kenyan and resulting kinship ties to the country.

were many foreigners running the research, that could also influence the overall results of the study in ways irrespective of the intervention being tested.[92]

In comparison, "objectivity" for Nyagaard was in the statistical significance of the data itself. Since a respondent's statements were privileged over observation, as long as there were no explicit language barriers, it should not matter if a *mzungu* with little in-depth knowledge about the country and context or a local, born and raised in the city where the research was being conducted, collected the data. What mattered was the credibility of the research instrument and sampling procedure through which the data was collected. This is illustrative of what Peter Galison (2000) has called "mechanical objectivity," an objectivity defined by its moralized and automatic status beyond the reach of an individual. The significance of data through such an instrument was not in its individual form. One data point (i.e., one person's completed survey) was not valuable in and of itself. It was only valued and insightful in the aggregate, after all data had been made through the same "automatic" and restrained procedure and when combined with enough other data to become statistically significant and representative at large enough scale. At that point, it was thought individual subjectivities or quirks would be largely neutralized. With enough mechanically collected data, it was assumed objective insights would emerge.[93]

As I participated in the field data making exercise and training, I realized that missing the context in which each survey data was collected was not by mistake. Under mechanical objectivity, context was considered unimportant and in fact, largely undesired. For Nyagaard and

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[92] This sensitivity to and recognition that external factors might influence study results are perhaps what predisposed Akamai towards incorporating techniques of what I describe as postcolonial objectivity. I describe this in further depth in chapter five.

[93] There is a relevant body of work on the production of numbers and epistemic power of quantification that relates to the continued privileging of quantitative research in Nairobi. Berman and Hirschman (2018) provide a starting overview of this sociological work on quantification and note the near universal reference to Ted Porter's *Trust in Numbers* (1995) which sought to understand the growing importance of quantification in politics and science.

other traditional research companies, context drops out not at the time of data cleaning and analysis as I had initially presumed, but in fact at the time of its collection. In contrast, as I discuss extensively in chapter five, for Akamai, embracing context has increasingly become an important strategy. I see these contrasting assumptions about best-practice data-making as illustrative of the difference between postcolonial objectivity and earlier regimes of objectivity.

During the debrief back at the Nyagaard offices the following day with the American client and other enumerators, I raise the point that "depends" was often given as a response. José, the American trainer from the client organization asked: "What did you do?" to Candida, the enumerator I had worked with. She explained that she had talked it out with the respondent and tried to understand what they were saying in more depth so that she could help choose the right answer.

"Instead of doing that, you could save time by just repeating the question to them. Because even after they go on their long story, they will eventually have to choose one of the two response options, right? So just repeat again, 'is it expensive or inexpensive' and if they say depends again, then just say, 'expensive or inexpensive.' The more people talk, the more you waste time," he stated matter-of-factly. Unspoken, he also seemed to imply, *and the more you waste time, the more you waste money*.

I realized then that the client did not actually care to hear the nuances of when or why something is considered expensive or cheap. He just needed an answer within what had already been determined as the appropriate frame of understanding. Here I also realized that there was great hesitancy to make any substantive changes to the survey because that would impede the possibility of cross-country analyses. If results were to be objectively comparable across country

contexts, then the questions had to stay the same except for literal translations into local languages.

Data then, in this example, is almost forcibly made—pre-conceptualized within and for a certain frame. I flashed on something that a Program Manager from the National Science Foundation had said to me several years earlier: "You can already see in the way a project is framed when there is nothing from the gathering of data that would alter the conclusions of the proposal. You can see that someone already knows what it is hoping to find, and they are simply going to mine for information that is already out there." "That," the program officer had emphasized, "is not science. There is no option that the hypothesis would be falsified or wrong."

This kind of pursuit of statistical objectivity, executed by a team of sub-, sub-, (and sometimes sub!) contractors who rarely, if ever, see the final outputs, leaves one empty-handed, devoid not only of scientific research validity, but also ethical validity.

"We get some of those people [respondents] who are very curious and intelligent about things and at the end of the whole interview then they say, so what? Now what? What is the point of the research?"

"Some give us their emails to send them the final reports. Of course, we don't because it is not within our scope. And even us we don't get the final report ourselves [laughs]."

The contracted Nyagaard Research enumerators opened up to me over our tea break at training after they learned I speak Swahili and that I was doing research on research in Nairobi. After hearing of my research topic, they told me that people who live in places like Kibera, Korogocho, Kawangware, and Kikuyu are so tired of being researched. "Even the DC [District Commissioner, an influential government position in the district] at Kikuyu refuses to let us do

any more research there. Some places have completely shut down research because they feel it doesn't help them, so we have to look for other places," they told me.

Studying the production of research "in the field" revealed to me missed opportunities for surprising research findings, generative relations and unique points of knowledge making. Research interlocutors are tired of paternalistic surveys and being quizzed for their knowledge of this or that product. They want answers, they want information, they want paid work. Or sometimes, they just want to be left alone. At best, frameworks for producing standardized, commensurate data overdetermine the data that is collected and remove any possible attunement to emergent phenomenon. At worst, such work is so abstracted that it does not represent anyone's understanding of reality. Privately contracted research often plays an important role in shaping product and organizational policy within a company. However, such research is rarely made public and does not include mechanism for review or disputing of results.

This section has offered a brief look at some of the heterogeneous and multiply located people who make data in and beyond the Nairobi research ecosystem. Although the data is made, in digital form, through encounters that take place on Kenyan soil, I have highlighted how the design and frame of the research instrument dictates what is captured as relevant data. The boundaries of what constitutes collected data are defined by people and discursive formations that move beyond national borders. To suggest that this data is "local" because it is made "locally" misses the ways that imperial forces are not necessarily external to everyday life in Nairobi but are in fact co-produced by the "local." Rather than attempting to disentangle the imperial from a romanticized regime of "local," instead in what follows, I present a heuristic for better understanding the multiple data ideologies at play that influence how research is conducted in Nairobi.

Enunciatory formations shaping Nairobi research data

In this section, I briefly present enunciatory formations which I have observed shaping notions of Nairobi research and its data. Kim Fortun's notion of enunciatory communities is helpful to point to the ways enunciatory formations are not a "unit" of analysis so much as they represent an "emergent effect of crosscutting forces," (2001, 14). These are dynamic discursive, material, and relational ecologies formed around particular logics, epistemologies, and sociologies. However, I resist using the term "community" in my description of these actors since such a term might suggest a level of connection and communication that is not currently in existence.

As mentioned at the start of this chapter, the Nairobi research landscape is heavily siloed, even within one of these enunciatory formations. I offer these groupings not to suggest they are discrete, self-contained ideologies and organizational alliances, but rather as an approach to better understand the array of explanatory logics in play that influence notions of credible and ethical research in Kenya. In practice, these ideologies are intercalated, but disaggregating them in this manner as I do below may help to better understand the multiple and at times contradictory pulls within the individual organizations, that I describe in more detail in subsequent chapters. A discursive analysis is foregrounded, but analyses of material and organizational layers of these formations were also considered in constructing these types.

Preservation for the Future

Keywords: Preservation; lost heritage; disappearing archives

Explanatory Logics	Data Types	Data Practices	Methods	Discursive Risk
Save materials that are disappearing to preserve them for an undetermined future	Digitized rare, printed sources, manuscripts, visual materials, audio recordings	Grants offered to create digital material in a format that facilitates long-term preservation, and at least two copies of these are stored: a primary copy that remains at an appropriate repository in the country of origin, and a secondary copy held at the funder's Library. Digitize material from before the middle of the twentieth century. Original material remains in the country in which it is located.	Digitization processes via specialized hardware; cataloguing	Reproduces colonial dynamics that have led to contemporary calls for restitution. Ignores the question of governance and ownership of archives. Who preserves (and owns) whose archives?

An organizational example where one can find strong illustration of this discourse is the British Library's Endangered Archives Program (https://eap.bl.uk/), whose website quotes their co-founder, Lisbet Rausing as saying: "The Endangered Archives Programme captures forgotten and still not written histories, often suppressed or marginalised. It gives voice to the voiceless: it opens a dialogue with global humanity's multiple pasts. It is a library of history still waiting to be written," (Lisbet Rausing, co-founder of the Endangered Archives Programme).

Open Data for Credible Science / for Effective Development

Keywords: reproducibility; academic honesty; transparency; reusability; audit; cost-effective; results; speeding up

Explanatory Logics	Data Types	Data Practices	Methods	Discursive Risk
Make research more transparent, accessible, and reusable so results can be audited /to reduce scientific duplication and academic dishonesty	Research instruments (e.g., surveys, discussion guides), pre-analysis plan, csv data ("raw" and "analyzed"), code scripts used in analysis, final reports; geospatial data; linked data	Focus on the individual to understand "human decision making and behavior;" data collected through digital software on handheld devices (applications downloaded to an individual's mobile phone that track behavior; scenarios on tablets administered in a testing room or "in the field"); certain research outputs made public (pre-analysis plan; data; final report; research instruments); data linked within final academic journal publications (often as "validation").	Surveys (open-ended and close-ended); focus group discussions; one-on-one in-depth interviews; experimental lab tests ("lab-in-the-field" and "lab-in-the-lab")	Continued dominance of existing hegemonic (increasingly corporate) Western knowledge systems and literatures; "best practices" that stem from US and European urban centers.

Organizations which are heavily situated in this enunciatory formation include the Center

for Open Science; Kenya Open Data; World Bank; Gates Foundation (and other Development

funders); Akamai;[94] and the Center for Effective Global Action (CEGA) at UC Berkeley, which

states on their website (https://cega.berkeley.edu/): "CEGA strives to produce research and

related outputs that meet a high standard of scientific rigor, policy relevance, and innovation. We

do this by leveraging our extensive intellectual assets, strategically and responsibly mobilizing

human and financial resources, building capacity, and partnering with others who bring

complementary expertise."

Global Representation for Greater Diversity

Keywords: Internationalization; "world-class"

Explanatory Logics	Data Types	Data Practices	Methods	Discursive Risk
Promote and enroll African academics in global research structures to increase their visibility on the "global stage" (through collaborations; express calls for contributors from historically marginalized places)	Scholarly outputs including academic papers; reports; conference proceedings; theses and dissertations; multimedia; transcripts of lectures/speeches (see for example the Univ.of Nairobi's data repository)	Data and journal articles published openly for grant recipients on foundation-sponsored sites (e.g Gates Foundation); Article Processing Charges to publish open access covered by particular universities/countries in order to rank higher on international rankings of higher ed	Impact factor rankings of journals considered as part of tenure and progress reviews; The Times Higher Education World University Rankings used as performance data on universities	Continued centering of Euro-American humanitarian agential academic; continued dominance of existing hegemonic (increasingly corporate) knowledge systems and literatures (with greater diversity of inputs and contributors)

Examples of this enunciatory formation can be found especially among African

governments and universities; African Academy of Sciences; Kenya Vision 2030; Gates

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[94] A pseudonym and one of the institutions where I conducted fieldwork in Nairobi.

Foundation and other development funders; global North Open Science; sympathetic Western academics; university libraries; Akamai;[95] and academic publishers like F1000 that have stated:

> Despite all good intentions, evidence suggests that implicit bias in the peer review and editorial selection processes mean that authors from some ethnic, geographic or demographic backgrounds are often at a disadvantage. A disproportionate volume of publications in scientific journals tend to be authored by researchers from a relatively small number of countries. … Enabling these researchers to decide for themselves what results they wish to share and when, will put their research on a level playing field with researchers from other countries around the world. This will remove the long delays and editorial biases for these research communities who currently find it disproportionately difficult to publish their research. (Lawrence 2017)

Afro-centric Towards Decolonizing Knowledge

Keywords: Africans for Africa; restitution; epistemic justice

Explanatory Logics	Data Types	Data Practices	Methods	Discursive Risk
Reduce reliance on external interventions and mobilize to invest in African knowledge structures and manage systems themselves (rather than having them managed by non-Africans); repatriation/restitution of materials back to their origins	Material cultural heritage artifacts; digitized printed sources, manuscripts, visual materials, audio recordings	Events to foster and build community; little emphasis on data but if any, would be similar to notions of indigenous data sovereignty (Kukutai et al. 2016) where community groups should be able to own and manage their own data.	Advocacy to put pressure on national governments (webinars, blog posts; research projects); establishment of Afro-focused, based-on-the-continent initiatives to offer alternatives to the Afro-focused orgs based outside of Africa; grassroots mobilization through tools like social media	Risk of reproduction of existing geographic boundaries and notions of "Africa"

Examples include the Council for the Development of Social Science Research in Africa (CODESRIA); The Nest Collective; SDI;[96] Book Bunk; progressive liberal Western academics; Ukombozi Library; pan-Africanists; and African Studies Association of Africa (ASAA) (https://as-aa.org/) who have as their mission statement: "To promote Africa's own specific

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[95] A pseudonym and one of the institutions where I conducted fieldwork in Nairobi.

[96] A pseudonym and one of the institutions where I conducted fieldwork in Nairobi.

contributions to the advancement of knowledge about the peoples and cultures of Africa and the

Diaspora."

Digital Data for Scalable Solutions				
Keywords: Big data; algorithms; tech solutions; techno-optimism; value				
Explanatory Logics	**Data Types**	**Data Practices**	**Methods**	**Discursive Risk**
Leverage the affordances of digital technologies to increase the availability and better mine digital data and information to create solutions, products and actionables	Digital user data (online activity including social media content; geospatial data)	Mining of social media data, app user data, existing open data; development and use of generic algorithms from open-source code libraries	Spatial analytics (locational analysis; GIS); natural language processing; statistical modeling	Ignores capabilities approach (Sen) related to who can leverage available digital data; downplays risks of technology adoption and use

Examples include Google; Microsoft; BRCK; Ushahidi; Nyagaard Research;[97] and IBM.

At the IBM Research Office launch in Nairobi which I attended in 2014, the keynote speaker

stated:

> The data has huge varieties. It's not just textual data that people are typing, it's coming from sensors, it's coming from … many connected devices, it's coming from radiological images, massive amounts of data being generated. And interesting, the data has varying degrees of veracity. It's not always accurate, it's not always true, we have to find ways of working with different kinds of data, different mediums of data, to in fact, extract valuable information. But one of the things that we'll see as we address the problems of Africa is the ability to relate that data together and to find patterns, and in fact, to find surprises. And as we begin to extract features, find patterns and find connections, we're going to find amazing things. And they will fall right into the bullseye of the kinds of things we're going to need to do in Africa. (Okune 2018a)

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[97] A pseudonym and one of the institutions where I conducted fieldwork in Nairobi.

Techno-conservativism for Human Protection				
Keywords: Ethics; anti-surveillance; anti-audit; risk-reduction				
Explanatory Logics	**Data Types**	**Data Practices**	**Methods**	**Discursive Risk**
Opening access to data, especially qualitative data, carries great risk for interlocutors that no one can predict. Better to protect and store it privately as has been done for generations than risk future unknown potential harms.	Paper-based data (including jottings, fieldnotes); images; audio recordings; text artifacts (interview transcripts)	Follow IRB protocols; data kept in multiple forms (paper, digital) and multiple places (notebook, laptop, paper); stored data kept in locked safe until required to delete/discard	Ethnographic interviews, human centered design methods	Justifies and reproduces the academic status quo

Examples include concerned ethical Western academics who articulate that: "I am worried about Open Data because even if people care and do the work to make things open, private sector can just take advantage of the data. But the private sector is not giving that data back." (academic interlocutor, June 2019)

Application of the Heuristic

To re-emphasize my earlier assertion that the enunciatory formations I describe above are not stand-alone types, but rather a heuristic for understanding the multiple strands that produce convincing narratives about research data, I want to look at one example, AfricArXiv. AfricaArXiv, a pan-African preprint repository[98] launched in June 2018 with the aim to increase the visibility and discoverability of African research outputs. While not founded by Kenyans, the initiative has partners and board members from Kenya and hosts work by Kenyan researchers. AfricArXiv Advisor Obasegun Ayodele is quoted in a blog post: "Context matters. Parachuted in 'solutions' are dangerous if you don't understand cultural nuance. We are therefore working with

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[98] A pre-print refers to a version of a scientific manuscript posted on a public server prior to formal peer review. Pre-print repositories have become increasingly common and popular over the last ten years, although the sharing of pre-prints (in paper format) goes back to at least the 1960s (Cobb 2017).

Code for Africa (CfA) on surfacing Africa-specific scientific research along with local experts to help local planners and the media better understand the underlying dynamics that contribute to the spread of the virus," (Code for Africa 2020).

This quote, in its emphasis on the specificity of Africa and importance of adapting universal solutions to local contexts seems closely aligned with the "Afrocentric Towards Decolonizing Knowledge" enunciatory formation. But the AfricArXiv platform itself (a branded version of the US-based Center for Open Science platform) and its partnerships with many of the major Open Science actors illustrates the initiative's close ties with the "Open Data for Credible Science / for Effective Development" formation. Finally, the platform's co-founder Jo Havemann is quoted in a press release that uses rhetoric common in the "Global Representation for Greater Diversity" formation: "AfricArxiv will combine and reflect the diversity of African scientists' research output and make it accessible to African as well as non-African scientists and non-scientists around the globe. Together with other regional preprint repositories (Arabixiv, INA-Rxiv) this is an essential contribution to diversify Science," (Center for Open Science 2018). Thus, in just one organizational example, influence from three enunciatory formations can be identified. AfricaArXiv may have stronger and weaker ties across these enunciatory formations, but these three formations appear to influence their discourse, capital sources, staffing and organizational resources.

Implications for Postcolonial Objectivity

In this chapter, through close ethnographic description of the production of digital field research data in Nairobi, I illustrated how imperial forces are not necessarily external to quotidian research work in Nairobi. Instead of fixating on empires as clearly bounded imperial

cartographies, thinking of imperial formations as fluid, states of becoming, may help to better trace their moving categories and force fields (Perdue, McGranahan, and Stoler 2007; Stoler 2013). I offer an initial heuristic for better understanding the multiple ideologies and formations at play in the production of research data in Nairobi. The recognition that multiple forces act on the production of research data within, across and beyond national borders, what I hold to be one marker of postcolonial objectivity, is an important precursor for more thoughtfully designing the production of one's own research data. An ethnographic understanding of the common ways through which research data is made in Kenya also sets the stage to understand the kinds of practices that the organizations I turn to next in Part II are attempting to push back against.

Pursuing Decolonization				
Character, practice, mode and ideals of decolonized Kenyan knowledge producer in different periods	**1963 - 1988** **Freedom fighter turned entrepreneur**	**1988 - 2008** **Developmentalist, structurally adjusted one-party state**	**2008 - 2015** **tech entrepreneur, wired**	**2015 - …** **Cosmopolitan turned anti-imperialist**
Aspiration	return of land stolen by colonial settlers	multi-party democracy; high quality education for a better life	economic wealth and global standing / recognition	epistemic justice and sovereignty
Context	Flag independence gained by Mau Mau freedom fighters, many turned to business to prove their equal standing with former colonialists; business as development of the nation; investments in social programs.	Cold War investments in area studies; structural adjustment programs imposed; Moi government ruled as one-party authoritarian state for over 20 years; universities gutted.	Technocrat president; charismatic minister of ICT establishes technical infrastructure for fast Internet; surge in organic mobile phone uptake; tech hubs; post-election violence led to tech solutions for social problems	Rising economic and social inequalities; government corruption scandals; growing wariness of state, funder, and media narratives about techno-utopian futures; global reckoning with anti-blackness and American techno-capitalism
Persona	nationalist	activist	cosmopolitan	place-based
Practice			trained expertise	altruistically engaged
Image			structural / statistical	polyvocal
Ontology			"trust in numbers" (Porter), "data-driven"	grounding in context; recognition of "made" character of data
Eso-Enunciatory Formation		activist university critics (who were exiled in 1982); MwaKenya	technology sector (including educated elites; start-up founders; tech hubs); international funders; American tech companies	Kenyan critics; Pan-Africanist feminists; educated elites; social activists; local creatives
Exo-Enunciatory Formation		diaspora NGOs; diaspora academics	Local and non-local academics; media; governments	progressive local and non-local actors in Nairobi
Techno | Infrastructure	interpersonal relations (many established through Mau Mau, for example)	paper; radio	cloud-based; international	open source; interpersonal
Tools			universal; designed to travel	self; attuned to context; constantly shifting; instrumental
Relevance	Kenya-rooted and focused knowledge	"Development" focused knowledge	Extroverted (outward facing) knowledge	local-focused knowledge

* I presented a blank version of this table at the start of Part I. Now, I offer a filled-in (but not completed) version of the table to summarize what I hope to have described in Part I as the backstory for the emergence of postcolonial objectivity. I leave blanks as openings for others to contribute.

Part II

A Litany of Tactics Towards Postcolonial Objectivity

Pursuing Decolonization, Differently (showing variation)			
Character, practice, mode and ideals of decolonized Kenyan knowledge producer in different organizations	**For Profit Research** 2005 - present	**Progressive libraries** 2017 - present	**RDS** 2019 - present
Aspiration			
Context			
Persona			
Practice			
Image			
Tools			
**Techno	Infrastructure**			
Ontology			
Eso-Enunciatory Formation			
Exo-Enunciatory Formation			
Relevance			

* This is a variation of the table presented in Part I which I developed while reviewing my ethnographic materials to draw out a more nuanced understanding of the pursuit of postcolonial objectivity grounded in its location. The left-hand column remains the same from Part I, but the upper row is now different to illustrate the variation amongst those pursuing postcolonial objectivity in the contemporary moment. I offer this empty frame here to evoke a sense of what is to be described in Part II of this dissertation. A filled-in version of the table can be found on page 230 to summarize what I hope to have conveyed in Part II.

Chapter 4

Re-membering Kenya:
Building Public Library Infrastructure
as Decolonial Practice

By: Angela Okune and Syokau Mutonga

Introduction

"What are you going to do with the lion's head?" I (AO)[99] asked Syokau, teasingly but genuinely curious. I was referring to a stuffed lion's head which seemed to have become somewhat of an infamous McMillan Library[100] mascot among those who visited. The lion's head (see Figure 16) caught my eye during my first visit to the McMillan Library in February 2019; left atop a dusty table outside of the second floor Africana library, it looked as if someone had tossed it there years ago and had not bothered to move it since. The clear lack of regard for it—as if the librarians and library staff didn't know what to do with it—was

Figure 16. The lion's head that can be found— sometimes—in McMillan Library's main branch (Nairobi, Kenya). Photo credit: Author (Angela Okune)

perhaps what struck me as much as the very materiality of a decaying lion's head just laid out for anyone to touch. But a few weeks later, when I returned on a sleepy Saturday with my four-year-old son in tow, having enticed him to come with me by telling him he would get to see a real lion's head at the library, it wasn't there. It had been moved.

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[99] Given multiple authorship, we indicate who is speaking using our initials. AO refers to Angela Okune and SM refers to Syokau Mutonga.

[100] The McMillan Memorial Library, one of the oldest libraries in Kenya, was established by Lady Lucie McMillan in memory of her late husband, US-born philanthropist, Sir William Northrup McMillan. The Library opened its doors in 1931 to Europeans only until its management was handed over to the Nairobi City Council in 1962 at the eve of national independence. Learn more about the history and context of McMillan library in this digital exhibit: Matathia, Trevas and Angela Okune. 2019. "McMillan Library." In Scholarly Memory in Nairobi, Kenya: Care for Sites and Sources, created by Angela Okune, Trevas Matathia and Syokau Mutonga. In Innovating STS Digital Exhibit, curated by Aalok Khandekar and Kim Fortun. Society for Social Studies of Science. August. https://stsinfrastructures.org/content/mcmillan-library/essay.

Needless to say, my son was mad at me for making false promises. But the removal of the lion's head from public view also flagged for me its paradox. The lion's head was illustrative of a double bind that the staff at McMillan library, not to mention others working on reviving and establishing libraries in diverse postcolonial and settler colonial sites around the world, are grappling with—what to remember and forget in attempts to decolonize. What to do with the massive ivory tusks of some poor elephant who happened to be living at the wrong period of time when Kenya was a colonial site of hunting expeditions for white foreigners, like Sir William Northrup McMillan?[101] What to do with a decaying lion's head? These charismatic items are a strange delight for tourists to the library—Kenyans and non-Kenyans alike—although for regular library users, they are quickly normalized as part of the library's environment. Such artifacts give the library "character" and are material reminders of Kenya's colonial and imperial past and present. How to contextualize these materials and memories appropriately? Not to glorify or romanticize an adventurous past that centers the heinous deeds of white "frontiersmen," but also not to erase them and their historical presence, since doing so risks ignoring the influence such colonial logics had and have on continued imperial formations.

In this chapter, we reflect on these challenges and the work currently being undertaken by teams and individuals seeking to revitalize libraries in and for various Kenyan publics in Nairobi. We are in full-throated agreement with the need to decolonize libraries and other knowledge infrastructures.[102] However, without intending to misrepresent important and necessary

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[101] American millionaire William Northrup McMillan came to Kenya in 1904 on a shooting expedition and decided he would stay. He became a British citizen during World War I and received knighthood for his wartime services. He is well-known for having hosted former U.S. President Theodore Roosevelt in 1909 at his lavish estate in Kenya. McMillan died in 1925.

[102] By knowledge infrastructure we mean the people, artifacts, institutions, and relations that generate, share, and maintain specific knowledge about human and natural worlds. We pluralize the term to highlight, as Edwards et al. (2013) noted, that knowledge infrastructures are not one system, but are numerous multi-layered and adaptive systems, each with unique origins and goals, that are always interfacing and interacting. Under "knowledge

decolonial work, we suggest that, in practice, decolonizing might look similar to "forget and move on," a force we describe as having failed to address historic injustices and violence in the country. But if decolonizing is in fact *not* the same as forgetting the British legacy, what is it? We suggest that looking to progressive librarianship (Durrani 2014) might offer a counterpoint to "forget and move on" and a way to think about what decolonizing without forgetting might look like. We frame the work being done by Book Bunk, a not-for-profit trust undertaking restoration of the McMillan libraries in Nairobi, as progressive librarianship and describe the ways in which the Book Bunk team are attempting to decolonize the libraries in ways that don't get caught in a culture of "forget and move on." While the role of the academic library is not explicitly the focus of this chapter, we believe Book Bunk's experiences are applicable to other kinds of libraries including Nairobi's university libraries.

What is the provocation to the move towards seeking decolonial practices?

The African library did not originate in and with colonialism. In ancient Ghana's cosmopolitan city of Timbuktu for example, the most profitable trade items were books. Under Mansa Musa's rule from the 13th to 17th centuries, Islamic learning centers, schools, universities, and an incredible library were established in Mali. In the city of Chinguetti in Mauritania, libraries containing over a thousand Quranic manuscripts survive to this day (Jurgens and Momoniat 2020). Today, ancient manuscript collections, some dating back to the

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infrastructures," we would include the infrastructures underlying academic and non-academic research, libraries, archives, data repositories, and scholarly publishers. We would include not only the built material spaces of these institutions, but also the technical platforms and human and social networks that give them vibrancy and life.

8th century AD, are re-emerging across the continent. Nonetheless, the role of the library within African society is still up for grabs.

"You can tell who the library was supposed to serve simply by its placement in the city," explained Trevas, a University of Nairobi anthropology student who was helping me (AO) to develop a crowdsourcing map of libraries and archives in the city. "McMillan was only for white settlers when it first opened and is in what today is considered 'uptown' Central Business District, whereas Ismail Rahimtulla Walji Trust Library was meant for all people from day one and sits in 'downtown.'"

Diverse libraries and archives[103] as mapped in Figure 17 are dotted all over Nairobi—some in the heart of the Central Business District's hustle and bustle, some located within social justice centers in densely populated informal settlements, and some far away from the residences of working-class Kenyans, located within foreign embassy compounds in leafy Gigiri. These libraries serve diverse users and agendas, funded by philanthropic donors, foreign and state governments, NGOs, and individuals, Kenyan and non-Kenyan alike. There are also public libraries under the national government (Kenya National Library Service)[104] and university libraries that primarily serve academics and students.

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[103] At times we also refer to archiving because, in our experience, many of the libraries in Kenya also house or have housed archival collections. You can find the crowdsourced map of libraries and archives in Nairobi here (https://researchke.ushahidi.io/views/map). It is not comprehensive but meant to be an initial start to aggregate some of the information about the diverse libraries in Kenya.

[104] The Kenya National Library Service (KNLS) is the Kenyan government's mandated library provider for all Kenyans.
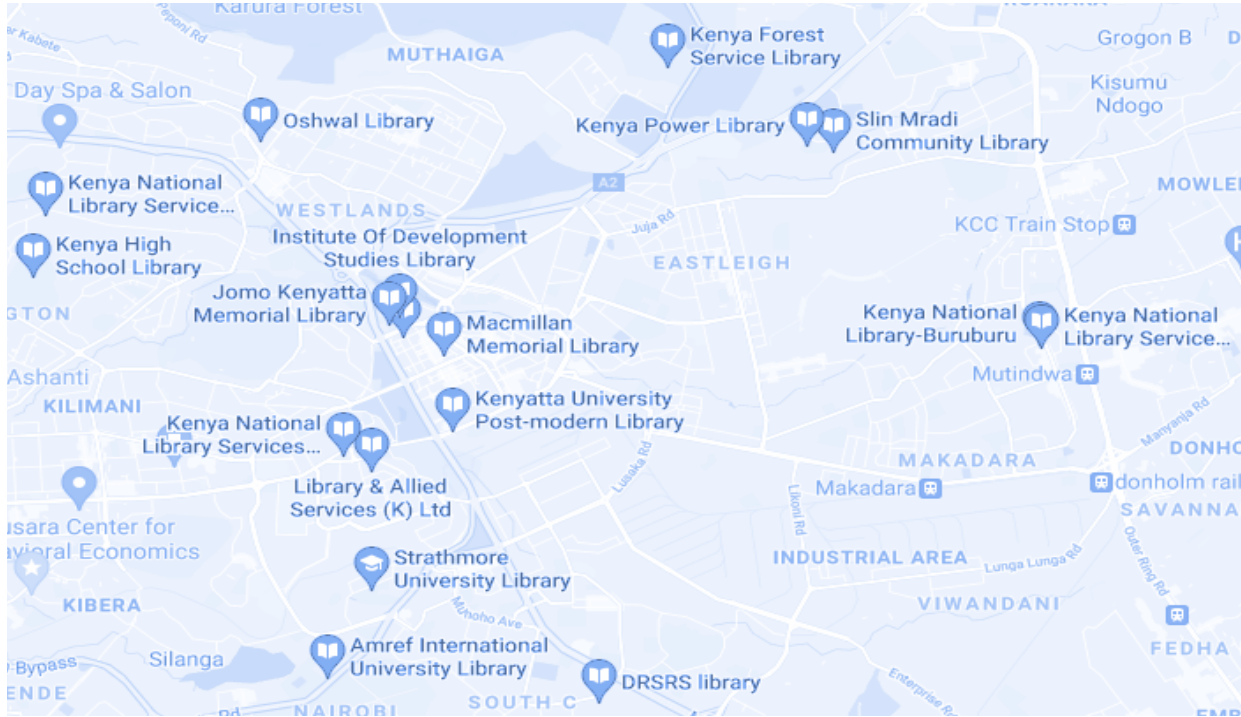
Figure 17. This visual map of Nairobi taken as a screenshot from Google Maps offers an incomplete but initial snapshot of the libraries that dot the city. Many of the city's community library and other more informal libraries are missing from view. Source: Google Maps

A new cadre of Kenyan digital humanities specialists have also entered the Nairobi library and archives ecosystem and include the African Digital Heritage initiative (https://africandigitalheritage.com/), focusing on the application of technology in the preservation, engagement and dissemination of African heritage; the Museum of British Colonialism (https://www.museumofbritishcolonialism.org/) which has digitally recreated Mau Mau detention camps; Wer JoKenya (https://www.werjokenya.com/), an online journal that seeks to document, highlight, protect, and celebrate Kenya's diverse musical history; and Paukwa (https://paukwa.or.ke/), a counter-narrative online library of Kenya's histories.

Table 2. Mission statements from some of the digital humanities initiatives in and for the country

African Digital Heritage: "Working at the intersection of culture and technology we seek to explore issues around digitization, digital engagement, digital research and digital participation within African heritage. We love experimenting with new technologies. From virtual reality to mobile applications. Our experiments fuel our curiosity, but they also push us outside our comfort zone. Most importantly they allow us to imagine alternate realities and visualize

history in interactive, immersive ways. Our main interests lie in but are not limited to: Interactive maps, Augmented Reality, Mobile Applications and Virtual Reality." **Source:** https://africandigitalheritage.com/about/

Museum of British Colonialism (MBC): "MBC is a joint UK-Kenyan project created to communicate a more truthful account of colonialism. Our mission is to restore and make visible suppressed, destroyed, or underrepresented histories relating to British Colonialism." **Source:** https://www.museumofbritishcolonialism.org/themuseum

Wer JoKenya: "Wer Jokenya is a Luo phrase that means, "Music for the people of Kenya." Wer Jokenya is an online journal and repository that seeks to document, highlight, protect, and celebrate Kenya's diverse and precious musical history." **Source:** https://www.werjokenya.com/about

Paukwa: "Paukwa is a place dedicated to positive stories about Kenya. The story house is named for the Swahili word that is an invitation to a story - Paukwa. It's an age-old term, well known across East Africa. Paukwa invites one to remember the joy of stories from their childhood days and to get lost in new, familiar or unknown ideas about the daily things that surround us. Paukwa is a space that celebrates memory, culture, modernity, but most of all, the positive." **Source:** https://paukwa.or.ke/

While developing a digital map of the various libraries and archives in the city, Trevas and I (AO) observed the varying levels of security at the different library locations. While some libraries like Alliance Français had security rivalling the international airport, others had no security, except perhaps their lack of marking. One could easily, for example, pass the Ukombozi Library hundreds of times without ever knowing its location. The books held by Ukombozi were once part of the Mwakenya movement's collection. Mwakenya, an underground Kenyan socialist movement especially active in the 1980s, was formed to fight for multi-party democracy and these books, which only recently became open to the public in 2017, are today located on the third floor of a building largely constructed of cement and iron sheet roofing across from the University of Nairobi. The well-worn stairs up to the library hint at decades of foot traffic.

For the activist scholars, researchers, and creative artists in Nairobi, the question of decolonizing the library and broader centres of knowledge is not a metaphor.[105] It is a question of where to put the lion's head and elephant tusks, dismembered animal parts that are metonymic of the dismemberment of Kenyans. Kenyan philosopher Ngũgĩ wa Thiong'o (2009) describes Europe's contact with Africa as one characterized by dismemberment. During the first stage, he explains, the African personhood was divided into two halves: the continent and its diaspora. The second stage was the literal fragmentation of the African continent and reconstitution into British, French, Portuguese, German, Belgian, and Spanish Africa through the Berlin Conference of 1884. Finally, he mentions the additional dismemberment of the diasporic Africans who were not only separated from their continent and labor, but also from their very sovereign being. When we write then of "re-membering," we are in conversation with Ngũgĩ and others' work on the dismembering of African personhood past and present and grappling with how to "re-member" the African body politic who have been divided from their land, body, and mind.

What motivates this formation?

Nairobi is home to diverse libraries, with varying funding mechanisms and users, who have nuanced motivations and ways of working. Many of these libraries run programs or

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[105] Here we are gesturing towards Tuck and Yang's highly influential piece, "Decolonization is not a Metaphor" (2012) where they note that the metaphorization of decolonization makes possible a set of evasions that problematically attempt to reconcile settler guilt. In this chapter, we find thinking about decolonization as material, not metaphor, to be particularly generative. Decolonizing non-metaphorically, according to Tuck and Yang, would mean to work towards the elimination of settler property rights and repatriation of land, an important discussion that was heavily debated during the decolonial moment in the 60s when labor leaders like Harry Thuku, demanded that stolen lands be returned to the rightful owners. The land question was in fact a primary motivating drive for the Mau Mau movement but to this day, their grievances have not been addressed. The "repatriation" discussed in the context of decolonizing Kenyan libraries focuses not on land but on cultural artifacts, both digital and material. Nonetheless, we would be interested in thinking with others on the elimination of settler property rights in contemporary Kenya and what that might mean for reversing what Ngũgĩ wa Thiong'o has called "a calculated sugar-coating of an immoral sale and mortgage of a whole country and its people…" (1981, 13)

initiatives that effectively are working to counter an erasure of national memory perpetuated by a culture of "forget and move on." However, these libraries, especially the public system, have been deeply affected by the last thirty years of neoliberal policies in Kenya. Many Kenyans born or raised during or in the aftermath of Structural Adjustment Programs (SAPs) have lost connection with their own history, partly due to the lack of investment in local institutions of knowledge and memory, as well as erasure of Kenyan resistance silenced through state violence. Structural Adjustment Programs were a scheme of loans from the International Monetary Fund (IMF) and World Bank in the 1980s and 1990s that were accompanied by policy conditions which included the liberalization of trade and the privatization of many government enterprises. Today, SAPs are recognized as having had wide-spread negative impacts on the well-being of citizens, especially those most marginalized in the country (Emeagwali 1995).

It is often assumed that SAPs primarily impacted health access and social services; in fact, the deep impact of SAPs on the contemporary state of Kenyan schools, libraries, data infrastructure, and overall scientific capacity cannot be overstated. In the period prior to the imposition of SAPs, academic libraries were part of a Kenyan university culture of student activism and decolonial strategizing, a key site of student activism (Klopp and Orina 2002). However, academic libraries in the region since the 2000s have had a limited role in contemporary social justice movements. While the history and geopolitics of structural adjustment are distinct from the history invoked by decolonizing the library, it is crucial to see the connections.

There is still little public discourse about the detrimental effects of the Bretton Woods' SAPs on/in Kenya. This is most likely because part of the legacy of the SAPs is that they limited funds for public services like libraries and public universities. Of course, this is not to discount

the important work by Subbo (2007), Rono (2002), Oyugui et al. (1997) and others on SAPs in Kenya, but to note that critiques of these programs have largely been relegated to the academy and do not circulate in everyday conversation as we have learned, anecdotally, they do in other national contexts such as in Zimbabwe. Any mention of the SAPs lasting and on-going effects on public services and systems are largely absent in both regular media reporting and educational curricula, including in history classes. This "structurally adjusted" Kenya whose public infrastructures have been defunded and local industries debilitated as a result of requisite financial policies imposed by Bretton Woods institutions offers a starting point for understanding how multinational private corporations today have such a captive audience for their "free" services. We will expand on this point at the end of this chapter.

First, we want to briefly discuss the Mwakenya movement since the deliberate erasure of its legacy is important to understand both the force of "forget and move on" and also for understanding the foundations from which Shiraz Durrani's concept of progressive librarianship (2014) developed and grew. We build on work by Joyce Nyairo who writes: "one of the glaring fault lines in the construction of the Kenyan nation is not the absence of memory, but rather the deliberate institutionalization of amnesia," (2015, 69). She refers to the "deliberate erasure of … any semblance of remembrance that celebrates a version of being or becoming in ways and forms that run contrary to the singular version that is inscribed by the state and the institutions that enable it," (2015, 69). The work of Nyairo (2015), Gathara (2020a; 2020b), Manji (2020) and others suggest that a dominant narrative in Kenya of "forget and move on"[106] glosses over unfair, unequal and at times violent actions of the state and non-state actors and avoids tackling

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[106] There are several key moments in recent Kenyan history including the Post-Election Violence in 2007/2008, and the armed attacks on the Westgate Mall in 2011, which we believe have furthered a habit and national narrative of "forget and move on."

the underlying root of the issues. Such a lack of resolution at particular moments in Kenyan history leads to an increasingly disillusioned and cynical public who do not trust public narratives or institutions, but who are also missing a deep connection to their own histories of resistance, where rich dreams of decolonial futures could provide the nutrition and support for their own to be established.

Remembering Kenya's Mwakenya Movement

In the late 1980s, the Moi government initiated a crackdown on the underground political movement known as "Mwakenya" (*Muungano wa Wazalendo wa Kukomboa Kenya* or the Union of Patriots of for the Liberation of Kenya) who were described by the government as a group of very dangerous individuals engaged in a guerrilla war. In fact, the Mwakenya movement was formed to fight for multi-party democracy and its members, which included many Kenyan university faculty and students, advocated for the opening of democratic spaces in Kenya. However, the movement was forced underground due to state violence. Moi is quoted as saying: "From today you should keep quiet. I don't want to hear anything again about Mwakenya." "Keep quiet" Moi repeated. "The government will deal with them one by one. We will collect them so don't mention Mwakenya again. Let's keep quiet and go on collecting them. I am happy that we have uncovered them and they are naming their fellow collaborators. This is very encouraging. If you were involved in this thing you should be worried," (Friedrich-Ebert-Stiftung and Citizens for Justice 2003, 3–4).

Twenty years earlier, in the years following independence, the country was jubilant and ready for the start of a bright Pan-African future. The university was a key site for decolonial thinkers excited to reimagine society and rid it of colonial structures and logics. But by the late 1970s, these same intellectuals were labelled dangerous traitors by a government who saw them

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as high potential risks for inciting the public against the state. Ngũgĩ wa Thiong'o was one such leader. In 1977, his controversial play, *Ngaahika Ndeenda* (*I Will Marry When I Want*), written with Ngũgĩ wa Mirii, was performed at Kamirithu Educational and Cultural Centre. Because it was sharply critical of the inequalities and injustices in Kenyan society, unequivocally championed the cause of ordinary Kenyans, and was committed to communicating with Kenyans in the local languages of their daily lives, Ngũgĩ was arrested and imprisoned without charge at Kamiti Maximum Security Prison in 1977. He was eventually released a year later after many in Kenya, Africa, and internationally including University of Nairobi students, the Pan-African Association, and Amnesty International, fought for his release. Then, while Ngũgĩ was in Britain for the launch and promotion of his book, he learned about the Moi regime's plot to eliminate him on his return. This forced him into exile, first in Britain and then the U.S. where he resides today (wa Thiong'o 1981).

Ngũgĩ was one of many Kenyan intellectuals forced into exile during the 1980s. Using a 1982 coup as justification, the Moi regime arrested hundreds of faculty and students. The University of Nairobi and Kenyatta University were closed for one year and on reopening in 1983, became divided into several faculty administrative units, part of divide and rule tactics. The Moi special police force invaded university libraries and removed all books by or on Vladimir Illyich Lenin, Karl Marx, Che Guevara, Malcom X, Franz Fanon, Ngũgĩ wa Thiong'o, Maina wa Kinyatti and Fidel Castro (Friedrich-Ebert-Stiftung and Citizens for Justice 2003). Reading these books or others published by the Mwakenya movement led to quick detention. For instance, in the early 1980s, security forces were deployed to look for copies of *Pambana*, the first underground anti-imperialist and anti-neo-colonial newspaper since independence; anyone caught reading or distributing such material was arrested. Leading thinkers arrested at this time

included Maina wa Kinyatti, Mukaru Ng'ang'a, and Willy Mutunga (Gisesa 2020). Despite being branded as a terrorist organization by the Moi government, Professor Isaiah Ngotho Kariuki, a former Dean in the Faculty of Commerce at the University of Nairobi and Mwakenya leader is quoted in a 2013 news article debunking this claim: "Our movement was not clandestine. It was a public movement where we gave open lectures and distributed literature to tell Kenyans what was wrong with the society and what we wanted changed. … It was a tool for democratic struggle, a progressive lobby group, and open forum that was only forced underground by unnecessary crackdown," (Oluoch 2013).

But despite what began as a public movement, being forced to "keep quiet" across generations fades many of these public memories and critical consciousness. By the early 1990s, for example, the term "mwakenya" was used by some to refer not to the activists, but rather to banned answer booklets handmade by and circulated amongst high school students to peek at during midterm and final exams. In short, Moi's admonishment to "keep quiet" worked to snuff out memories of the progressive politics and calls for democracy that the movement stood for. Today, many Kenyan youth are unfamiliar with these names, this history of resistance, and the Mwakenya movement. As Nyairo writes: "…nations are constructed by what they bury and forget, just as much as they are built on what they choose to remember," (2015, 69). Thus, we see here the need for knowledge infrastructures that go beyond housing official histories, which also offer safe spaces for archiving and sharing histories of resistance and subversive politics. The legacy of Mwakenya is little talked about today. Nonetheless, as the re-emergence of the library collection of the Mwakenya[107] in 2017, and the growth of the Ukombozi Library reading

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[107] Learn more about Ukombozi Library in this digital exhibit: Okune, Angela. 2019. "PALIAct Ukombozi Library." In Scholarly Memory in Nairobi, Kenya: Care for Sites and Sources, created by Angela Okune, Trevas Matathia and Syokau Mutonga. In Innovating STS Digital Exhibit, curated by Aalok Khandekar and Kim Fortun. Society for Social Studies of Science. August. https://stsinfrastructures.org/content/paliact-ukombozi-library/essay.

clubs symbolize, the Mwakenya legacy is not gone. The movement remains active, albeit less public and less widely known as in its early days.

What are the tactics? How are the tactics ideologically driven?

The symbolic renaming of streets and buildings has been an important part of the practices of decolonizing. Doing so renounces the colonial regime and its ideology and redefines a city's identity with symbols of nationalism and pan-Africanism. As Wanjiru and Matsubara (2017) have discussed, in the process, street names can act as sites for the restitution of justice, spatial memory, and ethnic unity. However, without intending to misrepresent important and necessary decolonial work, we suggest that, in these practices, decolonizing might also look similar to "forget and move on," a force we describe as having failed to address historic injustices and violence in the country.

In a 2014 news article in the local newspaper, Dedan Kĩmathi Waceke, the grandson of leading freedom fighter Kĩmathi wa Waciũri (who is known widely as Dedan Kĩmathi), claimed that not enough was being done to honor the freedom fighters who helped secure Kenyan independence from the British (Kimani 2014). Calling for one of the major roads in Nairobi to be renamed, he caused a stir when he chained himself to a statue of his grandfather situated on Kĩmathi Street in Nairobi (which had been renamed from the colonial era "Hardinge Street"). Michael Kĩng'ori, another descendant of Mau Mau freedom fighters is quoted as saying: "We are slowly killing our country's history. Naming of roads and erecting statues of honor is the only way we can remember the great freedom fighters of the country," (Kimani 2014). Clearly though, as the persistent grievances held by Kĩmathi and other descendants of Kenyan freedom fighters illustrate, re-naming streets and erecting statues are not sufficient ends for

"decolonizing." In an article analyzing the symbolism of the Dedan Kĩmathi statue unveiled in

Nairobi in 2007, Annie Coombes quotes an excerpt from periodical *The East African*: "A better

memorial would be an honest retelling of the story of his [Kĩmathi's] struggle…" (2011, 210).

In the young Kĩmathi's plea for remembering his grandfather, we hear a plea that goes

beyond renaming another street, but rather calls for greater structural changes towards realizing

the freedom fighters' vision of an emancipatory future for all Africans. In the following sub-

sections, we share some of these dreams and critiques of the colonial and postcolonial

governments as articulated by Kenyan freedom fighters, the Kenya Land and Freedom Army

(KLFA), (colloquially known as Mau Mau), to help move from "decolonizing" to think more

practically about what it means to practice progressive librarianship. In this way we seek to

expand the lens of practice and analysis, foregrounding voices from the past and present that

should lead in discussions of what exactly "decolonizing" entails.

Tactic: "Progressive Librarianship"

There is a rich history of revolutionary and anti-colonial publishing in Kenya to turn

to.[108] Crafting and practicing decolonial ambitions for libraries and other knowledge

infrastructures requires developing greater connection to and knowledge of these histories. A

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[108] In Durrani's rich history of Kenyan publishing prior to achieving independence in 1963, he details a history of publishing in Kenya that is diverse, and goes back to the end of the 1800s, noting that although colonial laws prevented Kenya's African population from owning printing presses or newspapers, that did not mean they lacked effective means of communication. Durrani spotlights the importance of oral communication systems and more fugitive methods for bypassing the embargo placed by the colonial administration such as writing "Kiswahili cha ndani" ('Kiswahili of the inside') resistance messages on women's khanga cloth, worn as skirts or wraps so the message reached a wide audience right in their homes. Durrani also points to the paper Nyota ya Kirinyaga (Kirinyaga's Star) (1949; 1951) as an example of the kinds of people who owned and ran the local radical press: "among the editors were one carpenter, a shoemaker, driver, sign writer, one book binder and several clerks, traders and farmers," (2006, 191). However, this rich history of intellectual and activist social communication is at risk of being "forgotten." We use quote marks here to highlight the connection with the chapter's earlier discussion of "forget and move on" in which we described how this kind of "forgetting" has been intentional and institutionalized.

Kenyan-British library professional and political activist, forced into exile in 1986 to the UK, Shiraz Durrani has published several important pieces that help us begin to better understand this past. In a monograph analyzing publishing and imperialism in Kenya from 1884 to 1963, Durrani described a shift in tactics as Mau Mau freedom fighters came to realize that despite winning what Durrani referred to as "flag independence" from the British colonialists, Kenyans had not acquired real liberation, land, or freedom (Durrani 2006, 235). Durrani reprinted the opening of an analysis penned collectively by Mau Mau analysts, which was widely distributed in the form of a pamphlet at the Kenya African National Union (KANU) Conference held in Nairobi, Kenya in December 1961, two years before the country would be declared an independent nation. Recognizing that the battle for independence had shifted from the military front to economic and political fronts, the Mau Mau writers articulated: "The struggle for Kenya's future is being waged today on three distinct though interrelated levels: political, racial, and economic. It seems to us that we Africans are being allowed to "win" in the first two spheres as long as we don't contest the battle being waged on the third, all-important, economic level," (2006, 236).

Key Aspects of Progressive Librarianship

- **Based on principles of equality and justice.** "…where everyone can create, access, utilize and share information and knowledge," (Durrani 2014, 405). "Progressive librarians are committed to changing the very debates and policies around information and development to ensure that the target population is an equal partner in the process of development," (2014, 407).

- **Relevant and people-oriented.** Relevance of information is judged on "whether it meets the needs of people in terms of content, language and form," (Durrani 2014, 404). "Relevance of information services also needs to be seen in terms of whether it enhances development...national, individual and social development," (2014, 405). "But...a blind use of development theories, without taking into consideration class reality, without taking into consideration political reality cannot lead to any real development. Thus any communication system that is to meet the developmental needs of people has to address the political aspect," (2014, 406).

- **Goes beyond "access to information" to think about what makes the information usable.** Drawing on Amartya Sen (2001)'s canonical work, Durrani asserts: "It is the people themselves who can assess their needs. For this to be a meaningful process, they need to have appropriate tools and a full menu of choice together with adequate information about what each choice implies. … The mere provision of information does not, in itself, imply that people have access to knowledge. People's capacity to make use of information, to turn it into knowledge, requires skills and resources many of which some people do not have. … Those who do not have these skills need to be served with compensatory services by libraries," (2014, 404).

- **Seeks to increase awareness among the people about their social, political and economic realities and the need for change from today's power relations**. "Progressive librarianship's great contribution to the development of theory and practice of librarianship is to re-establish the link between political and information struggles," (Durrani 2014, 91).

- **Heavily context driven and always shifting.** "What was progressive a hundred years ago will not necessarily be progressive today; what is progressive in Kenya today may not necessarily be progressive in Britain today. The essence of progressiveness is that it is dynamic and changes with changing circumstances. Every revolution needs a relevant information system to ensure success," (Durrani 2014, 50).

- **A counterweight to dominant ideologies of conservative librarianship.** "To undo the damage done by conservative librarianship which has taken away self-belief among librarians that the profession is capable of responding positively to challenges facing the profession today," (Durrani 2014, 401).

- **Offer alternative world outlook drawn from the lessons of people's liberation struggles.** "…information about lives, thoughts and achievements of African heroes such as Cabral, Kimaathi, Lumumba, Nkrumah, Nyerere, Pinto, to name a few, is hardly known or taught in African schools and universities. Few African libraries collect works about or by them. In this respect African information workers have not served their communities well," (Durrani 2014, 324).

The Mau Mau pamphlet noted that the neo-colonial status of the country is that of continued economic control by the British Government and the new imperialist power of the United States of America: "Put into slogan form, this plan would be: LEAVE IN ORDER TO STAY," (Durrani 2006, 236). "…There is clear evidence of a calculated plan on the part of the economic elite to partially dissolve racial barriers in order to use Africans as front men and

spokesmen for its interests… 'Africanisation' is the term used for the process…" (Durrani 2006, 237).

We use this sharp critique by the Mau Mau to build our own argument that decolonization is a double bind—it must feel the weight of history as it struggles to move on. As we have pointed to in the following section, despite being distinct and usually opposing forces, "forget and move on," in practice, may look similar to "decolonizing." Thus, we seek to articulate a "decolonizing" that doesn't forget. For that, we find inspiration in the Mau Mau vision for a Kenyan future. In the same 1961 pamphlet, they wrote:

> Let us instead struggle against a "stability" which is in fact stagnation; let us struggle to liberate that vast reservoir of reactive ability which now lies dormant amongst our people; let us, in short, create a society which allows to each the right to eat, the right to the products of their labour, the right to clothe, house, and educat[e] their children, the right in short to live in dignity amongst equals. It is a socialist society we should be struggling to build, a system which, unlike capitalism, concerns itself with the welfare of the masses rather than with the profits and privileges of a few. (Durrani 2006, 237)

The real task for those interested in decolonizing knowledge infrastructures then is in fact not really a question of what to forget. Instead, it is about developing new knowledge (practices) to address people's needs. The Mau Mau analysts stated:

> Let us then refashion an ideology which will unify the vast majority of our people by articulating their needs and by advancing a program of socialist development which promises to eradicate poverty, disease and illiteracy, a program which will draw out the creative talents and energies of our people, giving them that personal dignity and pride which comes from socially constructive and productive activity. Let us, in short, provide our people with the ideological and organisational tools necessary for the achievement of genuine independence and development. (Durrani 2006, 237)

Durrani builds on these Mau Mau writings to develop the concept of "progressive librarianship," which seeks to increase awareness among the people about their social, political, and economic realities and the need for change from today's power relations. "Progressive librarianship's great

contribution to the development of theory and practice of librarianship is to re-establish the link between political and information struggles," (2014, 91).

Book Bunk's Attempts to Practice "Progressive Librarianship"

I (SM) have been engaged in work with Book Bunk Trust, a social impact trust founded in October 2017 by Wanjiru Koinange and Angela Wachuka. As part of our work, the team at Book Bunk have been tangibly working on how to materially and conceptually decolonize some of Nairobi's iconic public libraries including the McMillan Library. Opened in 1931, the library was built by Lady Lucie McMillan as a memorial to her husband, US-born Sir Northrup McMillan, who died in 1925. The oldest library in Nairobi and the second oldest in Kenya, it is the only building in Kenya protected by an Act of Parliament. In its first three decades, the library was limited for use by Europeans only.

Figure 18. The entrance to McMillan Library's main branch (Nairobi, Kenya). Photo credit: Author (Angela Okune), taken March 2019.

The library was taken over by the Nairobi City Council in the lead-up to Kenyan independence in 1962 at which point the library was opened up to the general public. Four additional branches were opened in subsequent years but today only two of these branches are functional - Eastlands and Kaloleni. Towards realizing a dream that public Kenyan libraries can be steered to act as sites of knowledge production, shared experiences, cultural leadership and information exchange, the Book Bunk team has been tasked with key decisions about several aspects of the

libraries. Some of these include whether or not to use the Dewey Decimal library classification

system; the kinds of books to have in the library; and whether or not to un / rename the library.

Book Bunk is a not-for-profit trust founded in October 2017 by Wanjiru Koinange and Angela Wachuka. The Book Bunk team is working to restore some of Nairobi's iconic public libraries; the McMillan Memorial Library on Banda Street and two of its branches in Eastlands (Kaloleni Library and Eastlands Library in Makadara). Book Bunk imagines that public libraries should be seen as more than just repositories, acting as sites of knowledge production, shared experiences, cultural leadership, and information exchange. The Book Bunk team views libraries as sites of heritage, public art, memory and as critical spaces in Nairobi and Kenya's creative economy ecology.

In March 2018, Book Bunk formalized a milestone partnership with the Nairobi City County government. This partnership grants the Trust the mandate to drive restoration efforts and resource mobilization for these libraries. Book Bunk's responsibilities include sourcing and management of fiscal and other support; steering and management of architectural restoration; and management of these public library spaces including design and delivery of programming.

Book Bunk's Approach to Restoration

Experiential: We're working to transform what people do at the library. We believe that these spaces can continue to nurture academic and literary pursuits, while also providing a home for diverse and accessible programs and events that are free from any one particular political or religious agenda and that instead celebrate art, well-being and learning.

Social: We want to build "Palaces for The People" (Klinenberg 2018); public, inclusive and safe spaces where Nairobi's residents can access whatever they need be it legal advice, tax education, or an open space to commune and network. This, in a bid to institutionalize public spaces in Nairobi to serve all.

Architectural: Coordinate the physical renovation of these spaces while ensuring their historical integrity is maintained and showcased. We're also committed to ensuring the communities living around these spaces are the primary beneficiaries[1] of the work.

Digital: We're working to introduce technology into every aspect of these libraries: access control, collections management, online catalogues as well as digital skills training for librarians and library users. We want the digital lives of these libraries to match that of the digital possibilities of Nairobi.

Figure 19. Book Bunk's vision for public libraries and approach to restoration. Source: https://www.bookbunk.org/about/our-story/ and personal additions by the authors.

A core part of revitalizing the libraries has circulated around what it means to decolonize

the library: "When it was opened in 1931, this library was never intended for African users. So

when it was handed over to the city, there was never an attempt to decolonize that quite purposefully. It is something that we are thinking quite deeply about, and it is a phenomenal amount of work," the Book Bunk co-founders said in a documentary trailer.[109] For example, as we began cataloguing McMillan library's many items in 2019, the Book Bunk team and myself (SM) came across a rich photographic archive. The archive was stored in the library's basement in a metal storage drawer, with some glass plate negatives in a vermin-infested metal crate. When we started combing through the archive, we came across photographs with captions that literally gave us shivers, for example, the photograph of the first institutional hanging, when Kenya was a British colony.

Tactic: Digitizing the McMillan Archive

In 2020, after cataloguing all 137,705 items housed in the three libraries, Book Bunk created the first ever digital catalog of the libraries' collection and began digitizing the archive. This included newspapers, gazettes and photographs that constitute Kenya's cultural heritage and have suffered neglect and climate damage. The collection includes reports of key historical events during Kenya's struggle for independence such as the Mau Mau revolution, political assassinations, social and cultural developments, human rights movements, and exploitative land acquisition laws. Through this ongoing digitization process, the Book Bunk team has had to figure out how to frame and contextualize aspects of this colonial and postcolonial national history. Digitizing the photographic collection has been a way of making space for what has largely been a silenced history of Kenyan identity and struggle during the colonial period. As

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[109] See the full annotation here: Okune, A. 2019. "Decolonizing the Library." Distributed by STS Infrastructures (Platform for Experimental Collaborative Ethnography). https://stsinfrastructures.org/node/4463.

Coombes (2011) has noted, although many institutional public history exhibits are met with scrutiny and critique, the debates they foster are nevertheless often constructive and important.

Recognizing that we may encounter fraught topics and material, we nonetheless employ an approach similar to Mimi Onuoha's work, "The Library of Missing Datasets" ([2016] 2018). Onuoha's mixed media installation of a metal filing cabinet with labelled files that do not contain any data is, in her words, a "visible physical repository of those things that have been excluded in a society where so much is collected," ([2016] 2018). She explained: "The word 'missing' is inherently normative. It implies both a lack and an ought: something does not exist, but it should. That which should be somewhere is not in its expected place; an established system is disrupted by distinct absence," (Onuoha [2016] 2018). By creating a digitized archive of colonial newspapers, gazettes, and photographs, Book Bunk looks to call attention to the missing perspectives, voices and faces - to think about what "ought" to be there. This is what de Sousa Santos has called practicing the sociology of absences: "whatever does not exist in our society is often actively produced as non-existent and we have to look into that reality," (2016, 21). If, as Onuoha writes, "spots that we've left blank reveal our hidden social biases and indifferences," then Book Bunk seeks to make these materials available for public critique to inoculate against a public culture of "forget and move on." By analyzing what has been left silent in colonial Kenyan histories and grappling with them through these physical and now digital materials, we seek to support a Kenyan public capacity for critical consciousness. This is a key role we see for Kenyan progressive libraries.

Tactic: Opening space for new Kenyan narratives and self-expressions

In libraries across the world, "weeding" refers to a practice conducted periodically where books which are considered misleading, beyond physical repair, superseded (a newer edition is available), trivial (information can be found elsewhere) or otherwise unfit for a particular collection are removed from the library. After completing the digital library catalogue in 2019, in 2020 Book Bunk embarked on weeding the library's collection, which spanned ninety years. A question that continually resurfaces is what to do with all the books that write in a racist way about Kenyans and Africans. For example, in John Harris' *Dawn in Darkest Africa* (1912), British colonialism is exalted as a service to the "primitive natives" of the African continent. The book's introduction praised Harris as "having acquired a firm grasp of the main principles which should guide Europeans who are called upon to rule over a backward and primitive society," (Harris 1912).

Should such work be weeded from the collection entirely? How should a progressive library support critical awareness about scientific racism and racist imperialism, both past and present, while also promoting and opening space for Kenyan narratives and forms of self-expression that seek to move out of these over-determined frames? How do we move on and not forget?[110] One of the ways Book Bunk is working around this is by updating the library's acquisitions and collections policy so that books and events are chosen by the public; African authors are prioritized; and the works are more intuitively organized.

First, the new collection housed in the McMillan libraries is to be chosen by the public based on their own needs. We (SM) do this by asking library users who sign in daily to also write

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[110] One idea shared by Shiraz Durrani when he reviewed a previous draft of this chapter was to create an in-person museum for these books and material artifacts similar to the idea of the Museum of British Colonialism.

in their desired additions to our library collection. We prioritize new acquisitions based on user demographics in the different branches and have curated a wish list of books that are available through local bookstores. Kenyans around the city have begun to purchase these books for McMillan library users from the available online list and we have now begun to receive monthly drop-offs of new books.

Using a similar approach, library events and programming are crowdsourced from the Kenyan public themselves. For example, the Kaloleni library attracts primarily young children from the surrounding neighborhoods and thus some of the first events that were hosted there were movie watching events, music camp, and *Hepa Jam!*, a regular homework club run in the main branch that expands the library hours so young students can study from the library during rush hour traffic (hence the event name which means "avoid the jam"). These kinds of events confirm the library's importance as more than access to books.

Figure 20.Figure 20. Flyer of "Hepa Jam" event series. Source: Author (Syokau Mutonga).

In 2019, Book Bunk solicited proposals for public events[111] to be held at the library. We (SM) received 66 applications and eventually selected 12. Each group was given both cash and in-kind support to run their proposed event at one of the library branches, helping push forward a vision of the library as a public space of art, memory, cultural heritage, and knowledge production.

Second, the predominant voices in the library collection are to be Kenyan and African authors

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[111] See examples of these events here: https://www.bookbunk.org/programmes/past-programmes/.

writing about the people and region.[112] We (SM) are currently working on an acquisitions and

collection policy that details how we hope to promote bibliodiversity (Shearer et al. 2020;

Shearer and Becerril-García 2021) in the collection including authors and genres that we

intentionally prioritize. And third, Book Bunk will use the Dewey Decimal Classification

(DDC)[113] and other library cataloguing systems as inspiration for our own library management

system that serves the needs of a modern Nairobi library more intuitively. Most libraries use the

Dewey Decimal System, but the Glasgow Women's Library who mentor the Book Bunk team

created their own classification system inspired by Indian feminists calling for the creation of

alternative classification systems (Gandhi 1995) that were less hierarchical and more inclusive of

women's affairs. Drawing inspiration from this example, Book Bunk is in the process of

developing our own classification scheme as well.

McMillan libraries are just one of a diverse ecology of libraries in Kenya and are

certainly not the only ones that can be read as attempting to practice progressive librarianship.

PALIAct Ukombozi Library, as another example, is one explicitly founded by Shiraz Durrani,

Kimani Waweru and others on the very principles of progressive librarianship. Durrani details

these efforts in detail in his book, *Progressive Librarianship* (2014). By framing the

decolonizing work being done at McMillan libraries as also working towards progressive

librarianship, we seek to promote the idea that there is great heterogeneity in the libraries

attempting decolonization. Instead of decolonization as the goal in and of itself, greater

collective attention to articulations of a public information system that meets the needs of

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[112] While there are over 40 spoken languages in Kenya, English and Kiswahili are the main languages of speech and writing. As such, most texts in the library will be written in English and Kiswahili, but the collection will also have books of other East African languages.

[113] Commonly referred to as the Dewey Decimal System, it is a proprietary library classification system first published in the United States by Melvil Dewey in 1876.

Kenyan working people is needed. As Durrani wrote: "What was progressive a hundred years ago will not necessarily be progressive today; what is progressive in Kenya today may not necessarily be progressive in Britain today. The essence of progressiveness is that it is dynamic and changes with changing circumstances. Every revolution needs a relevant information system to ensure success," (2014, 50). A diverse ecosystem of libraries, archives, digital repositories, and scholarly communities in conversation with each other and constantly reassessing information needs of Kenyan citizens is important because local collaborations, transnational alliances, and an articulation of shared values and principles helps fortify against the commercial encroachment of digital knowledge commons which, as we detail in the next section, we have begun to observe in the Kenyan digital cultural heritage space.

What are the cascading effects of these tactics?

Work by groups like Book Bunk (https://www.bookbunk.org/), The Nest Collective (https://www.thisisthenest.com/),[114] and African Digital Heritage (https://africandigitalheritage.com/) have increased the visibility of and public interest in Kenyan libraries and cultural heritage artifacts. This brings both an opportunity to enroll wider concerned publics into the conversations and activism, but also carries with it a risk that the commercial sector turns its gaze on the various materials held by these public institutions and sees a profit-making opportunity. There is much to gain from controlling the technical infrastructure that the library relies on. Ownership of scholarly infrastructure has key implications for the governance of scholarly materials; attribution and profit model regimes; and evaluation metrics.

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[114] The Kenyan arts collective, The Nest Collective, is part of an interesting ongoing project entitled the International Inventories Programme (IIP) focused on questions of restitution and the politics of returning cultural artifacts to Africa: https://www.researchdatashare.org/content/when-empires-get-weary-objects-may-return.

Decolonizing knowledge then is not only about ensuring African voices are found in the historical archives and are represented at present-day academic conferences, but also about actively curating, building, and studying the archives Nairobians want in and for the future, including the socio-technical infrastructure on which materials sit. Towards this end, it seems important to check the power of Western corporations that have demonstrated interest in moving into these spaces.

> In an October 2020 video message, Kenyan President Uhuru Kenyatta stated:
>
> We must look for our common vision in the dreams of our ancestors. We must seek out their wisdom and preserve their memory. We must bring them to life in a way that present generations can relate—through technology. You can begin that journey by visiting the National Museums of Kenya page on the Google Arts and Culture platform to learn the stories of our folk and cultural heroes, relive their experiences and draw the inspiration that you need from them in order to play your part in constructing and exemplifying our national ethos. (Itimu 2020)

What does it mean when Kenyan youth are advised by their President to turn to Google for the dreams of their ancestors? In this section, we attend to the political economy of global knowledge infrastructure, pointing out the risks of increasing privatization of digital knowledge commons by private corporations. Given the deep history of Kenyan resistance that we have just briefly sketched as well as the disinvestment in public memory and knowledge infrastructures enacted by the austerity programs of structural adjustment, those who care about decolonized libraries must also care about protecting their public ownership. If we believe in the importance of progressive librarianship and scholarly knowledge for a vibrant civil society and public life, then we must pay attention not only to the physical structures and material content of libraries and archives, but also the digital systems that structure how this knowledge is indexed, accessed, promoted, and stored. The vertical integration of services provided by foreign corporate actors like Facebook and Google have far reaching consequences for network sovereignty and

(un)democratic control of digital infrastructures (Nothias 2020). Toussaint Nothias (2020) has described how, despite often critiquing these foreign companies, civil society organizations find themselves increasingly reliant on the digital platforms run by the very same corporations, not to mention the explicit partnerships and philanthropic funding linked to tech industry fortunes. This makes resistance to such corporate projects particularly challenging, especially when the government, as evinced in the section's opening quotation, is also in close collaboration with these corporations.

An approach of "forget and move on" towards Kenyan national events has led to the normalization of state incompetence and a distrust of its narratives and systems, fertile grounds for technology corporations to offer their "free" services. Simultaneous with work by concerned Kenyans to reinvigorate libraries as open spaces for diverse publics, there have also been growing investments made by technology corporations into these spaces, which we believe warrant critical attention from scholars, journalists, and activists. A culture of "forget and move on" has had not only debilitating effects on national memory, but also on the actors seen as trust-worthy and capable of managing and stewarding Kenya's past, present, and future. This loss of trust in public systems and their agents is imperative for understanding the barriers to overcoming what Paulin Hountondji (1990) has labelled "extroverted scientific activity," where scholarly work advances the theoretical needs and questions of the Western academy but does not serve the societies within which science is conducted. Individuals and library organizations alike, all of us, are increasingly caught within systems of platform capitalism (Srnicek 2017) that establish dependencies that are hard to get out of and which reduce the possibilities of bibliodiversity (Shearer et al. 2020) and epistemic justice (Albornoz, Okune, and Chan 2020).

Controlling the library, archive, or data repository and mining its contents, Big Tech[115] would have us believe they are best placed to reveal trends in data, from culture and thought to potential future pandemics. However, recent work by scholars of the archive reminds us to question the broad implications of technology corporations' investments in large scale determination of knowledge (Thylstrup 2020). We add to these ongoing conversations by suggesting that without addressing the enduring imperial legacies in current established postcolonial knowledge infrastructures that continue today, there is no way to "move on." In an environment where funding is limited and government support is thin, libraries and archives are in an increasingly tight spot to come up with the funds to stay open and develop services such as digitization of archives. When funding or in-kind support is offered, it is difficult to turn down corporate actors, many of whom appear very well-intentioned. But we must reflect on the autonomy and decision-making power that is sacrificed when mega-corporations begin to get involved.

We take no issue with the President's sentiments that Kenyan youth can draw inspiration from the revolutionary leaders of the last fifty years; in fact, we are in full agreement. However, we do question why, instead of promoting and recognizing, for example, the important efforts by Chao Tayiana at African Digital Heritage and the Museum of British Colonialism, Wairimu Nduba's work at WerJoKenya, or Mwihaki Muraguri's work with Paukwa—just to mention a few—rather, the head of state called for citizens to turn to a multinational American company with a business model centered around data extraction. In light of this, supporting the organizing of people and alternative socio-technical infrastructures that can enable digital humanities,

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[115] The shorthand of "Big Tech" refers to the largest and most dominant companies in the information technology industry—namely Google, Apple, Facebook, Amazon and Microsoft.

archiving, artistic and scholarly experimentation for public interest appears as an important,

growing role for Kenyan progressive libraries.

What future is implied?

In this chapter we shed light on what we characterized as an approach of "forget and

move on" towards national memory. Moving on instead of grappling with and bringing to

account the injustices and wrongs carried out at particular moments in Kenyan history leads to an

increasingly disillusioned and cynical public who do not trust public narratives or expect much

from state institutions. Instead, citizens as well as the Kenyan state turn to external actors,

outsourcing for example, core knowledge infrastructures to foreign companies including, most

recently, national archival and library content to American technology multinational, Google.

This has brought us into a contemporary moment where the President allocated $91 million USD

to pay Kenyan youth to sweep streets and dig trenches[116] and advised them to turn to Google to

learn about their ancestors.

In the closing shots of a corporate marketing video, a thin young Black woman looks

straight into the camera, raises her fist and states resolutely: "Forwards ever, backwards never."

The video from ThoughtWorks, a technology design company, is embedded in a company blog

post titled "Using Technology to Drive Change in Africa" (2015) and talks about the company's

relationship to the continent. "Our vision for Pan Africa is that in five years' time,

ThoughtWorks will have catalyzed the development of accessible software-driven-technologies

coded in Africa, for Africa, by diverse African teams," the post states. However, five years down

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[116] The latest youth employment scheme program has been critiqued for offering menial work to Kenyan youth.

the line, the company no longer has any physical presence on the continent, having closed both

of its Africa-based offices — one in Uganda and one in South Africa. Its headquarters in Europe

and North America remain open and active. The closure of ThoughtWorks' African offices is

joined by more recent closures in Kenya of technology start-up SafeBoda (Ayugi 2020), and

Google's Loon project (Wakabayashi 2021), rendering void any illusion of a technologically

driven linear progress narrative. Bestowing foreign technology companies—many of whom have

quickly left once capital and profits dry up—with the country's "roots" that is, historical artifacts

and national memory, is an incredible risk. Even if external partners hold the best intentions,

their activities can be experienced as extractive if care is not made to invest in strengthening

local systems in the places where these materials were first created. All knowledge

infrastructures reinforce authority, power, and control (Acker 2020; Dourish and Bell 2007) and

require upkeep, care, and maintenance (Martin, Myers, and Viseu 2015; Murphy 2015). Rather

than putting Kenyan youth to work sweeping streets and digging trenches to keep busy,[117] what

if young people were instead mentored to contribute to, learn about and steward Kenya's

knowledge infrastructure?

    We see great potential in Kenyan libraries and archives helping to build up the capacity

of next generation Kenyan knowledge makers and stewards. It is important that this work is

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[117] State programs designed to create employment for Kenyan youth have come in cycles, initiated with pomp and promise (and big budgets), only to end in scandal and missing funds and then to be resurrected again under a different name. For example, in March 2011, the government's Kazi Kwa Vijana (KKV) initiative (with 4.3 billion Kenyan Shillings allocated by the World Bank), was launched and aimed at creating 300,000 jobs countrywide. But barely six months later, claims of corruption and unaccounted for funds halted the program (Aseka 2011). Similarly, a 2018 scandal over 791 million Kenyan Shillings ($7.65 million USD) went missing as part of contracts associated with the Kenya National Youth Service (NYS) (BBC 2018). The NYS continues to be plagued by corruption scandals (Mukii 2021). Most recently, in 2020, *Kazi Mtaani* (which loosely translates to "Neighbourhood Employment" in Swahili/Sheng) was launched in 2020 and allocated 10 billion Kenyan Shillings (91.2 million USD) to provide jobs to young people (Kinyanjui 2020). Public criticism over the kinds of menial work being offered have surfaced in online spaces (see for example this satire video https://twitter.com/i/status/1298924063570702336 circulated on Twitter).

contributed to by diverse working-class people. This is not to downplay the efforts and role of the educated and internationally connected elite. However, if this work is to have the deep and transformative effects that those working on these issues claim, then the aim needs to be an investment not only in the physical building infrastructures and technical infrastructures but also in the people as critical infrastructure.[118] There is an opportunity to focus on the process of decolonizing a library as pedagogy, encouraging library interns, librarians and library visitors to question how the library came to be in its present state. Why are particular works dominant in the library and what might alternatives look like? How does the genre and industry of contemporary publishing limit the voices that can join in and how could such genre forms and funding models be revised and reimagined? Can public interest technologies enable scholarly work to more readily be fed back into community spaces? There is a never-ending stream of questions that the hands-on everyday work of developing progressive libraries for people can spark, fueling a growing critical consciousness. But conscious effort needs to be made to support such critical thinking in everyday work. If interns are only instructed with top-down directives—"write down the title and author here; input this data here"—then there is a missed opportunity to turn revitalizing the library into pedagogical practice in and of itself.

Kenyan philosopher Ngũgĩ wa Thiong'o wrote: "[m]emory is the link between the past and the present, between space and time, and it is the base of our dreams," (2009, 28). If, as Ngũgĩ writes, "[m]emory and consciousness are inseparable," (2009, 29) given this chapter's exploration of Kenya's contested approach towards national memory and proclivity to outsource knowledge infrastructure, what are the implications for Kenyan consciousness? What kind of knowledge infrastructures, particularly libraries and archives, are needed if Kenyans are to

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[118] Here we are drawing on important work by Simone Abu Malique (2004) on people as infrastructure.

(continue to) speak truth to power and rekindle and ignite consciousness not just in this generation but in generations to come? Here feminist historian of science and technology Michelle Murphy adds: "the past as archive or as trauma is not what has already happened but instead a potential that can be variously actualized in the becoming of the future," (Murphy 2014)

Going back to the paradox of the lion's head—what to remember and forget in attempts to decolonize—and layering this with contemporary and historical events that circle around questions of value and profiting from knowledge, it is clear that what to remember and forget is tied directly to the capabilities and ownership of the technical infrastructure. We cannot expect to retain a critical perspective of imperial formations if the very infrastructure itself is owned and bound up in that same hegemonic imperial power. The question of decolonizing knowledge then is also one of decoupling from infrastructures owned by private Euro-American corporations. "The need is for working people to own and control magazines and book publishing so as to reflect the world from their point of view," Ukombozi library founders Shiraz Durrani and Kimani Waweru have suggested, reflecting on their experience and motivations for starting Ukombozi Library (2014; 2017).

If we are to truly stay with the discomfort of decolonizing knowledge infrastructures, a first step is to develop and support community-owned systems, bringing together diverse people thinking and working on these issues. We do not need to know the answer to grasp that we must imagine and build something different together. We have no wish to simply replay the trauma and violence of imperialism over and over again, potentially overdetermining any kind of radical future imaginary. But by developing an understanding of colonialism's epistemic formations, we can better track its remnants and new formulations as they continue into the present and future.

Instead of a culture of "forget and move on" which does not in fact get us any closer to epistemic justice, we believe in the importance of infrastructuring and strengthening the connections that support those aspiring for decolonial knowledge through progressive librarianship to pay attention to existing oppressive systems and begin to imagine new modes of redress and freedom.

Chapter 5

Considering Context:
A Turn to Qualitative Methods for
More Ethical Experimental Research

Introduction

"This is actually something that we have been talking about for a long time," Caydin, the Akamai Vice-President of Research[119] mentioned. I had just finished explaining that I decided to study open research data because I was interested in why certain places and communities feel "over-researched" due to the hyper saturation of research on particular places and people. "Because of ensuring academic 'rigor,'"—he seemed to scare quote the word "rigor" with his tone— "we can't use respondents who have participated in our studies for more than 3 years or more than 10 times. This leads to them feeling like they have just been 'ghosted' because they were part of the Akamai family but then they are no longer viable members. So, the company has been trying to think of how we can find roles for such people to 'graduate' if you will and continue to engage them. We haven't found any answer or solution, but this is something we have been grappling with." At the end of this first in-person "get-to-know-you" meeting, Caydin repeated what he had stated several times throughout the conversation: "This is a super interesting project." He added, "A lot of the private clients that our company CEO, Tim, works with see increasing value in Open Data on the quant side, but no one is really talking about qual data yet."

* * *

A highly transnational corporate research assemblage has a strong foothold in Nairobi for

several reasons, discussed in more detail in chapter one, but especially because of the city's

history as a center of colonial and then postcolonial development capital and power. Concurrent

with the establishment of the Development apparatus well studied by critical development

scholars,[120] has been the establishment and expansion of an investigatory apparatus that has

focused on understanding and evaluating the effectiveness and impacts of Development

efforts.[121] In this chapter, I focus on research companies based in Nairobi that have begun

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[119] At the time of my fieldwork, Caydin (a pseudonym) was the Vice President of Research and by the time of writing in June 2021 was the Akamai Chief Executive Officer (CEO).

[120] See for example James Ferguson (1994; 2006) work which has highlighted the ways that the political-economic causes of poverty and injustice have been recast in ways that are amenable to a technical solution. David Mosse (2005; 2011; 2013a) has written extensively about the aid workers themselves and David Lewis (2008; 2006; 2015) has co-authored several foundational texts looking at the anthropology of development.

[121] While not as commonly studied as the development organizations and practices themselves, the social studies of development have been an object of analysis in works by Cooper and Packard (1997), and Michael

searching for new ways to do better research. In particular, I focus on Akamai Lab, an experimental research lab in Nairobi which has been connected to an enunciatory formation focused on "open data for credible science / effective development" and is now shifting towards an enunciatory formation around "global representation for greater diversity."[122] In this chapter, I document how Akamai has been producing poverty knowledge through experimentality and their pursuit of better research.

Following disappointing results from international development efforts and in line with growing austerity measures in the 1980s and 1990s that required "high-impact" and "effective" spending, development projects today are expected to include a research and evaluation component. For example, in their 2013 annual letter titled "Why Does Measurement Matter?" The Gates Foundation wrote: "Given how tight budgets are around the world, governments are rightfully demanding effectiveness in the programs they pay for. To address these demands, we need better measurement tools to determine which approaches work and which do not," (2013, 4). How exactly to measure and understand development "impact" has been heavily contested now for decades, but since the turn of the 21st century, randomized controlled evaluations have boomed, promising to "revolutionize development" (Duflo 2010) by using the scientific method to measure the efficacy of foreign aid.

Goldman (2001; 2006), for example.

[122] I describe and detail these heuristic types as well as others which I have observed active in the Nairobi research ecosystem in chapter three. Under "Open Data for Credible Science / for Effective Development," those within the formation seek to make research more transparent, accessible, and reusable so results can be audited /to reduce scientific duplication and academic dishonesty. Under "Global Representation for Greater Diversity," those within the formation seek to promote and enroll African academics in global research structures to increase their visibility on the "global stage."

Akamai Lab has been part of this expansion in producing poverty knowledge through experimentality. An off shoot of the more widely known BRC[123] research body headquartered in the U.S., Akamai spun out into its own organization in 2011. The Lab has been headquartered in Nairobi since its inception. Akamai's stated mission is to work with researchers and organizations to advance and apply science in pursuit of poverty alleviation. The company is registered as a US 501(c)(3) nonprofit and in addition to its headquarters in Nairobi, has also opened new offices in India and Nigeria in 2019. The Akamai CEO explained during a 2020 webinar hosted by Harvard: "We work really closely with academics to implement really … state of the art academic research. But then we also…use that same rigor and bring that into applied behavioral science, applying the theories that the academics have learned and honed in that process, into real world actions and activities. So, in that sense, we work in a very advisory consulting behavior."

I first reached out to Akamai Lab in September 2018 through an email to the head of research to introduce my project and see if they might be interested in having me work with them on questions related to qualitative research data. I was surprised to receive a warm and interested response; I had assumed that they would be concerned about intellectual property issues and would be wary to collaborate around open data with an external researcher that they didn't know, on an unfunded project. Instead, they were incredibly supportive, quickly sending over the signed requisite paperwork needed for me to receive IRB approval from the University of California, Irvine. They were obviously used to providing such letters for external researchers.

After I recovered from traveling over 30 hours from San Francisco to Nairobi, I set up a meeting with Akamai's Vice President in January 2019. After a 30-minute drive along the dusty

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[123] A pseudonym.

Ngong Road, which had been under construction since 2015 when I had moved from Nairobi to California, I arrived at the shiny headquarters. I remembered this building from a tour I had taken during summer 2017 fieldwork. I had been struck then by the almost too-obvious critique of asymmetric relations noticeably revealed in the division between researchers and research participants separated into two buildings. Located next to Kibera, one of the largest informal settlements on the continent, Akamai research offices are split across two buildings. In the older building, Kenyan Lab staff work with recruited Kenyan research subjects, who mostly come from Kibera and other informal settlements in Nairobi. Subjects are given research prompts on a mobile phone or tablet, which are then aggregated to generate insights into their preferences and behaviors. See Figure 21 for an example of one of the testing rooms. In the other building, commonly referred to as the headquarters or "HQ," over fifty project staff and directors analyze and write-up insights based on the lab data and manage client/partner/funder relations. Staff who work on the HQ side include Kenyan and foreign program officers and directors, most of whom hold master's and PhDs in economics from US and UK institutions. The Lab staff, all Kenyans

except for the Director, have been part of the Akamai team the longest; "even longer than me" the VP told me. But on the HQ side, it is a different story; turnover is high. The Kenyan work permit terms limit expatriates from working in the country for more than two years

Figure 21. One of the Akamai testing rooms. Image taken by author in 2017.

and the high-pressure environment often leads to burn out for many of the young, high-achieving employees. During my one year of fieldwork, I noticed new faces constantly appearing and disappearing in the office. When I would inquire where so-and-so had gone to, I would be told that they had moved on to the next thing, usually back to school for a master's degree in the UK or US.

Akamai—like many research organizations in Nairobi—primarily conducts research projects for donors, private and academic clients and depends on a steady flow of incoming projects. Most staff balanced their time across multiple projects and were often stretched thin because of juggling these multiple projects. There was a constant sense of not having enough time. Successfully running a project means keeping it under budget. Keeping it under budget means juggling team capacity and staff time on a project. Project budgets structured who worked on which projects for how long, and the kinds of labor that were paid, underpaid, and unpaid.

"Wait, are you slotting in your daily tasks in 30-minute increments?" I asked incredulously as I watched April color code her Google calendar, assigning her working hours to various projects. "Yeah, crazy right?" she shook her head as if she couldn't believe she was doing it either. April had just begun working at Akamai two weeks earlier and was still figuring out how the various processes and norms.[124] "Look at all of this," she said as she launched the multiple HR platforms being used to keep track of employee time and performance on her company-provided Macbook laptop. "I really don't understand why we use so many different softwares," she murmured, almost under her breath as she scrolled through one of the platforms that had an archive of the employee's monthly reviews from managers and peers with an almost "gamified" emoji-filled interface. "You can give someone a 'thumbs up', see?" she pointed to

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[124] By the time I was writing this chapter in June 2021, April had left Akamai and was working in the United States.

her screen as she scrolled through, and I was surprised by the detail and frequency of monitoring of an employee's performance. Not only was there the usual reporting to one's direct manager, there was also lateral reporting done by and on one's peers. April finished slotting out what she did for every 30 minutes of her workday into her calendar ("because if I don't do it at the end of each day, I forget"). I understood this to be a practice that directly assigned financial value to a researcher's time. Every minute was supposed to be tied to a project (budget) since every minute of an employee's time needed to be paid either by a project or by the company (for activities not directly project-specific). I noted that even activities that were not affiliated with projects were often assigned to a project. "Which project should we put this meeting on?" was a common refrain echoed in Slack communications whenever a company-wide meeting or even a company social event was held.[125]

Given that time is money under this kind of structure, what I refer to as "contract time,"[126] there was a clipped pace to interactions at Akamai. Meetings stuck to the scheduled allotted time (communicated in advance to meeting participants through Google calendar invitations) and almost like clockwork, at the top of each hour, people moved. From their chair[127]

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[125] In comparison, at Nyagaard Research, most employees worked standard Kenyan work hours of 8 am to 5 pm and their productivity was measured not by the hours clocked on the project but by deliverables. Nonetheless, the director at Nyagaard worked far beyond such "normal" hours, working on "global" time rather than "local time." Synced to join calls with London, New York, and Beijing, the research director would often be seen striding in at 5 PM after a day of meetings around the city to jump on evening calls in the office. "My day is just beginning," he would often tell me wearily as he opened the door of his glass corner office.

[126] Contract refers to either an individual researcher being contracted as a short-term consultant for a research job, or a research organization contracted to conduct a research project. Employees at the research company are not consultants but still operate on contract time because of the project-centered model under which most research is funded in Nairobi (see critiques of "projectization" for more details on this kind of model). I would contrast this hourly timekeeping of researcher time ("contract time") to "academic time", which is usually not by the hour but valued by scholarly outputs, quality (and in many disciplines, quantity).

[127] Akamai had a distinctly separated seating arrangement by the time I was conducting my fieldwork, although in informal conversations, I learned that the seating arrangement which I observed had not always been the case. Previously, the entire company was in one (albeit crowded) space, however, with expansion, spatial and architectural divisions exacerbated other kinds of divisions (class, race, education). Not only were staff separated by division into two buildings (Projects and Data teams in the HQ and Lab team in the Lab), within the HQ side itself,

into the board room, from the board room into the break-out rooms. On multiple occasions, another Akamai employee would stick their head into the room: "we have this meeting room booked, are you guys almost done?" Akamai researchers were often moved on and off projects. Certain individuals frequently traveled internationally but not all staff traveled equally.[128] By the time I arrived for my fieldwork, Akamai had already attempted, to varying levels of success, to develop processes to share information across their internal teams. Box, an American-owned cloud content management system, was the primary document management software used at Akamai. My inquiries about "where might I find that data" were usually responded to with "it is probably somewhere in Box." There was a general sense that project data and materials were either on personal Google drive folders, computer hard drives, or—in the best-case scenario— somewhere in the cloud on a Box folder. But given the high turn-over of project managers, I found there remained heavily siloed knowledge, information and data, a trend that I also observed at two other research organizations where I conducted participant observation.[129]

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teams were noticeably grouped according to their work. The upper levels of the organizational hierarchy sat in the East wing: the CEO and VP had enclosed corner offices overlooking a grassy field; Directors sat together in one enclosed glass room; Senior and Junior Associates sat on large tables in "open" (i.e., not enclosed) seating, which theoretically were not designated to any particular person, but in practice, all had their particular preferred spots. And then, down the hallway, through the entry foyer, and past the board rooms, on the West wing sat the finance team, the data team, and the analysts. As I discussed in the Macro chapter, as a result of immigration policies, there were stark and noticeable divisions based on race and nationality between the teams and consequently, in seating arrangements. This may have likely changed since I completed my fieldwork in 2019, given the organization's increasing focus on diversity, equity, and inclusion as I was leaving the field in Dec 2019.

[128] This was of course, pre-pandemic.

[129] This chapter focuses on Akamai Lab, where I spent the most time during my fieldwork. However, the insights gained were also brought into relief because of my comparative perspective gained by conducting research at two other research groups, Nyagaard Research and SDI. SDI was located just a fifteen-minute walk down Ngong Road, in recently upgraded new offices on the 13th floor penthouse that overlooked much of Nairobi. About six full-time Kenyan staff made up the team and their research work is often done in tandem with if not secondarily to policy and advocacy work. The SDI Managing Director is a long-time advocate of Open Data in Kenya and has well-established networks and connections amongst governments, donors, and grassroots organizations abroad and in Kenya. It takes about thirty minutes to move from SDI research office to Nyagaard Research office by *pikipiki* or motorbike, my preferred means of transport in a city notorious for its traffic congestion. Nyagaard Research, although renamed in mid-2017 after being integrated into a multinational consulting group, has been based in

What is the provocation to the move towards seeking decolonial practices?

The founding immigrant[130] men who established Akamai in Nairobi saw themselves intervening in what has come to be known as the "W.E.I.R.D." problem in social and behavioral lab sciences (see explanatory text box). W.E.I.R.D. stands for Western, Educated, Industrialized, Rich, and Democratic and as the VP of Akamai explained during a virtual event in 2020 hosted by a prestigious American university: "… if the goal is to really create research that's going to be broadly applicable to the world, then we probably should do a better job at kind of reaching out and getting populations that

> **The W.E.I.R.D. Problem**
> "Much of the behavioral research conducted in the world has been among populations that are Western, Educated, Industrialized, Rich and Democratic (W.E.I.R.D.). Instead, we believe that embedding ourselves in the contexts and cultures that we work in is crucial to building behaviorally informed solutions that help to avoid risks, save money and drive impact," the Akamai Lab website states. W.E.I.R.D., a catchy acronym still widely used amongst behavioral scientists to describe the unevenness of global populations represented in experimental social lab studies, was coined by a Harvard professor of human evolutionary biology in a 2010 paper which he has since written up into a book. In a Q&A post on his Harvard website, the lead author explained that the point of the paper was "to encourage experimental behavioral scientists to diversify their sampling and avoid generalizing from a peculiar subgroup to the entire species. Only by recognizing this diversity can we begin to rewrite the textbooks in ways that provide a more inclusive picture of the psychology and behavior of *Homo sapiens*," (Henrich n.d.; Henrich, Heine, and Norenzayan 2010). The "W.E.I.R.D. problem" as framed within experimental social studies is therefore an important justification for the need to conduct research in and on those in the global South.

more accurately represent the world population [aka non-W.E.I.R.D. populations]." He nuanced his understanding of the diversity needed by noting that he believed the populations studied, the

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Nairobi for over 20 years. Many of the Kenyan staff have been working there for over ten years and the European management duo have been based in Nairobi for over a decade with established roots and kinship ties to the region.

[130] Like Friederici et al. (2020) who write about white immigrant entrepreneurs in Africa, I borrow the terminology of "white immigrant" rather than the more common usage of "expatriate" or "expat" to denaturalize the raced assumptions about who is an "immigrant" and who is an "expat."

diversity of the researchers conducting the work, and where the researchers are based needed to be considered. Caydin then shared a slide of a "World map scaled to published research," (see Figure 22).

Figure 22. This is from a public virtual presentation by Caydin (VP Akamai Research). While the source information for the map was not specified, it likely comes from work in Open Science such as http://jalperin.github.io/d3-cartogram/.

"Here, Africa is really underrepresented relative to its population. And it means that both the participants and the researchers should be more steeped into kind of Global South contexts in order to create really impactful research that's going to affect policy, and affect the lives of people, which is ultimately what Akamai cares a lot about. So, at Akamai, our goal is to really bridge those two worlds, what we call the real world [referring to an earlier slide that had the world scaled to population], and the world of really rigorous academic research. Both are important, but it's where they come together is where Akamai really wants to sit. To do this, it's about, as I said, bringing the non-WEIRD participants and researchers to the forefront of

research, and creating that really engaged scholarship … It is also about exposing WEIRD

scholars to new contexts."

What does "context" stand-in for here? Anthropologist John Comaroff (2010), has

remarked that in recent times, the notion of situating almost anything in its broader context has

more often than not, been banalized by reduction to the language of the local-and-the-global. The

term "context" most usually refers to spatial contextualization (rather than say, temporal

contextualization), usually using the nation-state as the unit of analysis. And unlike John

Comaroff's recognition that "context is always a profoundly theoretical matter" (2010, 531),

amongst the behavioral scientists, "context" appears as empirically observable, an *a priori* given.

In a June 2021 newsletter post entitled "Understanding Contextual Differences

and The Perspectives Defining Them," an Akamai employee wrote about his experiences

contrasting the explanatory logics he had observed in his Indian hometown and his work

experiences in the US. He reflected on his experiences to argue that rather than only superficially

adjusting for different cultural contexts, behavioral economists need to redefine the very

concepts that are being investigated. One example of this kind of superficial "cultural adaption"

of an experiment is to change the names and job types to match what is more common in a

particular country context. For example, Figure 23 illustrates how Akamai transmuted the

behavioral economist's standard "Linda Problem"[131] into a "Mary Problem" deemed more

recognizable to Kenyans. I did not find that the author's call for redefining the very concepts

under investigation to be widely held by others in the organization or reflected in the everyday

work of those at Akamai. Most would have agreed with the need to tailor behavioral

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[131] See also Kamwendo (2020) for a more thorough description of the "Linda Problem" (pp. 395-397).

experimental instruments to be legible to local research participants but would not go so far as to question the very concepts studied themselves.

Ironically, immediately after he wrote that "at times we need to redefine the very concept that we are investigating," he quickly inserted in the next line and closing statement of the post: "… as [Akamai], we explore concepts such as risk, space, agency, and reactance, to name a few," stabilized the bounding frame almost immediately after calling for it to be opened up. His contradictory post underlined to me both the ongoing and emergent character of these epistemic shifts in behavioral science as well as the continued importance of hiring those with embodied experiences who come from non-Euro-American locations and who can often see these contradictions more sharply than their colleagues. However, as I will dive into in the following sections, despite tactics to encourage more diversity of methods, people, and locational perspectives, until the broader structural conditions under which this research is being conducted are addressed, such efforts may simply serve to shore up confidence in existing ways of doing research rather than fundamentally undoing the field's logics of productivity and rationality.

CONTEXTUALISATION OF BEHAVIORAL BIASES

We contextualised the three most problematic biases, adjusting elements of the problems to make them recognizable while maintaining the key psychological components of the original problems.

THE LINDA PROBLEM

Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

THE MARY PROBLEM

Mary is 35 years old, a mother and wife who always speaks her mind and resides near Toi market. After secondary school, she tried her luck running small scale businesses and also participated in mobilizing market women to attend political meetings in the run up to the 2007 general elections.

Figure 23. A screenshot from an Akamai Lab blogpost (2019) asking: "Are cognitive biases universal across cultures?"

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What motivates this formation? What are their ways of working? Intentionality?

The term *randomistas* refers to a porous network of interrelated but distributed organizations and discourses that originated and continue to center around the Abdul Latif Jameel Poverty Action Lab (J-PAL) at MIT, founded in 2003.[132] The name is a riff off the method that the community advocates for, the randomized controlled trial (RCT). Akamai's origin story, ongoing institutional partners, collaborators, staffing pool, and funders all link into the dominant *randomista* network, so I had expected them to be proactive advocates of RCTs. But as I began participant observation and interviews with staff at Akamai, to my surprise, I realized that the organizational leadership viewed the company as unique and distinct from the more normative *randomista* development economists.

In a one-on-one interview with Caydin, Akamai's VP, he shared further details about the organization's origin story. He noted that the founder, an economics professor based in Europe, would previously artificially induce poverty through simulated lab experiments. "He used to give research subjects in Zurich 'income shocks,' which is like [telling the research subjects], 'you were gonna make $30. Now you are gonna make $10. What does that income shock mean to

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[132] For a thorough description of the "randomista" thought collective in international development, see Donovan (2018). Donovan describes the randomistas as a porous network of interrelated but distributed organizations and discourses that originated and continue to center around the Abdul Latif Jameel Poverty Action Lab (J-PAL) at MIT. Founded in 2003 by Esther Duflo and Abhijit Banerjee, J-PAL facilitates and organizes RCTs, advocates for the method, and disseminates their findings. Duflo and Banerjee won the Nobel Peace Prize in 2019 while I was doing my fieldwork, news that circulated positively on the organization's Slack conversations and culminated in a party hosted by Akamai. The news was treated more critically on Twitter amongst those I follow who asked what exactly the economists have done to alleviate poverty (Ramanan 2019). While in this interview, Caydin positions their organization as apart from the randomista core, from their ongoing institutional partners, collaborators, staffing pool, and funders, it is clear that they have not severed ties from the randomistas, but might instead be viewed as part of the expansion and growth of the thought collective into new entity forms (see Donovan 2018 for description of how randomistas have expanded into other entity forms such actual aid organizations themselves).

you?' but that's not the same poverty as what people in Kibera deal with and people in western

Kenya or people you know in other parts of the world." Caydin went on: "If we care about

poverty alleviation, we should do our best to study populations that we're trying to make an

impact on. And let's stop porting insights from the West into a context that we know little

about." The gap in knowledge—"contexts we know little about"—thus became a strategic

business opportunity for which Akami was well poised to take advantage.

In his interview with me in 2019, Caydin mentioned how Akamai's split from the

original economics research organization in 2011 left them with a question of their position

in the randomized controlled trial research ecosystem:

> [W]hen we split off from BRC [original parent company], like when we said, okay, we're not the randomista crowd, it kind of leaves you in a lurch. It kinda leaves you like where do you sit then because we don't really have the expertise to talk in the qualitative circles or the anthropological circles and we're kind of like, yes, we can be in the RCT circles. But that's a little bit different than what we're trying to build. And we don't really have…we're purposely choosing staff that maybe want to move away from that, right? And so there's this kind of gap.

Noting that while RCTs are still considered the golden standard in most quantitative

assessments of development projects, Caydin cited growing criticism that they are the

wrong tool for the job:

> I've seen a lot from practitioners push back against this, like, the pendulum has swung too far. "We're using these tools for things that we shouldn't be using them for." "We're using five-year RCTs before we know what the intervention should be. Before we understand the context. It's too inflexible." I think neither side is wrong. It's not wrong, that it's the gold standard in impact evaluation but it's also not wrong that it's probably not the right tool for most situations. And I think thinking about how to adapt the methodologies to understand causality in a way that that the RCT does...into more nimble and flexible ways. I think even [our parent organization] is [now] thinking about that. A lot of their work in the last few years have been called "right sizing evidence"[133] so not too big, not too small.

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[133] I believe Caydin may have been referring to "right-fit" evidence. See https://www.poverty-action.org/right-fit-evidence for more information.

Whether or not they consider themselves part or apart of the randomistas, Caydin's comments highlight the methodological inventiveness and hybridity of the randomistas which Donovan has argued continue to give them their influence within aid evaluations (Donovan 2018). Donovan noted that randomistas argue for a merger of methodologies and display a great variety of legitimating strategies. In the following section, I focus on what I observed as a recent turn to incorporate more qualitative methods to answer this question of how to better contextualize behavioral economic experiments.

What are the tactics? How are the tactics ideologically driven?

The premise of the scientific study of aid is, according to the website of one of the leading randomista groups: "If we want to know how effective a program is, we need to have a comparison group. Without a comparison, we are limited in our ability to know what would have happened without the program. And the only way of having an equitable comparison group is with random assignment," (Innovations of Poverty Action 2015). Proponents of randomized controlled trials in development evaluation align themselves with medical laboratory sciences, explaining that they use the "same methods frequently used in high quality medical research." Their procedural objectivity (Galison 2000) is said to remove subjective bias and errant results. Pioneers of the methodology of Randomized Controlled Trials (RCTs) in development economics, MIT economists Abhijit Banerjee and Esther Duflo and Harvard economist Michael Kremer frame experimentation as the authoritative means of understanding what works to reduce global poverty.

In practice, applying the scientific method to study development looks like the conduct of trials, training and pilot projects in what Michelle Murphy (2017) has called a new era of

experimentality. A rich body of anthropological scholarship on experimentality emerged from the study of the globalization of clinical trials and has more recently been extended in feminist science and technology studies. These studies have revealed the ways in which distributed, transnational assemblages of experiments have come to serve as a kind of governmentality (Petryna 2009; Nguyen 2009). Such studies have revealed that an unevenly disbursed array of projects and experiments often stand-in for the state, a common critique of multi-million-dollar development projects like the Millennium Villages, designed and executed by charismatic American Jeffery Sachs, as one example. Yet despite millions of dollars now invested over the last 20 years towards understanding what "works" in development, there is still large-spread uncertainty.

Considering that RCTs were supposedly a means to consolidate consensus over aid policy and practice, the ongoing search for epistemic closure has problematized RCTs, leading proponents of the method to continue to search for ways to bolster it. The result is an extended "experimental system" (Rheinberger 2010) through which certain experts retain their power and authority in international aid. I focus the rest of the chapter less on describing the thick infrastructures of experimentality well-established in Kenya,[134] and more on how the authority of this formulation of poverty knowledge has continued to refresh itself through a new pursuit of postcolonial objectivity including open science tools, qualitative methods, and incorporation of diversity measures in hiring decisions.

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[134] One of the leading hubs for field experiments globally, the Kenya office of Innovations Poverty Action (IPA) is its longest standing and was established in 2006. According to the website, the IPA Kenya office employs nearly 500 staff members and manages approximately 30 long-and short-term complex research projects. See Rayzberg (2019) for more on this research assemblage.

Donovan (2018) has put forward several recent ways that randomistas have sought to extend the epistemic virtues of RCTs including running replications in multiple settings; developing experimental trial registries;[135] and conducting systematic reviews. In this chapter, I add to his list, describing an emergent turn to qualitative inquiry as the latest reorientation of randomista methodology and practice, and the focus of the rest of this chapter.[136] Akamai Research has harnessed the idea of "context," previously treated as a source of subjective bias to be minimized, and now reconstituted it for business advantage; in other words, they "compete on 'context'…," as the VP explained to me. In a 2019 Akamai blog post by a senior immigrant manager, he wrote: "At Akamai, we believe that only by locally embedding ourselves within a specific context can we build behaviorally-informed solutions." This narrative illustrates Akamai's strategic advantage over behavioral economic research counterparts in the US and Europe.

Tactic: Formative Qualitative Research

"We have been toying with this idea of creating a third technical division…all about doing really strong qualitative research to really strong intervention design…." It was April 2019 and Caydin, Akamai's VP, was introducing the new internal qualitative research lab to internal staff. "Not only are we getting more projects in, but more clients are asking us about our capacity to do this." While the first stage in the Akamai research process had always been what the staff

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[135] My interlocutors referred to these as pre-analysis plan registries. See this (https://blogs.worldbank.org/impactevaluations/a-pre-analysis-plan-checklist) for more details on pre-analysis plans.

[136] In this chapter, I expand on one of many attempts underway at Akamai towards decolonizing knowledge. Two additional areas of activity—the expansion of Open Science policies and protocols and increased attempts at greater African representation in the company—are also important markers of future trends in development research in Kenya and globally and are important for future study.

refer to as "formative research"—usually between one to seven days of qualitative investigation into a broad area of topic—qualitative research had not been a central part of the organization's work until 2019 when an internal qualitative lab was launched to better contextualize and ground the organization's quantitative experiments (See Figure 24 for a generic example of the Akamai research process).

PHASE 1: CONTEXTUAL AND BEHAVIORAL DIAGNOSIS	▪ Initial contextual and behavioral qualitative research to diagnosis of behavioral barriers ▪ Outputs: Suggestions for initial design of the program to be further tested in Phase 2.
PHASE 2: PRODUCT DESIGN AND INCENTIVE STRUCTURES	▪ Co-design of initial product features. ▪ Pilot of initial designs with respondents to understand interactions with the product and inform a behaviorally optimized design and incentive structure. ▪ Outputs: Product-specific recommendations for the program.
PHASE 3: ONGOING IMPLEMENTATION SUPPORT	▪ Implementation support to the client team for the final design and launch of the new program. ▪ Outputs: Live-implementation support and troubleshooting.

Figure 24. A generic example of the Akamai research process. This process is customized based on client needs. Source: Akamai report circa 2017.

Freeda, who had been recently promoted to fill the new role of "Research and Innovation Director – Qual & Design" began her presentation to the internal Akamai team of about fifty staff, making a case for why the lab was needed. "It's become very clear from some of the questions that are coming up that there seems to be this gap in our confidence in carrying out both good qualitative research and intervention design. What we need at Akamai is new,

innovative qualitative methods outside of IDIs [In Depth Interviews] and Focus Group Discussions. We can't pitch those as the only two qualitative methods that we do. [We need] interesting intervention ideas that are not just 'send an SMS reminder.' [widespread laughter from the staff]."

Freeda was one of just a handful of Research Associates who had *not* studied in an Economics program. Freeda had her bachelor's degree in Sociology from the London School of Economics and a master's degree in Psychology from another university in the UK. She and I had spent many hours together conceptualizing the qualitative division after Caydin had mentioned to me that they were planning to start a new division to serve as an internal resource for staff.

Tactic: Investing in new Qualitative "Tools"

"One of the things I have learned from Angela is that I am a tool," Caydin joked. "No, I am THE tool." This was the third time I had heard him repeat this. I was struck by the fact that he framed it as something he had learned from me; I have this in my fieldnotes as something that *he* told *me* during our first meeting together. Caydin was introducing the new qualitative research lab which was going to be an internal facing resource for Akamai staff to tap into:

> …[W]e need a team because qualitative research is fundamentally a different thing from quantitative research. You know, Angela and Sally have been telling me as I've been thinking about this … when you do quantitative research, the instrument is the tool, the survey is the tool. So anyone can take that tool and you can just transfer them. But in qualitative research, the person, the researcher is the tool. You can't substitute that tool with another tool.

As I was conducting fieldwork at Akamai, I observed how some of their assumptions about the universality and portability of research instruments were being unraveled. Whereas at the beginning of my fieldwork, the dominant practice was to have someone in the office write

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the research instruments, towards the end of my fieldwork, a key insight and lesson learned articulated by a senior staff was that "[t]he instruments should be designed by those who are going to be doing the fieldwork. Because they might say they understand what is to be covered but they really don't. It is important to have them understand what we are trying to understand with each section or sub-section." That this was stated as such a novel best practice illustrates the dominant norms of having the work done by an assembly line of distinct people: those who conceptualized and developed the research instruments, qualitative and quantitative alike; those who conducted the data collection; and then those who eventually did the research analysis. Such disconnects across the workflow, as also gestured to in chapter three, manifest in both poorly contextualized quantitative experiments and shallow qualitative insights.

I sat down in the glass-walled Nairobi board room with four other Akamai associates. I immediately noticed that none of those in this meeting to offer feedback on a practice client presentation were Kenyan. Aina,[137] a friendly blond, blue-eyed European woman who previously worked in European policy, thanked us for joining her and began her practice presentation. The first thing I noticed was how quickly she spoke. Even I, a native English speaker who often catches myself speaking too fast, was having trouble following. Aina was going to be presenting to Pacific Islanders about food research that she had overseen, and I wondered if and how her message was really going to travel and be understood. Sitting in this room, I had a sense that I was observing what normally happens on the client side after the research data is collected.

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[137] I met Aina about four months after she had moved to Kenya in September 2018. She had left a public policy job in European parliament to look for a job that was in "a more development context." She was forwarded the Akamai job description from an advisor in Parliament and had applied for both a consultant and a full-time position through the online portal. Caydin had created a special position for her that was "just perfect" she told me. She ran the regular internal research skills trainings for anyone in the organization every week and was worried that the conversation would just be all the *wazungu* talking so she was doing her best to facilitate it to be more inclusive. Aina loved traveling to the Kenyan coast and went on monthly trips.

The data had been collected ostensibly by Akamai who had designed the surveys and methodology and then outsourced the data collection to four local companies in four Pacific Island nations. Once the data was collected by these outsourced companies, it was electronically sent to Akamai.[138] Aina had conducted statistical regressions on the data and had attempted her first qualitative analysis. To me, the presentation revealed both what happens when quantitatively trained researchers attempt qualitative research without any support or training, as well as the deep limitations of this kind of outsourcing of qualitative data collection which I also speak of in chapter three. The richness and contextual understanding of responses completely drop out. The PowerPoint presentation was filled with orange and blue bar graphs, pie charts, and percentages. Aina had analyzed her data based on frequency counts and ranks. "How did you develop these visualizations?" I asked her after her practice presentation was over. "I did 'control find' to see how many times a particular word or phrase was mentioned and that became the basis for analysis," she answered, sheepishly. She seemed to be well-aware of the fact that she had essentially quantified what was narrative, textual data.

"How did you decide which quotes to include in the powerpoint?" questioned Manny, a self-professed "quantitative guy" who was the assigned Executive Director on the project.

"I included quotes from the extremes," Aina responded.

Manny cautioned: "Some clients make decisions mistakenly just based on one quote so be careful about which quotes you put there as representative."

In other words, rather than including the outlier quotes from the extreme ends, I read his comment as advising for the inclusion of quotes "from the middle" that represent the vast majority. When the focus of research is not to highly complexity and diversity but to apply

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[138] This workflow echoes what I described in chapter three.

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qualitative work towards an action/solution/product/or next step, such complexity becomes a complication to a cleanly executed and completed project. The aim of such research then is not to leave any open or new questions at the end of the project, but to have all questions answered, even if in truth they are answered superficially so.

However, to contrast this picture of the shallow insights that result when statistical objectivity is applied to the pursuit of qualitative insights, I want to also include a quote from one of the only senior qualitative researchers at Akamai who explained to me how she switched her methodological approach after observing the everyday challenges of doing qualitative research under "contract time."

> When I first came on [to Akamai], I was very much about developing credible research tools. Having transcripts, audio recordings, coding, etc. But then I realized that instead of aiming for that, our point of the qual work at Akamai is towards getting strong intervention ideas that are creative solutions and good ideas. So instead of focusing on the tools, what is needed are ways for us to spark good ideas and discussion. So I changed tactics and said instead of using audio recorders, just listen carefully. No need to record but more about being rooted in the moment.
>
> If we only focus on audio recordings, etc. then it doesn't allow the research to keep evolving. Based on the first day of research, then I should probe with some questions so that the researcher the next day goes to the field and asks different questions. The research focus should keep moving. So we said to forget about transcription and more on analysis on the spot. By the end of the one week of qual research, we should have consensus with the client that this is the right priority. For us, qualitative research is not an end in and of itself. Rather, our approach might be "less rigorous," but it serves what the point of our qual research is which is getting good ideas and creative solutions.

This to me is illustrative of postcolonial objectivity where, moving away from procedural objectivity (in her words, "developing credible research tools"), the pursuit of knowledge becomes more about "creative solutions and good ideas." Instead of research being an "end in and of itself," her comments emphasize that under postcolonial objectivity, research addresses the shifting needs of the problem space that created the impetus for the research in the first place. Avoiding the straitjacket of a procedural objectivity that can lock in an overly defined frame,

Sally here instead calls for a pursuit of knowledge that keeps up with the dynamically changing research context and researchers' ongoing findings. As Sally explains it then, under postcolonial objectivity, methodology can serve as a way "to spark good ideas and discussion" and help the researcher be "rooted in the moment."

Qualitative research in practice

Referring to the short length of time spent in a particular place, "fly in-fly out" researchers like Aina[139] unsurprisingly lacked the deep contextual understanding of the place(s) from where their data is collected and are therefore perhaps overly reliant on the official data provided (which is usually given to them from others who did the actual data collection). Without an understanding of the discursive context, this limits analysis to focus largely on taking what is said at face value.

"What does the phrase "people as tasty" mean?" I asked Aina, referring to a quoted phrase listed on the PowerPoint slide.

"I don't know," she responded honestly.

"And your finding that 'curries' are considered both a local and foreign food… is that because there are different kinds of curries?" I asked, imagining that perhaps there are a wide assortment of curries. "I don't know," Aina responded again.

The idea behind the qualitative lab at Akamai then was to support researchers like Aina to better develop skills to conduct more robust qualitative research, with a key value seen as helping to explain unexpected results from experiments. However, without tackling the underlying structural issues such as the "contract time" that limited the development of deeper,

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[139] Aina spent less than a few weeks total during the entire research project in country, due to limitations of "contract time."

place-based knowledge, the development of so-called "technical qualitative skills," as they were referred to, would not fully realize this goal.

What are the cascading effects of these tactics?

Nonetheless, by the end of my fieldwork in December 2019, the qualitative lab, less than a year in, seemed to already be proving a worthy investment. I heard that in addition to the two candidates that were hired to join the lab in October 2019, the two other candidates who had been interviewed were also going to be brought on. "Yeah, the demand [for the qualitative lab] is so high." Caydin, the VP mentioned to me. "And it's such a good service and I think it will improve the quality of the work so much."

The improvement of the work appeared to come from both expansion into new kinds of qualitative methods, but also recognition that, as Caydin mentioned so many times to me, who does the research matters:

> [The] University of Nairobi isn't the same as Harvard. But at the same time, you have to... know that the people that are living in those contexts brings something very different than people that don't. I was just talking to Ian [a newly hired user experience design researcher] yesterday. And he was in the car—they're going out to do some like piloting work for a project that they're doing in Malawi, but he was just doing it in Kenya. And he worded some questions about how they think about digital products in a very specific way because he knows it intuitively, and the person on the car ride said—who's from London said: "This doesn't make any sense. You need to word it another way." And they kind of had a back and forth and he said, fine, I'll do it [your way]. And as soon as they got into the field, she's like, "Oh, I see. I was totally wrong here." Right? And like that difference. That that's...those those are the things that I mean by you have to weigh that context and you have to believe. And compete on context with other organizations that are more of your traditional kind of fly-in, fly-out. And that's just I mean, yeah, that's the challenge and the opportunity, I think.

However positive these changes are in ensuring the work is better tuned to cultural context, the stated goals of "locally embedded" and "community oriented" research do not seem to break the existing core model of randomista research projects.

> … a lot of the motivation for this [qual design] team was not around intervention design. It evolved from like, ethical social norms." Tim, the then-CEO of Akamai[140] was chiming in with some concluding thoughts following Freeda's presentation announcing the new Akamai internal qualitative lab. "…[but] I think some of our most innovative solutions come from, associates who have been really good at tacking the qualitative research to a design idea, as Freeda gave some examples. So, I think, to do that effectively, we have to reduce the amount of friction or touch points between the qualitative and [intervention] design. Remember the aim is really good intervention design, it is better qualitative research, but ultimately to inform better interventions.

Tim's last point surprised me although it should not have given that Akamai was, after all, first and foremost an economics lab. "They are not changing the underlying mission or vision of the organization," I reminded myself. "Qual is just an add on to what they are already doing, something to improve what they already have and make their processes better. But not something to fundamentally unhinge the principles, working style, and values on which the company is premised." When I explicitly asked Caydin later about this, ("so the outputs from qual lab will always become a lab experiment?"), his response was: "Yes, definitely."

Informal conversations with the new hires and director of the Qual Lab however surfaced other answers. The user experience designer, sociologist, and public health researchers involved in the new qual team, expressed their interest in exploring the potential they saw to tackle deep issues of research inequities that went far beyond individual Akamai projects. For example, within her first few months of working at Akamai, April had already developed a multi-city

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[140] Tim stepped down from the CEO position in 2020 and now serves as Board Director.

internal[141] research project proposal entitled "Understanding Research Desires of Kenyan Community Members." In April 2020, the project received official Kenyan IRB approval, but I never learned whether the project successfully ran. By February 2021, I learned that April had left Akamai for a new position at a health organization in the US.

This reveals the ease with which other kinds of "non-contract-time" projects could be established, but also that these other kinds of projects will always be marginal and dependent on a committed individual unless/until a business model can be established to foreground and institutionalize such work.

What future is implied?

Today, philanthro-capitalists that fund much of the evaluative poverty knowledge work with global NGOs rather than governments and thereby provide the randomistas with relative immunity from the political resistance that has been attributed with randomized assignment of social services and resources (de Souza Leão and Eyal 2019). Social scientists of science de Souza Leão and Eyal (2019) argue that the randomistas were a contingent factor who could have very well been replaced by a different group of experts that aligned with philanthro-capital. De Souza Leão and Eyal (2019)'s work points to the importance of the funders in determining what kinds of evaluation matter.

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[141] Internal here refers to the fact that the project was developed without external funding, in other words, using the internal company resources. This marks a break from the "contract time" mentioned earlier and is an example of Akamai putting down its own money to do the research it sees as important. Akamai also runs a public research series "off the record" that is designed to look at timely issues in Nairobi and publicly share them in blog posts and newsletters. This is the kind of self-funded research that can break away from extroverted science practice but for now is only possible to do because the majority of external projects subsidize the self-funded work. Akamai also covered in-kind expenses related to running a focus group discussion in November 2019 with research participants who had participated in Akamai projects on more than 5 occasions in 2019 alone. The full transcript from that discussion, prepared by an external consultant paid for by Akamai, is available at: https://www.researchdatashare.org/content/transcript-191121001-being-researched-kibera.

Across multiple chapters in this dissertation, I have described how the rise of philanthro-capitalism has been a key influencer in the conduct of research in Kenya. As such, paying attention to its discourse can provide important suggestions for what might come next. The concept of postcolonial objectivity describes an emergent shift in what is considered "good" research that is distinct from what is valued under mechanical and procedural objectivity.[142] A look at Gates Foundations' extensive Evaluation Policy[143] demonstrates that funders are also part of this shift away from pure "trust in numbers." Their website states: "We are focused on results. Those that can be measured. And those measured in ways beyond numbers." They write:

> Evaluation is a contested discipline. We are aware of the ongoing and healthy debate about what types of evidence are appropriate to inform policy and practice in U.S. education and in international public health and development. However, the diversity of our partners and areas of focus precludes us from promoting only certain types of evaluation evidence as acceptable for decision making. We avoid a one-size-fits-all approach to evaluation because we want our evaluation efforts to be designed for a specific purpose and for specific intended users. This approach to evaluation design, which we call *fit to purpose*, has three elements… (Bill & Melinda Gates Foundation n.d.)

The write-up goes on to detail that being "fit to purpose" means it allows for a range of methods including qualitative data collection, requires teams to be explicit about the assumptions they use to make conclusions; and requires evaluation evidence to be considered in the "context of action" so that findings can be acted on.

Although the Akamai vision developed out of stated desires to enact more globally representative knowledge production, it is also rooted in neoliberal logics of productivity, efficiency, and reproducibility (cultural and economic forces that have shaped behavioral

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[142] Gaston notes that it is not that one paradigm of objectivity has a clean break from another, they can and do overlap with each other.

[143] This text unfortunately does not have public versioning, so it is unclear when it was last edited. Find the current version at: https://www.gatesfoundation.org/about/policies-and-resources/evaluation-policy.

economic history). These implicit values continue to render stable colonial units of analysis such as the nation-state, race and ethnicity, and the autonomous individual.

Despite the institutionalization of a qualitative research lab which aligns well with growing moves by development aid and philanthropic organizations away from "purely" numbers, the original questions of how to meaningfully engage with researched communities appears to still be a conveniently unanswered matter of concern (Latour 2006) and one left to concerned individuals within the organization who are willing to take on the extra labor to undertake such projects. In the 2020 webinar, Caydin mentioned:

> We have kind of a research ethics and community engagement team at Akamai, who's really thinking about how they can really get that information from the community, and then give that back to the community. [But] to be honest, I'm not exactly sure, beyond making sure that we have good community entry, which is what we did about a month and a half before we talked, and kind of lined up all the village elders, made sure we introduced ourselves on the first day that we were there, and kind of helped them guide where those research questions are as much as us. And then a good community exit, which we're still in the process of doing as we're recruiting people from the community to be a part of this survey.

> If anyone has any advice on what's the best way to really make sure that we're engaging them in the long term, and how these results are going to affect them, I would love to hear it. It's something that we're constantly struggling with, how we can make sure that we're engaging the community in a meaningful way. So yeah, I think beyond really just spending the proper amount of time to engage with a community before we actually go in there and do our research. I would love to hear other tips or other ways to really measure whether those engagements are successful or not.

Such public worrying does not undermine the authority of the randomistas, in fact, it bolsters their claims to knowledge by presenting them as ethical and engaged with the everyday issues of community. The webinar ended with Caydin inviting interested future collaborators to reach out:

> But of course, if any of you guys are interested in hosting versions of the course—as Alisa said, we'll post a syllabus—contact us. We're very happy to share our experiences. And if anyone there maybe wants to fund us to go into other places and partner with us, we'd also love that as well. Because I think it would benefit greatly from additional

context, right? The Kenyan context is just one of the myriad contexts that exist around the world.

Situating research in its "context" is a term ambiguous enough to account for multiple units of analysis but generally interpreted to mean the nation-state. This move, publicly calling out the troubles with the current status quo of research is a move I would characterize as illustrative of postcolonial objectivity. But this self-critique of the dominant system does not in fact undermine the enterprise, but rather strengthens its credibility with an ethical tenor.

In this chapter, I have described the ways that a Nairobi-based research company is entangled and reproducing extroverted scientific infrastructure within which it is caught including through structures of "contract time;" reporting out to clients, especially Euro-American philanthro-capitalists; and ideas of academic rigor and expertise. Recognizing that research needs to be done better, Akamai have begun reaching for better representation of the world and its diversity in order to make creative solutions and good ideas that are "steeped in Global South contexts." Towards this aim, the company is part of a trend that can best be described as "Africanization" where the populations studied go from being Euro-Americans to Africans; the researchers doing the studies change from Euro-Americans to Africans, and the geographic location where the studies are being conducted changes from Europe and America to Africa. While the move to re-center Africa as an epistemic center of knowledge might hold important decolonial promise (Ngũgĩ wa Thiongʾo 1993), Ugandan scholar Mahmood Mamdani (1996)'s work is important to revisit at this juncture to remember how, following independence in the 1960s, new African nations were deracialized for the most part, but not truly decolonized. Thus, there is risk under these attempts towards postcolonial objectivity that an excessive focus on the visible bodies and geographies misses what is invisible, that is, the long-established transnational systems that make extroverted knowledge about Kenya. In the final chapter, I turn

to a new formation of researchers invested in Kenya who have organized around a shared interest in discussing and practicing research approaches and data-making practices that might shift existing dominant norms.

Chapter 6

The Research Data KE Working Group:
Scaffolding for Thirdspace

By Research Data Kenya Working Group[144]

Setting the Scene[145]

"I was proud to be a Kenyan today," one of the panelists confided to me (AO) as we munched on the marinated chicken and soft chapati roll provided for lunch. "Oh interesting, why?" I probed, curious how the day-long workshop on research data archiving that I had organized tied into her sense of national pride. "Because Kenyans are doing good things. It can feel really alone when you are abroad there. There are a lot of deficit narratives. But to hear all the interesting things that people are doing here makes me feel part of a community." Chiku smiled, her Maasai beaded headpiece jingling slightly as she took a big sip of fresh mango juice.

Abena, who presented on the same panel, also chimed in: "Yes, I never would have considered myself a 'data' person but coming together with all of these people to think about how we need to decolonize our knowledge and infrastructures has connected me with interesting people doing really great things here in our own Nairobi."

* * *

The politics of knowledge production have often been reduced to questions of national or racial representation alone. "We need mechanisms to bring in and share work by more African researchers" is a response I have heard to growing, important critique about the lack of representation of African scholars in international academic work. Not to be dismissed, such limited articulations of the problem and solution nonetheless risk reproducing the same over-simplified fetishes and categories themselves, without necessarily undermining the asymmetrical knowledge infrastructures that position certain people and places over others. For example, Francis Nyamnjoh (2019) has explained that while most universities in postcolonial Africa have significantly Africanized their personnel, they have been less successful in Africanizing their curricula, pedagogical structures, and epistemologies. In my dissertation, I have extended this

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[145] This section was written in first person by Angela Okune to contextualize the chapter within the rest of the dissertation. Co-authors reviewed and offered feedback on this opening framing.

critique beyond the African university to turn the gaze also on the broader research assemblage in Kenya that includes private research firms, libraries and archives, and individual researchers. Building on Nyamnjoh's critique, this project's contribution is to think about the ways that sociotechnical knowledge infrastructures including the genres and venues of dominant research publishing, and care and storage of research data have also not been "Africanized" to allow for ownership by research communities located in Nairobi. By understanding how various Nairobi-based actors are caught within and attempting to push back against established research structures, I complicate notions of the politics of knowledge beyond race and nation and instead, point out the ways that established technical and funding systems; "world class" academic standards and norms; and dominant epistemologies, languages, and genres also reproduce global knowledge asymmetries.

Nairobi researchers do not fit into neat categories. From a young, tattooed Kenyan woman studying for her Certified Public Accountant (CPA) exams and translating research surveys into Swahili at night as a part-time hustle, to an overworked, white German man married to a Kenyan woman with two kids who acts as the go-between for a decentralized management team in New York, London, Beijing, San Francisco, and his Kenyan research team, these researchers are highly attuned to the global politics that structure their contributions to global knowledge production. Most recognize their positions within transnational research assemblages and sense that existing structures marginalize them and their contributions. Building an ethnographic data archive in/with/for Kenya then is not necessarily about enabling Kenyans to enter global conversations or showcasing their work so it becomes internationally recognized. It is as much about connecting "already global local"[146] players with each other in Nairobi to spur a

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[146] Here, as I described in more detail in Part One of the dissertation, I am referring to the ways that the imperial and local are more co-dependent and co-produced than most acknowledge and the subsequent "already

collective imagining about what an ethnographic archive for Kenya's intellectual workers could be. As James Ferguson suggestively posed:

> Can we learn to conceive, theoretically and politically, of a "grassroots" that would be not local, communal, and authentic, but worldly, well connected, and opportunistic? Are we ready for social movements that fight not "from below" but "across" using their "foreign policy'' to fight struggles not against "the state" but against that hydra-headed transnational apparatus of banks, international agencies, and market institutions through which contemporary capitalist domination functions? (2006, 107).

In the original conceptualization of my project and even as I conducted my fieldwork in Nairobi in 2019, I had no intent to organize a working group to continue the project goals after fieldwork completion. However, I was open to opportunities as they presented themselves and after spotting on Twitter an open call to organize an event with Book Bunk[147] in early 2019 at one of Nairobi's oldest libraries, my good friend and former colleague Leonida (co-author of chapter two) and I applied. We were the only researchers selected as part of a year-long schedule of library programs run by artists and creatives. In November 2019, over 50 diverse members of the Nairobi research landscape (described in chapter three) gathered under the McMillan Library's soaring arches on a rainy Tuesday to discuss management, access, and responsibilities of open data and collective knowledge production in Kenya. The November 12th panel discussions were rich,[148] the question-and-answer sessions were heated, and we ran out of time before we ran out of topics to cover. The event was designed to create interest in both the Research Data Share platform and a gamut of questions about the kind of knowledge

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global" local subjectivities that are in play even prior to developmental attempts to make Kenyans legible to Westerners. This concept builds on extensive work by those developing Theory from the South such as Raewyn Connell (2011; 2014), Jean and John Comaroff (2012), and Boaventura de Sousa Santos (2016) not to mention and other leading postcolonial scholars like Homi Bhabha (1994), and Francis Nyamnjoh (2012).

[147] Learn more about Book Bunk's history and work in chapter four.

[148] Proceedings from the event including video footage, distributed materials and photos are available here: https://www.researchdatashare.org/content/proceedings-archiving-kenyas-past-and-futures.

infrastructure needed in Kenya at this stage. It resulted in the formation of the Research Data

Kenya (KE) Working Group, which has sustained the dialogue using the Research Data Share

(RDS)[149] site as a virtual workspace.

My broader dissertation looks at ways that Nairobi-based researchers have been

attempting to address critiques of research extraction in a city with a long history of extroverted

science (see discussion of this history in chapter one). Researchers with ties to the country,

myself included, are grappling with what it might look like to enact more just, decolonial

practices in knowledge production. This chapter describes the Research Data KE working group

formation as an example where technical scaffolding (in the form of the RDS ethnographic data

archive) and the social relations such scaffolding supports have created new semiotic possibility

for articulations of "third terms" (Michael Fortun and Bernstein 1998) for Nairobi research.

In Fortun and Bernstein's conceptualization, charting of the "third terms" means

attempting to articulate middle positions that reach beyond ossified binaries. Closely aligned

with Homi Bhabha (1994)'s concept of the third space, this semiotic opening "is the space of

change and creativity; it's where the interesting problems and questions are; it's where things are

unsettled, calling for experimentation; it's where the action is," (Michael Fortun and Bernstein

1998, 274).

I have recently begun thinking about the collaborative development of ethnographic

archives and relational data that is at the heart of this dissertation through theories of thirdspace.

That is, as collaborative activities facilitated consciously towards building a shared third. Urban

geographer planner Ed Soja discussed thirdspace as rooted in a "recombinatorial and radically

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[149] The Research Data Share (RDS) site is an instance of the Platform for Experimental Collaborative Ethnography. The platform serves as open infrastructure for individuals and groups in Kenya interested in archiving and sharing ethnographic data to contribute towards growing a collective knowledge commons.

open perspective" where our spatial imaginaries are "open to ways of thinking and acting politically that respond to all binarisms… by interjecting an-Other set of choices," (1996, 5). Postcolonial scholar Homi Bhabha (1994) describes a thirdspace of enunciation as a transition space can enable the contestation and re-negotiation of boundaries and cultural identity, a space where hybrid identifications are possible and where cultural transformations can happen (1994, 37). Psychoanalytic theorists like Thomas Ogden have also worked on what they called "the analytic third" where the third refers to something beyond the dyad of doer and done to: "in the space of thirdness, we are not holding onto a third; we are surrendering to it. The third is that to which we surrender, and thirdness is the intersubjective mental space that facilitates or results from surrender," (Benjamin 2004, 8).[150]

These conceptualizations of thirdspace align with what we have been attempting to create: a thirdspace that moves away from well-worn binaries of expert/informant, student/teacher, and global/local. In our understanding of RDS, the digital archive is not the end in and of itself but rather the holding space for us to develop new understandings and new questions. I am interested in further exploring how the digital character of the RDS archive brings new dimensions to what Ed Soja, Homi Bhabha, Thomas Ogden and others theorized as thirdspace.

In the text that follows, the working group leads with our own articulations of what we want to see moving forward. This dissertation chapter comes last in a triad of chapters, each focusing on a group of research actors in Nairobi striving for more decolonial research practices. Chapter four looked at libraries and archives in the city and how some have turned to progressive

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[150] I like the idea of surrender because it implies freedom from any intent to control or coerce which I think is sometimes missing in the concept of "design" which can feel overly prefigured or top-down.

librarianship as a way to "decolonize without forgetting." Chapter five focused on initiatives by a research company foregrounding "context" to enact more ethical research. In this chapter we lay out the rationale for our collaborative formation and what it is the group seeks to hold space for.

This group is distinct from those covered in the other two chapters in that it was not a group already in existence which I "studied" but rather one that *emerged* from my study and in which I would consider myself a key participant organizer. This distinction makes a difference because it changed the nature of our relationships. A working group member described during one of our calls the awkwardness she felt being a researcher from outside of a particular community—no matter that she shared the same nationality as the research participants—and how despite wanting to engage in a deep and authentic way, because of how she joined them "in a very, sometimes very problematic way [where] it's an organization which has sent you there, and then you never quite fit in, then you're out in a few minutes," she was not able to sincerely engage with the community, even as a concerned and allied researcher.[151] The point here is that having more authentic research relations not only requires an understanding of normative research ethics, it also needs the appropriate circumstances under which research connections can spark more organically. Striving to catalyze more organic research connections does not detract from the fact that establishing grounds for such collaborations requires advance preparation and careful cultivation.[152]

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[151] This member also later reflected in the writing of this chapter about how we Nairobi-based researchers contribute to extractive research in other Kenyan counties (and countries, for that matter). Because of Nairobi's position as an urban geographic hub (where offices of research funders are located; the most prestigious universities, etc.) and how those in Nairobi are perceived to know more than people in rural counties, this member noted she had heard local communities question whether they needed someone to come from Nairobi because it is that they do not have good research skills.

[152] There is a highly relevant special thematic issue that was published in 2019 the Journal of African Cultural Studies looking at global North and global South dynamics in international research and academic collaborations. Contributors included Divine Fuh (2019); Akosua Adomako-Ampofo (2019); Grace Musila (2019) and others.

In the introductory chapter of the dissertation, I detailed the advance preparations I made for my project. These included installing my own instance of the Platform for Experimental Collaborative Ethnography prior to beginning fieldwork and developing textual devices such as a collaboration agreement and data circulation form. This infrastructure allowed me to access, review, and archive existing data held by research groups during my fieldwork in Nairobi, which were in turn used as an elicitation device to produce new data. Towards the conclusion of the fieldwork, I also organized and co-hosted a public event, as mentioned above, which gave rise to the working group. The proceedings of the event were not only archived on the RDS ethnographic archive, they were also analyzed and publicly annotated with interlocutors.[153] The technical scaffolding afforded by the RDS platform has enabled the conversation to continue. Members of the working group have used the PECE platform to gather and look at shared "cognizable objects" (Freire 1968) together, both synchronously and asynchronously. The platform itself has also served as a shared object of our attention as the group practiced the technical skills required to navigate its use (including how to upload, annotate artifacts for examples[154]) and reflected on that process. Finally, the platform also hosts an organizational archive[155] that holds our meeting records, including notes and audio recordings (recorded after verbal consent is received from all attendees).

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[153] To see the public annotations, scroll to the bottom of this page and click the individual names listed at the bottom: https://www.researchdatashare.org/content/proceedings-archiving-kenyas-past-and-futures

[154] Find tutorials I created for the group here: https://www.researchdatashare.org/content/technical-onboarding-rds-platform/essay.

[155] Link to the organizational archive is here (https://www.researchdatashare.org/content/research-data-ke-design-group-organizational-archive/essay).

Since March 2020, group members have identified artifacts—found in traditional media, social media, or captured by members themselves via photographs—and uploaded them towards producing an ethnographic archive of materials reflecting on diverse experiences of COVID-19 in Kenya.[156] The work continues in bursts and spurts, but our group holds together through monthly conversations, which go on regardless of what has been done on the technical platform. I always leave the meetings buoyed by thoughtful conversation. I love learning from everyone else's work and experiences and sharing my own ideas for their thoughts and feedback. It is important to clearly state that to me these are meetings not with "research participants" but with peers and friends with whom I listen and learn from and with whom I also share what I am learning.[157]

The recordings that we are making are not "data" to be used just for my own project; they are records of our conversations and an attempt to build collective public memory about what we are trying to figure out and how we are getting there. This reflects the difference between thinking about data as relational rather than as property.[158] As relational data, the data produced

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[156] Find the essay here: https://www.researchdatashare.org/content/news-and-public-discourse-covid-19-infromabout-kenya.

[157] I call attention to this because, as Kim Fortun has so eloquently described, there is a double bind experienced especially with ethnography conducted over the long term where "[t]he ethnographer knows her subject, in a manner increasingly divorced from it; the very quest for deep understanding and thick description produces an imperialist stance, a double bind," (2015, 152). I tackle this structural challenge both with my own positioning in the group not as an ethnographer studying the group but as a lead facilitator organizer (for now until that role is taken up by another member of the Design Team) working to maintain, boost, and organize the RDS work.

[158] This idea draws from a broad literature on data and ethics influenced by activist, indigenous, and feminist STS scholars (*see, e.g.*, Birhane 2021; Adema 2021; Lovett et al. 2019; Liboiron, Zahara, and Schoot 2018). Scholars critiquing dominant scientific practices have pushed back against treatment of data as if they are unitary, stable objects "owned" by any given researcher/author. Highlighting data's relationships with other objects and social practices, Sandeep Mertia, for example, noted that "data is shaped by actual and potential relations with other existing data, classification, paper and digital infrastructure, statistical techniques, data collection and cleaning practices, and possibilities of circulation," (2020, 10). Extending further, Sabina Leonelli (2015) considers data as "tools for communication," whose main function is to "enable intellectual and material exchanges across individuals, collectives, cultures, governments, and … whose mobility across these groups is a hard-won scientific achievement," (2015, 810–11). My conceptualization of data as relational relates to Janneke Adema (2021)'s

by our group provides building blocks for us to practice careful listening to each other and

ourselves and iterative (self)-observations. The data are not owned by anyone but are a collective

resource (symbolized by a Creative Commons license).[159] Of course, we have different stakes;

for me, working on these questions forms the basis of my everyday work as a full-time doctoral

student, while for others, this is not directly tied to their jobs. Even among the other academics

involved, this collaborative formation and any outputs we produce may not "count" within their

field. With these considerations, I have therefore been more than happy to take on the bulk of the

organizing work: ensuring that the audio data is uploaded with proper meta-data; that meeting

reminders go out in advance; crafting a tentative agenda; and setting up the Zoom link. Like I

learned while collaborating on my orals documents with James Adams in 2018,[160] collaboration

as a process is ongoing and can have different valences over time, sometimes tightly coupled and

at other periods, more loose (Adams and Okune 2018). I learned from collaborating with James

that beyond individual inclinations or institutional structures (which have been the large focus of

analyses of collaborations), external factors also affect the outcomes of a collaborative

endeavor.[161] In the RDS instance, the context of COVID-19, which began to spread globally just

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framing of scholarly book publishing as relational practice where "…the book is no longer perceived as (merely) a commodity or an object of value exchange fueling both publishing and university markets but becomes an ever-evolving node in a network of relations of communing, which it both fosters and is fostered by," (2021). Similarly, I conceptualize data as entangled in systems of relations that it fosters and is fostered by.

[159] For most RDS audio recordings, we apply a CC-by-NC-ND license that allows reusers to copy and distribute the material in any medium or format in unadapted form, for noncommercial purposes only, and as long as attribution is given to the creator. Learn more about the different creative commons' licenses: https://creativecommons.org/about/cclicenses/.

[160] Find the orals document at: https://worldpece.org/content/phd-orals-document-querying-analyses-collaboration/essay.

[161] By external factors, I am referring to things external to the collaborative formation itself such as natural disasters, changes to the political environment, or personal losses. Our experiment in collaborative analysis with James was unfortunately cut short when he had a family emergency.

as we held our first meeting in March 2020, may have in fact helped to coalesce this collaborative formation. While there is no way to know, one of the working group contributors mentioned that personally she would likely not have had as much time to dedicate to RDS had she been in Nairobi working her usual job instead of sheltering in place in her hometown.

The standing title of this chapter has been the "deutero" chapter which is in reference to a set of "deutero" questions[162] that Kim Fortun has developed as part of an analytic set thinking across scales and systems (Fortun 2009; Fortun and Fortun 2019). "Deutero" here refers to Gregory Bateson's notion of "deutero learning" (1972) which is concerned with understanding the learning frameworks and assumptions that underpin what one learns and values. Bateson contrasted this kind of learning with rote learning, noting that deutero learning could lead to questioning of fundamental premises and habitual behaviors that are seldom questioned and usually taken as given. In an analysis of Bateson's concept, Tognetti (1999) argued that such questioning could lead to a reframing of the problem in a broader context that might allow participants to view a wider range of factors as affecting their capacity for action. So here, in the final chapter of this dissertation, we write as deutero actors, part of and studying the reflective learning capacities in Nairobi, leveraging what we see as the potential of research data, broadly construed, to serve as a cognizable object of our shared attention through which to further build our own deutero capacities as we reach for thirdspace. Following Franz Fanon, Achille Mbembe (2015) has argued that disengaging from a Eurocentric knowledge regime does not require substituting an "Afrocentric" one. Rather, it means developing new practices, especially new pedagogies and arrangements that democratize the knowledge institutions. The last 50 years have

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[162] These questions—meant to be adaptable rather than formulaic—include but are not limited to: "How are people and organizations denoting and worrying about the phenomena you study? What reflective learning capacities are there in this setting and problem domain?" (K. Fortun 2021).

revealed that a strategy of replacement[163] does not inherently disrupt existing societal power imbalances and status quo. Instead, new ways of constituting and organizing new forms of community appear more promising. In this chapter, we describe how the Research Data KE Working Group has moved together and the present tactics we have used towards establishing a research data archive for an "already global local" community in Nairobi.

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[163] By replacement, I am referring to the idea that replacing European bureaucrats with African bureaucrats will naturally lead to a break from colonial institutions and logics. Unfortunately, as Ngũgĩ wa Thiong'o, Franz Fanon, Francis Nyamnjoh, Mau Mau leaders and many other postcolonial intellectuals have written about, the decolonial experience of the 1960s revealed this assumption to be incorrect.

Introduction

Figure 25. This is an image taken at the event on November 12, 2019 at McMillan Library (Nairobi, Kenya). Source: Book Bunk.

On November 12, 2019, Angela Okune[164] and Leonida Mutuku with support from Trevas Matathia, Syokau Mutonga, and the Book Bunk team hosted an event entitled "Archiving Kenya's Past and Futures" at McMillan Library in Nairobi's Central Business District. The event brought together fifty researchers, archival specialists, open data technologists, and government representatives to think about the intersection between open data technologies, digital humanities, and research data practices in Kenya. The aim of bringing such a diverse group together was, as anthropologist Emily Yates-Doerr (2019) has described, to foster a space of exchange and learning where collaborators come from places of difference and practice "careful equivocation" (Yates-Doerr 2019) to unsettle the binaries often drawn between one object, category or term and another. The importance of facilitating connections across difference and emergent discursive communities crystalized and became increasingly apparent to me (AO) over the course of my project.

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[164] Given the multiple authors in this text, we use the third person tense. If first person tense, we indicate the speaker using initials: Angela Okune is indicated by AO; anyone who wants to remain anonymous is indicated by A; Aurelia Munene by AM; Wangari Ngugi by WN; and Hawi Rapudo by HR.

Scholars have challenged the assumption that an archive is a neutral, immutable, historical repository of information, arguing instead that the archives are a place where important decisions about what documents—and therefore whose history—are made (Arondekar 2009; Stoler 2009a). In Angela's opening presentation on November 12th, she reminded attendees that it was not just the contents in the archive that needed careful attention as we sought to decolonize knowledge; the infrastructures themselves also need to be carefully attended to. Knowledge infrastructures here broadly refers to the people, artifacts, institutions, and relations that generate, share, and maintain specific knowledge about human and natural worlds.

Approaching knowledge infrastructures as "relational" rather than as a "thing stripped from use" (Star and Ruhleder 1996), we pluralize the term to highlight, as Edwards et al. (2013) notes, that knowledge infrastructures are not one system, but are numerous multi-layered and adaptive systems, each with unique origins and goals, that are always interfacing and interacting. As also stated in chapter four, we understand "knowledge infrastructures" to include built material spaces of institutions conducting and caring for academic and non-academic research, as well as technical platforms, and human and social networks that give these institutions vibrancy and life. This may include journal editorial boards, numeric and textual research data, peer review practices, scholarly societies, software systems, metadata standards, and research regulatory bodies. We do not restrict our understanding to solely universities, but also include libraries, archives, data repositories, scholarly publishers, and nonprofit and for-profit research organizations.

Ensuring African voices are found in historical archives and are represented at present-day academic conferences is an important, and unfortunately still not yet fully achieved milestone towards the broader aim of decolonizing knowledge production. But to stop at that

goal misses the fact that decolonizing knowledge is also about actively curating, reflecting on, and building the archives we want in the future, including the socio-technical infrastructure on which materials sit. The importance of scholarly archiving is not only to save or preserve records, but to provide grounds for further questions, working with people to take care of the data while also documenting to understand the processes, relations, and considerations at play. The point of this kind of an archive is to scaffold a deutero capacity to think about the world and support a rethinking of habituated ways of understanding the world.

On Style and Writing Process

The subheaders used in this chapter are shared with the previous two chapters which focused on other research formations in Nairobi. This cross-cutting set of questions[165] draws out the motivations, tactics, and infrastructures underlying the pursuit of decolonial knowledge in Kenya. In order to answer these prompt questions, we turned to the digital record of our previous conversations. Borrowing from a style first attempted in this thought piece (Okune et al. 2021) with the aim of developing a first draft of the chapter, Angela went back to monthly recorded discussions of the working group where members had discussed challenges observed with research in Nairobi.[166] She transcribed and included quotations from various members shared across several different working group conversations. This first draft was circulated to working group members who had committed to participating in this writing project and after all had a chance to read it, we hosted a discussion session. The edits/changes/points from the discussion were then integrated into a revised version of the chapter before this draft was shared with

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[165] Find the questions here: https://www.researchdatashare.org/structured-analytics-questions-set/pursuing-decolonial-knowledge.

[166] The full audio recordings, meeting notes, and additional supporting materials are made available for RDS members through the site (visit: https://www.researchdatashare.org/content/research-data-ke-design-group-organizational-archive).

Angela's dissertation committee for review. The intent is for the content of this dissertation chapter to also find other forms, perhaps as a public manifesto document; a blog post; publication in a scholarly journal; or something else. At the very least, it will also be published on the RDS site together with its various supporting materials.

At times, the text mirrors the conversational tone of the engagements that the working group has monthly. By directly and extensively quoting from our conversations, this style seeks to allow multiple contributors to present thoughts in their own voice. This approach in writing process and style expands the bounds of an authorial contribution beyond the direct writing of the text and considers instead conceptual engagement and participatory contribution as valid authorial contributions. This style of writing directly results from both practical and ethical choices. As scholars of the Writing Culture and subsequent generations of anthropologists have discussed at length, to try to write in "one voice" or on behalf of another, even with altruistic intent, can easily turn into a form of epistemic violence (Clifford and Marcus 1986; Harrison 1991; Harrison 2012; Behar and Gordon 1995; Green 2009). Recognizing that there is no way out of representational double binds, through this writing style, we attempt to reflect in our writing that which we are also attempting in our group, namely, to recognize and value our differences while also attempting to articulate and build a common goal together. We thank you in advance for the patience and generosity that is inevitably required when engaging with this kind of textual form and hope that you will gain something new in your reading of it.

Who is involved in this formation?

The Research Data KE working group members authoring this chapter have experience with different parts of the Nairobi research ecosystem: as students and faculty within Kenyan

university systems; founders of non-profit organizations that conduct research; as subjects of research; and research consultants for development aid, multinational firms and international organizations like the UN and World Bank.

- Wambui Wamunyu holds a doctoral degree in Communications and has worked as a member of the teaching faculty in a private university in Nairobi. While she is usually situated in Nairobi, throughout most of 2020 to present, she has been based out of her hometown in a rural town in Kenya.

- Aurelia runs Eider Africa, her own non-profit initiative that provides peer research mentorship opportunities to African graduate students. She is also working with lecturers to transform the teaching and learning of research in universities. She has worked for various international organizations on humanitarian and development research projects. For most of 2020, she called from Nairobi, but she was also based for some time in Kampala, Uganda working on a public health consultancy project.

- Wangari is soon completing her doctorate in Clinical Psychology at a private university in Nairobi. She is a Lead Mentor in the peer mentoring group that Aurelia founded, Eider Africa.

- Hawi has recently completed his master's degree in a social sciences program at a private Kenyan university. He is also the founder of Kijiji Yeetu, a non-profit organization and the Secretary General of the Internet Society, Kenya. Hawi is based in Nairobi.

- Angela is completing her doctorate in sociocultural anthropology at a public university in California, USA. Her ties to Kenya began in 2009 when she conducted research in western Kenya as an undergraduate student. She moved to Nairobi in 2010 where she lived and worked until 2015 when she moved to California to begin her PhD. She moved

back to Kenya in 2019 to conduct her doctoral fieldwork and is currently writing up her

research while based in the San Francisco area.

In addition to our experiences being trained in the academy,[167] all of the working group

members writing this chapter also have experience working as consultants in Kenya on research

projects. For most of us, that translates to using interviews, focus group discussions, and surveys

to develop understandings of particular topics (usually determined through a call for proposals

issued by an international development agency). We may or may not have been part of the

design of the research instrument through which such data was collected.

Figure 26. Screenshot from our February 2021 zoom call. Clockwise from top left: An anonymous member, Angela Okune, Hawi Rapudo, Aurelia Munene, and Wangari Ngugi. During our calls we typically keep our video off.

In our February 2021 call, nearly a year after we had first begun meeting monthly, we

discussed why each of us had first been interested in joining the group and why we continued to

attend. Wangari identified herself as a "naturally curious person" who found the open-endedness

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[167] Other than Angela who schooled in the US, all members have been educated in Kenyan public and private schools. Aurelia received a master's degree from a university in the Netherlands.

of qualitative research refreshing as compared to her highly structured quantitative research

within a psychology lab at the University:

> The curiosity of designing something that occurs to me as we don't know, the end, we just are creating as you go...that's like, super exciting. It's not anything I'm used to, I work in a quantitative science lab where I run computer experiments on memory and language, everything is predictable, I follow protocol, I read a manualized protocol. … and so this [Research Data KE working group] is the complete opposite of that. I haven't met most of you in person. … It's really interesting to be amongst strangers online, doing all these new things together.

A member of the working group initially joined because:

> I know you [Angela], I know Leo, and I know some of the work that you've done, and I find you interesting and good people to work with. By the way, that's one of my research philosophies these days, that I must work with people that I find interesting and good to work with. And so when I joined and then you know, Aurelia is there and Aurelia is someone I know, she's another one interesting and good person to work with. I was like, alright, this is a group I'd like to be part of.

We learned during a subsequent call that this member of the working group has been part of

previous research "collaborations" with heavily paternalistic hierarchies of knowledge and

extractive practices both of the researched communities and also within the Kenyan research

team. She shared with us the bitter taste that resulted from such a project and why, as a result,

she has since felt even more strongly about finding people who share an ethos of care with

regards to research in all of her subsequent collaborations:

> … my experience of research has been that there's some... for lack of a better word, predatory collaborations that are out there. And you just have to be very wise about who you partner with. What continues to be interesting to me is to talk about qualitative research in a mainly quantitative environment...and to explore new aspects of qualitative work through the PECE platform.

Hawi explained how he joined the group:

> I happened to pass by Facebook and I found that Book Bunk was hosting a session. I did not know anybody in this group. So I said, let me go and attend. Given that I have a background in civil society organizations, I said, let me join, why can't I join. I joined the first Zoom, the second Zoom… and this is very important to me because I have been

struggling in terms of how to engage in research work, especially research which is more traditional. …

What made me like the group further…the personal...we are able to express ourselves within the group. I've learned a lot from this group. I've learned the skills of trying to express and putting out your point the way you like it, and that is the real key issue that has come out very clearly. … This group is quite instrumental in terms of trying to see the people of different diversity, trying to communicate what they want to communicate. And I'm looking forward to learning more.

Aurelia chimed in:

I knew I was working with people either I have worked with before or people that at least we share ideas. I also joined … because of the convenience of working online and using online differently. To do research...to ask questions, to annotate… It made sense to work online so I could participate. … Part of the main reason... it's part of the ongoing work that I feel I have been doing. The other day, my friend told me she's a scholar activist. And I was like, okay, what's that? So she told me you know, questioning a lot the systems and trying to see, how can we have more equitable systems. So I was like, Okay, I think I kinda do that work.

She continued:

So, I kinda feel this is part of the work I have been doing or trying to do without having a name to it, of really questioning the systems that I feel really push us African researchers out to the margins all the time. You try to bring in your voice. But because you don't have money, you don't have a platform that can even elevate your voice, you're always on the margin. And being on the margin, you're always assumed you don't know. So, someone speaks on your behalf. So, this place was really an opportunity for me to speak, at the center, ... Like to really feel I have a safe place where I don't feel like there's someone auditing my ideas. And annotate as I wish, look for materials. And also, these zoom calls, we talk so freely. And that is really important, I think for us who are in spaces where the powers are so powerful that sometimes you either give up or you just follow. So, this, this is part of that large work that I'm trying to do even with the [Eider Africa] journal clubs,

I think the bigger picture for me is to really support African researchers to feel they have a place, but also continually working towards making those spaces with them so that they can be able to, also tell their story. So these are very empowering, and also the connections with broader ideas of what other researchers who are doing similar work are thinking, I think that's great. … So I think that type of engagement is for me what has brought me here. And I think what will keep me here.

Angela spoke last:

Maybe I can also share...I think you all know why I'm passionate about it. … But the reason I keep going is that I believe that this work is super important. I mean, we opened [the Feb 2021 meeting] by talking about the ...emotions of following Kenyan politics and like this feeling of like being powerless...and I feel like research work seems so disconnected often from what's happening every day and I think there needs to be a better way for social research to feel tapped into and able to...somebody said, the complexity...like to feel like there's a better way we can really start to analyze the [complex] things going on around us on an everyday basis.

... A group like this is so exciting, because it's like, it's one thing to talk about it at the kind of theory level ...But then to actually put it in practice is often just a whole other ballgame. And so I think, as a working group, with an emphasis on the working, how do we actually then actualize many of these big desires that we have, or the goals that we have, like, how do we actually now start to do it? What does that even mean? What does that look like to say decolonizing knowledge practices or, or what have you, like, what does that look like? So I find that also interesting. And I think for me, that's also why PECE is exciting. It's not the answer, and it's definitely not perfect, at all, no technology is. But I think it gives us something to work with as like a placeholder, if you will, to think with and to learn by doing.

A member of the working group responded:

I think everything is actually related. Why do our politics not work? Why does our research not work? Why is it that we have such boring, disconnected research studies? And yet, when we interact amongst ourselves, we know how to analyze matters... There's a box in which we are put. And we are put in those boxes by the power structures, so to speak. But when we break free of the power structures and think through things for ourselves, it's different.

And I was just thinking about even this whole discussion about BBI [the national government's "Building Bridges Initiative" attempt to change the national constitution].[168] Right now, the BBI discussion is being reduced to, do you support, the yes side or the no side? What if you don't support either side? You're just critically questioning what is this thing? Why must it be done now? ... No one is even talking about

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[168] Discussions about BBI have dominated Kenyan politics and news since late 2019. The BBI proposal would expand the executive in what its proponents have billed as an attempt to curb cycles of election-related violence in Kenya by creating 70 new constituencies, returning the role of cabinet ministers to elected members of parliament, and creating new powerful posts: a prime minister, two deputies and an official leader of the parliamentary opposition. Critics argue that adopting the reforms would burden a country already struggling with debt and push up the parliament's already exorbitant wage bill while creating more opportunities for patronage and corruption. Throughout 2020, the current president Kenyatta and his former political rival, now turned ally, Odinga toured the country rallying support for the initiative in the midst of the coronavirus pandemic. Critics see the initiative as a move for Kenyatta, who is not allowed to seek a third presidential term in 2022, to stay in power. In June 2021, the Kenyan High Court ruled that the BBI proposal was unconstitutional (see https://www.researchdatashare.org/content/muiruri-reporting-bbi-overturned-kenya-high-court). As of June 24, 2021, the ruling is now being appealed (see https://allafrica.com/stories/202106240895.html).

the vaccine. Here we are losing 2 billion [Kenyan Shillings] a day.[169] But we just want to talk about, "are you yes [in favor of BBI] or are you no [not in favor of BBI]." So … there are only certain kinds of answers. But a space like this [Research Data Share KE group], if we think about it, is actually a dangerous space. Because we are saying no, I'm not either this or that. I'm actually my own person, I am independent… So whether we are talking research, or whether we are talking politics, I think we are actually doing the same thing. You're coming against the typical status quo… To think independently is not bad. You actually want more people thinking independently. Because you get better ideas in the process because everyone has an equal say in contributing.

What is the provocation to the move towards seeking decolonial practices?

A Kibera resident and member of our wider Research Data KE working group, Nicera Wanjiru explained to Angela during a discussion held on October 29, 2019: "When you participate in so many researches and you don't know what is happening [as a result] and it's not changing the environment that we are in, you feel like wasted. You keep on asking questions, but this data will go where? The one who takes data will never come back to us like okay, we took this and these are the results. So you feel wasted."[170]

These sentiments are shared by many who have participated in research projects in Kenya and their critique of feeling "over-researched" has become largely common knowledge by many working in research in Kenya. These sentiments were a motivating factor for Angela's project and was the opening provocation for the November 2019 event at McMillan library,[171] laying the

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[169] See https://citizentv.co.ke/news/president-kenyatta-says-over-ksh-2-billion-is-stolen-from-govt-daily-4563455/ for context.

[170] Full transcript of the discussion can be found here (https://www.researchdatashare.org/content/transcript-191029001-being-researched-kibera) as part of an essay on experiences of being "over-researched" available here (https://www.researchdatashare.org/content/being-researched-kibera).

[171] Find the slideshow presentation that was used (https://www.researchdatashare.org/content/okune-mutuku-2019-opening-remarks-archiving-kenyas-past-and-futures-november-12-2019).

grounds for the discussion on open data and research responsibilities. This concern—that

research feels largely extractive rather than regenerative—resonated with those who joined the

Research Data KE working group.

"One of the biggest discomforts is the [research] feedback process," Hawi mentioned.

"The beneficiaries of research have always questioned the feedback process. And that's where

the biggest problem lies: how do we connect research to people's needs." Aurelia chimes in

based on her experience as a development research consultant attuned to the unequal grounds of

international research "collaborations":[172]

> For me the disconnection I have felt is in how I go to communities to do research [as an externally paid, "local" Kenyan research consultant]. First of all, research that they [research participants] did not know about, problems they did not even know they had, and how I sit uncomfortably with them, trying to promote an agenda...and now they've already figured out that you could be here just because you're earning money [as a research consultant hired to do the work]. And not really because you're interested. Yet I am interested in contributing positively to the community.
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> And that disconnection has always been very uncomfortable to me. How am I going to communities to change them and I'm from...wherever I am... anyway, like I want to be part of them, but I'm not part of them because how I have joined them is in a very, sometimes very problematic way. It's an organization which has sent you there, and then you never quite fit in, then you're out in a few minutes. In a few hours, you've done an FGD [Focus Group Discussion].
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> And so that disconnection for me has been very uncomfortable. Of course, I don't know how to resolve it. But I kind of feel like by being in this space, we are talking about some of those ways that research has really created divides rather than unite. And that's an ongoing discussion we should continue having.

In our conversations, we discussed two core aspects of the research landscape in Nairobi

that we want to interrupt as Research Data KE. We mention them first briefly before detailing

them in more depth in the following subsections. First, we have observed and experienced first-

hand the challenge of articulating what feels like an authentic problem in a hyper-saturated

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[172] Feb 25, 2021 call; 26:37.

discursive research and development space. Postcolonial scholar De Sousa Santos (2016) asserted that the global processes of knowledge production have historically been shaped and solidified by a set of privileged, powerful, and exclusive actors and institutions. We have found these powerful actors dictate the direction of research through their capital and supporting infrastructure including open access publication platforms and impact audit mechanisms. This has led to both over-saturation of research on particular topics and people, as well as incomplete and narrow understandings of the world. We see a need for new ways of being able to articulate the still "undone" research.

Second, we find that existing approaches to research pedagogy in Kenya still operate using what critical pedagogy scholar Paulo Freire termed the "banking model" where students are imagined as containers to be filled with knowledge. In this kind of banking model, Freire noted the individual learner is interpellated as a spectator, not a "re-creator" (1968, 75). In such a banking model, the hierarchy between teacher and student is dehumanizing and perpetuates oppression. Instead, Freire articulated that "liberation is a praxis: the action and reflection of men and women upon their world in order to transform it." Fostering this kind of consciousness requires a pedagogical approach where "student-teachers" are no longer docile listeners but interpellated as "critical co-investigators," (1968, 81). We see great potential in using the RDS space to serve as a catalyst for supporting more critical research pedagogy and disrupting existing ways of teaching and practicing research.

Challenge: Articulating an authentic problem space in a development research-saturated space

In his work on scientific objectivity, Peter Galison described how in the 1800s, Samuel Coleridge first popularized the English term "objectivity" in its modern sense as knowledge not dependent on human whims and desires. This work was important in introducing the idea that the

human will would need to be repressed in order for "true" knowledge to emerge from nature. Notions about this ascetic scientist subject continue to undergird many contemporary understandings about proper scientific method. As social scientists, we are still taught to wait and let the relevant issues from "the field" emerge so that a researcher's own biased conceptualizations are not imposed on a project in advance. However, social scientists of science have documented the ways in which research value is always semiotically produced. As Kim Fortun articulated, "one thus must be wary of what seems of organic or essential interest, aware that what a researcher sees—as important [or] as problematic—is always overdetermined," (2015, 155).

As long-time participant observers of the Kenyan research ecosystem, we have noted how the funding of research in Kenya overdetermines the research domains and project topics considered to be of critical interest. This appears true across global contexts (Solovey 2020; Hess 2016) but we find that in Kenya's postcolonial and "structurally adjusted" context where the majority of financial research support comes from external sources,[173] an externally-set funding agenda further exacerbates the conditions of an over-determined research space where specific issues are seen as most pressing and others are under-studied.[174] David Hess has referred to "undone science" where there are "areas of research ... left unfunded, incomplete, or generally ignored but that social movements or civil society organizations often identify as worthy of more

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[173] According to a 2018 report commissioned by the UK Department for International Development (DFID) entitled "Assessing the needs of the research system in Kenya," the Kenyan government spends 0.8% of GDP in research and development (R&D), which is still shy of its own 1% target. Citing UNESCO data, the report notes that international sources contribute to 47% of the domestic R&D expenditure (Fosci et al. 2019)

[174] This does not appear to be unique to Kenya alone but given that we are most familiar with the Kenyan context, we share from this perspective and look forward to learning from others whether or not our experience resonates with them as well. Hebe Vessuri has written about the South American experience and the ways that donor funding dominate the scientific research agenda as well (2014).

research" (Frickel et al. 2010, 444). We see a need for new ways of being able to explore, articulate, and conduct the "undone science" (Hess 2016) considered necessary by endogenous actors in Nairobi rather than waiting for or trying to appeal to donor-led Calls for Proposals[175] ("CFPs").[176]

The ability to articulate an endogenous research agenda is hampered by the fact that nearly every term with potential has been taken up and over-burdened with donor baggage. "Capacity", "community", "collaboration"… labeling these terms "buzzwords" (Cornwall 2007) only begins to describe how overused they feel. This is part of the challenge of doing research in a context with such a heavy development influence. As soon as a seemingly new and fresh concept emerges, donor agencies latch on, drafting their next calls for proposals and drafting guidelines and budgets. "Adaptation", "resilience", "innovation" ... But if one is to secure funding for research—the world over—one needs to play the buzzword game. You need to sprinkle your research proposal with the right language if you are to obtain the requisite funding to further your research.

My iHub Research colleagues and I (AO) jokingly used to keep a growing list on a whiteboard of the buzzwords to insert into our grant proposals. But the double bind of recognizing the over-used analytic frames and needing to be proficient and prolific in them to secure a research grant not only inevitably shaped the project's analytic scope and purpose, it also, eventually, seemed to lead to heavily cynical researchers. In Nairobi's heavily

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[175] Known as "CFPs," a call for proposals is one mechanism through which funders solicit research project proposals. The research conceptual framework and overarching literature are usually included in the call and applicants are expected to submit research proposals that align with those stated framing parameters.

[176] This is where a strong national government investment in local research could be significant for changing the dynamics of research funding in the country. Unfortunately, despite the establishment of the National Research Fund around 2015, the national government's support of research work, especially of social science and humanities work, is slim to none. Any funding distributed is usually directed to those working in the STEM field.

developmental landscape, the loud piper's song (and the need to tune one's research to match in order to get funding) feels like it has made it particularly hard for local researchers to articulate what feels like an authentic research agenda.

In September 2020, members of the writing group had a discussion with Kim Fortun to talk about Gregory Bateson's notion of deutero learning and double bind and how it might apply to our group's work.[177] During the call, she asked us: "what kind of data infrastructure and data availability would actually produce that kind of change in Nairobi, where you have parents mobilized as education activists, or people mobilized for transportation infrastructure, where you actually have a citizenry that's asking something..." (2020, 45:48).

We responded that the idea of helping to promote an engaged citizenry has been part of the narrative about why open data is important for improved governance. But the promise of a citizenry activated by open data to act and hold the government to account does not appear to have transpired in quite the way that donors and community open data advocates had hoped.

Angela mentioned:

> … [that was] the orienting ideal that started a lot of the open data movement push. … an active citizenry that will hold the government to account, you know, using information that they now have access to, that used to be behind closed walls, but now people can access and then they get energized, and then they want to hold [leaders] accountable. But then that never really played out. And then it became a tired kind of narrative that was then used to get donor money. And then you know, open data for "better governance" and for "transparency" and "accountability," like those are all key buzzwords, you know, that ended up being just used on both ends from those who apply for funding, and then the funders who give them out, like in their calls for proposals, you know, it just became kind of ... the next thing that then got funded. (2020, 52:06)

A double bind was noted: it's *not* that more transparency and a mobilized citizenry are *not* needed, but even that has been locked into a certain frame, so it has become a kind of cynical

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endeavor. These kinds of contradictions require Nairobians to be creative with how to support each other within such a paradoxical space.

Challenge: Existing research pedagogy and approaches to education

The Research Data Share KE group has discussed at length the entrenched hierarchies in the research process (the all-knowing supervisor who determines the speed and the nature of postgraduate student work) as well as biases in research structures and norms. Quantitative research, for example, is considered more "weighty" and "scientific" compared to qualitative research. Theoretical constructs developed in American and European centers—entrenched through research texts and resources—are applied to Kenyan research contexts. Combined, these practices result in a presumption of the superiority of particular knowledge systems and sources, and little value is placed on the heterogeneity of populations, nuance in experience, or diversity of perspective.

Analysts of the Kenyan university system, which was established by and for the British settler colonialists,[178] have long grappled with questions of relevance and application of knowledge (Okune 2018b). Africans in the 1930s rejected a British plan to substitute a "purely literary" British education for one that was supposedly more adapted to local context and environment (Whitehead 2005).[179] Such a British "adaptation" argument was seen as a ploy to keep control over Africans and slow the process of socioeconomic change on the continent. Under colonial rule, the administration used racial categories to say that Africans did not need

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[178] The Royal Technical College in Nairobi, which would eventually become the University of Nairobi, was opened by Princess Margaret in 1956 (see video footage of the visit here: https://www.britishpathe.com/video/princess-margarets-tour-of-nairobi). The first students were exclusively from white colonial settler families. The college was opened the same year that Kenyan freedom fighter Field Marshall Dedan Kimathi was captured (Gikandi and Mwangi 2007, xv).

[179] Find my annotation here: https://worldpece.org/annotations/user/1178/artifact/1077

training in complex thinking and that Africans only needed technical education to train them for work (Njoya 2018). Racist theories of the time claimed that African brains stopped developing after reaching teenage years (Campbell 2007). Discussions around decolonizing the university in the 1960s grappled directly with this colonial legacy, how to reorganize the university to center African knowledges and more closely reflect the experiences of and for African students. The time and space allowed for these important discussions of restructuring was, however, short-lived.

In the 1980s, Structural Adjustment Programs imposed by Bretton Woods institutions[180] resulted in the Government reducing its per capita expenditure on various social services including education. Previously state-subsidized university education came under a cost sharing plan that made the cost of education increasingly unaffordable for students from poor backgrounds. Kenyan scholars have detailed some of the cascading effects of the introduction of cost-sharing plans, especially the increased phenomenon of university students' involvement in income generating activities on campus (Kamau 2005; Muyia 1996).

After Kenya's independence in 1963, less than ten years after the official opening of the first college in Nairobi, a concern about employment became the dominant narrative about the value of a university education.[181] As Kenyan education scholar Wandia Njoya noted: "[t]he

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[180] The first adjustment policies were between 1980-84 and a second period of adjustment was between 1985 - 1991. For more details and the ramifications on the education sector in Kenya, see Muasya (2012).

[181] In a World Bank's 1974 Education Sector Policy Paper, it was argued that educational content in developing countries was "dysfunctional" because it was "more theoretical and abstract and less practical" (World Bank 1974). Such rhetoric paved the way for the Bank to restrict government borrowing for secondary education investments solely towards physical infrastructure such as metal and woodshops for boys, and materials for domestic science for girls as these subjects were thought to be more "practical" (Heyneman 2003). This echoes colonial ideas about the need for a more "Africanized" curriculum that is practical in nature and aims to develop a "stable peasantry" (Ball 1983). As late as the 1990s, the World Bank (1988; 1994a; 1994b) suggested that Africa had no need for universities because the return on investment was too low and unjustifiable. The Bank argued that Africa would be better served by investing in primary education and vocational education, and it was assumed that training African students in universities abroad would be cheaper, more cost effective and beneficial. Malawian historian Paul Zeleza (2007; 2016) noted that more recent World Bank publications and pronouncements suggest a

humanistic subjects were now [described as] irrelevant in Africa not because we are black, but because they will not get us employed," (2018). This trend would only strengthen in subsequent decades.[182]

To better understand contemporary perspectives of researchers in Nairobi, in October and November 2020, the working group circulated a survey amongst researchers in Kenya.[183] Of the twenty respondents, most participants were students attending Kenyan universities. As we read the survey responses, we quickly noticed that the majority of these students/researchers were self-funded (16 of the 20 respondents).[184] Only one person received funding from a Kenyan government agency. In discussions about this, we noted the incredible pressure and stress—both financial and emotional—that this puts on a student. In addition to struggling to pay their way through postgraduate study programs, not to mention using personal funds to cover research costs, these students also lead fragmented, stressed lives trying to raise funds to cover their everyday expenses and personal obligations. This experience of "hustling" even while within the university[185] appears to be true of both students and lecturers. In other discussions, we have

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radical rethinking of the anti-university orientation of the 1990s. While the World Bank today appears to be placing importance on developing Africa's higher education system (2016; 2017), the strong market-instrumentalist logic permeating its approach undermines any notion of higher education as a public and intellectual good. This disintegration of the idea of education as a public good enables outside interests to lay claim to filling the perceived skills gap left by Kenyan universities through private trainings sponsored by groups like the World Bank, academic private publishers like Springer and Elsevier, or foreign humanitarian organizations.

[182] See this 2017 news article for statements by Deputy President and 2022 presidential candidate William Ruto that is illustrative of this point: https://nation.africa/kenya/news/education/we-need-skilled-workers-to-prosper-dp-ruto-says-382376.

[183] The working group drafted survey questions together then created a digital typeform survey which we sent the electronic link to participants of the Nov. 12, 2019 meeting and also circulated within our own research circles including students of the Eider Africa journal club.

[184] This is also supported by a 2019 study by Mawazo Institute conducted with a larger sample size which found that lack of access to research funding was overwhelmingly the biggest challenge faced by female PhD students in Kenya (90%) and that 80% were paying for their PhDs from their own savings.

[185] There has been scholarly investigation into the phenomenon of "hustling"—income-generating activities that occur in the informal economy or job-adjacent work (McMillan Cottom 2020)—within the context of African

identified that overburdened lecturers supervise a large number of students and so students are

unable to receive the mentorship they seek. It is not helpful to point blame at the individual

lecturers since lecturers themselves are often campus-hopping from one temporary position to

the next in order to generate enough income to survive. These lecturers also struggle with the

time and support to conduct their own research.

Selected responses from RDS Survey (Nov 2020)

How would you describe research in Nairobi?
- **"**Intensive, academic, uncoordinated, limited policy execution"
- "Complex, Competitive, Isolating, Interesting Dynamics"
- "Raw"
- "Cumbersome due to bureaucracy, limited research funding"
- "Ad hoc basis"
- "Closed; research data is really done and 'kept' with gatekeepers."
- "Some sites are over studied, some mobilizers often act as gate keepers, social science studies encounter template responses, it's expensive as people expect to be paid 'transport reimbursement' etc"
- "Inaccessible, for the elite"
- "Expensive"
- "Tedious"
- "Exciting"
- "Slow"

What would you like to see happen as a result of opening up research data in the next ten years?
- "Interrogation of processes at a deeper level."
- "Meaningful collaboration"
- "Better informed society"
- "Qualitative research topics as emergent issues from existing data to be worked on rather than data duplication."
- "Better use of data by policy makers, higher quality of university graduates"
- "Improved health and social capital in Kenya"

Do you have any specific ideas of things that you would like to see done by Nairobi research communit(ies)?
- "citizen data sessions, smart citizen projects, nairobi metropolitan data share campaign"
- "collaborative events"; "forums"; "annual conference"
- "more research collaboration"

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entrepreneurship, especially in tech entrepreneurship; see for example work in Ndemo and Weiss (2017).

- "open centres"; "maybe co-laboratories where ideas across all fields of studies can be shared"
- "be more inclusive, actually use data collected, stop corruption"
- "Informal goat eating parties"
- "Project: profiling data findings"

Source: Research Data Share Survey, public results available at https://www.researchdatashare.org/content/research-data-share-survey-results-nov-2020.

There have been several attempts at revising the Kenyan education curriculum, most recently in 2017-2019. However, as critical education scholar Wandia Njoya has explained, the aim of such reforms has not been to fix a broken education system but rather to better establish a neoliberal "university-to-workplace" pipeline of workers. In a transcribed interview published by the journal *Ufahamu* (2018), Njoya noted:

> …the new curriculum is designed to train workers without broad-based thinking and creative skills, despite government officials claiming the contrary. There is widespread privatization of social services ... These areas are being sold over to foreign capital, which will definitely need workers, but not citizens who ask critical questions about their nation's sovereignty in the use of resources. So the government wants to put in place an education system that suppresses intellectual growth of the Kenyan people. (2018, 147)

She further explained the "reforms" as being a result of pressure on government to "act" and to fulfill a sense of donor-aid promoted "efficiency" (and profit from tenders and donor aid that may accrue):

> … [there is] contempt for public discussion, in the name of discussions delaying action, [which] is part of the neoliberal, anti-African contempt for African involvement in African decisions. As Issa Shivji has reminded us, Western donors have been engaged in an ideological onslaught against African reflection for decades, in the name of Africans being so desperate, that dialogue is a luxury. That ideology has been used by the Kenyan state to silence public discussions and public dissent. Any time citizens raise questions, there is a backlash in the form of "you are questioning but doing nothing concrete," or on social media, we are called 'keyboard warriors,' and asked what our solution is. (2018, 149)

As RDS, we pick up from this point later in this chapter when we describe our tactic of "slow and steady." This tactic is a direct response to the usual performance of output-oriented

"efficiency" that dominates most research work in Kenya and which we see as being to the detriment of deep dialogue and extended discussions.

What motivates this formation? What are our ways of working? Intentionality?

> Upon termination of the Agreement, or any other termination of Consultant's services for the Contractor, all records, drawings, notebooks, research questionnaires, reports, data, and other documents both in soft and hard copies pertaining to any Confidential Information of the Client, whether prepared by Consultant or others, and any material, specimens, equipment, tools or other devices owned by the Contractor then in Consultant's possession, and all copies of any documents, shall be returned to the Client, except Consultant may keep one copy of all documents for his or her files (which copy shall be subject to the confidentiality and non-use requirements set out in this Agreement).

<p align="center">* * *</p>

This is an example of a Kenyan research consultancy contract. In short, it says that the work done by the researcher is not in fact the researcher's to keep or talk about. This is a concrete example of scientific extroversion (Hountondji 1990), a concept that this dissertation refers to severally to characterize the research apparatus in Kenya. This is also a concrete example illustrating imperialist logics at work in existing knowledge infrastructure in Nairobi that our Research Data Share KE group is working against. In building a public knowledge commons established on sharing and re-use, we see ourselves as directly attempting to subvert a competitive intellectual property regime where research is viewed as individual property.[186]

In the transdisciplinary literature on research collaboration, communication and deliberation (Aellah, Chantler, and Geissler 2016) have been mentioned as important to

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[186] We see important intersections for future exploration between Cheryl Harris' work on "Whiteness as Property"(1993) and how research has come to be regarded as property.

successful interpersonal relationships and collaborative work.[187] However, there has been little

attention paid to the underlying technical and data infrastructures needed to facilitate

collaboration at many different stages.[188] While a handful of technology platforms exist to work

on ethnographic data, most of these are either for individual or team use (e.g. N-Vivo, AtlasTI,

MaxQDA) or are focused on presentation or annotation of results rather than collaborative

analysis (e.g. USC's Scalar https://scalar.me/; MIT's PubPub https://www.pubpub.org/; and

Humanities Commons https://hcommons.org/). Thus, a key feature and way of working for the

working group has been through the technical infrastructure that has served as both the object of

our attention as well as provided the scaffolding for collaboratively analyzing found and created

artifacts. We have begun to describe this work as building a digital archive[189] that continually

provides material, inspiration, support, and community for the kinds of critique that researchers

committed to decolonizing existing structures of knowledge and/for society would like to make.

This is an archive to help build not only diverse, inspiring, convincing, and analytically strong

lines of thought, but strong communities of/with allies that cut across sectors, nation-states,

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[187] Find the full annotation at: http://worldpece.org/content/ao-aellah-goal-not-consensus-enrichment-one%E2%80%99s-own-point-view.

[188] I found this gap while reviewing the literature for my orals. Find the annotations at: https://worldpece.org/content/data-how-does-analyst-point-data-practices-collaboration-or-data-produced-about.

[189] The term data repository is similar if not functionally interchangeable with our use of the term "archive" here. But we use archive to indicate both the more textual and media dominant forms of data that we engage with; to draw upon and contribute to the growing literatures around critical archive studies; and also, because we find that there is more analytic opening around the term which does not carry as much of an assumption of "depositing" and allows for a more lively engagement around it over time. Anthropologist David Zeitlyn (2012) provides a nice categorization of different kinds of archives including as hegemonic (a la Derrida and Foucault), or as potentially subversive (a la Comaroff and Comaroff, Stoler, and Trouillot). He noted that "archives run by the groups traditionally studied by anthropologists provide models of radical archives that are very different from those conceived of by traditional archivists," (Zeitlyn 2012, 461). We position our archive in this vein, not standing with the enunciatory formation of "Preservation for the Future" which operates using a logic of saving materials that are disappearing to preserve them for an undetermined future, but closer in line with the "Afro-centric Towards Decolonizing Knowledge" formation that seeks to reduce reliance on external interventions and mobilize to invest in African knowledge structures and manage systems themselves. See chapter three for more details on these formations.

generation, class, and all of the other, usual categorical boundaries. In our discussions, we have come to identify that such an archive requires:

time and space	space to "figure things out" where all are respected and seen to have important contributions to make. Here titles, positions, accolades, previous outputs and accomplishments are backgrounded because they do not necessarily help us to be present in the here and now and can unhelpfully promote a culture of deference to particular individuals or dominant epistemologies. Instead, all are encouraged to share. A culture of nurturing support has been strongly established, and because of these strong bonds, members of the Research Data Share KE group appear comfortable respectfully disagreeing with each other as well.
experimental governance structures	Decentralized but still collaborative. Figuring out how and who governs the RDS site (and how) is ongoing work. When we had our first non-Kenyan applicant who wanted to join the working group, we had to quickly discuss the kind of inclusion/exclusion criteria we were using for our group. We determined that "Working Group members are expected to be interested in learning from/about Kenya and its research data and its sociocultural systems. Members do not necessarily need to have experience having lived or worked in Kenya to participate." Design Group members who help steer the direction of RDS should "have in-depth experience in, knowledge about, and respect for Kenya, as well as a deep curiosity and desire to develop expertise in research data and its sociocultural systems."
ongoing reflexive practices	We find it important to constantly pay attention to the margins we inevitably create with our own actions. What mechanisms can we put into play to keep ourselves and each other accountable? Constant paying attention to the power structures we are all caught in not to just seek a way out of it, nor to become comfortable in our own complicity, but to stay with the discomfort and to constantly question why we do the research we do.

When asked "[w]hat do you worry about related to open data in Kenya... Tell me a little bit about what would be a disappointing result, 10 years from now with open data," a member of the working group noted: "I think [it] would be a disappointment....if further down the road, we don't do much with open data...My fear is that there will be no ripple effect. We'll be stuck at, let's get the budget information. And we don't see the bigger picture," (2020, 12:06). In other

words, if data just remains archived, but doesn't activate people to use that information to take action, that would be disappointing.

Towards this goal, beyond the RDS technical platform, we are also trying to test out new ways of working together and new kinds of collaborative relations (that are not based on donor-funding or a clear sense of "what is in it for me"). We come as peers with equal voice despite our differences and various life positions (gender, nationality, educational attainment, field of training, and so on). We use first names to refer to each other and speak informally. We try to be mindful of not taking up too much space so that others can also chime in. We usually do not use video for a variety of reasons including Internet bandwidth, Zoom fatigue, and practical purposes.

At least six months into the formation of our working group, during one of our monthly Working Group discussions,[190] we focused on new articulations of the problem space of Nairobi open (research) data. During the call, the group agreed that while there's already collaborative knowledge production underway in Nairobi, it's often collaborative knowledge production within constricting and usually predefined terms such as within donor-driven projects where you know in advance what you are producing. This tends to reduce research to a rote exercise and performance rather than a generative, exploratory investigation. Nairobi, considered by many to be hyper-saturated with certain kinds of research, is also saturated with postcolonial thick data (Murphy 2017).[191] Our call for new research data practices and infrastructures then is not

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[190] Transcript available at https://www.researchdatashare.org/content/2020sept24-writing-meetingtranscript.

[191] Michelle Murphy (2017) uses the term "thick data" to describe the dense enumeration practices in the twentieth century. They argue that postcolonial thick data is entangled with the history of twenty-first-century big data as well as settler colonial practices of counting and audit more generally that have been used against Indigenous people for generations.

necessarily a call for more data,[192] but should be understood as a call for being creative with data in ways that will produce new forms of knowledge and practices that attend to changing conditions. Building data capacity is not just about increased technical capacity to fill a dearth in available datasets, but also about building skills around determining how and which data are leveraged to make a point/take action. This kind of capacity promises to help continually refresh researcher's tactics to understanding and addressing changing local and global conditions.

What are the tactics? How are the tactics ideologically driven?

The first call of the Research Data KE working group took place on March 19, 2020, as cities around the world began to shelter in place with the global spread of COVID-19. During that first call we decided to hold monthly virtual meetings on the second Thursday of every month at 7 AM PST / 5 PM EAT. We continue to hold this meeting and have augmented it with a second "writing" meeting during which time we have been working on writing this chapter. Holding these steady monthly calls has been an important way to maintain our collective over time. On the first call we also decided to set-up a Whatsapp group[193] as well as an email listserv[194] to keep communications ongoing.

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[192] There is an unevenness to the data collected that has led to heavy data saturation around particular topics and regions as well as "data deserts" or "missing data" (Onuoha [2016] 2018) in other areas.

[193] The whatsapp group currently has 14 members.

[194] The email listserv currently has 19 members.

Tactic: Constructing shared meanings and core values

Philosopher of science John Dewey held that communication is particularly important because it serves as a process through which "a universe of shared meanings'' is constructed that brings about an "enhancement of the immediate quality of experience for those who participate in it," (Neubert 2009, 23). Based on our experiences organizing various communities, we have found that when there is a quick influx of new people, the grounding principles that originally brought the founding group together can be forgotten or quickly dissipate. So, building off of the experience of Aurelia and Wangari who run Eider Africa's Journal Clubs and developed a handbook of their values that all new members review, we agreed that an explicit articulation of our values was important. The writing of this chapter and the conversations that informed it were part of our attempt to articulate these values. In our March 2021 call where we explicitly focused on this, Hawi mentioned that the monthly dialogues were an important tactic of the group. It provided a space where people felt free to express their views and even uncertain musings ("I don't know exactly but I'm just talking aloud"). As Hawi nicely put it: "We believe that whatever someone is saying, there's value in it." Wambui also articulated that:

> …this group is interesting, because it goes against the norms we have, where we have hierarchy, top-down, you know, the supervisors who know everything telling us, you know wannabe researchers, things. There's none of that here. We come as peers. And we come as peers who can learn from one another, it doesn't matter, at this point, that maybe some of us have a doctorate, some of us are in the process of getting a doctorate, or not at all, that's irrelevant. What's relevant is, what can we learn from one another, and everyone has an equal voice."

She continued:

> The other interesting thing that I'm hearing, even from our discussion, is this idea of when we break free from the norms, we find our own thing. And our own thing makes sense. I love talking research, generally. But here, it's very enjoyable, because everyone else likes to talk about it. And to think about it, even though we don't know everything about it. So that freedom, and that equality, I think allows us then to grow further.

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Tactic: Slow and steady

When the problem space is so heavily (over-)determined by external agents with multiple motives that there is no time and space available to "figure things out." Donor-funded projects usually range from three-six months long, one year if lucky, and within that time, the grant recipient is usually expected to deliver a long list of outputs and outcomes. There is little time to slow down and no time to do activities and engagements that are beyond the scope of the project. Funders range in their level of flexibility, interest in micro-management, and availability of non-financial resources. But regardless, once funder money is received, it is expected that something must be delivered and something must be done (otherwise, most contracts stipulate that you are supposed to give the money back). In comparison, by not (yet) having any funding sources, we are not chasing to keep up / make good on any external promises.

One member explained:

> Organic means it takes more time, it is not neat and tidy. Sometimes it looks like it is not moving. Sometimes it may even look like it is moving backwards. But that is the value. You are doing the work of figuring it out. And because there is work being put in, it is longer lasting in the long-term. The long-term is what is of value. So hopefully we are doing something valuable even in these seemingly random conversations. They are part of building something. Building an understanding, building a sense of, actually, what are we doing, why are we doing it, why does it matter. Those are important questions to keep asking ourselves.

A member has called these "therapy sessions," where we are practicing anti-imperial knowledge making by valuing process over product or output. We have imagined outputs and products as milestones or stop points in the journey rather than the end in and of itself.

In describing what we are after as "slow and steady," we would not want to be misunderstood as calling for a return to some idealized framing of good thinking as intrinsically slow and egalitarian. What we are proposing is that in our specific cases, a commitment to

engagement over a longer time-period is both realistic given our various schedules and commitments and focuses on the strengthening of relations over time rather than the making of outputs. We argue this shift in the usual priorities of getting a research output out quickly, can help craft the conditions needed to create a distinct timespace for dialogue and discussion. In short, we go slow because we need the timespace to figure out what the space needs to be.

Tactic: Low-Cost and Focused on Listening

Without funding to cover our time, technical platform costs, or activities, we must, by necessity, keep things low cost (since everything is covered out of our own pockets). The small, normative habit of keeping our videos off during working group calls illustrates at a very practical level this tactic. But while acknowledging the real funding constraints that we work within, we simultaneously do not want to over-attribute our actions to cost-saving measures (a narrative that unfortunately is often over-emphasized with regards to practices in African contexts). So, it is also important to highlight the multiple reasons that members keep their video off. As one working group member says, staying off video helps her better listen to discussions on virtual platforms. "I tend to be off video in many of my Zoom activities not just for technical reasons but also because I find it less of a strain to listen to people, as opposed to both listening and looking at people on a screen. In our RDS group, I feel so comfortable talking to each of you that it sounds like a long phone call where I just focus on what is being said." This is an important reminder that initiatives to open up new discursive spaces should always reflexively think about the modalities of participation and the resulting qualities of the relationship being enacted.

What are the cascading effects of these tactics?

By mindfully constructing shared meanings and core values, working slowly and steadily and at low cost, as RDS we aim to care for and maintain good relations—with fellow researchers, our interlocutors, those who support our work, and the communities with whom we do research. Thinking of research as a practice of care (for ourselves and others) at which we have to work diligently daily, it is an aspiration that the tactics we use help establish a space for the emergence of new thought where researchers are comfortable experimenting and developing more authentic queries.[195]

What future is implied?

Playing the long game without organizational structures

Aurelia has explained:

I think the challenges that we have faced in the [RDS] platform being Nairobi-based researchers, we are very time-poor, there are a lot of demands that are really stretched researchers in this space. And therefore, we are not able to really upload a lot as we wish, we are also re-learning new ways of defining data, new ways of defining data production. And this is very unsettling sometimes because it really challenges what you have held dear for a long time.

As Nairobi-based researchers, we are always busy hopping from one consultancy to the next, so we are not able to reflect or document or speak about new ways of doing this work. We are just recreating more research. Personally, I wish I could document the subtle ways we are challenging how we learn and engaging with knowledge in the Eider journal clubs, for example, but I never seem to have the time.

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[195] I (HR) would add that there is importance in noting the informality of the RDS research discussions that helps move research beyond conservative academic principles that tend to lock the minds of young and aspiring scholars in urban centers like Nairobi as well as lock *out* young minds from rural parts of the country. There are a great number of people who have little opportunities to complete or join academic centers of excellence such as universities and influence social transformation processes in their communities. We need to pay attention to the ways that what could be highly original research ideas coming from poor communities who may not even read or write in English or Kiswahili are being excluded through existing academic institutions and systems.

This "time poverty" that Aurelia so aptly described, is a looming challenge. How do we ensure initiatives like the Research Data KE working group lasts longer than a few months? How to keep people motivated to participate without institutional funding in a landscape where "time is money" and exploitation of people's time and labor is already rife? How do we retain the "organic-ness" of our group, but put in place particular structures that keep it going? What kinds of light structures do we want/need?

As we discussed the possibility of setting up an events calendar and a few activities that would make it easier for new members to begin to get involved, we ran up against the challenge of over-committing and over-organizing. The ensuing discussion highlighted a challenging balance between wanting to keep the engagement and involvement as low-stress as possible (again, without feeling like you are committing to new "deliverables" and tasks), while still fostering a lively space that continues to hold value for members with a sense of overall movement.

Closing Reflections

The very act of reflecting on what we were going to write together and coming into this articulation has been important. RDS has helped us begin to create and define digital thirdspace where:

binary concepts (e.g., global/local, supervisor/student, etc) are diminished;
fluidity rather than rigidity of research approaches, structures, relationships is encouraged and nourished;
authentic rather than "buzzword" collaboration, peer-to-peer learning, and research-as-therapy are experienced;
value is experienced not just from quantitative "outputs" (e.g. completed projects, funding raised, etc), but also from qualitative engagement (time spent understanding and reflecting on

a phenomenon, talking to understand and hear one another rather than to produce a fixed "output," etc);
research is treated as a respectful process, sensitive to the contexts in which it is undertaken, and mindful of all participating in it.

This writing project in some ways has also been a light structure to hold us together, an "output" that is self-developed and self-designed. In such an environment where research is so heavily driven by funding regimes, when there is nothing that can be offered on that front, such initiatives can slide down the priority list over time. Thus, continually recalling what exactly we are trying to do together is important. What holds such a group together and what are we holding space for?

A member of the working group said in our December 2020 call: "You can't wait for people to be ready to think like you. You just quietly do what you can do. Even if it's just among us. It's still work that is valuable. It doesn't have to be highly visible for it to be valued. If those governments decide it is valuable, good for them. But in the meantime, let's keep doing what we are doing." Key discussions are needed to move forward in thinking about how to revise scholarly knowledge infrastructures towards the futures we desire. For example, how do we think about fairly crediting and attributing the various inputs and contributions made across the research process without playing into an audit culture, aiming to unseat rather than re-entrench a property model of work.

Table 3. Research Data KE Charting of the Third Terms (July 2021 version 1).

	Reaching for Articulations of RDS (Middle) Third Terms[196]	
global	Translocal / "already global local"	local
Supervisor	Peer-to-peer learning/doing	Student
Positivism	Fluid research-as-therapy approaches rather than rigid, "mechanically objective" methodologies; postcolonial objectivity	Constructivism
"Research Impact"	Value is understood as qualitative engagement (time spent understanding and reflecting on a phenomenon, talking to understand and listening to one another rather than to produce a fixed output	Quantitative outputs and outcomes (e.g., completed projects, funding raised, etc.)
North-South partnerships (e.g., EU-Africa Horizon 2020 Grants)	Focus on authentic relationships rather than "buzzword" transnational collaborations	South-South partnerships (e.g., China - Africa grants)
Research as end-product, e.g., completed study/thesis	Research as a respectful process, sensitive to the contexts in which it is undertaken, and mindful of all participating in it	Research as impersonal series of activities designed to generate 'knowledge'
Intellectual Property	Relational data	Worries of plagiarism and stealing of ideas

Denouncing the use of reductive broad terms like "The West," famed postcolonial author

of "Orientalism" (1978), Edward Said called instead for "concentrat[ing] on the slow working

together of cultures that overlap, borrow from each other, and live together in far more

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[196] See Fortun and Bernstein (1998).

interesting ways than any abridged or inauthentic mode of under-standing can allow," (1978, xxiii). But for that kind of engagement, he recognized: "we need time and patient and skeptical inquiry, supported by faith in communities of interpretation that are difficult to sustain in a world demanding instead action and reaction," (1978, xxiii).

In one of the last lectures he delivered, the eminent Black political theorist, Cedric Robinson stated: "If we are to move the Black Radical Tradition forward, it is imperative that we understand that it is not utopian. Rather it is about questing for freedom. It is about the necessity of recognizing the importance of struggle regardless of outcomes. Nor does it begin and end intellectually. We must look beyond the straightjackets of race to understand common histories in order to make common cause," (Johnson and Lubin 2017, 16). In this chapter, we have sought to describe what we—as a heterogenous group of researchers with stakes in Kenya—have organized towards building a collective public knowledge commons. This work is slow, complex, and messy, but we have found comfort in the sharing of experiences and cathartic release in what we have begun to jokingly call our "therapy sessions." We continue to work *pole pole* (slowly) towards building a digital data archive for and by Nairobians that supports the growth of critical co-investigators and a commons shared by robust institutions building public knowledge.

Pursuing Decolonization, Differently (showing variation)			
Character, practice, mode and ideals of decolonized Kenyan knowledge producer in different organizations	**For-Profit Research** 2005 - present	**Progressive libraries** 2017 - present	**RDS** 2019 - present
Aspiration	Better representation of the world and its diversity	To re-establish links btwn political and information struggles	Holding Space for a "Third Space of Enunciation"; Kenyan researchers interpellated as critical co-investigators
Context	Haunted by scientific positivism and ideas of academic rigor and statistical objectivity; contract time and reporting out to client funders; the promise of private sector efficiency	Haunted by authoritarian state violence; defunding because of structural adjustment programs which then leads to little capacity to remember SAPs; culture of "forget and move on" and trust in foreign experts (such as Google); colonial logics embedded in original colonial libraries	Haunted by contract time; in/out of communities; heavily informated space with uneven research saturation; old "banking models" of colonial education; SAPs impact on Kenyan universities; externally set funding agendas
Persona	Effective, productive knowledge worker	Progressive librarian for "the people"	Counter hegemonic
Practice	User-experience design methods; appropriate introductions and exit from communities	Prioritizing Kenyan users' interests through crowdsourcing (for events and new books); expanding the languages and authors included in the library; weeding out racist books; architectural restoration of the libraries	Recursive ethnographic practices and building sense of community amongst diverse Nairobi researchers; predictable regular discussions; slow and steady working together
Image	Digital csv (comma, separated value)	Digital catalogue	Digital text
Techno | Infrastructure	Slack; Box; Google; Dropbox; Zoom; servers in-house and/or Europe	Whatsapp; Google; WordPress (nrblibraries-archive.org/) with servers in Europe	Platform for Experimental Collaborative Ethnography (researchdatashare.org/) with server in Europe; Zoom; Google; Whatsapp
Ontology	experimentality	"sociology of absences" (de Sousa Santos); reading the archive "against the grain"	always partial and situated (Haraway), hence the need for collaboration
Eso-Enunciatory Formation	Black and Brown "Global South" scientists	Black Kenyan creatives	people with "in-depth experience in, knowledge about, and respect for Kenya; and a deep curiosity and desire to develop expertise in research data and its sociocultural systems"
Exo-Enunciatory Formation	WEIRD scientists (Western, Educated, Industrialized, Rich, Democratic)	Kenyan publics, especially youth; Kenyan and foreign donors	Kenyan publics and researchers, especially students and lecturers

Tools	Individual researcher	Programs and books attuned to context	Relational
Relevance	Knowledge for understanding the whole world	Knowledge for the people	Knowledge for the public good

* An empty version of this table was presented at the beginning of Part II and I now present it with content derived from my ethnographic materials. Here I seek to draw out not only how the pursuit of postcolonial objectivity is grounded in Nairobi but also how even within a specific geographic location, there is variation.

Conclusion

"Kenyans who can leave the country are leaving. Now is the time to get a foreign job and get out of Kenya; the next president seems like he will take us back to Moi-era days," a close friend and interlocutor shared during one of our regular Zoom catch-up calls in early 2021. I sensed a deep frustration. The genuine optimism of the 2010s that buoyed both the Kenyan tech and development sector has all but vanished with the realization that technology alone is not going to turn a government that doesn't work for the people into one that does. That is not to say that Kenyans haven't found creative and humorous ways to push back. For example, demonstrating a sharp awareness of the international regimes of capital that their own government is beholden to, Kenyans on Twitter staged a virtual sit-in on International Monetary Fund (IMF) meetings in April 2021 to protest the latest multi-billion-dollar loan that was to be given to their government.

Posts on the international financial institution's Facebook page cumulatively received thousands of comments by Kenyans. A typical one read: "Take back the US$2.4 billion loan. We don't want it!" Another turned its attack on the President: "Give it as a personal loan to the President and his cronies as this is how it will be used." An online crowdsourced petition demanding the IMF cancel the loan garnered 200,000 signatures in less than 48 hours (Kimeria 2021). In such an example, it is clear that the widespread use of mobile technologies on the continent has made such citizen mobilization possible. While thankfully the larger-than-life narratives regarding technosolutions to solve "Africa's problems" have been mostly deflated, I

would be remiss if I didn't acknowledge how digital platforms and mobile technologies in Kenya are still being used to speak truth to power in nuanced, non-innocent ways.[197]

Research about technology for development in Kenya has largely not been designed as a social good to support and expand the capacities of such a digital-savvy, smart Kenyan public. Instead, it usually serves to justify and expand new technology products, services, and interventions on Kenyan citizens. This is the backdrop for today's postcolonial objectivity in Kenya. Social scientists in Nairobi today are tasked not to provide yet another technosolution to save the day, but to grapple with the hard work of making knowledge that is attuned to everyday realities and contributes towards development as freedom(s).[198] Postcolonial objectivity slides in sideways between a simplified binary of "applied research" (which implies a shallow activist stance) versus "basic research" (which implies an overly theoretical perspective). Instead, under postcolonial objectivity there is greater recognition that processes of producing knowledge in and of themselves have their own effects and intervene in the world in different ways. How we make knowledge matters as much as the content and form of the knowledge we make.

This is not a new insight. Indigenous scholars and advocates of community-based, participatory methods have been highlighting the importance of community-engaged methods of research for decades.[199] This literature has established, for example, that the harm research

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[197] See Nanjala Nyabola's work "Digital Democracy; Analogue Politics" (2018) for more on Kenyans' relationship with their digital spaces and other examples in a long trajectory of digital resistance.

[198] Here I am referring to Amartya Sen's conceptualization of development as freedom (2001). In Sen's understanding, expanding freedom(s) should be understood as both an ends as well as a means of development.

[199] Most recently, for example, see Max Liboirion's work "Pollution Is Colonialism" (2021) which aims to demonstrate how methodology is a way of being in the world. Liboiron's work builds on decades of earlier scholarship including Linda Tuhiwai Smith's canonical work "Decolonizing Methodologies" (1999) and Tuck and Yang's work on "Decolonization is Not a Metaphor" (2012) among others. Robert Chambers' work (1994; 1984; 1997) on participatory methods has also been influential amongst NGO practitioners seeking approaches to development that center the agency of the subjects of development themselves.

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inflicts on marginalized communities of color, often located in the postcolonial contexts, can reinforce the very forms of colonization or oppression that radical scholarship often seeks to dismantle. So what is the significance of a turn to "context" and a turn (back) to promoting a more complicated picture of the "local"? The answer is, in part, the increased scale of uptake and broader recognition across a growing number of disciplines including within the more positivist disciplines, that science is made, has a history, has a location. Indigenous STS scholar Max Liboiron recently wrote that "the methodological question is: how do I get to a place where these relations are properly scientific, rather than questions that fall outside of science, the same way ethics sections are tacked on at the end of a science textbook? How do I, as a scientist, make alterlives and good Land relations integral to dominant scientific practice?" (2021, 20). This recognition that scientific decisions are also at their core ethical decisions and the question of research obligations and responsibilities that follow as a result of that recognition forms part of what I call postcolonial objectivity.

In this dissertation, I have presented the idea of "postcolonial objectivity" as a way to represent what I see as a distinct shift in practice away from what historians of scientific objectivity called "structural objectivity" (Daston and Galison 2010), towards an emergent paradigm where epistemic values are more expressly articulated and seen as important for the production of scientific knowledge. Ethics and context are not external to science, they are also co-constitutive of science and therefore are also science. Liboiron aptly summarizes this in describing what their feminist, anticolonial marine science laboratory[200] does: "we fight science with science," (2021, 20).

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[200] Learn more about the Civic Laboratory for Environmental Action Research (CLEAR) at: https://civiclaboratory.nl/.

Earlier regimes of scientific objectivity

The notion of scientific objectivity is neither monolithic nor stable. As historians of science have established, our current usage of the term is "composed of several meanings - metaphysical, methodological and moral - and each meaning has a distinct history, as well as a history of fusion within what now counts as a single concept of 'objectivity'" (Daston 1992, 597). Objectivity, that is "seeing without inference, interpretation, or intelligence" has not always defined science and only emerged as a new epistemic virtue in the mid-nineteenth century (Daston and Galison 2010, 17). Scholarship on the history of objectivity has noted that the procedures, morality, image status, and persona of the author-artist take on different forms in different regimes. Charting out a historical series of distinct codes of epistemic virtue (see Table 4 below), Daston and Galison clarify that even as new emergent epistemic virtues emerge, earlier stages are not necessarily abolished. "As the repertoire of epistemic virtues expands, each redefines the others," (Daston and Galison 2010, 18). "The relationship among epistemic virtues may be one of quiet compatibility, or it may be one of rivalry and con-flict. In some cases, it is possible to pursue several simultaneously; in others, scientists must choose between truth and objectivity, or be-tween objectivity and judgment. Contradictions arise," (Daston and Galison 2010, 28).

Table 4. Regimes of scientific representation. Table reproduced from Galison (2000).

From Galison, "Objectivity is Romantic."			
Character, practice, mode and ideals of science and scientists in different periods[201]	Before 1820 Genial Depiction	1820-1920 Mechanical Objectivity	After 1920 Judgmental Objectivity

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[201]As Galison noted in his original formulations, this graphic is presented "at the risk of schematizing the already schematic," and should be read "bearing in mind that the dates are of course only approximate," (2000, 22).

Persona	genius	manufacturer	trained expert
Practice	intervention	automatic transfer	conditioned judgement
Image	metaphysical	mechanical	interpreted
Ontology	universals, truth to nature	individual standing for type	families of objects

I borrow form rather than content from Galison in order to develop my own rough periodization of the reach for decolonial knowledge in Kenya. As I reviewed my ethnographic materials, I came to realize that additional analytics were needed on top of Galison's frame for a more nuanced understanding of the pursuit of postcolonial objectivity grounded in its location. The additional left-hand columns found in Table 5 below therefore are deeply grounded in what I observed empirically and themselves form an additional finding of the work.

Thinking Schematically about Cultural Shifts in Kenya: Postcolonial Objectivity

In this dissertation, I have sought to contribute to understandings about the production of knowledge in and from Kenya, describing what I have observed as an emergent regime of postcolonial objectivity. I frame postcolonial objectivity in Kenya as part of historic shifts in scientific representation and understandings of the scientific self in Kenya. See Table 5 for a schematic representation of these cultural shifts in Kenya since independence. Echoing Galison, who noted in his original formulation that the graphic was presented "at the risk of schematizing the already schematic," and should be read "bearing in mind that the dates are of course only approximate," I expand Galison's original table with new components that became matters of concern as independence in Kenya unfolded. The new rows I contribute (in the left-hand

column) are part of these shifts and expanded matters of concern. I leave blanks as openings for collaborative thinking, where I hope others will contribute.

Table 5. Historic shifts in scientific representation and understanding of the Kenyan scientific self. Original column labels inspired by Galison (2000, 22). Table contents by author.

Pursuing Decolonization				
Character, practice, mode and ideals of decolonized Kenyan knowledge producer in different periods	**1963 - 1988** **Freedom fighter turned entrepreneur**	**1988 - 2008** **Developmentalist, structurally adjusted one-party state**	**2008 - 2015** **tech entrepreneur, wired**	**2015 - …** **Cosmopolitan turned anti-imperialist**
Aspiration	return of land stolen by colonial settlers	multi-party democracy; high quality education for a better life	economic wealth and global standing / recognition	epistemic justice and sovereignty
Context	Flag independence gained by Mau Mau freedom fighters, many turned to business to prove their equal standing with former colonialists; business as development of the nation; investments in social programs.	Cold War investments in area studies; structural adjustment programs imposed; Moi government ruled as one-party authoritarian state for over 20 years; universities under-invested in as sites of critical public knowledge.	Technocrat president; charismatic minister of ICT establishes technical infrastructure for fast Internet; surge in organic mobile phone uptake; tech hubs; post-election violence led to tech solutions for social problems	Rising economic and social inequalities; government corruption scandals; growing wariness of state, funder, and media narratives about techno-utopian futures; global reckoning with anti-blackness and American techno-capitalism
Persona	nationalist	activist	cosmopolitan	place-based
Practice			trained expertise	altruistically engaged
Image			structural / statistical	polyvocal
Ontology			"trust in numbers" (Porter), "data-driven"	grounding in context; recognition of "made" character of data
Eso-Enunciatory Formation[202]	state agencies, governments,	activist university critics (who were	technology sector (including educated	Kenyan critics; Pan-Africanist feminists;

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[202]Eso/Exo emerges from Fleck's conceptualization of a thought collective, defined by Fleck as a community of persons mutually exchanging ideas or maintaining intellectual interaction (Fleck 1979). Members of that collective not only adopt certain ways of perceiving and thinking, but they also continually transform it—and this transformation does occur not so much "in their heads" as in their interpersonal space. "When a thought style, developed and employed by a collective, becomes sufficiently sophisticated, the collective breaks into a small *esoteric circle*—a group of specialists which "are in the know"—and a wide *exoteric circle* for all those members, who are under the influence of the style, but do not play an active role in its formation. Members of the first group are those "initiated"—priests and theologians in the case of religion; artists and art critics in the case of art; scientists

		universities, publishing houses	exiled in 1982); MwaKenya	elites; start-up founders; tech hubs); international funders; American tech companies	educated elites; social activists; local creatives
Exo-Enunciatory Formation			diaspora NGOs; diaspora academics	Local and non-local academics; media; governments	progressive local and non-local actors in Nairobi
Techno | Infrastructure		interpersonal relations (many established through Mau Mau, for example)	paper; radio	cloud-based; international	open source; interpersonal
Tools				universal; designed to travel; quantitative	self; attuned to context; constantly shifting; instrumental; qualitative
Relevance		Kenya-rooted and focused knowledge	"Development" focused knowledge	Extroverted (outward facing) universal knowledge	Community-focused knowledge

Postcolonial objectivity in Kenya is locally configured and sedimented as Table 5 illustrates. But Table 6, a variation of Table 5, keeps even that temporal periodization lively and in question, illustrating differences *within* contemporary Nairobi organizations and thereby unsettling the illusion of a single stable objectivity within the container of a nation-state, highlighting its multiplicity and malleability. Again, these expanded categories of analysis emerged from my empirical observations of the worries and considerations that various research actors were grappling with. The content in Table 6 helps to specify and compare how these different groups are reaching for postcolonial objectivity.

Table 6. This table offers a variation of Table 5 to nuance understandings postcolonial objectivity in Kenya, through a multi-organizational slice across actors in the contemporary research landscape.

Pursuing Decolonization, Differently (showing variation)			
Character, practice, mode and ideals of decolonized Kenyan knowledge producer	**For-Profit Research** 2005 - present	**Progressive libraries** 2017 - present	**RDS** 2019 - present

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in the case of science etc. The corresponding exoteric circles for those groups are: lay believers; art-lovers; school teachers of physics, chemistry, and biology, and also engineers and all people interested in science." (Sady 2021)

in different organizations			
Aspiration	Better representation of the world and its diversity	To re-establish links btwn political and information struggles	Holding Space for a "Third Space of Enunciation"; Kenyan researchers interpellated as critical co-investigators
Context	Haunted by scientific positivism and ideas of academic rigor and statistical objectivity; contract time and reporting out to client funders; the promise of private sector efficiency	Haunted by authoritarian state violence; defunding because of structural adjustment programs which then leads to little capacity to remember SAPs; culture of "forget and move on" and trust in foreign experts (such as Google); colonial logics embedded in original colonial libraries	Haunted by contract time; in/out of communities; heavily informated space with uneven research saturation; old "banking models" of colonial education; SAPs impact on Kenyan universities; externally set funding agendas
Persona	Effective, productive knowledge worker	Progressive librarian for "the people"	Counter hegemonic
Practice	User-experience design methods; appropriate introductions and exit from communities	Prioritizing Kenyan users' interests through crowdsourcing (for events and new books); expanding the languages and authors included in the library; weeding out racist books; architectural restoration of the libraries	Recursive ethnographic practices and building sense of community amongst diverse Nairobi researchers; predictable regular discussions; slow and steady working together
Image	Digital csv (comma, separated value)	Digital catalogue	Digital text
Techno | Infrastructure	Slack; Box; Google; Dropbox; Zoom; servers in-house and/or Europe	Whatsapp; Google; WordPress (nrblibraries-archive.org/) with servers in Europe	Platform for Experimental Collaborative Ethnography (researchdatashare.org/) with server in Europe; Zoom; Google; Whatsapp
Ontology	experimentality	"sociology of absences" (de Sousa Santos); reading the archive "against the grain"	always partial and situated (Haraway), hence the need for collaboration
Eso-Enunciatory Formation	Black and Brown "Global South" scientists	Black Kenyan creatives	people with "in-depth experience in, knowledge about, and respect for Kenya; and a deep curiosity and desire to develop expertise in research data and its sociocultural systems"
Exo-Enunciatory Formation	WEIRD scientists (Western, Educated, Industrialized, Rich, Democratic)	Kenyan publics, especially youth; Kenyan and foreign donors	Kenyan publics and researchers, especially students and lecturers
Tools	Individual researcher	Programs and books attuned to context	Relational
Relevance	Knowledge for understanding the whole world	Knowledge for the people	Knowledge for the public good

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In contrast to existing and habituated ways of conducting extractive research[203]—part of practices that Paulin Hontoundji has labeled "extroverted science" (1990)—this dissertation has come to focus on what I call postcolonial objectivity, a *reach* for decolonial knowledge (with its multiple definitions and aspirations), which I have observed emerge as faith in earlier regimes of objectivity has slowly been corroded by scientific crises of the 21st century, especially for example, the crisis of replicability[204] and the growing recognition of the problematics of dominant science.[205] However, this is not to lay out postcolonial objectivity as the next stage in a teleological progress narrative. Daston and Galison have used the metaphor of stars to nicely explain that "instead of the anal-ogy of a succession of political regimes or scientific theories, each triumphing on the ruins of its predecessor, imagine new stars wink-ing into existence, not replacing old ones but changing the geogra-phy of the heavens," (2010, 18).

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[203] In the introduction to a recent journal issue on extractivism, resistance, and alternatives in *Feminist Africa*, published from Ghana, Charmaine Pereira and Dzodzi Tsikata, citing Ye et al. (2020) wrote: "[w]hat renders extractivism a distinct process within contemporary capitalism is the shift away from accumulation through ownership and direct control over sites of production, which is the case in industrial capitalism. Instead, accumulation takes place in a global system where operational centres with control over the flows of resources and services, extract these from places of poverty, concentrating wealth elsewhere," (2021, 1).

[204] A "replication crisis" (also called the replicability crisis and the reproducibility crisis) rocked the academic field of Psychology around the early 2010s when a group of scholars failed to replicate one of the field's foundational studies (https://www.psychologytoday.com/us/basics/replication-crisis). The crisis soon spread to other key studies and core ideas and is considered part of an ongoing methodological crisis. This crisis has led many concerned scholars towards Open Science, a movement to make scientific research open access and accessible across society. The increasing push for pre-analysis plans, publishing of research instruments and datasets, among other demands, is viewed as a way to increase transparency and "better science."

[205] I borrow Max Liboiron (2021)'s use of the term *dominant science* rather than "Western science" for similar reasons as those they state in their book: first, to keep power relations front and center, and second, because Western science is not a monolith and there are marginalized knowledges within what would be considered "Western Science" such as midwifery. Critiques by feminist STS scholars like Donna Haraway (1988) and Sandra Harding (1991) helped to raise wider awareness of the ethical and epistemological problems with dominant science.

Reaching for Decolonial Practice in Kenya

I want to now briefly share a few aspects that I have noted as key markers of postcolonial objectivity in Kenya: naming the values under which the science is being undertaken; reflecting and foregrounding processes of scientific production; and excavating histories to inspire alternative futures. In this latest shift in scientific representation and understanding of the scientific self in Kenya, new values of qualitative research are being drawn out. Attempting to move away from extroverted (outward-facing knowledge) of earlier regimes, postcolonial objectivity in Kenya underlines the importance of being relevant for community. While the definition of such relevance continues to be debated, that research and its processes have effects in and of themselves (as ways of being in the world) is increasingly recognized by actors under postcolonial objectivity.[206] Despite a doubling down on the importance of supporting the "local,"[207] a clear local/global dichotomy is challenged by everyday navigations of transnational geo-politics that make "the imperial" and "the local" often difficult to disentangle.[208]

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[206] Calls for historicizing and decolonizing the study of technology production and use have served as a foundation for important recent shifts in academic fields like human-computer interaction (Philip, Irani, and Dourish 2012; Jack and Avle 2021) over the last decade. Such work has helped foster wider public recognition of the geopolitics of technology and has shown that the story of a rise and subsequent questioning of techno-utopian narratives that I have described in this dissertation is not unique to Kenya. Further, as studies and public debates about so-called artificial intelligence have grown over the last five years, awareness about the algorithmic bias embedded in everyday technologies that discriminate against Black people and women have also engendered postcolonial objectivity. Racial capitalism is increasingly articulated as a root cause of the reproduction of racialized and gendered difference (Robinson 1983) and naming this regime has further enabled critical technology scholars to see the continuities of technologically mediated oppression around the world.

[207] For example, see this recent call for research proposals by USAID which is calling for projects "Kenya Led, Kenya Managed, Kenya Owned" (Source: 2021 Call for Applications. Kenya Inclusive Governance, Accountability, Performance and Participation (Kenya-IGAPP) Agency for International Development Kenya USAID-Nairobi), https://www.grants.gov/web/grants/view-opportunity.html?oppId=331260.

[208] Here I am following the lead of a community of scholars who have developed "Theory from the South" (Jean Comaroff and Comaroff 2012) and "Southern Theory" (Raewyn Connell 2011) that calls out the suspect dualism between the global "North" and "South." African feminist Amina Mama for example has noted the fluid dynamism of "Africanness": … "at once the product of 'internal' cultural divisions and dynamics (of gender, sexuality, class, ethnicity, religion, and other differentials), and of 'external' influences of a global cultural arena which, however problematically it constructs Africans, … [ensuring] a history of cosmopolitanism (Appiah 2005),"

Naming social values under which science is being conducted

As Galison has noted across all representational regimes of science, "epistemology and ethics come in together," (2000, 37). "There is no strategy of inquiry (epistemology) followed by a morally-based reception (ethics)." I view the increasing interest in a qualitative approach to research in Nairobi as indicative of a growing prominence of postcolonial objectivity where research is driven by values rather than a moral ethos of restraint (Daston and Galison 1992).[209] Taking an ethical stance by explicitly articulating organizational values (see Table 7 below) then becomes a marker of postcolonial objectivity in contrast to the non-interventionist objectivity of the mechanical type.[210]

Table 7. Values statements taken from the respective websites of research organizations that I conducted fieldwork with (last accessed August 5, 2021). Organization names are pseudonyms.

Research Organization	Values Statement / Manifesto
Akamai Lab	"We let our firm belief in our purpose drive us and our curiosity guide us. Our respect for our work and each other shapes us while our collaborative spirit binds us and leads our every interaction. In allowing our actions to speak for themselves, we keep ourselves accountable and insist on upholding the rights and dignity of all our respondents. This is why all our researchers have to go through ethics training and why all our research studies and permits are always institutionally approved and certified."
Nyagaard Research	"Put impact first: Whether working alongside our clients, starting our own ventures or collaborating, we are always laser-focused on creating positive impact. We're not consultants, investors, designers or researchers who are conscientious about the externalities of our work. We consult, invest, design and research purely in service of our impact objective."

(2007, 16). In describing the co-constitution of the local and imperial, I also want to complicate the intersections of expertise and subject positions packed into the terms "global" and "local" to carve out space for the existence of "already global local" expertise and knowledge that transcend essentialized categories of nation, race, gender, ethnicity, and class while simultaneously accounting for the situated nature of all knowledges (Boellstorff 2003; Haraway 1988)

[209] Daston and Galison write that an "ethos of restraint" undergirds mechanical objectivity, fueled by both "external restraints of method and quantification and internal restraints of self-denial and self-criticism" (1992, 122).

[210] Daston and Galison (2010) wrote that non-intervention lay at the heart of mechanical objectivity because of the apparent elimination of human agency. The photograph for example, as a type of mechanical image, was seen as the emblem of such non-interventionist objectivity over the handmade image of the earlier representational regime.

Situated Development Initiative (SDI)	"SDI is an action-oriented non-profit think tank whose work contributes to the efforts of African governments to end extreme poverty, end hunger and reduce inequalities. … Ending poverty, hunger and inequality in Africa will be impossible without the evidence needed to make the right decisions being available to the right people at the right time."

In contrast to earlier representational regimes in which the active will posed a danger in the possible influence it had on distorting the scientific image, under this regime, the active will is viewed as a danger only when it is left unacknowledged. Scientists in Nairobi seek different strategies[211] to address their own bias, which under postcolonial objectivity, is naturalized as inherent in everyone.

Reflecting and foregrounding processes of scientific production

Under postcolonial objectivity, recognizing and acknowledging the inherently "produced" quality of science is no longer immediately stigmatized as "bad science." For example, an interlocutor at Akamai, trained as an economist explained to me:

> I'm not sure that anyone really teaches people that data are collected, and you should understand and empathize with that process… because it will improve your analysis, not just because it improves your hypothesis, but it will also improve your analysis. That's part of like what we're hoping to do with that course in January, is just get people to understand that like, this stuff just doesn't show up. You don't just hire Akamai to do it, and we just magically procure this data set. Like we got to do work to do it.

Openly discussing the work that it takes to produce data and the ethical choices made in producing the data under postcolonial objectivity are not viewed as invalidating claims to objectivity but are rather seen to strengthen the credibility of the science.

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[211] Different approaches might include collaboration with other scientists; reflective exercises to disclose and challenge biases held; acknowledgement of a partial perspective. See for example this (https://theconversation.com/bias-is-natural-how-you-manage-it-defines-your-ability-to-be-just-161874), which was recently shared in Akamai's newsletter (June 2021).

Excavating Histories to Inspire Alternative Futures

In conversation with work by postcolonial studies which have called out "the five hundred year regime of universal history told from the perspective of one local history, that of Western civilization… that passed for truth" (Mignolo 2012, ix), new threads of work in Nairobi are increasingly calling for acknowledgment of the specificity of temporal, geographic and embodied location from which knowledge is made as a way to make room for multiple truths and multiple histories. New work to excavate locally relevant pasts as a grounding for understanding the present and imagining new futures are being undertaken. For example, a non-profit organization led by Chao Tayiana Maina, African Digital Heritage (https://africandigitalheritage.org/) has completed cutting-edge digital heritage research projects that include the mapping and digital reconstruction of British colonial detention camps set up by the government during the 1950s emergency period in Kenya to quell the Mau Mau freedom fighters (African Digital Heritage 2019). The organization, in partnership with the Nairobi Railway Museum, has also documented Kenya's currently non-operational railway stations (African Digital Heritage 2021). "Straddling the line between software and storytelling, we believe that the work of technology is not just to build futures, but to help us radically reimagine, redefine and restore African pasts," their website explains. Other, less digitally focused initiatives include informal and unconnected reading groups led by the radical socialist Ukombozi library (reading Marxist texts); and a law professor at Strathmore University (reading Pan-Africanist texts).

Summary of Chapters and Structure

The opening three chapters that made up Part I explained the angst behind the reach for

postcolonial objectivity. In chapter one, I sketched out the contours of research in Kenya over the

longue durée from the colonial period into the advent of "Development" to the Cold War

investments into the region, to illustrate how today's aspirations to build decolonial knowledge

cannot be separated from earlier moments in time when the pursuit of knowledge was driven by

imperialist, colonial logic. In chapter two, I historicize the more recent past, as Nairobi became

"Silicon Savannah," a hot spot of tech development that promised to "save Africa." Attending to

these histories matters because they form the imperial structural holdovers that layer into the

contemporary.

These backstories which I draw out are largely etic and not yet part of the mainstream

discourse in the contemporary reckoning with knowledge imperialism in Nairobi. Here I

recognize I am pursuing postcolonial objectivity myself as I seek to make a public, in John

Dewey's (1927) sense, through the work of piecing together and presenting of these histories as a

multi-layered, sedimented history of the present-day research. Postcolonial objectivity needs to

be attuned to histories of the present. Most of the actors we hear from in Part II do not reference

these histories that set in motion the frame for their own activities today. Assembling and

articulating these backstories is therefore part of my own work towards postcolonial objectivity.

I have described ethnographically what earlier forms of objectivity look like as related to

habituated research data collection practices in Nairobi in chapter three. Data from individual

subjects are collected not for their explanatory power and intrinsic value as stories, but for their

statistical value in the aggregate form; generalized and abstracted out of the contexts from which

they were collected at the very get-go. This is the kind of colonial pursuit of knowledge that

postcolonial objectivity is pushing back against.

After I finished introducing my research interests, Munene,[212] the founder and CEO of

SRI responded:

> It's interesting you mention hyper saturation of research because we have found the same kinds of feelings of over-research amongst some of the farmers in Murang'a (a rural farming area in Kenya). They tell us, people keep coming and doing research on us but we don't see any benefits. We feel pressure to do [our research] differently but I worry that we will not be able to. Our funding for a second phase of the project was not approved so we don't have the budget to go back to the rural community to share our research findings.

Munene has been an outspoken advocate for Open Data in Kenya since it launched in

2011 and we have been acquainted with each other for many years although we had never

worked together in any kind of official capacity. Munene's sentiments capture what came to

become my ethnographic object of study, the litany of ways that Nairobi-based researchers are

reaching for decolonial knowledge. In chapter four, I describe how libraries and archives,

haunted by their ties to colonialism as instruments of hegemony (Zeitlyn 2012; Stoler 2009a) are

working towards the practice of "progressive librarianship" (2014). In chapter five, I look at

Nairobi-based behavioral scientists looking to beef up their qualitative research capacities in

order to better contextualize their experimental studies. In chapter six, I and my co-authors

describe the motivations and tactics behind an emergent formation aiming to build connective

relations and hold space to imagine the kinds of research infrastructures needed in the city.

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[212] a pseudonym

Evaluative Analysis

I have attempted to demonstrate ethnographically that the pursuit of decolonial knowledge within the Nairobi research ecosystem is both pushing back against diverse forces and taking on a variety of forms and tactics, to differing effects. There is no one "check-box" approach towards doing more ethical research; even within a place-based approach to knowledge, there is a wide heterogeneity of approaches, some more radical than others. Through this work, I sought to provide a multivocal understanding of how postcolonial objectivity looks within the context of Nairobi. Libraries and archives are attempting to digitize colonial artifacts and layer them with appropriate meta-data towards aims of progressive librarianship; research companies are shifting their methods and tactics to respond to participants' critiques and shifting funder expectations; and formations of volunteers are organizing, interested in articulating alternatives to existing systems and practices.

If the bulk of this dissertation presented empirical analysis to characterize a reach for postcolonial objectivity, I now want to turn, in conclusion, to my own evaluative analysis that has surfaced from this work. Postcolonial objectivity cannot be significantly undertaken without infrastructuring for it. My worry is that the wildly diverse research actors in Nairobi's densely informated space will turn in circles unless the infrastructural layer of the pursuit of postcolonial objectivity is closely studied and worked on.

The unequal and uneven representation in global scholarly publishing that many of the organizations I studied were keen to address (see Figure 27 reproduced from chapter five) will not be fundamentally addressed until certain aspects of the underlying sociotechnical supports are also dismantled. A discourse of greater inclusion of previously marginalized groups into scientific systems can easily miss the bigger point which is that, until we train our eyes on the

Figure 27. This is Figure 22 reinserted again here. The image, used in Caydin (VP Akamai Research)'s powerpoint presentation depicts scientific knowledge production measured by published research outputs by geographic location. While the source information was not specified, it likely comes from work in Open Science such as http://jalperin.github.io/d3-cartogram/.

structures of power rather than attempting to ameliorate its effects, there is risk of conflating

African representation in epistemic infrastructures with decolonization of said infrastructures.[213]

In making this assessment, I join Indigenous STS scholars who argue against a grant-supported

drive within dominant science toward the "inclusion" of "Indigenous Knowledge" as often

another form of colonialism that extends the reach of colonial and settler goals[214] and feminist

scholars who have shown that the responsibility for institutional diversity and equality is

unevenly distributed and undervalued and if racism were to actually be accounted for, a different

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[213] I find resonance here with what Max Liboiron cited as advice from Kim Tallbear, "to look at structures of the settler state rather than focusing on naming individual settlers, which reenacts the logics of eugenicist and racist impulses to properly and finally categorize people properly." (Liboiron 2021, 4: TallBear, Callison, and Harp. "Ep. 198."). TallBear, Kim, Candis Callison, and Rick Harp. "Political Pundits' Push-Back on 'Protec- tors.'" *MediaIndigena*, episode 198, February 24, 2020. https://mediaindigena.libsyn .com/ep-198-political-pundits-push-back-on-protectors.

[214] Liboiron (2021), 53.

account of the world would emerge (Ahmed 2012).[215] My intent is not to criticize Diversity, Equity and Inclusion (DEI) initiatives or reproduce an undervaluing of the important institutional labor often done by men and women of color. Instead, I want to draw our gaze to the ninth row in Table 5 and Table 6, the "techno" row. While local and global attention has been particularly focused on who is leading and who is the audience for our efforts at decolonizing knowledge (edo/exo enunciatory formations in rows seven and eight in Table 5 and Table 6), we have lost sight of the growing commercialization and encroachment of technical infrastructures of global knowledge production.

Why Infrastructure Matters

I click the icon to quickly save a paper into my reference manager. A big red "X" indicates that I can't download the pdf. I scroll down and see that the paper on decolonizing the decolonization required $42 USD to purchase.

If I wanted to read the whole issue, it was $430 USD, more than many university lecturers in Kenya make in a month.

I navigate to the Virtual Private Network and log into my UC Irvine account. I refresh the page and suddenly, additional text appears.

In fact, I can't check the price of purchasing the article now even if I wanted to.

I click the icon again. A bright green check mark. The PDF has successfully been deposited to my computer.

* * *

"Unfortunately, I don't circulate unpublished work for citation!" This was the response that I received from the host of an event series focused on decolonizing the university when I emailed asking if his opening presentation was available to cite. He had beautifully presented so many of the issues regarding post-structural adjustment changes to African university systems that I wanted to address in my own writing. I wanted to build on his work by citing it and referring others to him and his work.

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[215] Sarah Ahmed writes: "There are problems and pitfalls in becoming a diversity person as a person of color … You *already* embody diversity by providing an institution of whiteness with color," (2012: 4).

But my request was refused because he hadn't yet published it (in a peer-reviewed academic journal, he implied). The secrecy and proprietary sensibility encountered through this event and others has been surprising to me, especially coming from scholars so explicit about their interest in decolonizing knowledge production. Even though they were public events at a public university, presentations were rarely open to any outsiders, recordings of the events weren't available and there were never any meeting notes or reflective blog posts.

The events were enclosed, on many different registers.

* * *

With the one-two punch of these vignettes, I hope to convey the socio- techno- material practices through which the geo-politics of knowledge are perpetuated. The enclosures of critical scholarship on decolonizing the university are counter-intuitive, and all the more so when done within the privileged spaces of elite universities, some well-known for supporting open science and open access publishing. The irony of being unable to access a scholarly journal article on knowledge justice behind a paywall continues to be as striking to me today as it was seven years ago when I was compiling my graduate school applications. The director of an independent book publishing outfit and open access advocate, Eileen Joy nicely captured my own sentiments: "If, as humanists, we embrace and put into practice certain values in our research and teaching—such as openness, pluralism, constructive dissensus, freedom of thought, equity, decoloniality, and the like—then shouldn't we be mindful of the ways in which the practices of the dissemination of our research may be at odds with these values?" (2020, 323).

Such a stark contradiction—that despite all the ink spilled discussing extractive scholarly knowledge practices, the quotidian ways that this knowledge gains legitimacy and circulates has not fundamentally changed—has kept me particularly attuned to the infrastructure question. If one of the current characteristics of postcolonial objectivity includes an explicit naming of the values under which one is conducting their science, future work under postcolonial objectivity

needs to begin to encode those values into the socio/techno/material knowledge infrastructures.

Moving forward, scholars under postcolonial objectivity should move from long-running

acknowledgement that we are part of and responsible for what we study to working towards

ensuring that such responsibilities are technically infrastructured. This includes turning a critical

gaze on the underlying frameworks and evaluation criteria against which scholarly knowledge is

evaluated and made meaningful, tackling questions regarding who sets the standards of scholarly

credibility including peer review and measures of "impact."

At a 2019 workshop on scholarly publishing that I attended in Nairobi, the co-organizer,

Dr. Divine Fuh, stated decisively:

> Open Access will further marginalize people. If the University of Nairobi does not have a
> printing press and doesn't think that investing in its university press is a political project
> to give it a voice, that is a problem. It is doing what Paulin Hountondji called scientific
> extroversion. ... Once you build such local publishing infrastructure, then Open Access
> can kick in. It can be a public good. [But] how many African countries have that research
> foundation today? (Okune et al. 2021)

I included this quote in a short piece entitled "Conceptualizing, Financing and Infrastructuring:

Perspectives on Open Access in and from Africa" (2021) to underscore that Open Access,

contrary to the ways it has mostly been discussed by librarians and funders, is not a purely

technical or economic issue; it is also political. Here, I include it to make the opposite point.

Making (representations of) decolonial knowledge is not only political, it is also technical and

economic. If we do not pay attention to the sociotechnical systems through which this knowledge

has and continues to be made, the kinds of questions that we can ask under postcolonial

objectivity will inevitably be limited and increasingly contradictory.

Soon after independence, in the 1970s and early 1980s, parastatal and independent

indigenous publishing houses began to be established in African capitals (Bgoya and Jay 2013).

But these emerging operations and institutions were quickly undercut by the Bretton Woods

structural adjustment programs in the 1980s, giving African scholars little alternative but to turn to organizations and socio-technical publishing systems in Europe and North America. Today, scholarly publishing in and on Africa remains largely dominated by corporate academic publishers headquartered in cities around the global North. So while the notion of open access (OA) has grown in popularity since the late 1990s, instead of achieving its original radical vision to democratize who can contribute and access scholarly knowledge ("Budapest Open Access Initiative" 2002), a growing body of scholarship indicates that the label of open access is in fact re-entrenching the power of traditional academic publishers under a revised business model (Larivière, Haustein, and Mongeon 2015; Mirowski 2018; Posada and Chen 2018).

Digitization since the mid-1990s has been in step with increasing consolidation of the scholarly publishing industry, with five companies (Reed-Elsevier, Wiley-Blackwell, Springer, and Taylor & Francis and Sage) accounting for more than 50% of published output by 2006 (up from 20% in 1970) (Larivière, Haustein, and Mongeon 2015). Profit margins have been high partly because these companies do not pay for key inputs (the research itself and peer review). Larivière et al.'s study published in 2015 (based on a data set ending in 2013), showed that the social sciences had the highest level of concentration, with 70% of papers published by the top five publishers. Increasingly, these large commercial publishing companies are pursuing vertical integration as a "rent-seeking" business strategy, with exclusionary effects upon researchers/institutions in the global South (Posada and Chen 2018). Journal impact factors, bibliometric data and, in turn, university rankings are also generated by many of these same commercial corporations (Chen and Chan 2021).

The backend of scholarly communication is increasingly equally captured by these dominant commercial players.[216] For example, in 2013, Elsevier acquired Mendeley, a digital platform where researchers share references, papers, and commentary. Established in 2007 by and for researchers, Mendeley had, up to that point, been an icon of community-owned scientific infrastructure. Mendeley has continued to extend its services and in 2016, for example, Mendeley Data was launched to allow researchers to share citable data sets, becoming one of a cluster of repositories promoted by the US National Institute of Health for sharing COVID-19 data (Goldman 2020). In 2016, Elsevier acquired SSRN (Social Science Research Network), a repository for pre-prints (Kelty 2016) and in 2017, Elsevier acquired BePress, which includes Digital Commons, a cloud-based institutional repository now used by hundreds of universities, research centers and public libraries (Scholastica 2017). Elsevier is on record as stating that the acquisition of BePress was "was part of a deliberate effort to shift the company from journal publishing into research and technology data management," (McKenzie 2017).

So those of us concerned with decolonizing knowledge, need to look not only at who is doing the research work, but equally important, turn a critical gaze on the structures through which scholarly knowledge circulates. Who owns, designs, and makes decisions about these structures? Put otherwise, decolonizing knowledge cannot be significantly undertaken unless the infrastructural layer is closely studied and worked on.

There is a growing call for social scientists to get ethical. Beyond bioethical requirements, this increasingly also includes citing and recognizing the importance of historically marginalized knowledges and people, reflecting on one's position and privilege, and building networks of solidarity and mutuality, to name a few. As my work suggests, despite deep and in

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[216] This section builds off of points that Kim Fortun has written up (2021) and which we have been discussing together.

most cases genuine attempts to "care" (for data, research subjects, employees), there is more required beyond caring researchers to undo decades of extroverted scientific activity in Kenya. My experience with the Research Data Share (RDS) working group[217] suggests that certain kinds of thoughtful technical scaffolding can help hold space for thinking about the kinds of research spaces we need to extend good relations across time and space in ways that support more regenerative research.[218]

As a result of my fieldwork and through the establishment of an ethnographic data archive which served as an elicitation device, object of shared concern with interlocutors, and way to offer something towards a public knowledge commons grounded in Nairobi, I have come to some design requirements that I see as important to help engender new questions under postcolonial objectivity.

Design requirements for infrastructuring decolonizing knowledge in/for Nairobi
Structured not to reproduce silos (disciplinary; sector; geographic; social categories), but rather to allow new categories to emerge and creatively develop counter-hegemonic narratives and tactics
Designed for eliciting new questions rather than reproducing the same answers
Financial supported in ways that do not require reporting "out" or "up"
Governed by non-commercial entity as a public good
Engenders community firmly grounded in place(s)[219] and also helps form new connections with others who have resonant experiences and values

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[217] See chapter six for more on RDS.

[218] I understand regenerative research to be research that contributes towards deepening and extending ongoing relations in the particular places where research data and theory is made.

[219] In a collection co-edited by Shiera el-Malik and Isaac Kamola on an "african anticolonial archive," el-Malik and Kamola write: "Because the project of decolonizing African states had to constantly negotiate complex patterns rooted in the haphazard way their borders developed, African anticolonial thought is often concerned with thinking through ways of incorporating different peoples into a common project, united against a common colonial master. … It is intricately grounded in its condition of place. Or more accurately, places - as its producers lived, worked and participated in conversations with nodal points across Africa and other continents," (2017, 4).

Contextualizes data as relations rather than data as property. Data as a verb rather than a noun.
Space for discussing what should be remembered and what should be forgotten. Therapeutic, cathartic space, space for healing.
Designed to draw out haunting logics (of capitalism, imperialism, etc.) found within contemporary theories and practices of knowledge in order to better imagine and develop countering tactics

If we understand data as relations (and not as stand-alone, propertied[220] objects) then what I and my co-authors have sought to practice in this project together is to make data through our ongoing and continuous engagement spending timespace together and caring for one another at multiple registers that go far beyond any particular project. Sharing data then is less about the material research transcript or photograph circulated then it is about slowing down, taking a collective breath together, making space and time for talking with one another, and reflecting and building more of what we want to see in the world, for and through diverse ways of viewing and being.

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[220] Here I am drawing on work by Cheryl Harris on "Whiteness as Property" (C. Harris 1993; 2020) who describes how "through violence, the land and the people are transformed into property, into commodities, abstracted into investments, financial products, and debt instruments," (2020, 1). Her work has carefully documented how and why racial foundations of property remain so persistently obscure. I join with many other scholars who have pointed out the ways that stories and people's truths have been abstracted and turned into data (Murphy 2017; Biruk 2018; Raewyn Connell 2019; Jean Comaroff and Comaroff 2012).

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Timeline: A Swirl of Events
that Ground Postcolonial Objectivity in Nairobi

1884-85: Berlin Conference where European imperialist powers met to "regulate the 'scramble' for Africa

1888: Imperial British East Africa Company given a royal charter to administer the area allocated to Britain

1890: The British East Africa Company began the Mackinnon-Sclater road, a 600 mile ox-cart track from Mombasa to Busia in Kenya, in 1890. [Ogonda, Richard T. (1992). "Transport and Communications in the Colonial Economy." In Ochieng', W. R.; Maxon, R. M. (eds.). *An Economic History of Kenya*. Nairobi: East African Educational Publishers. pp. 129–146. ISBN 978-9966-46-963-2.]

1895: East African Protectorate formed and officially named British East Africa

1896-1901: British build the Uganda Railway running from Mombasa to Kisumu (it was in Kenya but named Uganda Railway because that was its destination)

1899: The first settler publication, *The Weekly Mail*, began to appear in Nairobi and was devoted to settler colonial interests. (Durrani 2006: v).

1900: The city of Nairobi is founded as the railway reaches halfway through Kenya.

1903: Kenya's colonial government began to establish a number of scientific research and development facilities especially in the country's agriculture and health sectors. These included the Scott Agricultural Laboratories in 1903, Coffee Research Services in 1908, Veterinary Research Laboratories in 1910 and Medical Research Laboratory in 1958. (Source: Kenya National Commission for Science, Technology and Innovation https://www.nacosti.go.ke/history-about-nacosti/).

1904: Colonial treaty dispossessed many original residents from using land (e.g. Masaai in Aberdares).

1907: The British colonial administration moves from Mombasa to Nairobi.

1919: First bilingual (Gujarati-English) paper published in Nairobi by Manilal Desai, who published articles and pamphlets of African nationalist leader, Harry Thuku. (Durrani 2006: v).

1920: Kenya as former East Africa Protectorate was transformed into a British Crown colony

1921: Population census showed that settler population had reached almost 10,000 (Durrani 2006: 27).

1921: Formation of Young Kavirondo and Young Kikuyu Association marks the beginning of African nationalism in Kenya (Gikandi and Mwangi 2007: xv)

1922: African protest against the kipande (identification document) system takes place outside the Norfolk Hotel. 150 defenseless Kenyan men, women and children massacred by the colonial regime troops in front of the hotel. African nationalist Harry Thuku sent into exile (Gikandi and Mwangi 2007: xv)

1931: McMillan Memorial Library established by the wife of US-born philanthropist, Sir William Northrup McMillan, in his memory. McMillan library was the second library to be built in the country and is the only building in Kenya protected by an Act of Parliament (passed in 1938)

1934-1938: Final reports for the African Survey were published. During this time, the very concept of "race" came under heightened scrutiny, particularly by scientists who used the term to frame their research. This shift arose in part from concerns over "racial hygiene" in Nazi Germany, but it also stemmed directly from internal critiques of research methods in psychology, eugenics, and anthropology. In these fields there was an increasing recognition that scientific studies could incorporate and reproduce unfounded assumptions concerning "racial inferiority." Research methods were subjected to critical analysis. (Source: Tilley 2011, 253).

1940: Influenced by the African Survey, the Colonial Development and Welfare Act passed, which shifted British policy away from the expectation that each colony was to generate its own revenue but also stressed the role of research and scientific expertise as necessary components of any development plan. (Source: Tilley 2011: 72).

1945: Return of disenchanted African soldiers from World War II leads to the emergence of radical nationalism (Gikandi and Mwangi 2007: xv; Durrani 2006: 99).

1948: Kenya Land and Freedom Army ("Mau Mau") formed (Gikandi and Mwangi 2007: xv)

1948: First government general census. (Prior to this, a 1921 census had reported less than 10,000 Europeans, of whom only 3500 were farmers. Indians were 22,822 and Arabs 10,102, while two and a half million Africans were recorded (Kyle 2008).

1952: Mau Mau begins campaign against white settlers and their collaborators. British declared state of emergency in response, which lasted until 1960. Tens of thousands put in detention camps under British orders. Kenyatta arrested. (Over 60 years later, a digital heritage project would attempt to recreate these camps: https://africandigitalheritage.com/reconstructing-mau-mau-camps/)

1954: Swynnerton Plan published as a report which detailed change to colonial agricultural policy that allowed African farmers to farm cash crops (which had previously been reserved for white settlers only) and offered land tenure. Plan emerged as a result of Mau Mau Uprising but reforms were seen as falling short of public demands.

1956: Arrest and execution of Dedan Kimathi. Mau Mau rebellion finally put down. (Gikandi and Mwangi 2007: xv).

1956: Royal Technical College of East Africa (now University of Nairobi) admitted its first students who were exclusively from white colonial settler families. (See video footage of Princess Margaret opening the college at https://www.britishpathe.com/video/princess-margarets-tour-of-nairobi).

1960s: British Institute in Eastern Africa (BIEA) established and moved its headquarters to Nairobi, Kenya.

1960: Small industrial loans to encourage African businessmen initiated with a fund of 50,000 GBP from USAID (Harris 1972: 11).

1960: State of emergency ended. First Lancaster House Cnoference provides for an interim constitution.

1963 - 1970: University of East Africa (UEA) established between Kenya, Uganda and Tanzania in order to "realize economies of scale in its operations" (Muyia 1996)

1963: The Kenya National Archives (KNA) in its current form was established on the eve of Kenyan independence in 1963 and was formalized through an Act of Parliament in 1965.

December 12, 1963: Kenya gains independence

1964: Republic of Kenya formed with Jomo Kenyatta as president and Oginga Odinga as vice president (Gikandi and Mwangi 2007: xvi)

1966: Odinga leaves KANU and forms Kenya People's Union (KPU) (Gikandi and Mwangi 2007: xvi)

1966: UNDP office established in Nairobi (https://www.ke.undp.org/)

1969: Assasination of popular minister Tom Mboya sparks ethnic unrest. KPU banned and Odinga arrested. (Gikandi and Mwangi 2007: xvi)

1970: University of East Africa dismantled and three colleges assumed more national outlooks. University of Nairobi becomes growing center of political organizing in the 1970s with the growing muzzling of dissent (Friedrich-Ebert-Stiftung 2003)

1970s: Mwakenya Movement (Muungano wa Wazalendo wa Kenya/ Union of Patriotic Kenyans)

1971: First e-Books created by Project Gutenberg which sought to digitize cultural works to make them available in public domain. Volunteers identified printed books to digitize, and created eBooks for Project Gutenberg to publish and redistribute. (https://www.gutenberg.org/about/background/50years.html)

1973: Pan-African research organization, the Council for the Development of Social Science Research in Africa (CODESRIA), established in Dakar, Senegal.

https://en.wikipedia.org/wiki/Council_for_the_Development_of_Social_Science_Research_in_Africa

1975: Market research companies began to be established in Kenya/Africa

1977: Ngugi wa Thiong'o detained without trial for publishing Petals of Blood and staging a play which was performed not by professional elites but by and among the workers and peasants in the village. Play as critical pedagogy.

1977: Kenya's telecommunications sector regulated under Kenya Posts and Telecommunications Corporation (KPTC) Act (Cap 411). Under the Act, KPTC was an exclusive monopoly provider of telecommunications services.

1978: Kenyatta dies in office, succeeded by Vice President Daniel arap Moi (Gikandi and Mwangi 2007: xvii)

1982: Kenya officially declared a one-party state by the National Assembly (Gikandi and Mwangi 2007: xvii)

1982: ITU Plenipotentiary Conference held in Nairobi, Kenya, decided to set up the Independent Commission for World-Wide Telecommunications Development. Chaired by Donald Maitland, the Commission was mandated to identify the obstacles hindering communications infrastructure development, and to recommend ways in which the expansion of telecommunications across the world could be stimulated. The Commission submitted its report in January 1985. The *Report of the Maitland Commission* drew international attention to the huge imbalance in telephone access between developed and developing countries and concluded that this imbalance was intolerable. It underlined the direct correlation between the availability of, and access to, telecommunication infrastructure and a country's economic growth, and it proposed concrete solutions to fix the missing link. The report is considered to be a core document in the founding literature of modern telecommunications development activity. (https://www.itu.int/en/history/Pages/MaitlandReport.aspx)

August 1982: Air Force of Kenya made an attempt to overthrow the Moi government. Coup attempt provided justification for Moi to arrest hundreds of student who were part of a movement fighting for greater democratic rights for Kenyans. The Nairobi and Kenyatta Universities were closed for one year and on reopening in 1983, they were divided into several faculty administrative units. Student welfare units formed under geographic/ethnic groupings and loyalist academics were promoted. These became known as "Nyayo" professors in the university, what Dr. Casper Odegi Awuondo described as "the rise of the cheering crowd" (Friedrich Ebert Stiftung, 2003: 17). "Special branch police invaded the university libraries and removed all books by or on Vladimir Illyich Lenin, Karl Marx, Che Guevara, Malcom X, Franz Fanon, Ngugi wa Thiong'o, Maina wa Kinyatti and Fidel Castro were removed from the shelves "where they lurked in wait to ambush young innocent Kenyan minds with their subversive foreign ideology" (18).

1982: Playwright, author, activist, instructor and poet, Micere Githae Mugo forced into exile and stripped of her citizenship. She is a professor of literature in the Department of African American Studies at Syracuse University and has never been given back her Kenyan citizenship.

1983: Antiquities and Monuments Act passed that provides the legislative authority that governs all the moveable and immovable relics of historical, archeological, and paleontological significance in the country.

1998: The beginning of a series of economic and political reforms called structural adjustment programs (SAPs) were initiated by the World Bank and International Monetary Fund in Kenya. These programs which continued into the 1990s have since been linked to high rates of income inequality, inflation, unemployment, retrenchment, and so on, which have lowered living standards, especially, those relating to the material resources in the family. SAPs in Kenya have also been linked to a gutting of state capacity in areas of education, library infrastructure, and healthcare (Rono 2002).

July 1, 1990: Nazmi Durani, founder of underground library under Dec 12ᵗʰ movement in 1980s, dies tragically. His books (of the Mwakenya Movement) go underground as increased state terrorism against the movement (Source: Abungu 1999).

July 7, 1990: Saba Saba Day ("Second Liberation") with multi-parties in Kenya. https://moderatekenyan.wordpress.com/2012/07/07/saba-saba/; https://nation.africa/kenya/blogs-opinion/opinion/saba-saba-day-kenyan-story-african-moment-1447374

1990: With the ending of the Cold War, the US no longer supported Moi. Smith Hampston, US ambassador at the time, speaks out against Moi. Opposition against the government intensifies. In response to international censure and suspension of financial aid, Moi government agrees to the introduction of multiparty politics.

1991/92: With the rationale that Kenyan university education was unsustainable if continued to grow at prevailing rate, World Bank required that the government limit university enrollment and institute cost-sharing schemes so that individuals partly pay for the cost of their own education. University fees for public education including Pay As You Eat (PAYE) cafeteria system was introduced.

1991: Arxiv.org (https://arxiv.org/about) was founded, a curated research-sharing platform open to anyone that served as an early example of open access publishing.

1992: Famine when Kenyans first started eating yellow ugali b/c US donated corn.

December 1992: Moi reelected in multiparty elections with a large majority.

1994: Netscape goes public; the World Wide Web comes to the masses (https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=1y5lOvQQNzKe_wv1CaPgDoOQTjTNw9Ym-V-e-nq84U6U&font=Default&lang=en&initial_zoom=1&height=1000)

1995: Milestone workshop organized by the Telecommunications Foundation of Africa. Immediately after the workshop, the Kenya Posts and Telecommunications Corporation (state-owned) declared that Internet services were an illegal use of leased lines (Mureithi 2015: 29). In October, leased line connection provided Internet to Kenya for the first time.

1994/95: The African Regional Centre for Computing launched a full Internet system with financial support from the British Government's Overseas Development Agency to pay for an international leased line. (Mureithi 2015: 29)

1997: Free software became more publicly recognized in the US (Kelty 2008)

1997: Moi wins further term in new elections.

1998: Google launches (https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=1y5lOvQQNzKe_wv1CaPgDoOQTjTNw9Ym-V-e-nq84U6U&font=Default&lang=en&initial_zoom=1&height=1000)

1999: National census. Final results never released.

1999/2000: Kenya Posts and Telecommunications Corporation (KPTC), a government company that provided telecommunication and postal services across Kenya, separated into three separate entities - Telkom Kenya, Kenya Postal Corporation and the Communication Commission of Kenya, (CCK) the licensing and regulatory authority of the government. Government begins to describe the Internet as a tool for development. (Mureithi 2015: 30).

May 2000: Mobile Network Operator Safaricom, which today is the largest telecommunications provider in Kenya, was formed as a fully owned subsidiary of the government company, Telkom Kenya. Subsequently, Vodafone Group PLC of the United Kingdom acquired a 40% stake and management responsibility for Safaricom. (Source: Wikipedia)

2002: Handover of power from Moi to Kibaki

2002: Budapest Open Access Initiative was signed, a public statement of principles relating to open access to the research literature. This is recognized as one of the major defining events of the open access movement.

2004: Facebook launches
(https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=1y5lOvQQNzKe_wv1CaPgDoOQTjTNw9Ym-V-e-nq84U6U&font=Default&lang=en&initial_zoom=1&height=1000)

2007: Google opened a development office in Nairobi (see here and here)

2008: Underseas Internet cables installed

2008: The Kenyan government offered 25% of its shares in Safaricom to the public through the Nairobi Securities Exchange. (Source: Wikipedia)

2008: Synovate acquired the Steadman Group to make it the largest market research company in Africa. 12 fully owned, full-service offices across Sub-Saharan Africa, of which the first opened in 1976.

Dec 2008: Post Election Violence after Kibaki took second term presidency

2009: census conducted.

March 2010: iHub was launched.

2010: A "replication crisis" (also called the replicability crisis and the reproducibility crisis) rocked the academic field of Psychology around the early 2010s when a group of scholars failed to replicate one of the field's foundational studies (https://www.psychologytoday.com/us/basics/replication-crisis). The crisis soon spread to other key studies and core ideas and is considered part of an ongoing methodological crisis. This crisis has led many concerned scholars towards Open Science–the movement to make scientific research open access and accessible across society. The increasing push for pre-analysis plans, publishing of research instruments and datasets, among other demands, is viewed as a way to increase transparency and "better science."

August 2010: Kenyan voters passed a referendum on the adoption of a new constitution rewritten to deactivate patterns of political tension and corruption by limiting the power of the presidency and promoting a decentralization to country governments.

2011: Synovate (leading global market research company with more than 100 offices in 62 countries) was acquired by Ipsos in 2011, which combined to be the third largest in the world. (https://www.ipsos.com/en-ke)

February 2011, Google launched its Google Art Project, now known as Google Arts and Culture (GA&C), with an objective to "make culture more accessible." (SOURCE: https://melissaterras.org/2021/01/18/new-paper-digital-cultural-colonialism-measuring-bias-in-aggregated-digitized-content-held-in-google-arts-and-culture/)

January 2012: International Criminal Court announced that Uhuru Kenyatta, William Ruto and two others (Muthaura and Sang) would face trial for crimes against humanity during the postelection violence period.

2012: iHub's growing prominence in media as a "nerve center" for "Silicon Savannah" (e.g. https://www.theguardian.com/world/2012/oct/30/kenya-silicon-savannah-digital-technology)

2012: Thoughtworks, a design research consultancy firm, opens Uganda office to serve as its base in East Africa (https://globaltelconews.com/thoughtworks-helps-amnesty-international-and-ihub-ux-lab-tackle-tech-challenge-in-sub-saharan-africa/).

2012: Heavy investments in "keeping the peace" in the country in the months running up to the elections to avoid another post election violence.

2012: The Nest Collective, a multidisciplinary arts collective founded. The collective works in film, music, fashion, visual arts and literature and also founded HEVA, a creative business fund to strengthen the livelihoods of East Africa's creative entrepreneurs. (Source: https://www.thisisthenest.com/about)

March 2013: Uhuru Kenyatta, son of the first president wins presidency. At the time, Uhuru had an active case (together with the Vice President, William Ruto) at the International Criminal Court.

2013: Google Chairman Eric Shmidt visits the iHub calls Nairobi a "serious tech hub" (https://www.infodev.org/highlights/google-chairman-eric-schmidt-calls-nairobi-serious-tech-hub)

September 2013: Al-Shabaab gunmen attack Westgate Mall in Nairobi killing 68 people. https://en.wikipedia.org/wiki/Westgate_shopping_mall_attack#cite_note-5

2013: #BlackLivesMatter was founded in response to the acquittal of Trayvon Martin's murderer. Black Lives Matter Global Network Foundation, Inc. was established, whose mission is to eradicate white supremacy and build local power to intervene in violence inflicted on Black communities by the state and vigilantes. (Source: https://blacklivesmatter.com/about/)

2014: IBM Research Lab's public launch in Nairobi. Keynote address by Chief Technical Officer of Watson product notes that "Africa represents to us an incredible, very exciting set of opportunities. And that's for many reasons, okay, not the least of which is the African economy is expected to be about two and a half trillion dollars by next year." (Full transcript of keynote talk here).

2014: The Movement for Black Lives (M4BL) formed to create a space for Black organizations across the United States to debate and discuss the current political conditions, develop shared assessments of what political interventions were necessary in order to achieve key policy, cultural and political wins, convene organizational leadership in order to debate and co-create a shared movement wide strategy. (Source: https://m4bl.org/about-us/)

March 2015: International Criminal Court judges formally withdrew charges and terminated case proceedings against Uhuru (and later Ruto in 2016) citing witness interference and political meddling. (Source: Britannica)

2015: Thoughtworks closes Uganda (and South Africa) offices. (https://techjaja.com/the-truth-behind-the-closure-of-thoughworks-kampala-office/)

2015: Chan Zuckerberg Initiative (CZI) announced, "one of the most well-funded philanthropies in human history" (https://www.vox.com/2017/7/10/15771676/priscilla-chan-facebook-philanthropy-mark-zuckerberg-initiative-cure-diseases)

2015: Westgate Mall rebuilt on top of the former site of the armed attack. https://www.independent.ie/world-news/africa/kenyan-westgate-mall-to-re-open-two-years-after-al-shabab-attack-31376629.html

2017: Shiraz Durrani and Kimani Waweru, among others, establish Ukombozi library which houses many of the Mwakenya underground books kept safe in personal libraries for over 30 years following death of Nazmi Durrani in 1990. (https://nation.africa/kenya/news/mwakenya-leaders-regroup-to-tell-their-experiences-240084)

2017: The Nairobi City authority entered into partnership with Book Bunk to allow the organization to fundraise, manage and restore the main McMillan library building and two more in the eastern part of Nairobi (Madaraka and Kaloleni).

2017: Results of 2017 elections nullified by Courts, but Uhuru Kenyatta wins second election for his second term.

2018: EU's General Data Protection Regulation (GDPR) takes effect (https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=1y5lOvQQNzKe_wv1CaPgDoOQTjTNw9Ym-V-e-nq84U6U&font=Default&lang=en&initial_zoom=1&height=1000)

2018: Facebook launches a tech community hub in Nigeria (https://innovation-village.com/facebook-in-partnership-with-cchub-launches-ng_hub-in-lagos/)

2018: Safeboda - an "uber" for motorbikes arrives to Nairobi (https://digestafrica.com/safeboda-live-kenya-nairobi/)

2018/19: Introduction of Competency Based Curriculum (CBC). Public critiques by Wandia Njoya where she points out that this is a system that has already been critiqued around the world (e.g. https://www.tandfonline.com/doi/abs/10.1080/00091383.2014.969177).

September 2019: iHub acquired by Nigerian CCHub. https://cchubnigeria.com/cchub-acquires-ihub/

2019: Google digitizes Kenyan National Museum exhibits to join its "Google Arts and Culture" site (https://nairobinews.nation.co.ke/general/google-to-digitize-and-promote-collections-from-kenyan-museums)

Appendix A: Analytic Framework for Postcolonial Objectivity

As part of the findings of my research, I offer this analytic framework which developed from studying how different groups in Kenya are puzzling through the double binds of making good knowledge in and for Kenya. These questions, which helped me draw out the specificity of what I call postcolonial objectivity in Nairobi may have resonance for others working and studying the production of knowledge in other contexts. Max Liboiron poses the question: "How do we make a nonuniversal science trustworthy and useful in more than one place?" (2021, 152). They note that even when knowledge is not universal, it can still be generalizable. I offer this framework in this spirit, not to argue that there is a universal experience of postcolonial objectivity but to help others to draw out place-based differences.

Analytic Framework for Postcolonial Objectivity
- How does history (colonial, petro-capital, liberal) haunt the problem space you are drawing out?   - What idealized figure shadows your problem space, threatening reproduction of existing structures, limiting change?   - How have rising diversity expectations (including recognition of marginal voices) played out in your problem space? What events/statements instantiate this?   - What modes of care and stewardship are practiced and idealized in your problem space?

Analysis at the Unit of the Enunciatory Formation
- Who is involved in this formation?   - What is the provocation to the move towards seeking decolonial practices?   - What motivates this formation? What are their ways of working? Intentionality?   - What are the tactics? How are the tactics ideologically driven?   - What are the cascading effects of these tactics?   - What future is implied?

Appendix B: Glossary

Here are working definitions of various concepts that I use throughout the dissertation.

Archive

Scholars of the archive have challenged the assumption that an archive is a neutral, immutable, historical repository of information, arguing instead that the archives are a place where important decisions about what documents—and therefore whose history—are made (Arondekar 2009; Stoler 2009a). Stoler (2009b) argued for a "move away from treating archives as an extractive exercise to an ethnographic one," calling for immersion rather than uncovering. I build on this work, especially understandings of the digital archive within Digital Humanities to conceptualize the making of an archive as both a place to work out new kinds of representations of research and data, and as ethnographic method for me. I conceptualize my engagements with ethnographic archives using Derrida's conception of the archive as a kind of "techno-prostheses" (1998, 26) of a particular temporal and spatial experience of the world.

The scholarly archiving of the nature I am undertaking with collaborators is not simply to save or preserve but to provide grounds for further questions, working with people to take care of the data while also documenting to understand the processes, relations and considerations at play. The point of this kind of an archive is to scaffold a deutero capacity (see glossary entry below) to think about the world and support a rethinking of our habituated ways of understanding the world.

Anthropologist David Zeitlyn (2012) provides a nice categorization of different kinds of archives including as hegemonic (a la Derrida and Foucault), or as potentially subversive (a la Comaroff and Comaroff, Stoler, and Trouillot). He noted that "archives run by the groups traditionally studied by anthropologists provide models of radical archives that are very different from those conceived of by traditional archivists," (Zeitlyn 2012, 461). I position the archive-

building I am doing collaboratively in this vein, less a logic of saving materials that are disappearing to preserve them for an undetermined future, and closer in line with working in community towards reduced reliance on external interventions and as a tool to mobilize for greater investments in African knowledge structures and self-governance of such systems.

Bibliodiversity

The concept of bibliodiversity applies the idea of cultural diversity to the writing and publishing world. "Bibliodiversity" generally refers to the need for a variety of publications to be available to readers within a given environment. It is unclear who first coined the term, but it appears to stem from Latin America (*bibliodiversidad*) in the late 1990s. The Jussieu Call (2017) was drafted on the campus Jussieu in Paris by a French group comprising researchers and scientific publishing professionals working together in Open Access and Public Scientific Publishing task. Scholarly Communications scholars expanded the Jussieu Call further to argue that bibliodiversity, rather than adoption of standardized models of Open Access, is central to the development of a more equitable system of knowledge production (Shearer and Becerril-García 2021; Shearer et al. 2020).

Colonialism

Building on work in Indigenous and Black Studies, I understand colonialism not (only) as a period of time, but as "a set of specific, structured, interlocking, and overlapping relations" to land and people that treat it / them as a usable resource that produces value for settler and colonizer goals and "that allow certain events [and things] to occur, make sense, and even seem right (to some)," (Liboiron 2021, 16). In other words, colonialism is not an event, a structure, or

an intent. It is, according to Tiffany Lethabo King, "a milieu or active set of relations that we can push on, move around in, and redo from moment to moment," (2019, 40).

Contract time

This vernacular concept is drawn from my observations of the way that "time is money" under a dominant structure in Kenya where research inquiry is driven by contract terms (usually stipulated by and for foreign clients based outside of the country). Contract refers to either an individual researcher being contracted as a short-term consultant for a research job, or a research organization contracted to conduct a research project. Employees at the research company are not consultants but still operate on contract time because of the project-centered model under which most research is funded in Nairobi. I contrast this hourly timekeeping of "contract time" with "academic time", which is usually not based on an hourly wage, but instead valued by the quantity and quality of scholarly outputs (and increasingly, the journal's "impact factor").

Data (as relational)

Influenced by a broad literature by activist, indigenous, and feminist STS scholars on data, technology, and ethics (see, e.g., Birhane 2021; Adema 2021; Lovett et al. 2019; Liboiron, Zahara, and Schoot 2018), I have come to view open research data as a potential object of shared cognition that may provide the basis for ongoing dialogue and recursive analysis. Scholars critiquing dominant scientific practices have pushed back against treatment of data as if they are unitary, stable objects that can be "owned" by a given researcher/author. Highlighting data's relationships with other objects and social practices, Sandeep Mertia, for example, noted that "data is shaped by actual and potential relations with other existing data, classification, paper and

digital infrastructure, statistical techniques, data collection and cleaning practices, and possibilities of circulation," (2020, 10). Extending further, Sabina Leonelli (2015) considers data as "tools for communication," whose main function is to "enable intellectual and material exchanges across individuals, collectives, cultures, governments, and … whose mobility across these groups is a hard-won scientific achievement," (2015, 810–11). My conceptualization of data as relational relates to Janneke Adema (2021)'s framing of scholarly book publishing as relational practice where "…the book is no longer perceived as (merely) a commodity or an object of value exchange fueling both publishing and university markets but becomes an ever-evolving node in a network of relations of communing, which it both fosters and is fostered by," (2021). Similarly, I conceptualize data as entangled in systems of relations that it fosters and is fostered by.

Data repository

To me an ethnographic data repository is similar if not functionally interchangeable with my conceptualization of the "archive." But I primarily use the term archive to indicate both the more textual and media dominant forms of data that I engage with; to draw upon and contribute to the growing literatures around critical archive studies; and also, because I find that there is more analytic opening around the term which does not carry as much of an assumption of "depositing" and allows for a more lively engagement around it over time.

Development

By "development," I refer to the intellectual and capital apparatus that projects a particular ideological framework for producing subjects and objects (Escobar 1995). I also use

Development with a capital D to refer to the industrial complex of Development as written about by scholars such as James Ferguson.

Decolonization

Indigenous studies of "conquistador-settler colonialism" (King 2019) in the US and Canada have come out strongly in denouncing the appropriation of "decolonization" within the university where academics often "decolonize" an academic syllabus or panel while colonial land relations remain firmly in place. Those working within this thought community argue that "decolonization is not a metaphor" (Tuck and Yang 2012) and decolonization means "re-patriating land to sovereign Native tribes and nations, abolition of slavery in its contemporary forms, and the dismantling of the imperial metropole…" (2012, 31). I recognize the problematic and excessive uses of the term but stick with the term to recall an intellectual activist decolonial tradition that comes out of Latin America and parts of Africa and refers specifically to knowledge.

I use "decolonial" rather than "anticolonial" to capture a sense of the future possibility that many of my interlocutors were aspiring for: a more hopeful future space where knowledge is rooted outside of the colonial logics and extractive relations that still structure today's academic institutions and the global research world. In the words of Foluke Ifejola: "Decolonisation is impossible, but we must make her possible, if we wish to survive this wretched night that this wretched earth has been plunged into by humanity. We must make her possible," (2019). In this dissertation, I find thinking about decolonization as material, not metaphor, to be particularly generative and I have been thinking about decolonization primarily in terms of who owns the

knowledge infrastructures through which knowledge artifacts circulate, especially scholarly

publishing infrastructures such as journals.

Dominant Science

I borrow Max Liboiron (2021)'s use of the term *dominant science* rather than "Western

science" for similar reasons as those they state in their book: first, to keep power relations front

and center, and second, because Western science is not a monolith and there are marginalized

knowledges within what would be considered "Western Science" such as midwifery.

Deutero learning

Gregory Bateson (1972) has called deutero learning a capacity to learn from particular

operations about one's context, thus enabling work attuned to that context going forward.

Bateson contrasted this kind of learning with rote learning, noting that deutero learning could

lead to questioning of fundamental premises and habitual behaviors that are seldom questioned

and usually taken as given. In an analysis of Bateson's concept, Tognetti (1999) argued that such

questioning could lead to a reframing of the problem in a broader context that might allow

participants to view a wider range of factors as affecting their capacity for action. I leverage

Bateson's notion of deutero learning to call for the kind of research capacity needed to

understand and respond to constantly shifting conditions.

Epistemic imperialism

The concept of epistemic imperialism or "the domination of one people by another in

their world of thinking," (Alatas 2000, 24) helps explain the ongoing need in postcolonial

contexts to "decolonize the mind" (Ngugi wa Thiong'o 1986). Francis Nyamnjoh has argued that such epistemic imperialism …"has facilitated both a Western intellectual hegemony and the silencing of Africans even in the study of Africa," (2006, 398). In my work, "epistemic imperialism" helps to call for thinking not only about legacy geohistories of colonialism, but also layered histories of Development, structural adjustment and technosolutionism and their effects on the epistemologies, knowledge practices and infrastructures of a community.

Extroverted Science

I rely heavily on Paulin Hountondji's conceptualization of scientific extroversion (1990), which he describes as scientific research on the African continent intended to meet the theoretical needs and questions of the Western academy and not the society within which the science is being conducted. He gives a concrete example that many of research articles from Africa are published in journals located outside of the African continent and therefore meant for non-African readership. In this project, I observed how this kind of scientific extroversion is reproduced through Euro-American funding regimes, imperialist logics, and assumptions about capacity and expertise, especially technical. I describe how Nairobi-based research groups are entangled, reproduce, and also attempting to push back against the extroverted scientific infrastructures within which they are caught.

Open Data (in Kenya)

Open Data emerged over ten years ago as a rough point of consensus for action among pro-democracy practitioners, internet entrepreneurs, open source advocates, civic technology developers, and open knowledge campaigners (Davies et al. 2019). In 2011, the Kenyan Open

data portal was launched, making it only the second of its kind in Africa. While the Open Data label has shifted in its application around the world to genomic data, land registers, and parliamentary voting data, the concept of "Open Data" still largely refers to numerical data held by governments, NGOs, and private sector. In comparison, conversations about ethnographic archives have largely remained amongst libraries, archives, museums and their patrons (Silverman, Parezo, and Wenner-Gren Foundation for Anthropological Research 1992). I situate my work within the domain of open data but consider how, as Leonelli et al. (2017) have noted, data are not always stable, ready-made objects.

Knowledge infrastructure(s)

In this project, "knowledge infrastructure" broadly refers to the people, artifacts, institutions, and relations that generate, share, and maintain specific knowledge about human and natural worlds (P. N. Edwards 2010, 17). Approaching knowledge infrastructures as "relational" rather than as a "thing stripped from use" (Star and Ruhleder 1996, 113), in the dissertation, I often pluralize the term to highlight, as Borgman (2020) and Edwards et al. (2013) have noted, knowledge infrastructures are not one system, but are numerous multi-layered and adaptive systems, each with unique origins and goals, that are always interfacing and interacting. All knowledge infrastructures reinforce authority, power, and control (Acker 2020; Dourish and Bell 2007) and require upkeep, care, and maintenance (Martin, Myers, and Viseu 2015; Murphy 2015). I understand knowledge infrastructures to include built material spaces of institutions conducting and caring for academic and non-academic research, as well as technical platforms, and human and social networks that give these institutions vibrancy and life. This may include journal editorial boards, numeric and textual research data, peer review practices, scholarly

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societies, software systems, metadata standards, and research regulatory bodies. I expand beyond the university system to also include public libraries, archives, data repositories, scholarly publishers, and nonprofit and for-profit research organizations under the category of knowledge infrastructure.

Platform for Experimental Collaborative Ethnography (PECE) / Research Data Share

The Platform for Experimental and Collaborative Ethnography (PECE) is an open-source software that provides digital space for sharing, collaborative analysis, and creative presentation of ethnographic data and writing. In comparison to most qualitative data software, which are built on a coding paradigm, the platform is built through poststructuralist theorizing (Khandekar et al. 2021). I came to learn about PECE in 2017 and using PECE enabled me to conduct analysis at varying scales and with multiple layers of resolution. As my knowledge of PECE and its possibilities grew, I decided to develop my own instance of PECE, which I have called "Research Data Share" (RDS). I developed skills in PECE in 2018 by participating in the STS Across Borders exhibit (http://stsinfrastructures.org/about) organized by Society for Social Studies of Science (4S). I also eventually developed my comprehensive exam "documents" in PECE. While I had begun dabbling in PECE simply for my own research infrastructure, over time I found its broader value in adding an analytic layer to ethnography at multiple points in the process.

I conceptualized the development of the RDS qualitative data archive under three distinct rationales. First, I saw it as an elicitation device and grounds for collaborative discussion and engagement, imagining that the deliberations about the archive that I would have with those in the field would be a basis for my learning. Second, it was an attempt to produce something of

value to informants and respond to the ethical questions that I started with. At the very least, I could give a transcript and/or audio recording from the research encounter back to my interlocutor. Third, I anticipated that key questions would emerge through my own process of building and studying that would be valuable.

Once I was in Nairobi, RDS became expanded even further: it became a site where I archived proceedings for a public event that I held at one of the oldest libraries in Nairobi; a space for archiving of the collaboratively taken fieldnotes at the event using a shared set of analytic questions. And the infrastructure that has supported a smaller subset of researchers, librarians, technologists, and open data activists who were interested in continuing the conversation and formed a working group. RDS working group continues to hold monthly working group calls where we come together as an emergent community and developing ideas about what research is currently and what it could be. A subset of the working group co-authored chapter 6 of this dissertation and the chapter will be available on RDS itself as well.

Postcolonial Objectivity

Based on my empirical observations of the conduct of research in Kenya, I put forth the concept of postcolonial objectivity, where scientists begin to recognize their own methodological choices are not informed by scientific choices alone, but also moral choices. This kind of awareness of self appears to be growing as faith in earlier regimes of objectivity has slowly been corroded by scientific crises of the 21st century, especially for example, the crisis of replicability and growing recognition of the problematics of dominant science brought about by feminist STS scholars like Donna Haraway (1988) and Sandra Harding (1991) who offered us "situated knowledges" and feminist standpoint theory. Such critiques have helped engender what I view as

a new emergent form of scientific objectivity. Postcolonial objectivity describes a positioning of the scientific self in the production of knowledge that is not centered on a separation between the subjective and objective but knowledge that instead gains its validity through recognition of and grounding in its location. In this conceptualization of postcolonial objectivity, it turns out to be more than an endpoint. Instead, "postcolonial objectivity" points to a variegated process through which knowledge is developed, evaluated, legitimated, and used.

Progressive Librarianship

Kenyan-British library professional and political activist, forced into exile in 1986 from Kenya to the UK, Shiraz Durrani has developed the concept of Progressive Librarianship which is based on principles of equality and justice. "…where everyone can create, access, utilize and share information and knowledge," (Durrani 2014, 405). "Progressive librarians are committed to changing the very debates and policies around information and development to ensure that the target population is an equal partner in the process of development," (2014, 407). According to Durrani: "Progressive librarianship's great contribution to the development of theory and practice of librarianship is to re-establish the link between political and information struggles," (2014, 91). Find more details in chapter four.

Socio-technical infrastructure

Infrastructures are the systems that enable circulation of goods, knowledge, meaning, people, and power. Work in STS understands infrastructure as a relational entity that emerges for people in practice and structure (Star and Ruhleder 1996). What this means is that infrastructure is built upon other layers, and, at the same time, is shaped and constrained by its relations to

them; infrastructures are embedded in other structures, social arrangements, and technologies. Sociotechnical infrastructure requires experimentation and innovation, care and work. It is not naturally self-sustaining and constantly requires input. I understand infrastructure to both "shape and be shaped by the conventions of a community of practice," (Star 1999, 381).

Tech Philanthrocapital

Tech Philanthrocapitalism refers to the capital investments by wealthy private individuals and families who made money from technology and are now distributing it around the world for "public good." Such philanthropists include Bill and Melinda Gates Foundation, and the Chan Zuckerberg Initiative, among others. While these groups position themselves as altruistically "giving back", scholars of philanthrocapitalism have questioned the deliberate conflation of public and private interests and the moral positioning where (1) development challenges are framed as scientific problems; (2) beneficiaries are framed as productive entrepreneurs; and (3) philanthropy is framed as social investment (Haydon, Jung, and Russell 2021).

Thirdspace

I have recently begun thinking about the collaborative development of ethnographic archives and relational data through theories of thirdspace. That is, as collaborative activities facilitated consciously towards building a shared third. I am interested in further exploring how the digital characteristic of the RDS archive bring new dimensions to what Ed Soja, Homi Bhabha and Thomas Ogden and others have theorized as "thirdspace." Urban geographer planner Ed Soja discussed Thirdspace as rooted in a "recombinatorial and radically open perspective" where our spatial imaginaries are "open to ways of thinking and acting politically that respond to

all binarisms… by interjecting an-Other set of choices," (1996, 5). Homi Bhabha (1994) describes a thirdspace of enunciation as a transition space can enable the contestation and re-negotiation of boundaries and cultural identity, a space where hybrid identifications are possible and where cultural transformations can happen. Psychoanalytic theorists like Thomas Ogden have also worked on what they called "the analytic third" where the third refers to something beyond the dyad of doer and done to: "in the space of thirdness, we are not holding onto a third; we are surrendering to it. The third is that to which we surrender, and thirdness is the intersubjective mental space that facilitates or results from surrender," (Benjamin 2004, 8).