

Introduction

Studying Trial Communities: Anthropological and Historical Inquiries into Ethos, Politics and Economy of Medical Research in Africa

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Overseas Medical Research

This book is about medical research carried out in Africa, by African institutions and their collaborators from Europe and the USA. It is thus about what used to be called ‘overseas’ medical research, a term which – unlike more recent terms such as ‘transnational’ or ‘collaborative’ – recalls its imperial origins as well as the asymmetrical topography of power and resources it still involves. Overseas research is shaped by its geographical and political-economic frames, as well as by colonial history and by the process of nation building, and decay, that marked the postcolonial era (or, as Ombongi, below, distinguishes, the ‘postcolonial’ and the ‘post-postcolonial’). This is why the authors of this volume, participants of the conference ‘Studying Trial Communities’, held in 2005 at the Kenyan Medical Research Institute (KEMRI) Centre for Geographical Medicine in Kilifi, Kenya, include historians among the majority of anthropologists, and why many of the anthropologists here draw upon historiography or historical sources for the purpose of their ethnography. Medical research in Africa is an area intensely shaped by history, and the fact that it often is oblivious to its own origins and genesis makes it particularly important that we combine ethnographic and historical-archaeological investigations.

The chapters below focus on contemporary medical research endeavours and, to a lesser extent, their postcolonial prehistory. They cover a range of African countries, and diverse types of medical research: clinical studies, drug development and randomised controlled trials, entomological surveys and vector control, ethnobotany and phytopharmacology, even medical anthropology. What they have in common is a commitment to understanding how medical research is shaped in the interactions — set within stark political and economic disparities — between global scientists and their institutions, national and transnational forms of government, and people who contribute time and effort, and often also bodily substance, to research projects, either as temporary employed staff, or as study subjects without direct, formal remuneration. The contributors ask why, and under which circumstances, scientific medical work takes on particular forms, and how the people and institutions involved determine what is right and wrong, and which direction to take. Underlying these inquiries is, for many of the authors, the question of how scientific investigations — as well as the public good that medical science makes possible — could be realised in a more democratic and equitable manner. Thus, their scholarly occupation with science in Africa is intertwined with reflections on the politics and ethics of medicine, in the ‘overseas’ situation of unequal scientific and technical capacity and great disparities in power and wealth.

The Ethos of Medical Science

This book could be said to be about the ethics of research, but it does not limit itself to the domain of discourse that recently has been cast as ‘research ethics’ or ‘bioethics’ in the regulatory sense of guidelines and principles of ‘good clinical practice’ (see e.g. CIOMS 2002), and which has given rise to some fruitful debate in public health and attendant social sciences. This literature blossomed in particular during the past decade, stimulated, among other sources, by the human rights discourse that evolved around HIV/AIDS, and, more specifically, by the debates provoked by the 1997 discussion among scientists and ethicists on appropriate ‘standards of care’ in African HIV research (see Angell 1997; Lurie and Wolf 1997). Simplifying a rich debate for the purpose of positioning this volume, we can discern a continuum across this literature, ranging from contributions that aim to produce better regulatory frameworks or to implement rules more systematically (e.g. Leach et al. 1999; Emanuel et al. 2004), to social research that enriches the debate through the use of sociological and anthropological method (e.g. Molyneux et al. 2004, 2005a,b; Fairhead et al. 2006; Parker et al. 2008).

The authors of the latter kind of texts often critique and qualify the terms set out in standard bioethics guidelines, or resituate research ethics in their political-economic context – thereby critiquing their inherent ‘anti-political’ effects (e.g. Benatar and Singer 2000). By contrast, the former – social science that remains within the delineations of the existing bioethics discourse – tends to reify these limitations of regulatory bioethics, excluding, at times explicitly, questions of political and economic inequality and interest from the purview of ethical ‘worries’ (see Emanuel et al. 2005). The contribution of this literature to critical debate about medical research and scientific knowledge, and thus to the creation of egalitarian and democratic science, is therefore limited by an implicit acceptance of the status quo. Setting themselves in particular apart from this normative version of the scholarly debate on medical research ethics, the anthropologist or historians below situate themselves outside the frames of existing normative ‘bioethics’, and many critique these frames or their epistemological and political premises (see e.g. Dilger, Heald, Strathern, White). In as far as they do directly refer to research ethics, they prise open the taken for granted closures of existing ethical discourses, in order to create the possibility of thinking up alternatives. In other words, the chapters collected in this volume wish to extend the critical and analytic end of the spectrum delineated above.¹

While most contributors below acknowledge the importance of legal instruments to regulate medical research, the ethical impulse behind their chapters is different from that which drives bioethics guidelines in the sense embodied by ‘Good Clinical Practice’.² For the sake of distinguishing it from ‘ethics’ in the restricted sense that is now often taken for granted in the context of medical research – emphasising the protection of individual rights at the expense of a wider societal project including the pursuit of justice – one could refer to this different concern as the ‘ethos’ of medical research, that is, the visions and projects that orientate and direct the discourses and practices of different actors and groups, in different places, situations and periods.³

Ethos in Time

Scientific ethos, or articulations of ethos in relation to medical science, is shaped by historical and political-economic circumstances, and revealed by close attention to how different actors, in different localities and times, produce scientific evidence in particular ways, how they express motivations and aims, take decisions, identify and solve problems, chose ways forward and evaluate past actions. Ethos can be articulated on diverse

levels of scale – including, for example, commitment to thoroughness and pride in technical inventiveness, faith in progress and enlightenment, commitment to freedom, welfare, equality or democracy – and linked to different wider societal projects – such as the nation or a global commonwealth, the market or the welfare-state. In contrast to narrow definitions of ‘ethics’ in terms of guidelines and rules, the broader study of ethos emphasises the problem of direction over that of particular choice, the openness of intention and anticipation over the closure of a right or wrong action. Asking for the ethos of science is searching for the projects implied in it, the imagined futures and pasts, and thus it is as much about temporality as it is about morality (for the centrality of time for diverse articulations of ethos, see also Badiou 2002).

Articulations of ethos shift over time, and not infrequently the broad frames of one historically situated ethos serve as shared ground, upon which struggles about diverging interest can be carried out. A key example of this, which several of the chapters below attend to (e.g. Ombongi, Schumaker, Geissler), is the specifically modern, mid-twentieth century ethos which took modernisation, progress and development for granted, and which shaped science and drew upon it to expound visions of society and government. The outlines of this particular ethos may be particularly visible to us, today, for two reasons. It has been analysed, critiqued and deconstructed, most fruitfully by the Frankfurt School and later by the Foucauldian tradition, giving us a sense of distance from it; and yet, as we inhabit an increasingly uncomfortable and destructive sort of after-modernity, we cannot help but rediscover some of the attractiveness of the outdated hopes of our modern forebears (whom we now know have never been modern, leaving us with a task at hand).

Importantly, this modern ethos served also in the African medical context as a shared frame of reference for politically and economically radically opposed interests: colonial medical administrators could draw upon it to justify, for example, racial segregation, while anti-colonial freedom fighters could demand medical equality and redistribution of the fruits of progress. Claims and counter claims could thus be made with reference to this one overarching ethos. Choices could be contested, even fought over, within this frame, which did not provide simple moral answers. This potential inclusiveness, and ambivalence of ethos, which allows for diverging interests, conflict and dialectics, is an important difference to ‘ethics’ as conceived of in regulatory research ethics.

Ethos and Politics

In a similar way, a contemporary ethos based on individual freedom and rights and the value of life can be drawn upon to defend very different interests, for example those of the pharmaceutical industry claiming intellectual property rights, and those of treatment action campaigns demanding equal rights in HIV treatment; those of industry-sponsored 'patient advocacy' groups demanding high-cost drugs for unproven improvements of patients' lives, and those of 'right to die' activists, who oppose the dictate of life-extending medicinal technology (see Ong and Collier 2005). Thus, within the space of an overarching ethos different interests can be both disputed and brought together. Indeed, as most of the authors below will agree, contestation, consensus-making and contradictions are inevitable dimensions of the historical process, and must be named and articulated in the political engagement of science. At the same time, different articulations of ethos can coexist, compete and interrelate within one historical situation. For example, in the field of medical science and healthcare, individual rights provide for a very different ethos from that of older government public health; yet, both coexist around many of today's key health issues. If we, for example, want to engage with the ethical challenges that HIV research and intervention pose, we need to understand how these different kinds of ethos overlap, mix and conflict across this field; we must consider the different political and societal projects entailed by, respectively, emphasising individual rights to confidentiality and voluntariness, or the responsibility of government public health to minimise suffering and maximise citizen's welfare.

Commitments in the sense of ethos thus go beyond rule-set 'ethics principles'. The latter distinguish right and wrong, an inside and an outside, divided by a moral line. Such an apparently clear moral separation obscures the more ambiguous political and economic struggles that shape medical science, and the society that it exists in and brings about. Discussions about the 'ethos' of science include interest and conflict into the purview of ethical reflection rather than excluding them by the sanitising morality of principles. Ethical action can thus be anchored again from where it has been unmoored: if science is about truth and value – with all the term's moral-cum-economic ambiguity (see e.g. Kelly and Geissler 2011) – these are inseparable from power and resources. Whether science harbours the possibility of change – the improvement of knowledge, lives and societal order – depends crucially upon whether and how the linkages between

ethics, epistemology and political economy are rendered visible, negotiated and contested. Struggles about ethos are thus linked to questions of truth as well as to matters of interest.

Trial Communities

Anthropologists are usually called to work on medical research with a clear remit: to study 'the community', that is what medical research protocols define as 'study populations' and 'participants' or 'volunteers'. Their task is, then, to describe certain characteristics of this group, such as 'preparedness' and 'response' to a clinical trial, or 'cultural' concepts and behaviours of significance to the trial or intervention. The aim of the anthropologists assembled in this volume, and their historian colleagues, is different. Their unit of analysis is, in diverse ways, not a particular, delimited group, but sections of a wider network that is constituted not through attachment to a place or 'culture', but by the work of collaborative medical research.⁴

When we met at the conference in Kilifi, Kenya, whence this book derives, we referred to this network of actors engaged in medical research – for some of us including non-human actants – as the 'trial community'. This definition of the subject has two implications: it opens the frame to include everyone concerned, and it shifts focus from the concerns arising from a particular social grouping to those arising from the relations between points, nodes and groups in the network. This allows discerning new collectives and solidarities – such as trial volunteers, data collectors and entry clerks and other workers in scientific production sites – and new connections, distinctions and separations, for example between Zambian and US American doctors, or between medical anthropologists and medical ethics. Finally, a focus on the production of associations destabilizes taken for granted boundaries – such as the line between 'community' and 'researcher', the difference between 'cultures', between scientific and traditional medicine and so on.⁵

Since we met in Kilifi in 2005 to study 'trial communities', which we then felt were an exciting, largely unexplored field, several important works have been published, which in diverse ways apply anthropological knowledge to overseas medical research, if not all of them in Africa, and which inspire many of the authors below in their ongoing work (e.g. Biehl 2005; Nguyen 2005; Petersen and Folayan 2005; Petryna 2006, 2009; Rajan 2006; Cooper 2008). The fact that these important books speak a somewhat different language from that of many of the authors below is not only due to the editor's

tardiness (most chapters were written before these works became available to the authors) but also due to slightly different starting points. Most of these recent publications on clinical research aim to shift the location of anthropology to levels of scale that explode the notion of locality, as discussed previously, for example by Gupta and Ferguson (1997); they take a principal interest in what Ong and Collier described as 'global assemblages' (2005), working through the global construction, and transformation, of scientific production. The contributors to this volume come at similar issues and concerns from a slightly different angle, one perhaps grounded more in the empirical, ethnographic British-European tradition of social anthropology, starting out from concrete social realities – which not only, but also and importantly, consist of concrete, localised social engagements and experiences.

Moreover, these recently published works share an interest in the political economy of overseas research – which is what makes them so inspiring against the backdrop of less clearly political forms of medical anthropology and ethics. Partly therefore, they focus mostly on commercial, industry-driven transnational medical research or on the effects of private, capital interest in bioscience (e.g. Petryna 2005, 2009; Rajan 2006 Cooper 2008), and most of them take a particular interest in clinical trials – as the most advanced and industry-endorsed form of medical research – and less in the wider field of public health research. The papers in this volume do not pursue such a coherent agenda. In the open spirit of the Kilifi meeting, they are more diverse and eclectic, exploring different possibilities of making medical research and medical knowledge in Africa the centre of anthropological attention. Moreover, many of the authors below focus their interest mostly on medical research in the *public* domain, funded by government or bilateral arrangements and conducted by government or parastatal organisations. Although publicly funded and governed medical and public health research is of course increasingly affected by 'partnerships' with private enterprise and charity, and by reformulations of academic intellectual property rights in the wider neoliberal context, public scientific institutions and the research they conduct pose slightly different challenges from the (important) critique of commercial, openly profit-oriented research, and might also help us to discern diverse directions and intentionalities in the conduct of science today, as well as discover alternatives to the neoliberalisation of science that Cooper (2008) and others have successfully explored.

Critical Ethnographies

Underneath the diversity of geographical areas, scientific domains and historical periods, and different political viewpoints and disciplines, the papers assembled here share a commitment to ethnography in the sense of tracing relations and separations that shape social space. For most of us, ethnography implies both studying social relations across domains and levels of scale, and beyond locality, and understanding people's, including scientists, lives; both fascination with 'global assemblages' and attention to intimate social encounters and engagements. Both are needed to question formations and habits that have become commonsensical, to make visible structures and processes that are obscured or ignored, and to contribute to the critical analysis of science and society.

Most of the texts in this book could be said to be 'critical' studies of medical research and its ethos, in the sense not of 'anti-science' – all contributors are committed to scientific medical research and progress, and none has an issue with science as such – but of allowing us to see scientific research in a different way, and positioning science within relationships that at times are overlooked, at other times downplayed and ignored.

First, attention is fixed within the material realities, both of the research work and of the lives of people involved in research, including political and economic inequality and deprivation. Second, authors attend to the institutional relationships beyond the purview of research itself, within given localities such as between government healthcare system, pharmaceutical industry and medical research – and across levels of scale, between national government and transnational institutions and corporations. Analysing such networks means tracing visible as well as unseen connections, and exploring the aggregations and separations produced by social, spatial and epistemological categories. As such the critical study of medical research aims to prise apart the pre-existing and newly formed social relations – such as the 'community' that performs much work in contemporary understandings of research ethics – and to problematise separations such as that between researchers and research participants, which projects a problematic epistemological distinction onto social space and overlays, sometimes obscures, other social distinctions. Last but not least, contributors aim to reveal alternative solidarities, material similarities, overlapping interests and tensions attendant to these groupings – such as, relating to the previous example, the material similarities and overlapping interests among overseas research participants and some categories of technical re-

search staff, and between different groups of scientists within transnational scientific collaborations.

In other words, the social studies collected in this volume are not positioning themselves opposite medical science, aiming to cast doubt over or relativise its value and validity. Most contributors would indeed defend the superiority of a scientific approach to medicine, and the achievements of its tools, like randomised controlled trials, and its products, like antibiotics and childhood vaccines. And neither do most of the contributors take the side of a particular group in overseas research – such as the research participants, or the underprivileged community – vis-à-vis the researchers and their institutions, as certain older anthropological solidarities would call for by default. Our aim, then, is not so much to ‘take sides’, but to make sides: to discern contradictions and separations, bonds and cohesions, that need to be debated in order to produce better science and better public medicine. The overarching deontological question is: where do we want science to take us? What futures are we aiming for through science? As such, ‘critique’ means here a search for openings, not definite positioning and closure (see Geissler 2011).

Overview of the Book

The chapters below, which were discussed at the 2005 Kilifi conference, were grouped into three sections: engagements, evidence and politics. Since all of them deal with relations, epistemology and power, these headings serve not so much as compartments, but as three intersecting lines of inquiry.

Engagements

The chapters of the first section took the conference theme most literally, focusing on the relations that make up medical research, and some of them have left a particular imprint on other, subsequent, papers in this collection.

Whyte’s exploration of a Ugandan epidemiologist’s research, and of the role of paper in it, sets up a distinction between epistemological and ontological concerns; between knowledge and acknowledgement, ‘knowing about’ and ‘knowing’ people. Whyte pursues the relational possibilities of scientific work by showing that paper, apart from its capacity to contain information, can also embody substantial relations. While contrasting objectified knowledge and ‘being together’, she shows that both inhere to the same practices and may be pursued by the same people within the same

work; all 'situated social actors' are motivated by both ways of knowing and by both capacities of the practice of writing knowledge. Thus, Whyte implies, we should not attribute epistemological motives to scientists and relational ones to study subjects. All members of trial communities learn new abstractions and gain understandings, and all must get to know others in the process of research work; and knowing and relating changes those involved. In conclusion, Whyte calls for ethnographic attention to the interfaces where making knowledge creates relations, and knowledge relies upon relational practices. While this is clear advice to ethnographers of research, the intertwining of knowing people and making knowledge that Whyte describes should also have implications for scientists conducting research: instead of the widespread tendency to exclude or silence the relational dimension of knowledge-making, for example through bureaucratic apparatuses and regulatory standards, it should be taken seriously, not only as a complementary foundation of ethics, but also as a contribution to science itself.

Approaching concerns with epistemology and ontology from a different angle, Strathern takes issue with the notion that the engagement between researchers and researched is predicated upon divergent, respectively scientific or local, 'perspectives' (onto one reality) that have to be aligned through 'information' and 'communication', in order to achieve effects – namely scientific results. Such 'perspectivalism' might label the 'non-scientific perspective' as ignorance (to be corrected through information), or – more fashionably – as local 'cultural' knowledge, which scientists should understand and appreciate for the sake of better communication. Despite the different degree of political correctness in these two renderings of the 'local' or 'lay perspective', the assumption is the same: the other has a different way of seeing; shifting perspective – in the first case 'theirs' in the second case 'ours' – is proposed as the solution. Both approaches focus on epistemology. Instead, Strathern suggests to consider the cultural, 'Euro-American', nature of perspectival knowledge itself: 'perspectives', and the concomitant notion of 'context' (supposedly shaping perspectives) is for her not a solution to the problem of difference, but 'part of the problem'.

To make this point, Strathern examines ethnographic cases in which engagements among humans and the world are not conceived of as epistemic exercises directed at one substantive reality, but as substantial relations producing diverse forms of being – the dispute about ownership and belonging of museal human remains is a case in point. Instead of knowledge and information, Strathern suggests to 'rely on relations', notably of bodies. The

social relations around field research, which many of the other papers in the book explore, are thus not peripheral, secondary – not ‘the social context of data’ – but substantial, central to knowledge generation. As witnessed by my summary, this argument is easily reduced to the very pattern of opposite ‘world-views’ that it critiques: epistemological scientists versus ontological natives. The ethnographic labour consists in discerning the mutual articulation of these modes in the practices of research; here, I think Whyte’s material above, and many of the chapters below can be of use.

Leach and Fairhead’s exploration of ‘being with’ research in *The Gambia* deals more directly with the problems of knowing and being, or rather with the intertwining, sometimes collision, between the epistemological concerns of scientific knowledge production and the material struggles and conflicts of the people engaged in research. They show that the uncertain world in which Gambians live is partly specific to local social forms and cultural understandings, as well as, in an important sense, an outcome of global economic processes. Therefore, the balance of benefit and danger that parents consider when consenting to clinical trial participation is not a matter of free choice; larger frames of power and value are at work, and local actors are aware of, and part of, these. Leach and Fairhead conclude that ethical assessments of medical research must consider the context of healthcare delivery and health seeking, and draw our interest to the separations between matters of health, in its social breadth and open-endedness, and matters of life, in the sense of trial participation and mere survival; they consider how these separations are produced and negotiated around overseas research and its ethics (see also Molyneux et al. 2005a on this issue).

Like Leach and Fairhead, Dilger draws on the notion of context to reflect about the methodology and ethics of his own medical-anthropological research on AIDS in Tanzania. After ‘ethical clearance’ by Tanzanian authorities, which assessed and re-shaped his study according to medical ethics standards, he went to different field sites and found that ethics, rather than being universal, as the medical ethics committee had assumed, are ‘contextual’, shaped by local ‘politics of speaking’, ‘moral constellations’ and ‘epistemologies of illness’. Dilger concludes that the ethics of medical-anthropological research ought to be guided less by medical ethics rules, but by continuous reflection about the research process, including reflexion on the fieldworker’s own position in the field. The latter point gains, he argues, particular significance where the situation under study entails extreme forms of suffering and loss – as in his own case of anthropological research on AIDS. Is ethnography in such circumstances a mere ‘bourgeois luxury’

or could it, as Dilger suggests, help to make better, in his words ‘locally adapted’, public health interventions, or could it even help to prise open and thus unsettle the wider structures that perpetuate the unequal distribution of suffering? The social relations that are the foundation of his ethnographic knowledge also ought to be the basis of his ethical commitment.

Manton’s historical inquiry moves us into an age before ‘research ethics’ – although we can sense strong and not always aligned modes of ethos at work in his historical study of pharmacological research by mission hospitals, nationalist governments and travelling scientists and global companies in mid-century Nigeria. He examines relations and transitions across global inter-personal and institutional networks, in view of tracing different interests that went into a new drug, as well as of charting relations between local ‘field research’ and global realms of science and experimentation. Though his analysis operates on a less localised level than, for instance, Whyte’s, Manton shows how universal standards are shaped by local alliances and shape local experience – an observation that might as well be applied to research ethics as to, in his case, laboratory standards. He reveals how technical problems and tensions with people and things, and the wide and often surprising circulation of research between local instances and global negotiations, shape scientific outcomes, and even the disease in question, leprosy, itself. Just as the drug on trial – a red powder which apparently dispersed easily and stuck to anybody it got in touch with – the research that went into its clinical testing, Manton shows, produced multiple relations and transformed not only bodies, but also personal and institutional lives across continents.

We end this section with Ulrich’s reflection, as an anthropologist and philosopher, upon the ongoing bioethics controversies, which oppose the advocates of global bioethics regulations to those who denounce current research ethics as hollowed-out versions of ethical reflection, or as external standards enforced by central institutions in rich countries – imperialist variations on global ‘audit cultures’. Some of these critics of formal rules propose instead to place ethics in the realm of the private, in individual decisions and morality. Ulrich shows how the latter assault against formal bioethics tends to reiterate the individualizing and privatizing tendency inherent to certain current interpretations of bioethics.⁶ In contrast to such privatised ethics, Ulrich insists that medical science requires ‘public ethical legitimation’. The ‘public ethics’ that he – based on Kant and on Habermas – proposes ‘positions all social actors equally and accords an equal say in the pursuit of judgement of what is right’. What is thus needed

is 'situated accountability' (as opposed to 'accountancy standards'): spaces in which to account for or challenge the ethics of research.

This renewed emphasis on 'the public' raises the question of where to locate such a 'communicative, reciprocal' ethics in today's collaborative medical research settings – situations equally far removed from the discursive equality of the *agora* of the ancient *polis*, and from Habermas' 1970s western Germany. In the old contract of 'public health', medical science was assumed to be directed, controlled and utilised by the nation-state as the legitimate representation of its citizens, for the benefit and welfare of the latter (see e.g. Titmus 1971). While this contractual relation has world-wide been cast into doubt by the scholarly critique of biopolitics of the 1980s, as well as by the realities of neoliberal assaults on national welfare institutions, in Africa it has been particularly brutally severed by the gradual criminalisation of the state and the hollowing of its politics of representation, and the destruction of much of its public sector, accelerated by external economic and political pressures. Although there certainly still is a large public sector in many African countries – notably in health care and education, urban administration and the legal system – its function is at least ambiguous: both evoking projects and memories of a national collective, and embodying its destruction and absence. The primary ethical challenge today would thus be to circumscribe the lost 'public' to restore and safeguard the condition of a public ethics.

To further this, Ulrich proposes that anthropologists explore potential 'sites of accountability', ranging from national and international institutions to interactions between groups and individuals involved in research, and that historians trace the genesis and demise of the 'public', in view of restoring this achievement of the Enlightenment.

The ideal of 'public ethics' draws our attention to the material constitution and dissolution of the public, and the demise of the nation-state and democratic representation, and to the surge of 'bioethics' that has come to fill some of the spaces vacated by the democratic public sphere. In response to the present weak and undemocratic public discourse and to 'forge reciprocal communicative contexts', the position of state and public academic institutions in research should, according to Ulrich, be reinforced, and the 'qualified opposition with which researchers ... are met' by people and institutions in developing countries strengthened.⁷

We chose to conclude this section with Ulrich's chapter because his reflections serve as a valuable antidote to the misunderstanding to which anthropologists are prone: to place our hope in 'relations'. While these of

course are our analytical target, they carry no moral value and the implication of immediacy, and its assumed moral value, that the term can carry, offers no solution to the problem of the democratic and egalitarian constitution of overseas medical research.⁸

Evidence

The book's second section focuses on how evidence is produced and negotiated in medical research. Participating in preparations for collaborative research in Ghana and Zambia, Feierman notices different conceptions of 'evidence' among clinicians working, respectively, in African government and US American university hospitals. These differences, he shows, are shaped not by 'culture' but by the material conditions under which doctors can put evidence into effect. Faced with the 'normal emergency' of government healthcare, the African doctors look for evidence fitted to the specific problems faced by their hospitals at a given moment in time – for example how to make clinical judgements without optimal diagnostics. Such limited, local, make-do evidence is problematic for the US American counterparts bent on contributing to academic research and dependent upon competitive funding. They propose instead to link global standards and local situations by research on 'low-tech' practices independent from latest technical devices and drugs, a proposition that will be discussed also by Ombongi's historical paper, below.

Interestingly, although Feierman does not elaborate this point, such clinical trials of 'adapted', low-cost interventions must adhere to the highest medical standards in order to satisfy US regulations. Thus, while the African doctors might prefer to retain the aim of state-of-art global medicine as a frame, while making do with local, temporary shortfalls in research practice, their American colleagues want to test localised forms of medicine while applying global medical standards in the trial regime. The latter approach means shifting the frame of evidence, creating another kind of universal, standardised medicine, rather than the instable, localised improvisations within one universal frame proposed by the African doctors. The former approach generalizes differences in resources and capacity: poor technologies for poor places.⁹ The African colleagues are not content with this because they remain committed to aspiring towards global standards, and because they do not regard local as static. For them, the lack of capacity in their hospitals constitutes not a given, but a 'not yet', or a 'no longer', with respect to the scope of medical science and the mandate of a national teaching hospital. Research on low-tech medicine means for them relinquishing the ideal of global universal science.¹⁰

Feierman concludes that African doctors – negotiating scientific aspiration, clinical practice and daily economic survival – should be critical mediators of collaborative research. This raises the question of who sets the research agenda as one of the ethical cum political-economic dimensions of collaboration that requires anthropological scrutiny. The demand, by doctors working in Africa, of medical research that inserts itself into their world, can be linked to the call for ‘pragmatic’ clinical trials that is elaborated in the subsequent chapters by Kachur and Kelly. If a large-scale trial is tailored to local technological and administrative conditions, like in Kachur’s case, is this what Feierman’s doctors have in mind when they call for local evidence?

Kachur’s chapter deals also with two different conceptions of evidence around a US government research project in Tanzania: ‘experimental’, based on randomised controlled trials (RCT), which shows how well a technology works under ideal conditions, and ‘observational’ or ‘quasi-experimental’, which shows how things would work under ‘real world’ conditions.¹¹ Within this contrast, RCTs could be said to imply transcendence by pointing at what could be done in the absence of mere political or economic constraints; observational studies remain, somewhat akin to the low-tech medicine critiqued by Feierman’s African doctors, immanent to the existing societal situation: they show what can be done within given political and economic conditions.¹²

Kachur describes a quasi-experiment to study drug resistance, delivery efficacy and cost involving an approved anti-malarial drug. The Tanzanian Ministry of Health agreed with the US public health organisation to introduce the new drug ‘as a matter of local policy’ rather than as a clinical trial.¹³ Thus, ‘national and local authorities have taken responsibility’ and the experiment does not need ‘individual informed consent’, nor specific information about the drug on trial. Yet, while the researchers overall maintain a ‘low profile’, they ‘alter or enhance’ some aspects of the delivery system to ascertain the validity – dependent upon regular drug delivery – and the ethical and legal correctness – relying upon monitoring of adverse events – of the experiment.¹⁴ This raises, as Kachur points out, the question of what variables are to be altered, compared to ‘reality’, and which ones must remain stable to maintain resemblance with normality. In other words, what is imagined as a realistic change of reality? In the given study, only the drug is shifted (apart from improved adverse event monitoring for regulatory reasons); healthcare staff levels and resources remain unchanged.¹⁵

Comparing the contrasting modes of evidence described by Feierman and Kachur, one could be inclined to see parallels between the African cli-

nicians' pragmatism and the 'pragmatic' research design. Both are more 'localised' and specific than, respectively, clinical trials of innovative low-tech interventions and the RCT, which address more generalisable levels of evidence. Yet, on another level one could argue that the clinicians' local experimentation and the RCT share a commitment to the open-ended potentiality of science, while both low-tech and pragmatic trials share a commitment to 'reality' as represented by the status quo. As Kachur underlines, observational studies look for 'real world outcomes', not for results that reveal the potential capacity of science; similarly, low-tech interventions purposely aim below not beyond the limits of known science, to remain within the seemingly insurmountable limits of the 'real'.¹⁶

Kelly's chapter expands on the question of how 'reality' is constructed when it is modelled in trials. It also relates to Feierman's concern with how evidence is constituted in different contexts of healthcare delivery. Again, the relationship, shaped by the political economy, between means and ends, and between evidence and ethics in clinical research is in focus. Two trials run by the Medical Research Council in Britain and The Gambia evoke both 'pragmatic' entanglements between everyday life and scientific evidence: scientific representations and medical realities converge in a co-productive process, albeit within two very different systems of healthcare. While the UK healthcare standards are, apart from the tested intervention, equivalent to those of the experimental context, in The Gambia, the by-and-large absence of public medical care separates the realities of research and care provision. Indeed, the distance between medical realities and trial regime is so large that participants consider the experiment a 'healthcare system' (see also Leach and Fairhead), and, maybe partly in response to this wide gap, the Gambian study sets itself apart as an RCT, not attempting to be 'pragmatic'. However, as Kelly's ethnography shows, the purity of the RCT is modified in manifold ways to accommodate the local situation, which is why Kelly recommends a greater dose of explicit 'pragmatism', akin to the UK pragmatic trial, testing simultaneously new technologies and modes of delivery, addressing questions of causality and effect and matters of political economy.

Kelly's chapter opens up the larger question of how 'clinical researchers are to adopt a pragmatic position'. Engagements between science and everyday life are uncertain, and it is precisely this enduring uncertainty, incompleteness and openness that make science epistemologically as well as socially generative. Can a 'pragmatic trial' foster this surprising potential of the scientific endeavour? It might as well simply prove what is known already, thus ce-

menting 'security' (in Peirce's sense of the term, opposed to the productiveness of 'uncertainty'), which, while practically important, curbs the creative possibility of science. Is it possible to build in pragmatic or 'real world' elements into existing forms of clinical research, irrespective of its wider political-economic situation? If it is done, what happens to the notion of reality? Is there not a subtle difference between engaging science in (unpredictable) social and political processes, allowing for transformations of either or both, and inserting (some selected) social elements into a scientific trial regime?

Feierman's African scholars point towards a possible alternative to the accommodation of human unpredictability into trial regimes: unlike pragmatic anti-malarial trials or low-tech interventions trials, their approach is fundamentally pragmatic in that it maintains the 'subjunctive', trying mode of clinical engagement and pragmatic science (see Whyte 1997). Paraphrasing Peirce (quoted by Kelly): their ideas have life, generative life. The fact that it is exactly this approach to scientific inquiry that is not easily turned into large-scale collaborative trials, and cannot command funding streams – unlike pragmatic trials, quasi experiments and the like – might be indicative of this peculiar 'insecured' quality. How exactly to promote such a pragmatic science – which is not necessarily a simpler, lower variety of high science – remains an open question for the social study of science. Part of the answer might, again, lie in the wider public to anchor healthcare, public health and medical research (see Ulrich). If experimentation were to be part of a continuous and effective process of government, and constituted within systems of both democratic representation and control, the hiatus between science and reality might become less dramatic.

Mueller-Rockstroh's chapter on Dutch ultrasound machines in Tanzania links the problem of shifting contexts of evidence to ethics by asking how 'good' scientific knowledge is produced. Relating pregnant women's, doctors' and administrators' understandings and uses of ultrasound, she suggests that rather than asking what is 'good technology', we should attend to its varied effects in different situations – intended and unintended, beneficial to some and harmful to others. The ethical question what 'good' technology may be is thus turned into a matter of negotiation: 'good-ness is a choice between different worlds'; and diverse goods call forth different interests. This supports empirically Ulrich's conclusion that ethics is, and indeed should be, a matter of contest, and that the validity of ethical judgement depends upon transparent and balanced modalities of arbitration.

In an aside, Rockstroh suggests another small but important distinction: that between 'good' and 'better'. While ethics discussions often understand

the notion of 'social good' as analogous to 'value', there is an important difference between the good of a technology – the value for society or a particular group – and the prospect of betterment, 'hope for the better' – embodied by a technology. Rockstroh's ethnography draws our attention to that latter, subjunctive and directional quality, which is not necessarily identical with the actual effects intended or achieved by science and technology, but which nevertheless can make people utilise technology, pursue science and change their reality.

The last three chapters in this section share a more direct interest in the political context of evidence. Langwick's chapter on government traditional medicine research in Tanzania underlines, again, that scientific proof emerges in the details of research methodologies and the structures of research institutions and collaborations, and that the conditions that allow some things to be proven and not others change over time. Her work sheds light in particular on the changes that occurred between the 1970s and today, a period during which Tanzania has taken a particularly radical turn from social democracy to radical privatization and 're-structuring'. For traditional medicine this implied, as Langwick shows elsewhere, a shift from herbs as resources for national health to herbs as possibilities in the globalised economy (see Langwick 2001).

Langwick shows how values and practices that bolster particular forms of proof – in other words traditional medicine which is elaborated through scientific study – are sedimented in institutional structures. In her case, social studies and pharmacological and botanical studies relate in a specific way: the former covering largely what is deemed 'unnecessary' and 'uncaptured' by the latter. As a result of this order of knowing traditional medicine, Langwick shows, healers and their rituals are variously included or excluded from the development of traditional medicine. This effect of epistemological and institutional structures raises methodological, political and ethical questions, and opens the possibility of renegotiating the integration of traditional medicine and biomedicine.

Geissler's chapter on ageing Kenyan government scientists' memories of a bygone era of nation-state public health covers a similar period as Langwick's work – 1960s to the present – looking back from the post-neoliberal era to distant, long-lost modern times. Exploring the lives of scientific workers, the chapter discerns a particular notion of evidence linked to direct action on concrete public health problems. This notion of 'field-work' relied upon the integration of scientific work into the frames of the nation-state and a – however fragile and at times violent – contractual relationship

between citizen and government. This modern project claimed that it is possible to understand the world, and that it can be changed. This faith in two kinds of interdependent transformation – of knowledge and of what has been made known – permeated the men's biographies. Their lives as quintessentially modern government scientists underline the necessity to think epistemological and political economic questions jointly, and they cast some doubt over certain anthropological and historiographic views of the state and medicine, current in the 1990s, that viewed the state as an entity vis-à-vis its people and focused analysis on its controlling and disciplining nature. Instead of the spatial imaginaries of the people as opposed to the state (or that of science juxtaposed to its subjects), which often underlies scholarly and ethical reflections on government and science, the men's lived-in ethos of truth and transformation points to the importance of temporality to understand health science, not merely as governmental domination and discipline, but as a project.

Heald's chapter closes this section with a somewhat related reflection on 'public health' versus the current rights-based, 'exceptionalist' approach to HIV in Kuria, Kenya, an area heavily affected by AIDS. Heald links the exceptional status of HIV/AIDS among other, comparable health problems to its early association with certain rights-based interest groups, and to the fact that its outbreak coincided with the beginning of the global human rights wave that paralleled political-economic neoliberalisation. Opposition to such HIV exceptionalism has been raised by public health policy makers (e.g. Bayer 1991). Heald finds similar arguments in her Kuria informants' commentary upon bioethical regulations around HIV research and intervention, and specifically their apparent opposition to confidentiality and voluntariness, which they argue contributes to the spread of HIV, and their calls for obligatory testing and publication of test results. In conclusion, Heald considers the idea that some of the ethical constraints of VCT might be counterproductive, and that HIV research and intervention should reconsider the emphasis on individual autonomy, rights and choice – making for an interesting convergence between anthropological and public health perspectives.

While there of course are diverse opinions on the issue of confidentiality and patient rights among public health scientists and western Kenyans, the point made by Heald and the informants she quotes points back to the public health contract that the old scientific workers in Geissler's chapter remembered from 1960s health science. The old men's longings for authoritative, even authoritarian, and effective public health knowledge, and some Kuria people's

rejection of liberal and individualised approaches to HIV, seem to express a yearning for public health interventions in the interest of a wider social collective, for the (re)constitution of some sort of a 'public' in relation to public health. Importantly, there seems to be at present no shortcut to such larger whole, as any nostalgic attempt to return to 1960s postcolonial nation-state health would be as futile as politically dubious. Indeed, in the situation of criminal or failing states, a call for authoritarian public health policies would be dangerous, and probably detrimental to health. Thus, rather than siding with the different calls for a 'return' to public health that emerges in the last two chapters, anthropologists and historians ought to reflect about what happened to the 'public' that once held together government and citizens in one collective, which pursued – or at least claimed to do so – betterment and welfare. The next step would then be to decide what kind of collectives we might want to (re?)create to face the current epidemiological and political-economic situation.

Politics

Accordingly, the book's last section brings together chapters that occupy themselves with politics and the history of medical research and public health.

Ombongi opens the section with an analysis of the shifting relation between state and biomedical policy in the colonial, postcolonial and what he calls 'post-postcolonial', or post-1980s era. While he stresses that colonial public health was a dimension of colonial hegemony and social control, and that science served also 'the legitimisation of cultural superiority', he also acknowledges that biomedicine was part of an (albeit paternalistic) state modernisation process. This modernist project fed then, in the 1960s and 1970s, into a progressive nationalist research agenda, expanding public health infrastructure and research institutions during the postcolonial era. Only by the late 1970s did it become evident that the government had become unable to deliver on its medical and scientific promise, and consequently the state lost prominence as an agenda-setting actor in public health and medical research. In its stead, new para-statal, non-state and international institutions were created while the bodies of government health science and public health decayed. Ombongi's chapter provides us thus with a broad periodisation that can be generalised – and fruitfully compared – to other African countries. In so doing, he draws our attention, as historians and anthropologists, to the as yet largely under-researched period of the long 1980s, the era of the liberalisation of science and health, which calls for new analytic modes and approaches compared to the history of colonial medicine and research.

The following chapter by Lachenal takes on this task. Looking at the life of the Institut Pasteur in post-independence Cameroon, Lachenal works out a specifically French ethos of ‘collaboration’, which emphasises the aim to assimilate the postcolonial subject – ‘Cameroonisation’ – while continuously postponing the actual transition of power and authority. The short-lived nationalisation of the Institut Pasteur in 1975 reveals the difficulties that the loss of French resources and contacts entailed at a time of economic crisis and neoliberal globalisation; nationalisation appears as a noble but doomed anachronism in the face of the political and economic restructuring of the nation and of science. Attending to the ideologies of separation supporting the continuous ‘collaboration’, Lachenal examines work arrangements and relations among staff, and traces the ‘moralisation’ of professional categories, and the culturalisation of politics, framed by old racist stereotypes. The colonial order is thereby, he argues, perpetuated and transformed within the new global political arrangement. Lachenal’s conclusion is characteristically ambivalent: while he does consider that global ethical standards could provide an opportunity to critique and address inequalities in research collaboration, he also notes with chagrin that such standardisation will entail the loss of the specifically French ethos of cooperation which, in spite of its obvious imperfections, arose in on-going face-to-face relations and thus offered possibilities of negotiation, contestation and change, which are not easily captured by formalised ethics.

Schumaker’s chapter takes us back in time, to corporate malaria research and control in a colonial Northern Rhodesian copper mine. Scientists’ and industry representatives’ views of malaria control were here linked to the control of workers in a contested economic terrain. Miners and local malaria control workers, while often resisting this project, nevertheless associated scientific work with modernity’s universal promise of progress and wellbeing. Colonial antagonism did not preclude the emergence of a modernising dream that united, underneath racial repression and proto-nationalist resistance, the colonial occupants and their workers. This joint ‘research culture’ of malaria control made ‘different people and interests work together on a common project despite their often radically different understandings of the project’s meaning’. Schumaker’s study reveals the double-edged nature of modern (medical) science, noted above: disciplining in the context of existing power-knowledge alignments, on the one hand, and yet, on the other, opening horizons for hope and for transformation, which ultimately may move beyond existing arrangements.

Speculating about the future rather than looking into the colonial past, Nguyen’s chapter follows Schumaker’s interest in medical charity and aid by

discussing the impact of global flows of antiretroviral medicines (ARV), produced by US American and European companies and procured by US government and transnational charities, to Africa. He suggests parallels between the current re-formation of medical intervention in the context of HIV and the colonial history of medical intervention in Africa. In his view, ARV policies challenge national sovereignty and foreshadow a renewed 'military therapeutic complex', in which military might and therapeutic power, with scientific authority, are deployed for the political ordering of the world. He argues that what at present happens in Africa is indicative of 'global futures of biomedicine' – much in the same way in which past tropical medicine was a laboratory of colonial power and of metropolitan science – in the sense that the production and distribution of pharmaceuticals and the maintenance of bare life will be a key to the future order of government, and to the link between political and economic power and scientific knowledge.

Our book ends with a final chapter by Luise White, who shares Nguyen's concerns with 'imperialist' tendencies in some forms of overseas medical research and intervention in Africa. Using the case of smallpox, she traces a persistent disconnect between medical and health policy actions and the interpretations and intentions of those – African bodies, societies and nations – that have been subjected to these actions, over the course of the twentieth century. She argues that in the face of this divergence between those in power (scientifically and politically) and those whose bodies experience this power, the current utilisation of research ethics is doubtful at least, if not harmful. The question of whether a particular procedure is 'ethical', she states, is secondary to the question whether the whole political and epistemological process can be judged ethical, in a broader sense of the term. In view of powerful transnational interests in medical science that overshadow African national sovereignty (in her view, especially those of the USA), White insists that medical intervention and research must be viewed not primarily as an ethical issue, but as a political contest. And she concludes that: 'the broader context of medical intervention [throughout the twentieth century] ... originates so far from African concerns and African consent that it cannot be called ethical at all', and that medical ethics 'simply avoids the larger question'. Provocatively running counter to the entire research ethics debate, she insists that we should 'not worry whether this or that individual consented to a particular injection' but 'why some injections are available and others not', and who controls this.

It must be said that White's historiographic head-on assault on regulatory bioethics was not shared by all participants at the Kilifi conference. We nev-

ertheless let her chapter close this collection, giving her the last word on the matter, because it marks one endpoint of the spectrum of our fruitful discussions in and after Kilifi, and because we do think that the underlying concern with radical political economic inequality, exclusion and domination is shared widely – indeed also among some of the ethicists and scientists she critiques – and does provide an important starting point for further, joint thinking about the ethos of medical science in Africa. It is our hope that these conference proceedings, like the sustained dialogue that the meeting in Kilifi has encouraged, will contribute to the open, engaged and theoretically informed debate on the ethics and political economy of medical research in Africa and elsewhere – a discussion that is willing to include diversity of views, controversy and conflict, and more: a debate which accepts that position, interest and conflict are inevitable features and driving forces of the historical process, including the progress of medical science.

Notes

1. The papers assembled here consider themselves closely related to the latter part of the recent bioethics literature that uses ethnographic and other forms of social inquiry to open up and transform the ethics debate. We have earlier published a special issue that brought together those papers from the Kilifi conference that relate more closely to the ‘research ethics’ debate (Molyneux and Geissler 2008). The reason why we decided to publish the texts separately is not their incompatibility, but the fact that those published earlier directly insert themselves into the interdisciplinary bioethics debate, while those assembled below remain closer to their specific disciplinary origins outside the medical realm.
2. ‘Good Clinical Practice’ (GCP) is a regulatory protocol, issued by the International Conference on Harmonisation, that details practical procedures, including those pertaining to ethical matters (consent, incentives etc.) around clinical trials. It has been endorsed by the World Health Organisation and by the US Federal Drug Administration, which is responsible for licensing pharmaceuticals to the world’s largest pharmaceutical market, and it is therefore of crucial importance to the conduct of clinical trials all over the world, shaping widespread ideas about what the ethics of medical research are about (see e.g. EMEA 2002). In their GCP version, the ethical challenges of overseas research are inevitably reduced and focused on procedural matters, as exemplified by various online GCP/ethics certificates (see e.g. www.onlinegcp.org). It is this reduced version, rather than the important bioethics dialogue between philosophers, religious authorities, publics and scientists, that many of the authors in this volume react against.

3. The Oxford English Dictionary defines ethos as ‘the characteristic spirit, prevalent tone of sentiment, of a people or community; the “genius” of an institution or system’ (although it originally has its roots in the Greek word ‘etho’ or ‘to be accustomed to’) (Oxford English Dictionary, <http://www.oed.com/viewdictionaryentry/Entry/64840>).
4. For an exemplary discussion of how biotechnological networks stabilise a ‘public’ see Hayden (2003).
5. The choice of trial ‘community’ was maybe, in retrospect, unfortunate, as it echoes the boundedness of the older ethnographic object and thus misrepresents the openness of the associational webs produced by overseas research – ‘network’ would have been a more contemporary formulation. Yet, to many of us, this old fashioned term also evokes one of the virtues of old ethnography, as we understand it: a methodological commitment to partake in the associational spaces that we study, including importantly the engagement with and positioning among sets of people, with their things and institutions, projects and memories.
6. Ulrich’s critique of this choice between pseudo-legal standards and personal morality echoes the observation, made by Harvey (2006), that neoliberalism erodes the democratically constituted public sphere and reduces the role of state and public institutions to legal protection of private property, leaving deontological commitments to private, often religious, morality and neoconservatism.
7. Since the Kilifi conference, several initiatives have been undertaken both by research institutions as well as activist groups to support the qualified engagement of various publics with overseas collaborative medical research (see e.g. the reflections of the activist de Cenival 2008).
8. The publication of this volume was overtaken by the second Kilifi conference on ‘The publics of public health’ (December 2009), which discussed the collectives of bioscientific work and public health in Africa (see Kelly and MacGregor, in preparation).
9. This discussion between American and African doctors recalls Ferguson’s description of ‘telos’ and ‘status’ in relation to modernity. While the African doctors retain the modern medical telos in spite of adversity, the ‘appropriate technology’ approach ascribes lastingly different (lower) status to African health systems (see Ferguson 2006).
10. The quest for low-tech solutions, advocated by doctors from high-tech institutes for the poorest people, have another problem: they tend to bypass national levels of medical decision making, reaching out to what is designated as ‘community’. Decisions are made by northern scientists, on behalf of southern patients, excluding local medical and political elites. This bypassing threatens national capacities, and may, as Feierman’s conversations with African doctors show, exclude important insights into the nature and use of medical evidence. It contributes to the erosion of the public, in Ulrich’s sense, above, and of accountability and legitimacy of research. This ‘bypassing’ is thus a particularly important ethical concern to be

studied by social scientists (see also Ulrich's observation of a Ugandan doctor's views of the 1997 research ethics debates).

11. This is a similar – though not identical – problematic as Feerman's. As Kachur points out, the latter approach tries to *include* a clinical perspective into its field of vision, but this is not the same as *seeing and acting like* a clinical practitioner.
12. When the findings of the latter are put into practice, disappointment is less likely than in the case of purified RCT results. On the other hand, the knowledge produced by such 'realistic' studies does not necessarily point beyond existing conditions: the pure, in a sense radical, truth of RCTs evokes political-economic demands; the realism or relative truth of quasi-experiments, by contrast, risks remaining within the seemingly given conditions of global inequality.
13. Kachur's trial presents us with a distinctive innovation: while the destination of the medical intervention remains the citizen's body, the experiment pertains to the health-care system; unit of randomisation and consent is thus not the individual but the district. While in standard experiments the body of the experimental subject is intervened into, in this case the body of the nation is modified. This policy-experimentality has some continuities with governmental experiments throughout the twentieth century (see e.g. Bonneuil 2000); yet, the contemporary experiments are carried out by a sovereign nation-state in collaboration with a foreign government. While the investigators led by Kachur have carefully considered the ethical questions arising from this new constellation, the political import of such an experimental regime would deserve further anthropological and historical reflection.
14. Kachur describes the choice involved in the latter aspect: not to test every female patient who is prescribed ACT for pregnancy, but to monitor closely those who had inadvertently been given the drug. Since the drug had not yet been approved in pregnancy 'to some observers ... this appeared to be inconsistent'. The evidence resulting from the safety monitoring has an ambiguous status. While the primary motive of monitoring the effect of the drug on pregnant women is ethical and legal – driven by responsibility for subject health – the outcomes provide evidence of drug safety. Thus, while pregnancy exposure to the drug must not be an experiment, the effects are findings.
15. This innovative type of trial reproduces, on an unusually large scale, the inherent tension of tropical clinical research: on the one hand, it requires that the clinical situation is different from what might be the case in industrialised countries with well-developed healthcare systems – different epidemiological profiles and different material conditions of care – and thus it has to be firmly situated in a particular place, such as a clinic. On the other hand, it aspires to universal standards of validity (and ethics) and must therefore detach itself from the place, by establishing separate, globally certified laboratories, or by transferring scientific specimens to other places, and by providing global standards of care. While simultaneous emplacement and detachment are regularly negotiated within African research hospital settings, in this case the scale of emplacement/disentanglement is larger: a district, and potentially the nation.

16. The shift, in recent years, from research proper to 'effectiveness studies' or 'evaluations' that are more 'real world' and often less stringent in terms of controls and regulatory concerns/ethics is, as Kachur mentions, exacerbated by the fact that many new large-scale funders of health interventions (e.g. PEPFAR) preclude the use of their funds for research in a stricter sense, and demand at the same time continuous exercises in 'evaluation'. This conflation of experiment and intervention, could be said to be characteristic for contemporary African biopolitics.

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