Building a Culture of Research in Clinical Medicine:

An ethnography of professional aspiration, privilege and crisis at the intersection of hospital and university in South Africa

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Declaration

I declare that this thesis is my own unaided work. It is submitted for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other university.

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Abstract

This thesis is an ethnography of a group of medical doctors in South Africa who produce clinical research based on their patient practice. These clinician-researchers are scarce around the globe but praised as contributing indispensable clinical insights to research in an aim to improve healthcare. In South Africa government and professional bodies recently took action to expand and racially transform this elite of knowledge producers with the aim of remedying the country's healthcare, perceived as being in crisis. My ethnography centres on the University of the Witwatersrand (Wits), specifically its School of Clinical Medicine, its associated teaching hospitals, and its attempts to grow a so-called culture of research among doctors. It is a reflection on the relationship between clinical practice and knowledge production at the intersection of resource-insecure public hospital and research-intensive university — both powerful state institutions with competing demands for doctors.

Drawing on interviews and participant-observation I describe and analyse the aspiration, contestation, contingency, and actual work of research production among local clinicians. Overall this thesis indicates that the resource-insecure context in which clinicians produce knowledge creates the opportunity for and the value of their research. But this context simultaneously limits the scale, translation, and social good of their research, undermines the valour and expertise of clinician-researchers, and in cases bifurcates their knowledge production from their clinical experiences. This undercuts the pervasive imaginary of doctors' clinical insights as fundamentally valuable to clinical research; and the potential of their research to improve healthcare for a population with a unique demographic and epidemiology by providing locally-embedded evidence for best practice, rather than relying on research from the global north. My evidence also indicates that publicly claimed professional aspiration to create a more inclusive democratic scientific community of doctors sits in tension with the often unacknowledged professional privilege many doctors have in the dispersed labour of research and does not fully reflect the unequal professional experiences and engagement that research doctors have in relation to gender, race, language, and locality. I argue that attempts to build a culture of research in clinical medicine sit uneasily within its larger institutional structures and historical context.

My ethnography of "studying up" is relatively uncommon in South African anthropology. But I demonstrate that profession is a useful lens through which to study the relationship between power, knowledge, and human suffering, including the brutalisation of professionals, in post-apartheid institutional life. The thesis also highlights the personal and epistemological challenges of doing interpretivist research among a professionally-privileged, research-literate community that places great value on instrumental knowledge production.

Keywords: Biomedicine, clinical research, clinician-researcher, ethnography, hospital, knowledge production, medical anthropology, profession, South Africa, University of the Witwatersrand.

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Abbreviations and glossary

ART	Anti-retroviral treatment
ASSAf	Academy of Science of South Africa
Bara	Chris Hani Baragwanath Academic Hospital
Consultant	Qualified specialist doctor
CPD	Continuing Professional Development
DoH	Department of Health
DVC	Deputy Vice Chancellor
EBM	Evidence-based medicine
Faculty	Group of academic schools in a university (not used in the American sense to denote academic staff members)
HPCSA	Health Professions Council of South Africa
HSRO	Health Sciences Research Office
MMed	Master of Medicine
RCT	Randomised (double-blinded) control trial
Registrar	Qualified doctor in training to become a specialist (known as resident in USA)
RWOPS	Remunerated work outside of public service
SMU	Sefako Makgatho Health Sciences University, previously Medical University of South Africa (MEDUNSA)
UCT	University of Cape Town
UFS	University of the Free State
UKZN	University of KwaZulu-Natal
UP	University of Pretoria
USA	United States of America
WDGMC	Wits Donald Gordon Medical Centre
WHO	World Health Organisation
Wits	University of the Witwatersrand
WSU	Walter Sisulu University, previously University of Transkei (UNITRA)
[ ]	Square bracket to indicate author insertions
{}	Curly brackets to indicate replacement of information to ensure anonymity of research participants

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Chapter One —
Introduction: Contextualising the study of clinician-researchers in South Africa

Without empirical examination of how contemporary African biomedicine is learned, lived and practiced, we will describe medicine only in relation to its own theory of itself.

— Claire Wendland, *A Heart for the Work: Journeys through an African Medical School*

Introduction: Of war, code-breakers, and bilingualism

> South African medicine will always be like fighting a war and you cannot understand this unless you go to a casualty department on a Friday night anywhere around this country. You just cannot fathom it. Even in the height of the academic hospitals we don't have space enough to put people [patients]. They are just lining the walls. Then, in the midst of that you get people that are then saying, "Whoa, I've got an idea", or, "I've got a vision for my life and career and I need to step away from this and try and figure out what the hell is going on".

The people who step away, as referred to here by Dr Keenan February, are clinician-researchers, medical doctors who mobilise their professional experience of treating patients to guide their research endeavours to improve healthcare provision. They are rare because of their abilities to bridge the divide between clinical practice and medical research.

February was a junior doctor completing a Master of Science degree at a prestigious overseas university and hoped to return to medical practice someday. In our long conversations, he elaborated on the rather masculinist metaphor of war: sending young doctors into the public healthcare system where they face overwhelmingly high numbers of patients, including a large burden of violent trauma cases, and where they have to improvise with limited resources was like sending troops into the trenches. February compared clinician-researchers to code-breakers, like Alan Turing, or to the Alamo nuclear weapons designers during World War Two: scientists who are exceptional and indispensable because they step away from the trenches to find improved ways to win the war. Arguing for the exceptionalism of the figure of the clinician-researcher, a pervasive and evocative trope I had become well acquainted with, February explained that:

> Essentially in most fields in the world you would not have a person capable of designing a fighter plane and being able to fly it … these people are bilingual, they are unusual. They are able to do something as well as generate the knowledge that they use to do it.

Clinician-researchers — these unusual bilingual individuals — are scarce around the globe, including South Africa, but praised within the medical profession as valuable assets bridging science and care (Schafer 2009a). In South Africa clinician-researchers have historically largely been older white men specialists (Mayosi et al. 2009: 26–7). Nowadays government bodies and prominent medical professionals state that to remedy South Africa's healthcare problems it is urgent to develop local research skills, expand the medical profession, and racially transform this elite of knowledge producers (Aldous, Adhikari, and Rout 2014; Bateman 2011, 2012a; Gevers 2009; Mayosi et al. 2009; Paruk et al. 2014; Senkubuge and Mayosi 2013).

The figure of the clinician-researcher, bringing unique perspectives from the combative South African public hospital to the university, embodies intersecting concerns about healthcare provision, medical training, scientific knowledge production and statecraft. This figure also embodies anxieties about the segregated professional past as well as a future of biomedicine in a context where both the general public and healthcare professionals see the healthcare system as crippled.

This thesis is an ethnography of the people, contexts, ideas, practices, and knowledge that make up the world of the clinician-researcher in South Africa, largely based at the University of the Witwatersrand's School of Clinical Medicine and its associated academic hospitals. In this thesis I describe, analyse, and correlate a web of evidence across a number of key themes. First, I trace the prevailing public imaginary about clinician-researchers who are presumed to address a dearth of clinical knowledge and make visible local clinical problems so as to improve healthcare; second, I map out the actual labour of research and how the identity of the clinician-researcher emerges from this; and, finally, I track the institutional attempts to develop a larger, more diverse cohort of these professional knowledge producers. The findings of this thesis make apparent the compromises and contingencies of knowledge production that take place at the intersection of hospital and university in the context of post-apartheid South Africa, as well as how these both limit and advantage clinician-researchers. The value and triumph of clinician-researchers is considerably more complex than first suggested by Dr February's metaphors, as well as those of his colleagues.

This introductory chapter is an overview of my project's conceptualisation, rationale, contextualisation, and accompanying disciplinary and methodological positionality. To frame my project historically and geographically I give a concise history of the rise of scientific medicine and the hagiographic figure of the clinician-researchers. I explain in more detail the history of medical training and medical research in South Africa. Consulting social science literature, I provide the academic rationale for my project in relation to a dearth of "studying up" in South African ethnography; broader medical anthropology of biomedical constraint and improvisation in the global south; and anthropology — largely from the global north — of the relationship between practice and medical problem-solving through knowledge making. I then present the methodological and ethical aspects of my project, including the suitability of the University of the Witwatersrand (Wits) as the hub of my fieldwork. Lastly, I conclude with an overview of the proceeding chapters.

Brief rationale

Although the figure of the doctor is prominent in South African social life, politics, and literature, doctors and the various roles they have been expected to play have not been well researched in South African anthropology. “Studying up” amongst clinician-researchers in this context is valuable, ethnographic contribution to understanding the dynamics of power and knowledge and their relationship to human suffering in South Africa – dynamics that in other guises or contexts, have been a key subject in local anthropology. My project also describes social life in tertiary education and in public healthcare, two institutions that continue to be the subject of public debate about the social good of state institutions in a relatively young post-apartheid state.

My project is of global and regional relevance in trying to understand what it means to be a healer and a scientist in a world of rapidly developing biotechnologies and knowledge, as well as of enduring health inequalities. This project continues anthropological study of the complex relationship between science and practice in biomedicine. It both compliments, and stands in contrast to, the contemporary social science of biomedical knowledge production that centres on genomics and laboratory sciences and on the exploitative characteristics of transnational pharmaceutical research within weakened states of the global south.

Clinicians and knowledge production in global history

Clinician-researchers — also known as clinician-scientists or physician-scientists — are medical doctors who are involved in some type of formal knowledge-making (Schafer 2009b: 3; Shaddox 2011: 17).[1] To produce research, these doctors gather data from their clinical

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[1] For the purposes of this thesis I use the term “clinician” in the narrow sense to refer specifically to medical doctors. I exclude nurses and physiotherapists, for example, who are often included in broader definitions of the term.

practice, and they may sometimes collaborate with laboratory scientists or do laboratory work themselves (ibid).

In 2009 the Academy of Science in South Africa (ASSAf) produced a lengthy report explaining that clinical research in South Africa was in a dire state, and that strengthening it should be a national priority to improve the health of the population (Mayosi et al. 2009).[2] Clinician-researchers are only one party to contribute to this field, which generally also includes researchers ranging from basic sciences, biostatistics, to nursing. The ASSAf report set up a chain reaction of responses on how to ameliorate the state of affairs, across academic disciplines, and scientific and state institutions. The prominence and power of the professional voice of doctors was evident in this chain reaction. There was a glut of articles in local medical journals espousing the need to inculcate a "culture of research" in medical schools and promoting doctors' ability, as practitioners, to make great and unique contributions based on their bedside experience to reinvigorating scientific knowledge production (for example, Aldous, Adhikari, and Rout 2014; Bateman 2011, 2012a; Bovijn et al. 2015, 2017; Gevers 2009; Kramer, Veriava, and Pettifor 2015). Although affected by specific political and historical contingences, which the ASSAf helped to make widely known, the idea that South African clinicians could and should be pilots *and* designers — to extend Dr February's earlier metaphor — is firmly embedded in nineteenth century European history and ideas of what it means to be a responsible, modern doctor.

Improvements in European healing, derived from better knowledge of human anatomy and pathogens, preceded the nineteenth century. Notable developments include Vesalius's uncovering, literally, of human anatomy, William Harvey's discovery of blood circulation, and Edward Jenner's rudimentary vaccination against smallpox (Porter 1997). But it was only in the nineteenth century that what became known as scientific medicine, and what we might now imagine as biomedicine, coalesced (Booth 1987, 1993; Bynum 1994, 2006; Porter and Bynum

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[2] Clinical research includes all scientific investigation of disease development, diagnostics, and treatment with the central object of improving patient care, clinical research does not include "basic science" of biological processes as abstracted from specific patients or specific diseases (Mayosi et al. 2009: 2; 9).

1993; Stern 1941; Warner 1995).[3] Medical doctors in Western Europe and North America made significant contributions to the knowledge needed to improve the treatment given to patients. Practice became systematically intertwined with evidence gathered from methodical, recorded, and published experiments. Better known examples of this are Ignaz Semmelweiss's correlation of puerperal fever with doctors' unwashed hands, Joseph Lister's use of antisepsis for surgery, or Claude Bernard's contribution to physiology and to the design of modern scientific medical experimentation with reliance on observation rather than trust in expert opinion (Cartwright 1967; Gonzalez-Crussi 2008; Olmsted and Olmsted 1952; Porter 1997: 337–41). In popular historical literature many clinician-researchers are often depicted as working between bedside and laboratory bench, traversing the practical and the scientific, going between the doing and the thinking about medicine. They are celebrated as extraordinary doctors, as unusually curious and dedicated, and as courageously fighting the anti-intellectualism of their time. Often they are described as rather gung-ho, trying out untested procedures and drugs on themselves — including anaesthetics (Hugin 1989). The accounts of their lives and work, especially those written by medical professionals, often border on being, or actually are, hagiographic.

From the nineteenth century onwards medical training became more standardised across the globe and more uniformly associated with universities, rather than with an apprenticeship system (Harvey 1976; Jacyna 2006; Porter 1997). During this time, understandings of human and microbial life and of medicines developed along with more reliable and effective treatments, and medical doctors began to gain social status, with their association with science and modernity.

From this heyday of the innovative clinician-researcher, scientific and medical knowledge-making developed into discreet university disciplines, such as pathology, anatomy, and microbiology. Development in medical knowledge no longer relied solely on the work of healers but was increasingly informed by men, and a few women, who were trained as what we now call basic scientists in these disciplines with distinctive, advanced skills and expertise (Bynum 1994; Porter and Bynum 1993). Examples of these figures would be Marie Curie and

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[3] It can be argued, however, that science and medicine were co-constitutive during this century, as what is now considered science and the scientific method was only established in this time frame (Warner 1985).

Louis Pasteur. A division between science and practice began to grow, lessening the ability of practitioners to contribute directly to novel breakthroughs in the medical field.

From the 1950s there has been a further shift in the production and use of evidence in biomedicine, with the importance of the clinician-researcher shifting even more (Berg 1995; Ecks 2008; Lambert 2006; Lambert, Gordon, and Bogdan-Lovis 2006; Löwy 2000; Marks 2003). With breakthroughs in DNA science and the molecularisation of biomedicine, knowledge-making at laboratory benches was entrenched. The proliferation of epidemiology, randomised-controlled trials, and the development of systematic reviews and meta-analyses of medical data meant that evidence-based medicine (EBM) was firmly in place by the 1980s. EBM has been an attempt to rationalise and standardise treatment creating guidelines for "best clinical practice". But these more recent methods require advanced skills that the average physician would not find easy to acquire.

From the late 1970s, particularly in the global north and the United States of America (USA) more specifically, medical professionals have lamented what they termed the disappearance or vanishing of the apparently indispensable, celebrated clinician-researcher (Le Fanu 1999; Schafer 2009a; Wyngaarden 1979). Even as I completed my thesis articles were still being published using this alarmist language (for example, Kluijtmans et al. 2017; Rowland and Ng 2017; Twa et al. 2015; Yoon et al. 2018). This discourse attributes the decrease in doctor-led research to increasing clinical workloads; inconsistent research funding; a lack of mentorship; the difficulties in mastering the expansion of non-clinical knowledge; and the challenges of collaborating with other scientists (Donath, Filion, and Eisenberg 2009; McKelvie and McGhee 2009; Schafer 2010; Shaddox 2011). But clinician-researchers remain important, according to these laments, first, because they often become the academics who train the next generation of doctors in academic hospitals and, second, because:

> Physicians have always played an *irreplaceable* role in medical discovery, bringing to their research work the *unique perspective of their own experiences with caring for patients*. Their disappearance from the front lines of medical inquiry would cripple the biomedical research enterprise (Schafer 2010: 2, my emphasis).

The alarm about the disappearance of the clinician-researcher emanates mainly from North America and Western Europe, yet a quick search in (English language) medical journals indicates that the dearth of clinician researchers is cause for distress around the world. These concerns include encouraging research among younger generations of doctors and establishing career tracks that enable doctors to do more research. These emanate from countries across the globe — from China to Sudan and India — with a range of institutional capacities to allow local doctors to pursue their intellectual interests (though not necessarily as members of research projects run by universities or NGOs from the global north) (for example, Bateman 2012b; Davies and Mullan 2016; Ekeroma et al. 2015; Li 2014; Osman 2016; Yoon et al. 2018).

The production of health research in low- and middle-income countries has been articulated as a discourse of development. The lack of human capacity, financial resources, and infrastructure to produce research in low- and middle-income countries has for decades been on the agenda of global bodies, and often framed by United Nations Millennium and Sustainable Development Goals (Franzen, Chandler, and Lang 2017; McGregor, Henderson, and Kaldor 2014; Whitworth et al. 2008; WHO 2012: 1–7). Projects to build capacity for health knowledge production in such countries have had some gains. But projects suffer from inconsistent support (Davies and Mullan 2016), and power differentials between southern and northern partners remain problematic if the former are dependent on the latter for funding (Franzen, Chandler, and Lang 2017).

South African context

Local doctor-led research in South Africa mirrors the problems outlined in the global history above. But, the situation has also been exacerbated by local contingencies which include institutional funding changing with political regimes over the twentieth century, a history of segregated medical training, a resource constrained public healthcare system, and a relatively unusual and large disease burden.

Prior to the twentieth century little clinical research was conducted in the colonies and republics of what now makes up the country of South Africa. Doctors, predominantly white men, who had trained in Europe, had little time or inclination to publish research articles or unusual cases once they established their practices in South Africa (Brock 1977; Digby 2006; Pick 2009: 188). From the late nineteenth century the medical profession became better established in South Africa. The *South African Medical Journal* was first issued in 1884, various professional associations formed, and local medical schools opened, beginning with University of Cape Town (UCT) in 1918 and Wits in 1919 (Brock 1977; Digby 2006). During the first half of the twentieth century South African clinicians contributed to regionally and globally significant research. Examples of such figures (just from Wits University) were George Alfred Oettle, trained as a doctor at Wits and studied at Oxford, who produced trailblazing epidemiological models to ascertain the prevalence of cancers in Africa (Murray 1967); and James Gear who contributed to the development of the polio vaccine and understandings of haemorrhagic fevers (Schoub n.d.). A widely known and cited example from the 1940s is the work of Wits-trained Sidney and Emily Kark who developed a still globally influential community-oriented primary healthcare model (Brown and Fee 2002; Geiger 1993; Tollman 1994).

Clinicians, inspired by their day-to-day experiences with patients, contributed to crucial research proving that the prevalence of diseases amongst the "native" population — such as tuberculosis, pneumonia, or malnutrition — were largely attributable to socio-economic factors (Galloway and Yach 1994; Horwitz 2009a: 6–7). Nonetheless, despite a mass of evidence little was done to change the material conditions of the majority of the South African population (Baldwin-Ragaven, London, and de Gruchy 1999: 136–9; Mayosi et al. 2009: 17–46).[4] In the latter half of the twentieth century, South African clinical research generally reflected the state of the healthcare system, which did not meet the needs of the majority of the population. These scientific endeavours were funded by the state via white academic hospitals and the Medical Research Council and was part of a nationalist project to showcase South Africa as a modern nation (Digby and Phillips 2010a; Dubow 2006; Horwitz 2009b).

This apartheid-era clinical science centred around specialised medicine and "high-tech" medical interventions and was epitomised by the work of heart surgeon Dr Christiaan Barnard. This local, but globally significant, research pertained to organ transplantation and accompanying research into immunology to prevent organ rejection; the Afrikaner "founder population" and genetic disorders such as porphyria and lipid disorders; and diagnostic technology, such as CAT scans (Digby and Phillips 2010b; Mayosi et al. 2009; Senkubuge and Mayosi 2013; South African Medical Research Council 1991). With political turmoil and transition from the 1980s onwards, the government reduced its investment in clinical research (Bateman 2011, 2012a; Gevers 2009; National Health Research Committee 2011; Paruk et al.

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[4] Some research findings were also deliberately suppressed, for example, the relationship between asbestos exposure and mesothelioma (Baldwin-Ragaven, London, and de Gruchy 1999: 136–9).

2014; Senkubuge and Mayosi 2013). This continued into the democratic era as the state placed greater emphasis on primary healthcare and public health initiatives than on research emanating from tertiary academic hospitals.

As hinted at in the history above, clinician-researchers in South Africa had largely been older white men who were specialist doctors associated with academic teaching hospitals, or research institutes, such as the South African Medical Research Institute, which itself had links to Wits medical school (Malan 1989; Mayosi et al. 2009: 26–7). During most of the country's early twentieth century black people were almost entirely prohibited from training to be doctors or contributing to clinical research in any way (as explained by Digby 2006; Horwitz 2009a; Murray 1982; Noble 2013). From 1941, after years of discussion between universities and government, Wits and UCT allowed a small number of black students to enrol to study medicine.[5] With the emphasis on separate development in government policy from 1948 onwards, black students were even more restricted in being able to train at South African medical schools. After 1959 black students were forced to apply to the government for special permission to train at Wits or UCT, but very few were granted permission (Horwitz 2009a: 13; Murray 1997; Noble 2013). The few black doctors who did train at these universities were until the 1980s restricted from treating white patients in white academic hospitals, where much research was taking place at the time (Digby and Phillips 2010a; Horwitz 2009a; Noble 2013). Meanwhile the government, intent on enforcing educational apartheid, built separate educational facilities for different racial and ethnic groups. The Natal Medical School opened in 1951, the Medical University of South Africa (MEDUNSA)[6] in 1976, and University of Transkei[7] in 1985, all specifically to train black doctors. Opportunities for black doctors to specialise and to conduct research was limited at these comparatively under-funded institutions (Noble 2013).

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[5] A few black individuals, mostly men, were able to train abroad. Locally there was ongoing conflict between white professional and political groups who wanted to maintain white elite control of the profession and a small number of medical practitioners who wanted to expand medical training. The latter particularly hoped that an increased number of doctors could minister to rural people who had desperately little biomedical healthcare available to them. Protracted debate resulted in compromise and the development of "medical aid" training that restricted black students to becoming assistants to white doctors (Noble 2013: 21–52).

[6] Now Sefako Makgatho Health Sciences University (SMU).

[7] Now Walter Sisulu University (WSU).

South Africa was not unique in its paucity of women clinician-researchers. This has been understood as the result of women's burden of domestic labour in tandem with an inflexible workplace environment, as well the historic difficulties women faced in training as specialists and in finding mentors (Hudson, Kane-Berman, and Hickman 1997; Petherick 2014: 1372; Rehman 2017; Walker 2005). The lack of women clinician-researchers also relates to a longer history of women's struggle to carve out intellectual spaces for themselves as knowledge producers, particularly in hierarchical patriarchal societies, such as apartheid South Africa.

Since the 1990s medical training and to some extent the medical profession has been "feminised" in South Africa. Previously white universities have also redesigned admission criteria to diversify medical students — to enable a far greater intake of black African students and students from rural areas (ASSAf 2018; Breier and Wildschut 2006, 2008; van der Merwe et al. 2016). However, changes to the public healthcare system during this time have limited the ability of all clinicians, including the new generation of more demographically diverse doctors, to contribute to research.

Since 1994 the shift of state resources from tertiary medicine to primary care, compounded with a quadruple disease burden,[8] the relative stagnation of the number of doctors trained, and inexperienced hospital management have significantly impacted medical practice and training in tertiary hospitals (Bateman 2004; Benatar 2004; Coovadia et al. 2009; Gibson 2001; von Holdt 2010; von Holdt and Murphy 2007; Mayosi et al. 2012; Rispel 2016). Clinicians in public service thus struggle with massive workloads and often work without sufficient resources, leaving them with little time for conducting research (Bateman 2011, for example, 2012a; Gevers 2009; Paruk et al. 2014; Senkubuge and Mayosi 2013). This is exacerbated by the higher proportion of healthcare professionals and funding in the private sector, which serves the minority of the population. The public hospital sector purportedly serves 84% of the population, those without medical insurance, but operates only with half of the country's

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[8] The quadruple disease burden is formed by communicable diseases, non-communicable diseases, injury, and maternal and perinatal disease (for example, Mayosi et al. 2012).

healthcare expenditure (Ranchod et al. 2017: 102).[9] Compared to other middle-income countries, South Africa has a poor ratio of doctors to population and was projected to have a shortage of 3 930 medical practitioners and 5 677 medical specialists by 2015 (National Department of Health 2011: 12, 35).

The majority of doctors associated with universities are employees of the state working at public hospitals; they are called joint appointees, or joint appointment staff (Degiannis et al. 2009: 172; University of the Witwatersrand 2013).[10] They are beholden to the state to provide care for patients, but as university members they are obliged to teach medical students and supervise junior doctors in academic hospitals. Under these circumstances, joint appointees' research, as an academic activity over and above teaching, have low institutional priority. Many of South Africa's doctors choose to work in private facilities or abroad, where they are not known to contribute to knowledge production in South African healthcare.

Overall, because research had been an unattractive prospect for doctors in the democratic era, there had been relatively little growth or racial transformation of doctor-led research (Bateman 2011, for example, 2012a; Gevers 2009; Paruk et al. 2014; Petherick 2014; Senkubuge and Mayosi 2013). Clinical medicine publications from South Africa decreased 22% from 1990–2000 (Jeenah and Pouris 2008: 352; Pick 2009: 200).[11] Remarkable as it is in the circumstances, there remained in South Africa a small number of doctors committed to producing clinician-led research and straddling the worlds of knowledge production and patient care (Aldous, Adhikari, and Rout 2014; Bateman 2011, 2012a, 2013a; Gevers 2009; Paruk et al. 2014;

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[9] These statistics are complicated by the fact that the public sector holds 70% of all hospital beds, and the private sector is known for inflated costs. Furthermore, the assumption that no uninsured person will make use of private facilities in oversimplified, particularly for out-patient care or short hospital stays. Studies indicate that up to 32% of the population make use of private providers for healthcare or medication; indeed, a 2014 study indicated that 41.5% of the study's participants indicated that their last healthcare provision was from a private healthcare professionals (Pretorius 2017).

[10] For example, at the University of the Witwatersrand's School of Clinical Medicine only 50 out of 2000 staff members are employed full time by the university, the remainder are hospital employees (University of the Witwatersrand 2013: 10).

[11] Despite the decline in research activity in clinical medicine, health-related research has consistently made up a third of South African research publications from 1975–2005 (Sooryamoorthy 2010). This is because public health publications grew substantially during this time, with increased government emphasis and support of primary healthcare.

Senkubuge and Mayosi 2013). Since the release of the 2009 ASSAf report, there has been a push in government departments, research bodies, universities, and in the medical profession to grow clinical research, including doctor-led research, in order to improve patient care and provide evidence about the state of healthcare as the country moves toward the new National Health Insurance system (Aldous, Adhikari, and Rout 2014; Bateman 2011, 2012a; Gevers 2009; Mayosi et al. 2009; Mekwa et al. 2016; Paruk et al. 2014; Senkubuge and Mayosi 2013). Improving health research was point ten of the Department of Health's 2009 "Ten Point Plan" to improve healthcare in the country (National Department of Health 2010). The government drew up plans to provide better financial resources for doctors to produce research, for example, providing funding for 1 000 health sciences doctoral degrees[12] before 2022 (Bateman 2012a; National Health Research Committee 2011). Since 2011 registrars (doctors training in specialisations) have had to complete a compulsory research component in their training to qualify as specialists, meaning that there should be an increasing number of South African doctors trained to produce research (Aldous, Adhikari, and Rout 2014; Health Professions Council of South Africa 2011; Rout, Sommerville, and Aldous 2015).

But articles in local medical journals still report inadequate institutional support for doctor-led research, a lack of academic mentors and supervisors for a new generation of researchers, and few career opportunities for clinical researchers (Aldous, Adhikari, and Rout 2014; Bateman 2011; Rout, Sommerville, and Aldous 2015; Senkubuge and Mayosi 2013). The Department of Health continues to provide an insufficient budget for clinical research[13] (Paruk et al. 2014: 468). And, despite the rhetoric about the necessity and public good of clinical research, there are still problems in translating research findings into clinical recommendations (Bateman 2012a; Paruk et al. 2014; Senkubuge and Mayosi 2013).

The publications, pronouncements and plans of the last decade to increase doctors' involvement in research are strikingly similar to prolonged proselytising from within medicine in South Africa (as well as a global discourse praising clinician-researchers). Throughout the twentieth century, figures like John Brock, professor of medicine at UCT from 1937 to 1970, considered by some to be the father of clinicians' research in the country (Saunders 2012),

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[12] These are doctorates for all health sciences, not specifically for doctorates in clinical medicine.

[13] According to the Mexico 2004, Bamako 2008 and Algiers 2008 declarations, governments should dedicate 2% of their public health budget to health research (Paruk et al. 2014).

wrote enthusiastically about the need to establish a “spirit of research” (Brock 1963). He also urged medical schools to help ignite the passions of medical students and doctors to connect practice and research, and drew attention to the advantage offered by the spatial continuity from hospital to university for the production of scientific, locally relevant research otherwise in short supply.

Embedded in past and present enticements for doctors to expand research has been the simultaneous description of South Africa as a fertile and unique place to produce research. From my work as a research assistant on a historical study about a medical science spanning the global south in first half of twentieth century, I realised that South Africa has for probably almost a century been imagined as a necessary, exciting, place to produce research. Doctors and scientists imagined the country as a research Mecca with a racially, economically, genetically varied population, a relatively unusual and varied disease burden including infectious and chronic illness (imagined respectively as diseases of poverty and wealth), with well-established and -funded universities and research institutes, and well-trained doctors and scientists. With a dearth of local research, clinician-scientists could fill in the gaps in biomedical knowledge, founded and largely driven by institutions in the global north, and make visible local problems and solutions (for example, Brock 1960, 1963, 1967, 1977; Gillman 1936).

Bibliometric studies measuring research publications and research capacity are testament to the importance clinicians place on South Africans and Africans more widely contributing research about their local context to biomedical knowledge production. Studies indicate serious concerns about the place of African and South African medical science within the international arena. Although Africa’s scientific research productivity has grown since the 1990s (Confraria and Godinho 2015), the continent currently produces only 1.3% of the world’s health research, although this is almost double the 0.7% it contributed in 2000 (Uthman et al. 2015). Africa has a disproportionately large share of the world’s disease burden, and disproportionately small capacities and resources for producing health-related research (Ijsselmuiden et al. 2012; Ncayiyana 2002; Uthman et al. 2015; Volmink and Dare 2005).

With Kenya and Nigeria, South Africa forms a minority of African countries that excels in clinical research publication (Pouris 2012; Uthman et al. 2015). And yet compared to other BRICS members and to middle-income countries in Asia, South Africa lacks researchers and publication outputs (for example, see Bateman 2011: 615; Senkubuge and Mayosi 2013). Yet, despite the proliferation of knowledge production of medical doctors and scientists in these African countries, there has not been a corresponding growth of social science literature regarding biomedical professionals and knowledge production. Generally, with regards to studies of African professionals, there has been more historical study of figures of the colonial era and missionary medicine. (One exception is HIV-prevention and -intervention, but this scholarship has tended to focus on the relationship between biomedical knowledge and the knowledge of local laypeople.)

Literature review and disciplinary positionality

To elaborate on the academic rationale of my project, I first describe the way my interest in South African clinician-researchers and their knowledge making speaks to the project of South African anthropology as well contributes to some sparser areas in this discipline. I then explain how my research converges and diverges with existing literature in anthropology on the interconnected domains of healthcare and science, knowledge production and imaginaries of Africa. Through this I demonstrate my disciplinary positionality in my approach to the interlocutors and institutions I studied.

Local scholarship and relevance

My research continues a broader anthropological project of understanding the relationship of politics and economics to issues of life, suffering, and death in post-apartheid South Africa. It departs from most South African anthropology, however, by studying biomedical healthcare and its educational links. In studying up, in the company of elite experts, I explore a complex community of practice, a site of power, of knowledge production, of anxiety and practice, and in doing so chart an area of potentially fruitful future research.

The anthropology of health in South Africa has focused predominantly on structural conditions affecting ill health, and on experiences of and beliefs about communicable diseases related to poverty, for example, HIV/AIDS and TB (for example, Henderson 2011; Hunter 2010; Macdonald et al. 2016; Ross 2010; Thornton 2008). Anthropologists have focused on the country’s plethora of indigenous allopathic medical practices and practitioners, as well as on medical pluralism (for example, Levine 2012; Thornton 2017; Wreford 2009). There has been relatively little ethnography of specialised biomedical healthcare, hospitals, or medical training (exceptions being, for example, Avera 2009; Fassin 2008; Gibson 2001, 2004, 2011; Gibson and Olarte Sierra 2006; Human 2012; Koster and Ross 2017; Levine, Øverland, and Ramson 2014; Macdonald and Nicholls 2017; Moll 2017). There have been a significant number of ethnographies dealing with expertise and elites of "traditional" leadership and healing in South Africa. There are as yet few anthropological works concerned with "professional" expertise or elites (one exception being Hornberger 2011). Most ethnography about scientific knowledge production in South Africa has centred on the intellectual politics and economics surrounding knowledge of indigenous plant-based medicine (Cohen 2018; Gibson and Ellis 2018; Green 2009, 2012; Laplante 2009; Levine 2012; Robins 2008). Studies of South African biomedical research have predominantly focused on lay people's experience of pharmaceutical trials (for example, Dixon 2012; Reynolds et al. 2013; Saethre and Stadler 2013, 2017), on dissident HIV/AIDS science (for example, Colvin 2012; Fassin 2015; Green 2009; Robins 2008), and more recently on the clinical and public health aspects of the "First 1000 Days" project (for example, Pentecost 2017; Ross 2017).

My choice of fieldwork is not simply about local ethnographic novelty but also takes inspiration from Nader (1969) who argued that "studying up" is a political project that forces us to review the scholarly framing of social problems and events (see also Gusterson 1997). Related to this ethnographic project, I draw on the intellectual impetus of the relatively newly established field of medical and health humanities in Africa. In South Africa particularly, there is a collective call for the critical examination of interrelated political, ethical, and intellectual facets of biomedical knowledge and intervention (Cousins and Reynolds 2014). It aims to encourage the greater study of and reflexivity amongst those who wield knowledge and power over life and death matters (Tsampiras 2014), in order to promote a "theory from the South" (Cousins and Reynolds 2014; Levine, Reid, and Colvin 2014). My project, investigating the complexities and contingencies of expert knowledge production in healthcare, is a response to these prompts.

Studying up in healthcare can be fraught with tensions. I draw on the above African medical humanities scholarship, which alert to the global north context where dangers of studying up in in medical humanities have been being co-opted or merely becoming a complementary of biomedicine – a so-called "add-on" to academic discussions or curricula – rather than a critical engagement with biomedical knowledge, institutions and practitioners. Similarly my work is informed by observations of anthropologists who have worked alongside public health experts and/or clinicians and report the antagonistic position they may find themselves in and the manner in which their contributions may be dismissed in situations where the actionable facets of research are valued above critically reflective work (for example, Adams, Burke, and Whitmarsh 2014; Pigg 2013; and for details specific to the South African context, Saethre and Stadler 2017).

When framing and carrying out my research I was also aware of my own social positionality and that in South Africa studying up, or in some cases sideways, is a methodological approach and disciplinary intervention that for all its promise, elicits a complex politics of representation in local anthropology. These politics have been extensively debated in local journals and at local conferences, particularly regarding race and class and questions around who may study whom (see, for example, 2012 issue of *Anthropology Southern Africa* 35 (3/4), Nyamnjoh 2012 and responses from Hartnack 2013 and Niehaus 2013a; and Spiegel and Becker 2015).

Limits of constructivism

> This is our point of departure: medicine is not a coherent whole (Mol and Berg 1998: 3).

Historically so-called modern/western/Euro-American scientific knowledge, including biomedicine, has held a powerful and privileged position globally, as if produced in a space beyond culture. The bedrock of science studies — the constructivist critique of the production, expertise, and application of scientific knowledge as socially contingent — gained traction in medical anthropology in the 1980s and 1990s (Fischer 2007; Franklin 1995; Marcus and Fischer 1999). A new ethnographic focus developed that observed practices in laboratories and diagnostic and reproductive technologies, largely in Europe and North America (for example, Latour and Woolgar 1986; Löwy 1997; Rapp 1999). These medical anthropologists, "studying up" and "studying at home", exposed the biological reductionism and the ideology of universal human biology embedded in biomedicine (explained at length in Lock and Nguyen 2010).

More recently scholars have criticised the ensuing mistrust of science and predictable, seemingly infinite, constructivist critiques of its knowledge production (Green 2009; Latour 2004; Rose 2013; Williams, Birke, and Bendelow 2003). Conspiratorial criticisms of "neoliberal science" as "nefarious" (Pinker 2013) and relying on sinister "social forces" to explain social life have become overdeterministic (Latour 2004). Critiques of biomedical practice and knowledge-making have produced an essentialised, personified caricature of a monolithic biomedicine as a malign coherent whole (Burri and Dumit 2007; Colvin 2015; Geissler 2011a; Gibson and Oosthuysen 2012; Mol and Berg 1998). Rose (2013) and Svendsen (2012) have thus suggested that social scientists need to take into account that scientific developments do not just exist as social constructs or as dehumanising, "disciplinary" forces. Rather, these developments change the world and the ways humans understand themselves, interact and solve problems (for example, Martin 1994; Rabinow 1999; Rose 2001).[14] I draw on this literature by paying attention to the "operative philosophy" of clinician-researchers, and to the nuance and "multiplicity" of what they, as scientific knowledge-producers, actually do (Rose 2013: 15). This is a means to see beyond the ideology of biomedicine as a coherent scientific whole (Mol and Berg 1998). I pay attention to the "humanness" of the experts I study to understand them as nuanced social beings (rather than dupes or co-conspirators of neoliberal science) (Boyer 2008).

Professional experience

> Seldom has the analytic focus been explicitly on the health professionals themselves (Adams and Kaufman 2011: 314).

Social scientists have widely criticised biomedicine, and by extension its practitioners, as being technocist and operating with a dehumanising and narrow clinical gaze (historical explanation in Foucault 1994). They have also drawn attention to the power and privilege of the medical profession linked to the moral claims from clinicians' proximity and responsibility for life-and-death matters. Sociologists and anthropologists have described and challenged the prominent, dominant voice and expert authority of the medical profession in public and state affairs and within the intimacy of the doctor-patient encounter (for example, Freidson 1970, 1975; Lock and Nguyen 2010). Yet Marcus (1983) warns ethnographers who study elites not to conflate them with the powerful institutions they occupy; thus not to apply a normative or ideological

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[14] However, the works of Rabinow (1999) and Rose (2001) especially elaborate on shifting biopolitics of "risk politics", "molecular politics", and "biosocialities" rooted in the global north. Their work does not necessarily translate well in African contexts where biotechnologies and knowledges have generally been less pervasive.

evaluation of individuals. Such analyses of professional medical power may be valuable at a systemic level but can run the risk of disavowing the everyday work of clinicians.

Indeed, medical training and work involve their own forms of dehumanisation. There can be deep antagonism between doctors, patients and other health professionals. The hierarchies and levels of resources doctors work with can render their work ineffective. Anthropologists and sociologists uniformly conclude that medical training is a process of extreme socialisation (Becker et al. 1961; DelVecchio Good 1998; Helman 2006; Holmes, Jenks, and Stonington 2011; Kaufman 1994; Luhrmann 2001; Prentice 2013; Wendland 2010). It is compromised of self-doubt and personal sacrifice, academic humiliation, social alienation, and profound fear in being responsible for human lives, while facing the limits and uncertainties of biomedicine. The socialisation of training and subsequent clinical work results in profound personal transformation and development of a professional subjectivity.

Everyday clinical work, particularly in hospitals, can be disturbing, chaotic, exhausting, involve professional risk-taking, and even be physically dangerous. Healthcare professionals are often brutalised by this experience, perhaps indeed with parallels to trench warfare. At times practitioners do employ a dehumanising gaze, and disengage emotionally, to get through a long and sleepless shift or avoid the painful, hopeless experience of not being able to adequately treat the critically ill (as is often the case for doctors in severely resource-constrained facilities) (Cassell 1991a; DelVecchio Good 1999; Livingston 2012; Luhrmann 2001; McKay 2017). But this mode of experience and gaze is not absolute. Ethnographic detail of doctors at work and doctors in training unsettles critiques of the clinical gaze. Mol (2002), Prentice (2013), Luhrmann (2001), and Wendland (2010) have revealed through ethnography that doctors and students are able to treat or operate on part of the body as an objectified knowable biological thing, but that this does not exclude their ability to see patients as social beings, and even the larger political and social world affecting healthcare. Also, writing about tertiary care in South Africa specifically, Gibson and Olarte Sierra (2004; 2006) indicated that in wards with limited staff and resources the power and surveillance of the clinical gaze should be not be assumed.

Just as the humanness of knowledge-producers is important, it is vital for my project to take seriously the messy human work of medical professionals, especially because their insights of this work are ostensibly the foundation of their research. This is crucially different from laboratory research.

Science to practice, and vice versa

> How is the practice of science affected by its *immersion* in medical practice, as is the case with clinical research? (Casper and Berg 1995: 398)

There are further limitations to critiques of the technocist nature of biomedicine — as if doctors mechanically translate knowledge, apparently universal, into practice without concern for context. Recent scholarship indicates that this overlooks the tensions, inconsistencies and messiness of biomedicine as both practice and science.

Doctors' work is increasingly rationalised and evidence-based — meaning that practice is intended to be determined by economic logics and international guidelines rather than individual expert opinion. This has prompted considerable concern both within and without the medical profession about doctors' loss of autonomy, the art of healing, and the mindless implementation of protocols (for example, Kaufman 2016; Lambert 2006; Lock and Nguyen 2010: 176–96; Martin 2012: 33; Mol 2002: 181–4). Human (2012), Timmermans and Berg (1997), Castel (2009), and Mol (2006) have shown that protocols, as measures to standardise biomedical decision-making, are not absolute in operation. In practice these tools have a flexibility, a "local universality" that clinicians consciously doctor or "tinker" with (Mol 2006; Mol, Moser, and Pols 2010) in order to best suit an individual healthcare context or patient. This tinkering occurs everywhere but is arguably a matter of degree. A significant literature about resource-limited contexts across the global south indicates a tremendous degree of gut-wrenching but often ingenious improvisation in healthcare, and in diagnostic and scientific services (for example, Geissler 2015; Geissler and Molyneux 2011; Gibson 2001; Hannig 2017; Livingston 2012; McKay 2017; Mika 2016; Mulemi 2015; Oppenheimer and Bayer 2007; Redfield 2013; Street 2014; Tousignant 2013).

The mutually constitutive relationship between knowledge and practice is most plainly manifest in the endeavours of clinician-researchers (Katz 1970). When it comes to the dual roles, or rather intertwined roles, of care and knowledge-making, there is significant tension between "medical uncertainty" (Fox 1959, 1980; Fox and Swazey 1974) and the "biotechnical embrace" (DelVecchio Good 2001, 2010). Here medical uncertainty is the limit of technology and treatment, and the uncertainty of intervention — old, new, and improvised. The biotechnical embrace, in turn, is the clinicians' efforts to maintain their own and their patients "political economy of hope" (DelVecchio Good 2001, 2010) that biomedicine can offer solutions and salvation, particularly in high-stakes medical interventions, such as transplantation, foetal surgery, or oncology (also see Casper 1998; Fox 1959; Fox and Swazey 1974; Gibson 2011; Jain 2013; Löwy 1997, 2000; Mukherjee 2011; Pollock 2012; Sharp 2014). As Helman (2006: 160) suggests, "in the face of suffering, science is a comforting world-view".

My work on the relatively under-studied figure of the clinician-researcher helps bring into sharper focus the relationship between problem-solving, the stepping-away from the clinical, and its direct relation to suffering and death (for example, Casper 1998; DelVecchio Good 2001; Feierman 2011; Fischer 2010, 2012; Fox 1959, 1988; Fox and Swazey 1974; Katz 1970; Löwy 1997). Studying clinician-researchers in South Africa is a compelling addition to a literature that to date largely derives from North America and Western Europe. My project is of global and regional relevance in trying to understand what it means to be a healer and a scientist in a world of rapidly developing biotechnologies and knowledge as well as of enduring health inequalities.

Ethics and social good

> It is one thing to articulate an ideal notion of ethical engagement, quite another to see it realized in practice (Ulrich 2011: 157).

Studying medical research demands a reflection on ethics. Commentary on "offshored" pharmaceutical trials shows that narrow conceptions of bioethics overlook the "ethical variability" and vulnerability (Petryna 2009) as well as any locally negotiated benefits trials may offer otherwise precarious populations who engage in trials, especially African HIV trials (Dixon 2012; Kelly 2011; Kelly and Geissler 2011; Molyneux and Geissler 2008; Reynolds et al. 2013; Saethre and Stadler 2013, 2017; Ulrich 2011). A narrow focus on ethical engagement within the research setting ignores the potential disconnection between rigour and relevance: namely between the scientific soundness of creating new knowledge and creating local value or applicability (Kelly 2011; Ulrich 2011). Mol (2002: 151–84, 2006) and Feierman (2011) highlighted that scientists' evaluations of the effectiveness of interventions does not always translate into the intended outcome — improvement of care. This includes the ability of local doctors to make use of this knowledge (frequently but not always produced by clinicians or scientists from the global north) to improve practice in resource-limited facilities in the global south (Street 2014). I heed Mol's (2002: 151–84, 2006) warning that we should not leave the presumed value of clinical research, its social good, uninterrogated.

Colonial histories

> Asking for the ethos of science is searching for the projects implied in it, the imagined futures and pasts (Geissler 2011a: 4).

In contextualising my project above, I provided a history of the endeavours of clinician-researchers from the nineteenth century. I would be remiss to not to recognise that this was also a century of colonial expansion and scientific racism. These histories still haunt the contemporary and have an impact on my interlocutors including their relationship to global knowledge production, what local realities they strive to make visible through research, and what limited and damaging ontologies they may be implicated in while they produce their work.

Vaughan (1991) and Comaroff and Comaroff (1993; 1997) have suggested that the European colonial encounter has led Europeans to discursively construct Africans as "as a repository of death, disease and degeneration" (Vaughan 1991: 2). Colonialists legitimated scientific interventions, from city planning to vaccination campaigns, as measures to alleviate the suffering in Africa (Tilley 2011). Africa became a field laboratory for Europe, and scientific projects of colonial governance were integral to the development of Western scientific thinking and method (Braun and Hammonds 2008; Tilley 2011). This extraction is arguably still the case in some HIV drug trials in Africa (Crane 2010, 2011; Okwaro and Geissler 2015). This simultaneously reproduces and complicates ideas of political and scientific centre and periphery.

Postcolonial critiques have emphasised that the sciences, and in particular biomedicine, were tools of empire, interventions to produce a healthy, black workforce (Tilley 2011). They have challenged the universalist conception and triumphalism of Western scientific thinking as progressive and apolitical, and reveal instead that science is often employed in the interests of exploitative governments and corporations (Anderson 2002; Harding 2011).

Identifying human difference has been fundamental to the framing, investigating, and solving of healthcare problems. However, categories of difference are not an objective scientific tool recording reality; they rather serve to construct groups of people as "other", a process that is ongoing. There is a prolific social science criticism of clinicians, public health experts, and policy makers using problematic classifications of race, culture, religion, ethnicity, tradition, and sexuality for explaining disease prevalence. These classifications can essentialise, homogenise, and stigmatise (for example, Bradby 2012; Briggs 2005; Das and Das 2007; Dein 2003; DiGiacomo 1999; Kleinman and Benson 2006; Lock and Nguyen 2010; Rouse 2010; Taylor 2003; Volpp 2000; Wilce 2009).

Colonial biomedicine, in assessing difference in disease prevalence, diet, and sexual practices between coloniser and colonised, was pivotal in constructing Africans as other, as less modern (Comaroff 1993; Comaroff and Comaroff 1997; Joralemon 1999; Vaughan 1991). This stereotype of Africa tended to emphasise communicable diseases. These stereotypes impacted research in HIV prevention and treatment (and shaped the racism latent in these) (for example, Saethre and Stadler 2017; Tsampiras 2015). They left little room, to the present day, to imagine and therefore record and manage non-communicable disease, such as cancers (for example, Livingston 2012; Mika 2016; Mika and Vaughan 2018; Whyte 2012).[15] This is significant with regards to local clinical research in South Africa and what my interlocutors fought to make visible through their knowledge production.

Within the South African medical literature, it is clear that the apartheid racial categories — black, white, coloured, Indian — remain entrenched. Thus, denigrating ideas about modernity and difference that are associated with these ontological categories remain pervasive in understanding and managing illness (Avera 2009; Baldwin-Ragaven, London, and de Gruchy 1999; Erasmus 2017; MacLeod and Durrheim 2002; Saethre and Stadler 2009; Tsampiras 2015; van der Wiel 2013a, 2013b).

State and institutions

> Africa is not merely undifferentiated periphery (Pollock 2014: 850).

Just as medical research of the past is implicated in colonial politics, clinician-researchers of today, engaged in improving healthcare, are imbricated in modern state-making. Foucault emphasised the historic relationship between medical statistical knowledge and modern state power in his explanation of the development of biopolitics (Foucault 2006; Rouse 2005).

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[15] This is not merely an African phenomenon. Conceptualisations of a social teleology have influenced global health agendas and epidemiological models, such that chronic illnesses have until recently been imagined as related only to so-called development (Sivaramakrishnan 2014).

Geissler (2015b) and Rottenburg (2009) have argued that Foucauldian critiques of biomedicine and science that arose largely in the north need modification when applied to contexts where the reach of the state or biomedicine is not uniform. As Geissler suggested, in the post-colonial era there is an "unhinging of state, medicine and science" (2015b: 4).

Anthropology of biomedical sciences in Africa, focused on pharmaceutical trials, HIV/AIDS, malaria, and state laboratories, reflects the collapse of state scientific and medical institutions in the postcolonial era and the dominance of international organisations in African research (for example, Geissler 2011b, 2011a; Geissler and Molyneux 2011; Kelly 2011; Kelly and Geissler 2011; Lachenal 2011; Nguyen 2009; Ombongi 2011; Pollock 2014; Tousignant 2013; Whyte 2011). But far from marking the disappearance of the state, Geissler (2011b, 2015b) and Ombongi (2011) maintain that in the shifting nature of African institutions, the state is always present and acts as a reference point, framing the legitimacy of and the public good of public science. Geissler (2015b) and Prince (2013: 34) argue that in Africa, as compared to South East Asia or Eastern Europe, there has been considerably less corporate profiteering in medical research and trials. There is a powerful imaginary among African scientists, doctors and patients about the importance of a state-supported science to produce a better future.

South Africa, although not immune from institutional decline or dysfunction, has considerably greater scientific infrastructure than many other African countries (Confraria and Godinho 2015; Connell et al. 2017). I do not wish to advocate a South African exceptionalism, but rather point to the fact that the reach of biomedicine, the state, formal scientific institutions, and interventions should not be presumed homogenous across the global south or Africa (Pollock 2014; Rajan and Leonelli 2013: 470), just as it should not be presumed homogenous across the expanse of the global north (Meyers and Hunt 2014). As Comaroff and Comaroff (2012) would argue, there is a bit of south in the north and vice-versa. This point is helpful in taking cognisance of both the strength and the dysfunction of the state institutions — universities and hospitals — that my interlocutors occupy in South Africa, as well as their discourse of crisis, failure, prestige, and progress in these institutions.

African modernity and knowledge

> Where are the other stories — the stories that do not look into Africa but start from Africa and look out? (Mkhwanazi 2016: 2)

Conceptualisations of Africa are underpinned by the problematic and enduring association of Africa with the non-modern, the converse of European Enlightenment and modernity, an Africa imagined as the other (Comaroff and Comaroff 2012; Ferguson 2006; Mbembe 2001). This affects the imagined relationship between science, as modern practice and community, and African-ness.

Ethnographers have highlighted that discussions about science in Africa and in South Africa tend to centre around the importance of valuing and validating local knowledge of plant based medicine — as a pushback against the hegemony of western thought and medicine which historically denigrated this knowledge (Green 2009; Pollock 2014). Challenging the virtues of Western scientific thinking and intervention and the colonial devaluation of indigenous (or endogenous) African knowledge and healing has brought about what Tilley (2011) described as a form of identity crisis in trying to gauge what is authentically African knowledge. Yet, these critical challenges to what is considered modern or locally valuable knowledge sometimes ignore stories that do not look like Africa, stories in which Africans are both postcolonial and bioscientific. Africans themselves produce this so-called modern African science and are deeply entwined in a project of development (for example, Feierman 2011; Geissler 2011b; Ombongi 2011; Pollock 2014; Tousignant 2013).[16] I draw on Pollock's (2014) emphasis that the distribution of knowledge production, not just of goods or economic power, is problematic and requires scholarly attention so as to negate the idea of Africa as a place from which raw data is extracted (explained in Comaroff and Comaroff 2012). This is significant in detecting ways that South African clinician-researchers imagine themselves in relation to scientific communities, locally and globally, or how their research of clinical work contributes to the construction of a modern state and an African biomedicine.

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[16] In South African medical journals the terms "indigenous clinical science" (Bateman 2011: 615) and "indigenous health research" (Senkubuge and Mayosi 2013: no page number) has been used to describe local clinical research. This usage emphasises the need to broaden the scope of what "indigenous knowledge" might signify in South Africa.

Fieldwork among clinician-researchers

In order to focus my ethnography on clinician-researchers in South Africa, I centred my fieldwork on Wits and its School of Clinical Medicine. The Wits medical school, established in 1919, is the country's second oldest medical school, after UCT. It was connected with the prolific and influential South African Institute of Medical Research in Hillbrow, Johannesburg. In addition to the researchers already mentioned above, Wits has been the academic home of prodigious and world-renown clinician-researchers such as Phillip Tobias, Helen Rees, Glenda Gray, and Shabir Madhi.[17] More recently, Wits produces about a third of South Africa's health science research (Mouton and Gevers 2009: 62).[18] In 2016–2017, the years in which I conducted my fieldwork, Times Higher Education (2016) ranked the Wits Faculty of Health Science at 77th place on the globe.

Historically, Wits was a prestigious, liberal white university.[19] Although for most of the twentieth century access to the university was restricted for black students, with only few obtaining government permission to study there during apartheid, the university had a reputation for liberal, progressive politics among staff and students. Historically members of the medical school were involved in projects of political and social transformation, including campaigns against racial segregation at South African universities; the exposure of medical professionals complicit with human rights abuses of apartheid detainees, such as Steve Biko; support for the 1980s Baragwanath doctors' protest against appalling conditions of black healthcare facilities; and in 1997 became the country's first health sciences faculty to establish an internal reconciliation process (Horwitz 2009a: 6–7; 18–26; Keene 2012a; Murray 1997). Although not without its complications, the Wits School of Clinical Medicine adopted an admissions policy for undergraduate medical training in the 1990s to include more students who are black, female, or from rural areas (with a number of adjustments to the policy since) (van der Merwe et al. 2016; University of the Witwatersrand 2014a).

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[17] Phillip Tobias is world-renowned for his work in anatomy, genetics, and palaeoanthropology; Helen Rees for her studies on HIV and HPV vaccinations, and microbicides; Glenda Gray for her research on mother-to-child transmission of HIV, and HIV vaccinations; and Shabir Madhi for his investigations of respiratory and meningeal diseases and trials.

[18] Another third of South Africa's health sciences research is produced by UCT (Mouton and Gevers 2009).

[19] During apartheid, white liberal universities stood in contrast to white Afrikaans universities strongly associated with Afrikaner nationalism, or Bantustan universities developed only for black students.

Situated in the Faculty of Health Sciences, the School of Clinical Medicine is constituted of various clinical departments, such as internal medicine and psychiatry, and is associated with five teaching hospitals across Johannesburg: Charlotte Maxeke Johannesburg Academic Hospital, Helen Joseph Hospital, Rahima Moosa Mother and Child Hospital, Wits Donald Gordon Medical Centre, and Chris Hani Baragwanath Academic Hospital (Bara). The majority of the school's staff are joint appointees employed and paid by the Department of Health and responsible for healthcare in government hospitals but also university staff members responsible for teaching Wits medical students. According to a Wits report only 50 out of the school's 2000 staff members are full-time faculty employees paid by Wits University and largely working as lecturers (University of the Witwatersrand 2013: 10).

Wits academic hospitals are well-known both for providing quaternary care,[20] in which pioneering procedures such as the first liver transplant from an HIV-positive donor (Etheredge, Botha, and Fabian 2018) are conducted, and for providing a large proportion of public secondary and tertiary healthcare in southern Gauteng, the most densely populated province in the country. Bara serves the almost 1.3 million residents of Soweto and is the largest hospital in the southern hemisphere (Wild 2016). Across all spheres of medicine and the diverse facilities, clinicians produce research on wide-ranging topics, from specialist surgery to HIV/AIDS, and on a range of scales from case-studies to international network pharmaceutical trials. The university is unique in the country in that clinicians associated with it are producing research based on public and private practice. The Wits Donald Gordon Medical Centre is a private academic hospital where registrars as well as sub-specialists train. This medical centre established a research office in 2014 to develop doctor-led research including in private care, which is unprecedented in the country (WDGMC n.d.; Tager in WDGMC Clinical Research Office 2014). The research publication outputs in the School of Clinical Medicine increased by approximately 60% between 2013 and 2016 (Papathanasopoulos and HSRO Staff 2017: 6). The school is currently the top contributor to research publications in the university's Faculty of Health Sciences, although the bulk of these publications emanate from research units and

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[20] Quaternary hospitals provide highly specialised and advanced treatments by sub-specialists for patients with complicated or rare illnesses that are not easily and adequately treatable at the already specialised tertiary level.

not joint appointee staff working in teaching hospitals (University of the Witwatersrand 2013: 10, n.d.).

The School of Clinical Medicine has eleven research entities[21] and benefits from government and international funding. The university established the Wits Health Consortium in 1998 to assist with the logistical and bureaucratic aspects of attracting and managing large-scale international funding, such as funds from the Bill & Melinda Gates Foundation granted to the prestigious Wits Reproductive Health and HIV Institute (WRHI).

The Wits Health Sciences Research Office runs programmes to facilitate clinical and research collaborations between the Faculty of Health Sciences and diasporic alumni and between the university and prestigious universities abroad. There are also a number of funding opportunities specifically to attract specialist doctors to complete their PhDs at Wits (Kramer, Veriava, and Pettifor 2015; University of the Witwatersrand 2014a, n.d.).

Methodology

I conducted ethnographic fieldwork over 14 months from January 2016 to February 2017. My research entailed semi-structured interviews, participant-observation, and a review of textual aspects of the field that I was studying — clinical research publications and university reports and publicity. I used the qualitative data analysis software MAXQDA to track themes across transcripts, field notes, and publications. (Also, I observed public medical research events, such as prestigious lectures, over a period of four months at the end of 2015 as I was waiting for ethical approval).

Ethnography is an appropriate qualitative methodology for studying how clinicians produce research, particularly investigating the pragmatic, institutional contingencies of this work; the material and epistemological characteristics of this work; and the imaginaries evoked about the possibilities and limitations of biomedicine and of social transformation. This empirical

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[21] The eleven research entities are: Carbohydrate and Lipid Metabolism Research Unit; Clinical HIV Research Unit; Developmental Pathways for Health Research Unit; Effective Care Research Unit; Empilweni Services and Research Unit; Hepatitis Virus Diversity Research Unit; Perinatal HIV Research Unit; Maternal, Adolescent and Child Health Research Unit; Project for Improving Neonatal Care Research programme; Pulmonary Infections Research Unit; Wits Reproductive Health and HIV Institute.

approach makes it possible to observe modern academic knowledge production as "generated not in an imaginary and universalized space but in the particular moments of realization of action" (Barth 2002: 9). My ethnography was multi-sited: this was imperative to understand the distributed activity of scientific knowledge making and sharing (Marcus 1995; Martin 2012: 32), particularly for doctors whose research is only a part of their work.

Participant-observation was pivotal to learning how research is actually done, going beyond what knowledge-producers say that they do to gain an understanding of their "operational philosophy" (also Latour and Woolgar 1986; Mol and Berg 1998; Rose 2013: 15). However, participant-observation is not easy to sustain with studying professionals, whose work days are filled with a range of dispersed work activities. These limit an ethnographer's possible intrusion on professional lives (Forsythe 1999; Nader 1969; Priyadharshini 2003). To deal with this I adopted a "polymorphous engagement" (Gusterson 1997: 116) in which I placed a greater emphasis on formal interviews and the analysis of archival materials, contemporary documents and speeches (Nader 1969).

My previous academic fieldwork and employment experience, and the scholarly networks I was able to draw on meant that I had access to a rich and varied network of clinicians and researchers at Wits and beyond. Due to the challenges of embedding myself in the lives of professionals I drew extensively on this social or institutional positionality, especially at the beginning of my fieldwork; from there my research snowballed. This meant that I got to know people across all five Wits teaching hospital hospitals, and to some extent across other universities. My interlocutors came from a range of clinical fields, with the majority from three specific fields, which allowed for some triangulation on similarities and differences of research within and between disciplines. This was less a by-product of haphazard design than a reflection of the practical challenges of my ethnography. My fieldwork did not extend to shadowing (or doing participant observation with) doctors during their shifts in hospitals. This would have been unfeasible especially considering my interlocutors busy professional lives. This may also have impinged on my ability to focus primarily on tracing research activities, a challenging enough task on its own.

I formally interviewed 49 interlocutors. The interviews ranged from 45 minutes to three hours long, and I conducted six additional follow-up interviews. I had sustained contact with many of the interviewees that allowed for clarificatory conversations or follow-up questions. Where necessary, I emailed interviewees additional questions. I conducted interviews in a variety of venues, such as in university campus offices, at coffee shops, and at hospitals. Most interviews took place in Johannesburg, with three taking place in other South African cities and one using Skype.

An interview rarely stood alone. In addition to casual interactions, I observed the more prominent researchers speak multiple times at events like public lectures and conferences. I read as much as I could of their easily accessible publications — a public record of their labour of research. I noted interviewees' research topics and designs and collaborators, and where possible tracked down their master's and doctoral theses using PubMed, Google scholar and researchgate.net listings and metrics.

My interviewees ranged in professional rank from junior doctors to emeritus professors, most being specialised doctors or registrars in public service. The scale of their research ranged from case studies to international network trials. However, the majority designed their own relatively small-scale quantitative research, using descriptive statistics based on hospital records or on their own data collection in their clinics or wards. Most research was facility-specific, a few compared hospitals across Johannesburg, Gauteng, or even across the country.

41 interviewees were associated with the Wits Faculty of Health Sciences, Wits hospitals, or Wits-associated research institutions. Six of them were research development staff who were not trained as medical doctors but as basic scientists or as allied health professionals. Eight interviewees were clinician-researchers from other universities.

My interlocutors extended beyond those I formally interviewed to people with whom I was or became acquainted in research workshops, conferences, or more casually as friends of so-called primary informants. My interlocutors, generally, ranged in age from late twenties to seventies. The older generation were predominantly white, with only a few black professors. (I generally use the term “black” to refer to apartheid categories of Black African, Coloured, and Indian. Where relevant to specific narratives, I refer to the apartheid race classification). In the younger generations of doctors, particularly those in their late twenties and thirties, my interlocutors were more racially diverse and roughly representative of the racial demographic of the Wits student body.[22] Unfortunately, due to the demands of their professional lives (which I describe in Chapter Five), these younger doctors with whom I became acquainted at workshops and conferences were often unavailable for formal interviews. This means that overall only about half of my interviewees were black. In addition, almost two-thirds of interviewees were women, a fact that may be related to the "feminisation" of the medical profession particularly over the last three decades — especially in public care where women do not have the responsibility for a full-time private practice and can arrange flexible hours.

I engaged in participant-observation to study the following three aspects of doctors' research: first, public performances of research and public discourse about the value of clinical research in the medical profession; second, the formal teaching and learning of research; and third, the actual work of research. I discuss each in turn. With regards to public presentation and discussion of clinician-researchers I attended five southern African conferences (one of which focused on science generally in southern Africa); six Wits Faculty of Health Sciences or School of Clinical Medicine research days (and one of which took place at another university); one medical education symposium outside of Wits; a day-long national clinical guideline writing workshop; two Wits journal club meetings; one Wits Faculty of Health Sciences "indaba"; and five prestigious or annual lectures, hosted by the same faculty. At the suggestion of one of my interlocutors, I presented part of my master's hospital ethnography at one of the conferences I attended, and presented on aspects of my doctoral research at one of the journal club meetings. To observe the teaching and learning of research I attended sixteen postgraduate research workshops, three undergraduate research lectures, and one undergraduate research presentation day. I completed three massive online courses in clinical research methods and completed a short course on clinical trials at the Wits School of Public Health. Aside from valuable observations I gathered at these events, I also used these occasions to meet potential interviewees.

With regards to longer-term participant-observation of the work of research, I also spent several weeks with a group of Wits registrars compiling their research protocols (proposals) outside of

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[22] In 2016 the racial classification of the Wits student population was 54% black African, 4% coloured, 12% Indian, and 19% white. The remainder of the student body was made up of "other", "unclassified", or "international" (University of the Witwatersrand 2017a).

their clinic hours and worked for twelve months as a research assistant gathering and capturing data for a clinician's research project.

Note regarding HIV research

HIV medicine, a field several of my interlocutors were involved in, is a dominant part of the research landscape in South Africa. Wits along with the University of KwaZulu-Natal (UKZN) and UCT have prominent, comparatively well-funded HIV research institutes, largely independent of the universities and teaching hospitals. They bring a great deal of prestige and publications to universities. I have chosen not to focus explicitly on HIV research institutes because there is already a considerable literature on HIV research in Africa and South Africa. More importantly, a focus on international HIV research would have occluded precisely the individuals whom I wanted to place at the centre of my project, workaday clinicians at academic hospitals who navigate the intersection of institutions and bring to knowledge production their specific clinical insights, building a kind of grass-roots culture of research. Nonetheless, I have in Chapter Three described aspects of HIV research community as a flash point to explain different moments of expansion of research and career opportunities for clinicians.

Where I have drawn on the narratives of interlocutors involved in HIV medicine in research institutes, I focus deliberately on their experiences in the hospital and university setting and less on their dealings with international donors and scientists. I focus on their insights of medical training and the evolution of clinicians' research in South Africa, their continuing postgraduate study at Wits, part-time work at Wits hospitals, or supervision of registrars' research at Wits.

Ethical considerations

I obtained formal ethical clearance for this study from the Wits Human Ethics Research Committee (protocol number H05/09/43), and the necessary permission letters from authorities in the Wits Faculty of Health Sciences and the university registrar for conducting research with staff and students. I have included these approvals in appendices A to D. I used Boxcryptor, a password-protected encryption software, to store my interview recordings, transcriptions, and fieldwork notes.

Doing research across a combination of public and private fieldwork sites complicated my ethical duty to protect my interlocutors. I have anonymised my interlocutors, providing them with pseudonyms. As my interlocutors may be identifiable to one another or the general public by various details of their professional lives, I have where appropriate omitted or generalised some details to avoid such identification. In interview quotes I have used curly brackets ({ }) to indicate where I have changed a specific detail about a hospital name, or medical details that would reveal an interviewee's clinical specialisation and, potentially, identity. (I retain the convention of using square brackets ([ ]) when adding words to a quote to clarify meaning.) I have not formally referenced the scholarly, institutional, and journalistic texts I consulted in framing my interlocutors' narratives, as this would reveal their identities.

When writing about public events, at the university or further afield, I have retained the real names of the public figures I write about. In the age of the internet it would be futile to try to disguise their identities. Also relating to formal ethics, one is allowed to write about public events without the explicit consent of individuals there. I have tried my utmost to be as accurate and fair as possible in my description and analysis of these public figures' public statements and behaviour. There are three instances where I write about an interlocutors' public appearance using his/her real name but refer to them by pseudonym when separately writing about the information they shared with me in an interview. This arrangement may be unconventional but is a compromise that protects my interlocutors, especially those who would otherwise have been reticent of sharing their critical assessments of their institutions or senior staff members employed there.

Ethnographic reflexivity

My institutional position relative to my interlocutors was complicated. I was a university insider but a hospital outsider. With regards to my academic rank and research experience (in my own studies and work experience) I was studying up — although often actually sideways or downwards. With regards to professional and economic status I was almost always studying up. Added to these hierarchies of evidence and method in medical science, my qualitative methodology placed me as compassionate colleague, yet exotic and potentially suspicious outsider. In each ethnographic chapter, where germane, I discuss specific aspects of my methodology and reflect in greater depth on the profound experience I had in conducting fieldwork among professionals and the many conflicting emotions that I came to feel about them, for example, awe, respect, empathy, envy, and scorn. In the interim, the following poster, which I created based on my fieldwork, serves as a humorous precursor to these later, weightier discussions.

Figure 1 (on next page): Poster entitled “Ethnographic surprises and crisis”.
Produced for the “Organisational Ethnographies of Health and Care” stream of the 12th Annual International Ethnography Symposium, in 2017. It is also part of a blog post by the British Journal of Medicine’s Medical Humanities (“Blog — Medical Humanities” n.d.).

Ethnographic surprises and crisis
Studying clinician-researchers in Johannesburg

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1. ENTERING THE FIELD - (ASSUMED) DISCIPLINARY DIVIDE

2. PERFORMING PRAGMATISM, ON OCCASION

3. BUT, EPISTEMOLOGICAL HOSTILITY ISN'T THE ISSUE

4. HAPPY SURPRISE! BEING AN INSIDER IS EASY

5. HAPPY SURPRISE! ETHNOGRAPHIC EXPERTISE IS VALUED

6. RESENTMENT

7. EXISTENTIAL CRISIS AND HEALTHCARE CRISIS

8. EXISTENTIAL CRISIS - ETHNOGRAPHY OR POLITICS?

9. REPRESENTATIONAL CRISIS - ONGOING

- HOW DO I WRITE ABOUT INSTITUTIONS & CRISIS WITHOUT WRITING UNCRITICALLY OR PROBLEMATICALLY ABOUT AFRICA?
- HOW DO I WRITE ABOUT POWERFUL FIGURES IN THE SAME UNIVERSITY AS ME?
- HOW DO I NOT COMMIT KNEEJERK CRITIQUE?

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Overview of chapters

Following this introductory chapter framing my project, Chapter Two provides institutional contextualisation of attempts to build and sustain a so-called culture of research in clinical medicine at Wits. Through descriptions of a research day in the Faculty of Health Sciences I show, first, bureaucrats' invocation of a crisis of research productivity and the prestigious institutional value of this productivity. This includes the social good clinicians bring to research through exclusive professional insights and sets up a hierarchy of value in knowledge production. Second, I highlight doctors' pushback against this university pressure through their public discourse of perceived clinical crisis and the social good of medical practice. This discourse acts as a defence against the demands of a research-intensive university intent on extending the work of doctors to include research. In the third part of the chapter I provide doctors' first-hand accounts of clinical hardships, the details of which are assumed in public debate about clinical work and knowledge production. I also point to some interlocutors' scepticism about the function of the research-intensive university in contemporary South Africa. Overall this chapter starts to unfold the genuine difficulties as well as immense privilege doctors have at the intersection of hospital and university.

In Chapter Three I describe medical experts' conference presentations and performances proselytising for doctors to produce knowledge and expand communities of research. Different from the defensive discourse in the university environment, research is here posited as an ethical and political response to doctors' every day professional challenges in the South African context of a lack of local medical research and scarce hospital resources. Research inspired by these challenges is imagined as the foundation of translatable research to improve local medical practice, as well as leverage for demanding greater medical resources from the state. I describe conferences in the two medical fields of general surgery and HIV medicine to show differences in moments of opportunity and expansion in doctors' research careers. My ethnographic evidence shows striking similarities in the inspirational and aspirational discourse across these fields, and a tendency to celebrate exceptional clinician-researchers rather than confronting systemic institutional problems that hinder research.

Moving from public expressions of clinicians' research, the next two chapters are based on more intimate findings from clinicians' private narratives and my participant-observation of the work and teaching of research. Chapter Four is divided into two corresponding but oppositional parts. In the first part, the chapter charts the work that doctors do to produce research in conditions of material and epistemological constraint. Doctors described their clinical and research work as inherently intertwined, so that their knowledge production was tailored to respond to challenges in local practice and could potentially translate into improvements in practice. Through their explanations of the practical work, clinician-researchers explained knowledge production to be more intellectually challenging than clinical work and cast themselves as an exceptional, hard-working elite, which reproduces to a broader historical trope about the extraordinary doctor-researcher. In the second part of Chapter Four I examine three narratives that subvert the idea of clinical research being difficult and locally valuable, and the clinician-researcher as being exceptional. First, I describe my own participation in hierarchies of labour in clinicians' research, hidden in the trope of clinician-researchers. Second, I draw on the non-clinician interlocutors who are involved in clinical research and have ambivalent perceptions about the epistemological limitations and normative interventionism embedded in clinicians' research. These perceptions begin to undermine the professional authority of doctors in the university space. Third, I describe the cynicism present within the clinical community about the value and authenticity of research in relation to the history of the Wits School of Clinical Medicine and the stripping of its academic expertise over the last two decades. Along with the value placed on metrics of research this has inadvertently created conditions in which doctors' knowledge production can be performative rather than substantive. Overall, this chapter indicates that institutional context, in both hospital and university, provides conditions for assigning value to but also the devaluing of doctors' research.

In Chapter Five I map the attempts to develop a new generation of clinicians to contribute to clinical research and becoming the future, more diverse professoriate filling the gap in research expertise in the university. The chapter focuses on the hotly debated Master of Medicine (MMed) degree and reveals the challenges and privileges of learning research at the interstice between hospital and university. Postgraduate research, like doctors' research generally, is framed in such a way that professional experience is fundamental to developing what are interpreted as good research questions. But this form of obligatory research production, constrained by time and methods, indicates how professional disagreements and conflicts, inequality and institutional exclusion in the hospital system become excluded from research itself. These exclusions are rarely discussed in relation to institutional requirements and support to create a broader more inclusive generation of clinician-researchers.

In conclusion, Chapter Six weaves together themes that emerge through my ethnographic findings to assess how the actual production of research differs from the imaginary of research as a project of progress or transformation on the level of the personal, the professional, and the institutional. I return to the disciplinary context of my work and elaborate on some of the interventions I have made: understanding the relationship between knowledge and practice in biomedicine; exploring post-apartheid institutional life and the usefulness and limits of profession as social category in South Africa; revealing further complexity in the relationship between local (peripheral) and global knowledge production; and the challenge and value of the ethnographer’s work, from the point of view of the observer of medicine, to critique her interlocutors as doers of medicine.

Chapter Two —
Calling research into being and into question: Invocations of institutional and professional crisis

Just as every edition of newspaper must be published with an emphatic headline, so must every period declare itself in crisis. It seems to be a characteristic device of a world competing for public attention to seek it by crying alarm, crisis, and imminent far-reaching change.

— Eliot Freidson, *Doctoring Together: A Study of Professional Social Control*

Further removed from economic calculus than, say, agriculture, livestock, or plant sciences, medicine’s good is hard to contest. Medicine occupies the high ground.

— P. Wenzel Geissler, *Para-States and Medical Science: Making African Global Health*

Prelude: Institutional disjuncture

VISION STATEMENT

The University of the Witwatersrand aspires to be a
leading research-intensive university
firmly embedded in the
top 100 world universities
by 2022.

Figure 2: Wits vision statement, as displayed in the Wits Health Sciences Building.

A framed vision statement hung on an unremarkable beige wall behind an almost always unused seating area on the fourth floor of the brutalist Wits Health Sciences building in Parktown (see Figure 2). Also on the fourth floor was the main street-level entrance to the building, the well-frequented and noisy canteen, the library, the museum, the stationery shop, and stairs leading to passages conveying students and staff to the adjacent Charlotte Maxeke Johannesburg Academic Hospital. It was generally a busy floor. But this framed statement hung on an out-of-the-way wall, along with its partner — a Mission and Purpose Statement, a more long-winded list of explanations of how this vision should be carried out.[23] The only time people might conceivably see these framed statements was if they were returning from some departmental offices along considerably quieter corridors towards the rear of the fourth floor. Yet the statements' placement behind big bulky chairs meant that they were in a position to be overlooked, unnoticed. I wondered if perhaps this had once been a more appropriate space for these elitist

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[23] For the full text of both the Vision Statement and the Purpose and Mission Statement, see Appendix E.

statements, when some Health Sciences Faculty offices had been located on this floor, before moving to greener pastures in the refurbished and swanky Phillip V Tobias Building down the road. Nonetheless the display was strikingly incongruous with the hubbub of university and hospital life not too far away.

In May 2017, a few months after I had completed my fieldwork, a friend in the health sciences told me, with a tone of incredulity and hilarity, that the roof near the main entrance of Charlotte Maxeke Johannesburg Academic Hospital had collapsed. According to news reports a dodgy contractor had been stashing rubble and building materials on the roof, thus overloading the weight it was designed to carry. Some reports captured that provincial authorities had, for years, been warned about lack of maintenance and compromised safety at their state facilities (Huffington Post 2017; Phakgadi 2017). When hearing these stories of roofs collapsing I was dismayed as well as somewhat ashamedly amused. I thought back to those framed, ambitious statements and their institutional disjuncture from but physical closeness to the material collapse. No magic strong enough resided in those framed incantations that could stop the hospital's collapse.

Introduction

This chapter is a description of the landscape that clinicians, including clinician-researchers, work in. I discuss the pervading sense of crisis that colours Wits' push for, and the professional pushback against, a culture of research and its importance at this South African university. I begin to uncover the difficulties of professionals at the interstices of university and hospital, and the seemingly clashing priorities of these two different types of institutions. These clashes result in an expansion of professional roles to include research for doctors in academic hospitals. I describe a world where crisis — in discursive, imagined, and material forms — was present in both institutions. I argue that doctors' proximity to the immediacy of clinical crisis and their regular reference to life-and-death matters are powerful in defending against the university's expectations of these doctors. Also, this proximity to crisis and human suffering makes it easier to see social good involved in clinical practice than the often more intangible social value of a research-intensive university. While later chapters tackle the optimism, imaginary and practice of connecting clinical insights to knowledge making, it is necessary in this chapter to set the institutional scene in which this takes place.

The first two sections of this chapter centre around my ethnographic description of selected events held at the Wits Faculty of Health Sciences' Research Day in 2016. I use this description to explain how research is imagined and constructed in the context of higher education in South Africa, and the continent more broadly, and Wits' fervent and relatively successful mission to be a research-intensive and elite African institution. I then describe a public debate about health sciences research as an exemplar for how research and the clinician-researcher were called into being. In the faculty, knowledge making was cause for both celebration and consternation. This debate also serves as an illustration of the professionally privileged place of clinical medicine and joint appointees (thus employees of the Department of Health appointed to practice at Wits teaching hospitals). This debate begins to foreshadow the effects that gender and race may have on knowledge production.

In the third and final section of the chapter I draw on ethnographic material garnered from private settings such as interviews and casual conversations. This fills in the blanks about the challenges of clinical life that are left unsaid in public discourse in the faculty, such as the debate at the research day. My interlocutors employed their experiences of hospital life as a shared testimony of professional burden and institutional crisis to construct a moral claim to challenge the feasibility of doctors doing research. Among some clinicians, there was also underlying cynicism that the call for a research culture was not related to a university ethic of social responsibility but rather a bureaucratically motivated project of prestige. The public good of this project was to them less obvious than in that of training of doctors, and calls into question the contemporary function of South African universities.

A research-intensive African university

In 2016 the Wits Faculty of Health Sciences held its biennial Research Day on 1 September, during a short academic term break. It was an opportunity for students and staff alike to present work in oral or poster form and put themselves into the running for prizes. It was a chance for the faculty to boast its research and showcase its success with a plenary lecture by a world-famous faculty alumnus. I had spent much of the year looking forward to this day, a grander research event than most of the others I had attended in the faculty. It would allow me to see some interlocutors in action and see the ways research from the School of Clinical Medicine was positioned in the broader faculty and university context.

The opening address of the Research Day was like other addresses by university luminaries I observed at other events. It took a common, recognisable form of institutional discourse that publicly reproduced the guiding statements the university — such as the vision and mission statements framed on the fourth floor. The speech was a public manifestation of bureaucratic ideas about the value of the university in the broader context of higher education and knowledge making in South Africa and further afield.

Along with the rest of the almost-just-in-time crowd, I filed through the doors at the back of the steep, relatively newly-built School of Public Health auditorium. I found a space to sit down in one of the rows of hard wooden seats that, as I knew from many hours of sitting in this venue, may as well have been designed by sadistic puritans. I scrambled to find the complementary Roche-branded note pad in my conference pack and began scrawling down a few notes. Dr Witness Mudzi of the Physiotherapy Department, organiser of the research day, was explaining the programme for the day and made the point that research from the full spectrum of the Health Sciences Faculty was represented in the programme. He called up Professor Zeblon Vilakazi, the Deputy Vice Chancellor (DVC) of Research at Wits to whom the organisers had allocated a full eight minutes in the jam-packed agenda. In the world of health sciences this is a very generous allocation; this is usually the time people receive to explain their life's work. Eight minutes seemed positively luxurious for only a welcome.

I had observed Vilakazi at other such events across the university. I imagined that his work required a great deal of effort and energy and that traipsing across campuses to smile and pat people on the back must become arduous. But if this was the case, Vilakazi certainly did not let it show. He was man of calm demeanour, always dressed tidily in suit and tie, with a head of thick slightly-less-than-tidy hair. He lightened the tone of his speeches with little anecdotes or examples from physics, the discipline in which he was trained. Significantly, on this day, he positioned the basic sciences as insubstantial when addressing the Faculty of Health Sciences.

On this day, Vilakazi opened his address with the statement that research is powerful. Referring to a partial solar eclipse that was due to take place later that day, he mentioned Arthur Addington's scientific expedition to Principe almost a century ago to observe a solar eclipse to understand the behaviour of light in a strong gravitational field. He then introduced Prof. Keith

Klugman, a Wits alumnus who was due to give the Phillip V Tobias Plenary lecture.[24] Klugman was trained in physiology and medicine and had an illustrious career at the Bill and Melinda Gates Foundation, with an honorary professorship at Wits. Vilakazi framed Klugman as someone who had decided to move away from the basic sciences in order to save lives rather than "indulge" himself in "ephemeral things". He decided to work in a research laboratory and play a leading role in producing evidence-based information and inform policy. Vilakazi's point was reflected in the title of Klugman's lecture, "Research to Prevent Pneumonia Deaths in Children", a title unambiguously practical and literally on a matter of life and death. Moving from praising Klugman and the translatability of his research to concrete, vital matters, Vilakazi congratulated everyone in the audience for their work and "amazing feats". He mentioned that the Shanghai ratings had just been released and that Wits was ranked as one of the top 200 universities out of 25000 in the world and ranked first in Africa.[25] His congratulations then turned to thanks, in particular to those researchers who had published in high impact journals such as the *New England Journal of Medicine* and *The Lancet*. Thank you, he stated, presenting himself as "a Wits bureaucrat", for "managing the university under siege".

Vilakazi's address was charming and genteel, personable even. But his sentiments were representative of the university administration and allowed a view into administrative workings of the university. His speech revealed a good deal about how the university (or at least its bureaucratic leadership) unmistakably associates research with value and prestige, how the university sees its function and mission to have been challenged and troubled in the social context of contemporary South Africa, and how it creates the hierarchies of knowledge making predicated on social good and utility.

Vilakazi's reference to prestigious global journals plainly reinforced the university's aspirations, its dreams of being an internationally highly-ranked institution, attaining global

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[24] Phillip Tobias was a prolific Wits scholar working across the disciplines of anatomy, palaeoanthropology, and medicine and had some involvement in anti-apartheid politics at the university. He remained an institutional luminary well into retirement and his name was a university touchstone of prestige with buildings and lectures named after him. Recent critique of palaeoanthropology's complex entanglement in South African race science, and his position within this, has not done nothing to lessen this reputation (Kuljian 2017).

[25] Technically according the Shanghai rankings Wits was 230th worldwide in 2016, therefore ranked in the category of top 200-300 universities (Academic Ranking of World Universities 2018; University of the Witwatersrand 2016), slightly different from the impression that Vilakazi's words gave.

prestige through systems of metrics and fulfilling the ambition of being an African "research-intensive university". This was a term bandied about, tirelessly, by university bureaucrats, and appeared with reliable regularity in the glossy promotional material that the university produced, and of course in official institutional statements and strategy documents. Yet it was also a phrase that seemed to be slippery in meaning, as my observations and interviews suggested. Part of my fieldwork entailed uncovering the significance (or lack thereof) of this institutional imaginary in the daily life of doctor-researchers, as I will discuss later in this chapter and in those that follow. But to contextualise my ethnographic findings, I first offer a brief history of the development of the research-intensive university as a response to a broader milieu of the postcolonial knowledge economy.

"The University of the Witwatersrand aspires to be a leading research-intensive university firmly embedded in the Top 100 world universities by 2022": the words of the framed Vision Statement I came across in the health sciences building were key text taken from the "Wits Vision 2022 Strategic Framework" (Nongxa 2016; University of the Witwatersrand 2010). The university adopted this framework in 2010, although research had already been a priority in the previous guiding strategy "Shaping Future" of 2000. Part of the impetus for adopting this strategy was as means to secure funding. In the early 2000s the university had run on a deficit budget (Nongxa 2016), partly due to a lack of accountable spending but partly also because government was showing no sign of maintaining or increasing its subsidisation of public universities. One manner in which the university hoped to turn around its financial predicament was to secure non-governmental sources of funding, especially through international research partnerships and grants (although some of budget shortfall was passed onto students through tuition fees as explained below). A lot of the strategy discussion of Vision 2022 is modelled on internationally successful universities and, as the Purpose and Mission Statement on the wall of the Health Sciences building indicates, benchmarking elite global universities. One of the lines in the Purpose and Mission Statement is to "pursue intellectual elitism".

While Vilakazi, in his speech at the Health Science Research Day in 2016, did not place much emphasis on the local context of knowledge making, university documents, such as Wits Vision 2022, explain in great detail why the university and the research it produces is of value to and responsive to South African society. Vision 2022, for example, lists some of the university's better-known projects, such as the large Birth to Twenty and Agincourt health demography projects, and entities such as the Perinatal Health Research Unit. The social good of a research-intensive university is better explained in these longer documents than, for example, in the Purpose and Mission Statement.

The university's senate, council, and executives did not chance upon this knowledge making strategy or philosophy. The vision is aligned with the country's science and technology policies. Accompanying South Africa's political change in the 1990s was a shift in political attitudes towards science and medicine. These remained part of the project of building a modern state. But under the democratic state science and biomedicine were intended to become democratised and to serve the population — specifically the least privileged. The 1996 White Paper on Science and Technology stipulated that South Africa should become a knowledge economy, and that scientific activity should be a liberating force and economic strategy for improving the life of the population (Department of Arts, Culture, Science and Technology 1996). This sentiment has been reiterated in subsequent policies or acts relating to improving health research (National Department of Health 2001, 2010; Chapter Nine in Republic of South Africa 2004).

The discourse about making Africans contributors to knowledge making, and even competitors in knowledge production, is linked to a broader concern about the relatively minuscule proportion of research that is produced by Africans, given the size of the continent's population, and the logic that Africa's problems can be solved through science and technology. Crucially it involved the conceptualisation that this form of progress must be directed by locals, Africans, to meet the needs of the continent (Abrahams, Burke, and Mouton 2010; Christoffels 2018; Dubow 2006; Ncayiyana 2002; Nongxa 2016; Robins 2008; Simpson and Gevers 2016).

Wits' emphasis on African research intensity, including clinical knowledge production, is also aligned with funding and incentivising policies of the South African Department of Higher Education. From 2003 the department awarded universities with subsidy for research outputs. Research publication approximately doubled between 2004 and 2012 at historically black universities previously not particularly noted for producing research (Simpson and Gevers 2016). Overall it means the country maintains its position of dominant knowledge producer on the continent. However, this system has been criticised for encouraging quantity and not quality.

The rhetoric and activity centred around African knowledge production, for all its ambition and alleged social good, has come under sustained scrutiny. Scholars have tended to criticise this on two, related accounts. First, the faith in the potential of science to ameliorate Africa’s maladies through science reproduces a universalist enlightenment optimism that elides the profoundly unjust and uneven position Africa and African knowledge has occupied historically (Anderson 2002; Harding 2011). Second, critics assert that chasing after high rankings on prestigious global university lists emphasises that Africa and African knowledge is ordinarily lacking and located at the periphery (Badat 2010). This feeds into a problematic but pervasive association of Africa with the non-modern, with a manqué modernity (as noted, for example, by Comaroff and Comaroff 2012; Ferguson 2006; Mbembe 2001), and possibly also perpetuates the historical “extraversion” of African knowledge production oriented towards to metropole (Hountondji 1990). In the game of prestige, with rankings at stake, the rules are pre-determined by the winners.

The relationship between an aspiring elite institution, colonial histories, and the contemporary social world have not only been noticed by published academics and university administrators. The relationship between Wits’ ambition, its current social context, its legacy of inequality, and perceptions of universities’ social value is complex and has caused tremendous trouble in recent years. Vilakazi slipped a brief mention of this heated contestation into the closing of his address, describing the university as being under siege. Later that same month student protests would erupt at Wits and other university campuses around the country, as they had a year earlier, in September and October 2015 — the siege he presumably referred to.

The student protests, often involving the disruption of learning activities and sometimes the destruction of property and policing by private security and public order police, were largely documented in the media in terms of the Fees-Must-Fall campaign. This moniker for contestations at universities across the country is an oversimplification for the institutional shake-up. The contestation at universities was informed by two interrelated issues: first, sustainable or feasible economic access to higher education, and, second, the exclusionary nature of institutional culture. The Wits Health Sciences campus was not immune from these disruptions. This was despite the fact that historically students and staff at the Health Sciences campus have at times been less embroiled in political protest compared to those at the main campus in Braamfontein, only a few kilometres away, a point often confirmed by my interlocutors.

Post-1994 South Africa saw a massive expansion of access to tertiary education, particularly due to a government-mandated expansion of the intake of undergraduate students and a number of ensuing problems (for example, Bozzoli 2015; Cloete 2016; Makou, Wilkinson, and Bhardwaj 2016; Shay 2017). Academic staff numbers did not grow in proportion to growing numbers of students, and the government decreased its subsidisation of universities. The government currently spends less than 1% on higher education and training, less that many other middle-income countries. Universities, including Wits, have tried to recoup some of these costs by passing higher than inflation increases in tuition fees onto students. The combination of poorer students who are unable to pay fees or debts and the situation that many of them are not considered to be adequately prepared on an academic level, leaving them unable to succeed, has resulted in a high drop-out rate. The tertiary education system has thus expanded but not entirely successfully and inadequately supported by the government. At the time of my fieldwork the financial security of tertiary institutions was not guaranteed or clear, despite government commissions and a plethora of new economic models being circulated in the wake of the student uprisings.[26]

As access to tertiary education has expanded dramatically over the last two decades, students and academics remark that the institutional life of the university has not changed accordingly or adequately. Critics frame universities as fundamentally colonial institutions that are built on Eurocentric forms of knowledge that do not address the experiences of students nor prioritise local forms of knowledge. In this climate transformation has become a tainted word, and fresh demands are that social justice in the university be not just about changing racial demographics of staff and students but a drastic reimagining and reshaping of the institution (for example, Mamdani 2016; Mbembe 2016; Nyamnjoh 2015a, 2015b). The Rhodes-Must-Fall protest at the University in Cape Town in 2015, ostensibly about the removal of a prominent statue of Cecil John Rhodes, an infamous British colonialist, is a watershed moment that alerted broader society to this ferment.

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[26] Since the start of 2018, the government has increased the financial support offered to students. The National Student Financial Aid Scheme (NSFAS) has changed its aid from loans to bursaries. It also widened the eligibility of students for aid by raising the threshold of the maximum combined annual income of their families from R122 000 to R350 000, thereby extending support to the previously “missing middle” (DHET 2017; NSFAS n.d.). For 2017 the government enforced a cap of 8% increase in tuition fees and a no fee increase for university students whose combined family income was less than R50 000 per annum (Mail & Guardian 2017).

In this context, Wits's devotion to excellence, emulating globally renowned universities (even though apparently with the aim of producing locally relevant knowledge) becomes problematic. Its Vision Statement, for example, does not reflect on local relevance and is easily perceived as elitist, exclusionary, even inappropriate given its student body and the social context. Media, student and staff narratives and political commentaries have positioned South African universities, and particularly the previously white universities, as morally compromised institutions, and the social good they purport to produce through excellence and prestigious research is tainted, distant and seen as insufficient for, and even dismissive of, the contemporary social context (for example, Chinguno et al. 2017; Moosa 2016; Naidoo 2016; Ngcaweni 2016).

A number of commentators, including the Wits Vice-Chancellor (principal) Adam Habib (2016a, 2016b), pushed back against these perspectives. Habib argued that research is in fact informed by the democratic project of expanding an inclusive knowledge-economy, and that global excellence in research need not be unAfrican or in opposition to broader political and social projects.[27] Research, therefore, could not be abandoned at Wits and other research-intensive universities — for ideological and financial reasons.[28] From my observations of Habib speaking at university events, there was no mistaking the value this man attributed to knowledge production. Other commentators also suggested that the prolonged protest action by students and staff damaged university research productivity and its prestige and rankings, which in turn affected its ability to attract outside grants and retain a world-class professoriate, ultimately negatively affecting students (for example, Hayden 2016; Wingfield 2016).

But the relationship between ranking and resource, as a manifestation of the neoliberalisation of universities and therefore counter to a decolonial project, has not gone unnoticed. Increased managerialism and corporatisation of universities, globally (Johnson 2006; Strathern 2000a),

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[27] Habib also contested student and staff ideas that emerged during the protests that Wits had made no serious attempt to incorporate black students into institutional culture or foster black academics and suggested that Wits had perhaps been more successful than most local universities at doing so even this was still a work in progress.

[28] There has been some discussion that there should be a differentiation of tertiary education institutions, some focused on intensive research, others on undergraduate teaching, and even others on technical training (making a concerted effort to rid technical education of its inferior status) (see also, for example, Jansen 2016).

has resulted in an “audit culture” (Strathern 2000b) and a “mania for assessment” (Mbembe 2016: 31) as a means of accounting for the work of the university. Published research is a relatively easily measured outcome, by which a university can claim its excellence, productivity and even local relevance. But it can also result in stifling other potential missions of the university. The work of a decolonised university in producing moral citizenship, for example, is not quantifiable and cannot be compared and ranked internationally the way *The Lancet* publications can be stacked up and banked on.

Concerns about decolonisation and accessibility to the institution have by no means been restricted to Wits or to universities in South Africa but have been raised throughout the postcolonial world (Connell et al. 2017; Mamdani 2016). Universities are large organisations that are extremely complex in terms of their practical functioning as well in terms of their mission and value in a particular moment and place (Archer 2017; Waghid 2017). Although universities by their nature are complex and contested spaces, it is perhaps not hyperbolic to describe the state of South African higher education, during the time of my fieldwork, as being in crisis.

Nonetheless, the interrelated contestations I have described above highlight the distance between the glossy world of university strategies and the everyday realities faced by many students and the daily life of institutions. This overtly and continually contested terrain is the one in which the clinician-researchers and the fantasy of their knowledge-making abilities reside. And, as I demonstrate below, doctors challenge the mission of the university with their own discourse of the public good.

The round-table and crisis in the faculty

Vilakazi’s Research Day opening address was a manifestation of Wits’ overall objective of being a research-intensive university. It pointed to perceived hierarchies of research within the university, founded on assumptions about the social good and translatability of research. Of course his comments comparing life-saving knowledge with knowledge of ephemeral phenomena, such as the “bending of light”, added some humour to his speech and maybe ingratiated him to his audience. But it also said a great deal about that fact that research with a clear purpose and instrumentality is simple to understand and easy to value. Biomedicine occupies a moral high ground, and not only in the South African or African contexts with their associated perceptions of health crises. For example, Geissler (2015b: 2) describes medicine as having a "moral valence", Redfield (2013: 32) argues that medicine is perceived as "noble response" to crisis, and Wendland (2010: 15) suggests that clinical work has "moral order". Biomedical knowledge production, like that of the clinician-researchers I studied, is built firmly on this moral high ground.

Further manifestations of this hierarchy as well as professional privilege, as relating to forms of social good, where evident at a public debate later in the programme at the 2016 Faculty Research Day. After Klugman's dry but factually impressive plenary lecture, I endured the agony of some even drier PowerPoint presentations and I chatted with some interlocutors at the frantic and loud poster presentation session. But what I had really looked forward was the "Round-table Discussions" scheduled from 2:30 to 3:30 pm on the day of the Health Sciences Faculty Research Day. Later in the day, three concurrent round-table discussions were to take place, one concerning lifestyle diseases and another on mental health. I was eagerly anticipating the third, entitled "Conflict between Research and Health Sciences Education in 2016". The programme instructed me that this event would take place in "Lecture Theatre 3, 5th floor, Medical School" (not Health Sciences building mind you, which is its official name). This lecture theatre, and the almost identical adjoining theatres where the other discussions were taking place, were large windowless venues with beige-painted walls. These were where, during term-time, many of the undergraduate health sciences lectures took place.

There were, of course, no knights and no Round Table. But there were four prominent men from the faculty sitting unceremoniously in a row on nondescript chairs at the front of the bleak auditorium. The men of the round-table were from the audience's left to right: Prof. Mohammed Tikly, head of rheumatology at Wits; Prof. Martin Veller, dean of the Health Sciences Faculty and vascular surgeon; Prof. Viness Pillay, professor of pharmaceutics and head of the Wits Advanced Drug Delivery Platform; and Prof. Frans "Scarpa" Schoeman, medical educationalist and head of the Unit for Undergraduate Medical Education. Prof. Laetitia Rispel, head of the School of Public Health, was the chairperson of the session. She introduced the speakers and the format of the discussion with characteristic poise and a touch of light heartedness. The printed programme also gave short biographies of these men – alongside their photographs, which were slightly distorted and pixelated. In her introductory remarks, Rispel explained that the forum would allow each speaker to make a brief statement to be followed by rounds of questions from the audience and responses from the panel. The speakers would not make any formal speeches but present a few poignant points they felt important and worth some discussion. I assumed that the designation of this discussion as a round-table suggested something slightly egalitarian. Certainly in her introduction of the speakers, Rispel joked that Dean Veller was not speaking in his capacity as a dean and did not "need to be a dean here", suggesting he could say what he liked. And yet she asked Veller to share his thoughts first, even though he was not seated as either end of the row of speakers. (To me it seemed that if all these men were meant to equal at this unstructured discussion then it would be common-sensical for the chair to select a speaker at one end of the panel to begin and then move along the row of speakers).

Veller had graduated from Wits, trained at Wits academic hospitals as a specialist vascular surgeon, and had completed a fellowship in England. I had already heard a gamut of stories and opinions about him over the course of my fieldwork, opinions he seemed to attract by occupying a prominent position in the faculty. He was a tall, deep-voiced, bespectacled man, and I cannot recall ever seeing him not in a full suit and tie. Holding a small lapel microphone in his hand, and looking down as little piece of paper, he quoted figures on the publication output per faculty member in the Faculty of Health Sciences: the faculty had a publication rate of 0.9 per faculty member in comparison to the national average of 1.4, and this in a situation where the faculty's student to staff ratio fell fully within the national norm. He said sternly that looking at these figures he could tell that people were not "producing". (What remained unclear to me, and presumably to other members of the audience, was which norm or average he was referring to: that of other health sciences faculties, other academic departments in general, or the rate for joint appointees at other universities. As I listened to him, I wondered whether he had gotten this information from Vilakazi that morning: I had seen the two of them talking together after the plenary lecture. When together these sorts of men always looked like covert agents or politicians — moving hurriedly, chins down, speaking in hushed tones. While feeling amused at this vaguely conspiratorial behaviour, I also felt some sympathy for such figures, whom a lot of the time looked lonely and harangued.

Each speaker at the round-table had a different style of approaching their comments. Veller was the only speaker who did not draw on his personal experience of research, playing the role of university official. Many of his detractors — and there were many — might have suggested that this was because he had, at least compared to the other men on the panel, relatively little experience of conducting research himself. During Veller's speech I had almost expected someone in the audience to shout “bureaucrat!”. But this was not the sort of faculty or forum where the audience heckled.

Veller passed the lapel microphone over to Tikly, who was sitting to his left. Tikly was a more mild-mannered man, with glasses and a white, fluffy-looking beard. He had done his undergraduate training, MMed and PhD at Wits, and had been a research fellow in England. Upfront Tikly said that, with due respect to the Dean he didn’t play a numbers game. If Veller was performing the role of the bureaucrat, Tikly countered this by playing the role of virtuous clinician. Tikly said that he would not contribute abstract statistics but share what he called “three little stories”. He relied on three historical anecdotes, followed by his personal experience, to make the argument that clinicians are imperative to health sciences research. These examples were: doctors’ observations of patient’s remission from rheumatoid arthritis during jaundice or pregnancy and, following this, the development of steroid treatment; the discovery of Still’s disease by doctors’ observations of protein levels in urine; and doctors connecting mercury poisoning to skin lighteners. Tikly highlighted that it required an astute clinician to make these observations but also depended on other basic sciences. He said that Wits was great because of its clinicians, that they make great observations. He argued that – the question for “us” as clinicians was how to divide time between service — which was increasing — and teaching and research.

The lapel microphone was then passed on to Prof. Pillay, seated to the right of Prof. Veller. Pillay was the only one of the speakers who was not a medical doctor. A sense of crisis least pervaded his opening comments and the answers he offered later on, which he conveyed with a sense of calm enthusiasm and dynamism. He holds a MSc from the University of KwaZulu Natal and a PhD from Temple University in the USA. He drew on his experience as the leader of the prestigious Wits Advanced Drug Delivery Platform and emphasised the importance of collaboration across clinical and basic sciences. He proposed that, ideally, the Wits administration should allocate multiple posts for the teaching of one course, so that one individual was not always responsible for any one academic course and for the students taking it; the dilemma was, however, in finding the funding for this. More posts meant that more money was required. But such an arrangement would decrease teaching load, which he mentioned was sometimes as high as three quarters of a person’s work load, and would allow for an increase in focused time for research. He referred to two prestigious international universities that were putting systems in place to create posts that focused more on teaching or on research.

Seated to the right of Pillay was Prof Schoeman, the youngest man on the panel and the last to give his address. He had done his undergraduate training at the University of Stellenbosch, a Master's in Medical Education from Dundee University and held a PhD in medical education from the University of the Free State. In early 2016 he was appointed as the director of the Unit for Undergraduate Medical Education. Schoeman opened is address with a quote from Nelson Mandela, "the father of the nation" as Schoeman called him, that education was a tool. Schoeman's position on the importance of medical education to the improvement of health in the country was unmistakable through his concerned and sobering comments and tone. He said that the conflict between education and research was misguided because both of these should be concerned with improving health outcomes. But he was not convinced that all research had that impact on these outcomes. Yet good teaching did. He related his own experiences of being inspired by great teachers, saying that a great researcher can stand in front of you, but a great teacher can inspire. Unlike many other medical colleagues, he was fortunate in that his work as an educationalist was also his field of research and that there was an easier confluence between these two activities.

After the four men had stated their cases, Rispel opened the discussion up to the floor, or rather more accurately the audience dispersed across the steeped rows of seating. A range of people asked questions — they were largely prominent people in the faculty such as heads of departments, heads of research units, and members of the deanery (as the faculty administration is frequently referred to). Despite the challenging professional experiences the audience members had and the serious impact that matters of research had on joint appointee staff and on faculty-appointed staff – in the manner that people put across their questions they performed a surprising amount restraint and deference for the panel members. There was no spilling out of perturbance or anger at the events I attended, even though at I had a few times overheard doctors saying something along the lines of "I am going to give the deanery a piece of my mind; they have no idea what I had to deal with this week".

The first question from the floor was posed by Dr Robin Drennan who holds a PhD in chemistry from Rhodes University and at the time occupied a prominent bureaucratic position in the university as research director of the Wits Research Office. In my previous interactions with him at a number of postgraduate workshops he came across as a kindly man with a vast technical knowledge about research bodies and bureaucracies. He often drew on knowledge gained from his interactions with people across the disciplines. At public events, I had seen him ask, in a very light-hearted way, challenging theoretical questions. At this round-table he said that he would like to play devil's advocate and pose the question – "can we only do one thing well at a time?". When it was Veller's turn to respond to the first round of questions from the floor, he bluntly cut down Drennan's question with more passion that I had seen him characteristically display by saying the following: "To get to your point about doing one thing at a time, we are not scientists. We are health scientists. We can do more one thing at a time".

I wondered what a health scientist was. It was not a term I could recall hearing before. But I read this comment, with many other events and speeches in mind, to be specifically about medical doctors. It seemed to link up with the constant plaintiff about doctors having to manage the unmanageable, particularly an overwhelming burden of service.

I was not sure if the term of health scientist would include, nurses, biokineticists, or occupational therapists, technically other kinds of clinicians, who also worked in public institutions. These other health professionals were almost never mentioned at public events in this faculty. The fact that the Health Sciences Faculty also included non-clinical disciplines, such as anatomy and physiology, was often overlooked. This round-table was an exception, in that some people, in passing, acknowledged the importance of the basic sciences, although no one did much to expand on the idea. The fact that only one member of the round-table panel was a not a doctor and that there were no representatives of other clinical disciplines could be read to mean that the debate was imagined as being putatively about medical doctors. During the question and answer session no one in the audience refuted this, even though I recognised basic scientists and public health experts in the audience.

Veller's comments seemed to speak even more strongly to hierarchies and values beyond the health sciences, in the university at large. The term "health scientists" was used in this context to trump other faculties and other kinds of scholarship. In this manner, the particularity of the health sciences was made explicit for a second time on this day. The first had been Vilakazi's reverence for health research dealing with saving lives and not investigating ephemeral issues. The alleged superiority of the healthcare professions was manifest. It reminded me of one my professors who, discussing the university and university criteria for admission and assessment, had joked that one had to be a familiar of Jesus Christ to be accepted for a medical degree. That was certainly the predominant attitude that pervaded the field during my own research. When looking at the notes I had typed up about this event I saw that I had written a sentence beginning with “Ethics of making god doctors”. Of course I had meant to write “good doctors”. But perhaps considering the hierarchy of professions or academia this Freudian slip converting good doctors to gods was not surprising.

In a later round of questions, the dapper, Wits-trained haematologist and head of the National Health Laboratory Service, Prof. Johnny Mahlangu, shifted the discussion to doctors’ intimate experience of resource constraints. He stated that he could not see the conflict per se, between teaching and research. But, he asked, “in a resource-constrained setting where should we be putting resources, if we are said to be a research-intensive?”. In an ideal institution limitless resources would, he argued, allow a person to choose one interest, or career “track”, over the others, thus choosing to invest time in teaching, research or healthcare provision. But this was not the case at Wits. Resource constraint was an issue pervasive throughout my fieldwork, though it was rarely explained, its meaning remaining tacit in public discussion such as this one. Whether Mahlangu was speaking about resource constraint in the university, in state hospitals, or in South Africa generally was not clear. The nature of this constraint was not always clear to me as outsider.

There is clearly a material reality to the frustrations people feel about not having adequate resources to do their work. Yet, in these kinds of contexts, the idea of crisis and constraint had become a trope, deliberately employed to create a self, a position, or an exclusive subjectivity in relation to the university as institution. In this way, it acted as defence against expanding institutional expectations of doctors (that aimed to add research to their responsibilities) and to limit the university’s power in defining what their work should be. It was also used to set up an us-vs-them professional position — propping up hierarchies within health sciences and within the university.

In addition to the unambiguously predominant differentiation between medical doctors and the rest of the faculty and the university, other differentiations between researchers also featured. During the rounds of questions, the head of one of the clinical departments at Chris Hani Baragwanath Academic Hospital put it to the men of the round-table that while he could choose to work overtime to do research, he could not expect his staff to do the same. Tikli reiterated this point, explaining that joint appointees (such as he was one) were employed to do service and administration in the hospitals, which was different from people who were employed full-time at the university. Then, adding a disclaimer that he did not want to sound sexist, Tikli also raised the sensitive matter of the rising proportion of female staff members who often had family responsibilities outside of their jobs. He argued that the faculty had to realise that employees had a life and responsibilities outside of the hospital and the university — thus implying that they could not be expected to put in free overtime to fulfil the university's aim for research. Tikly's candid explanation was not an unfamiliar story: in faculty discussions it was always assumed that women bore the brunt of domestic responsibility. And, this story was presented often in quite unsophisticated and possibly even sexist ways, a fact underlined in Veller's closing remarks that seemed well-intentioned if a bit ham-fisted. He stated: "I am glad I am not you because I don't know how you do what you do", from the context I understand "you" to mean women with children.[29] Although the issue of different gendered experience of life and professional and private work was thus highlighted at this round-table discussion, as it was at some other public events, it was not discussed with any great depth, nuance, or complexity. I was left wondering if this would have been different if the panellists were not all men.

Another potentially problematic aspect of doctors' working lives beyond their shared experiences of resource constraint was raised towards the end of the discussion, albeit unsuccessfully. In her role as chairperson, Rispel posed a question to the audience and asked whether doctors, and in particular young doctors, felt that their racial identity impacted their working lives as it related to doing research. Yet her question went completely unnoticed. No one took the bait, despite the fact that the audience included many younger black health professionals and faculty employees. This was very surprising, considering the manner in which identity politics, in particular tough and even antagonistic discussions about race, were playing out on campuses across the country in the wake of the Fees-Must-Fall movement. It is possible that this aspect of professional experience was not as much of a priority in this context

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[29] At the Academy of Sciences of South Africa (ASSAf) Young Scientists annual conference in 2016 in Johannesburg, with the theme "Inspiring Change Post-2015: The Role of Science, Technology and Innovation in Empowering Women in Africa", the convenors and presenters were more earnest in their attempts of understanding differing gendered experiences in the sciences. However, likewise, there was a remarkable naiveté in the comments that were made, with superficial anecdotes given from everyday life and little to no reference given to long-established gender scholarship.

as doctors' shared working conditions; that it was not an issue that audience members felt significantly affected them; or perhaps that people did not feel this rather restrained and formal professional discussion was not the appropriate or safe space to discuss this issue. Whatever the combination of factors, the relationship between race in institutional life and knowledge making did not see the light of day in this forum.

Later in the year I discussed the debate with an interlocutor, telling him that I was surprised that a range of issues were not really fleshed out in the debate, some issues that were raised were almost dead in the water. He indicated that the purpose of the round-table discussion had not been to provide answers but to act as a space to raise grievances and ideas. Nonetheless, it was indeed telling that the aspects of doctors' lives that were allowed to inform the public debate were limited. Aspects that extended beyond this — such as gender or race issues — were allowed to peek out but were not allowed to have any impact; only the experience that was considered shared by all doctors was recognised as definitive. This was common in my observations of the field. I examine the relationship between the more thorny aspects of professionals' clinical lives and research production over the course of the following chapters, especially in my discussion of the more intimate disclosures made in interviews.

A second concern that made a brief appearance, but with the dominate theme of discussion being doctors' working lives, was not taken up in any sustained manner was the question about the purpose of the university and value of research itself. Schoeman gave a reasoned introduction into this complex issue with a number of thoughtful and critical comments in his opening address. Schoeman presented a much more explicit argument for the value of research than any of the other panellists who, aside from Tikly's comments about the value of research based on clinical insight, tended to focus solely on the practicalities and feasibilities of the research product. Schoeman posited that a lot of research was not in fact translational, as usually claimed in faculty discussions. It had no impact on the practice of medicine or on medical training but seemed to be done solely for reasons such as furthering a person's career within the university or for the glory of academic titles like professor. In his closing remarks Schoeman cut to the chase about the purpose of the university arguing that the aim of achieving a high ranking in terms of research was a university goal that made no difference to the man in the street. A focus on teaching has a direct outcome for the healthcare of the man in the street; research, in contrast, had an outcome only at an international level of high university politics. Schoeman's comments were a response to the implicit content of Veller's opening comments, for example, that publications and metrics to rate productivity in research was important to the university. Tacit in Veller's rather bureaucratic approach to the discussion was that the number of publications staff produced was of value to the university. Vilakazi had been far more explicit in his welcome address about the link between highly rated publications and the university's prestige. Either way, Veller and Vilakazi truncated the discussion about the value of research and the value of a research-intensive university in South Africa. Schoeman's comments, and more widely the private comments of some of my interlocutors (see Chapter Four), were in some ways more closely aligned with the recent student protests. They interrogated the function of the university and trumped the idea that research was a social good in and of itself. Like professional experiences, for example of race, and its connection to research, this explicit questioning of the imagined chain of research production and value was not commonly displayed in public.

Shelving these issues for the meanwhile, I return to the mainstay of clinicians' public and private discussions, the challenges of clinical work.

Filling in the blanks about professional crisis

The position that Tikly took at the round-table discussion at the 2016 Research Day — that the astute observations of clinicians are indispensable to the production of knowledge and the changing of practice — was not questioned at any of the public discussions I witnessed during my research. What was rather being questioned was the plausibility of making real the university's fantasy of all joint appointees as prolific knowledge makers. Specifically at events organised by the Faculty of Health Sciences, the feasibility of extending the professional role of doctors within the current institutional arrangements to include research was interrogated. As Mahlangu's comments began to sketch out at the 2016 Research Day, the predicament joint appointees faced making knowledge was the conditions in which they worked in public hospitals.

As is evident from the description of the 2016 round-table event, and was typical also of other events I attended, very minimal substantiating evidence was given for claims made in the discussion of clinical medicine. The discourse about the burden of service assumed that the colleagues attending these events were clinical professionals, and not just university academics, and that they had first-hand experience of the challenges faced at the Wits teachings hospitals.

Or, that any non-doctor colleagues in the room were familiar enough with the discursive power of clinical professional problems so as not to challenge, question, or scoff at these in public. There was certainly no eye-rolling evident among the non-doctor audience members at the round-table discussion.

Despite a great and pervasive celebration of and reverence for quantitative evidence in the field of clinical medicine, I did not hear anything remotely resembling quantitative evidence to justify the position that clinical workloads have increased, for example. (Although, as I explain in Chapter Four, there is not sufficient infrastructure to easily obtain this kind of data.) Therefore, the claim that service represents an exceptional burden, without abstract evidence or fact, takes on the form of a moral claim for, and a form of testimony of, professional suffering in this context. In public discourse it becomes ossified as an indisputable position from which to defend against requirements of the research-intensive university.

For the purposes of this chapter and explaining the broader context of doctors doing research, it is important to step away from the public discussion with its apparent lack of evidence to delve into the background experiences that allow doctors to make this moral claim. I do so by presenting compelling first-hand narratives of this burden of service and of working within crisis and constraint, as well as on the perceptions that doctors hold on the imposition by “the university” on joint appointees associated with Wits. I draw these descriptions from interviews and more casual interactions with clinician-researchers. In more private settings people were more open to refer to constraints under which they worked, the hardship of clinical work in public hospitals, and the sense of crisis in healthcare.[30] However, as in public forums, people rarely qualified these claims. When I probed interviewees further, they would give first-hand and often gory and distressing details of their everyday experiences. For the most part, they shared these details with more animation and emotion than when they explained the importance of doctors doing research, for example. This explanation of the trials of training and practicing

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[30] Some interviewees also spoke about challenges of private medical practice. Given that my study focuses largely on people in public practice, specifically on the experience of training and practicing in public healthcare which is formative of a professional identity regardless of whether people work in private practice later on, I do not mention these problems in the following discussion. Nonetheless, here a brief list of complaints about private practice were: demanding patients; patients with petty complaints; the difficulties of running a practice (long working hours, the difficulty in taking leave); the necessity of having to establish a network with colleagues for referrals; logistical and administrative difficulties; and the costs of running a private practice and working with medical aid providers.

medicine in public hospitals is not intended to be a lament of the working and training conditions that doctors face at Wits — and around the country and across many parts of the world. It is about getting to demonstrate how pervasive personal experiences and material challenges congeal to create shared moral and professional insights and privilege.

To ground this discussion, I draw on an interview with Prof. Jeanne Crowley, head of a clinical department at one of the Wits University teaching hospitals. Her response regarding the university imposition on joint appointees and the moral claims about the good work of doctors in public hospitals demonstrates a common narrative. My interaction with her revealed how the work of public good, along with the expansive roles joint appointees have, was a position from which to defend against Wits bureaucrats. I interviewed Crowley in her hospital office. Finding her office was yet another encounter with labyrinthine design of large hospitals. So prominent and inescapable is this design that it left me, a relative neophyte in navigating this terrain, to assume that a maze of corridors, staircases, and mezzanines was somehow vital to the functioning of medical work.

Crowley's office was a testament to her role and responsibilities as head of a large clinical department. On the tables and shelves were large piles of labelled files showing evidence of her involvement in the practicalities of running a department, dealing with medico-legal issues, doing journal editorial work, and working as a postgraduate research supervisor. Like her colleagues she supervised clinical learning and evaluated undergraduate students, interns, and registrars in her clinical department; she tutored registrars for their exams and supervised their clinical research; over and above that she was involved in setting national registrar examinations in her clinical discipline; and she coordinated the teaching and evaluation of undergraduate and postgraduate studies in her discipline at Wits.

Crowley was critical of the way the university had imposed expectations of research productivity onto joint appointees, particularly senior consultants in her department. Her comments revealed common concerns amongst my interlocutors about why and how the university demanded research from them and how the practical and moral dimensions of clinical work could be a defence against university bureaucracy.

As at the round-table, at no point did Crowley criticise the idea that doctors should be familiar with knowledge production or produce knowledge themselves; her criticism was rather with the plausibility of doing this. Although she gave a complex explanation of the value of research within her clinical discipline and explained why the university was driven to be research intensive, she described this as a perfunctory drive to prestige. She said that this was because the university wanted to be an elite institution and rise up in university ratings, especially compared to UCT, South Africa's oldest university. Along with Wits, UCT also has a history of being an elite, white, English, historically liberal university and both have consistently been the top two African universities in the rankings. Patently the university leadership's discourse, as represented by figures such as Vilakazi and Veller, was not unnoticed by joint appointees.

Doctors' perception of the university's drive for research intensity was influenced by the manner in which they experienced the university making demands of research on staff — both those employed full-time at the Wits School of Clinical Medicine but, more specifically, the joint appointee staff at the university hospitals. Generally, interlocutors gave very vague or inconsistent explanations of the actual mechanisms that the Faculty of Health Sciences used to impose its demands for research. This was even the case with those employed full-time as undergraduate lecturers in the faculty. One faculty-employed doctor even described her department's attitude to research as a "nice-to-have", either for one's CV or the department's publication statistics. This gave the sense that research was not intelligibly integrated into a department's functions. But other interlocutors described more malevolent threats in their departments. The presence of levels of pressure or encouragement seemed to depend on the head of the clinical department and seemed inconsistent across clinical disciplines and hospitals. Interlocutors, never specifying a particular representative of the faculty or broader university administration, would say that "the university" or "the faculty" would plot with heads of department. They would send emails or drop in on departmental meetings or seminars to call for an improvement of the output of publications in that department in order to ambitiously, if rather ambiguously, increase the so-called academic standing of the department. There were vague threats that if people did not publish, they would not be promoted within the faculty or that the faculty would collude with the Department of Health to institute some punitive measures for consultants working in academic hospitals who did not conduct research. As did many others, Crowley perceived these threats to be rather toothless attempts at manipulation, given that joint appointees were not employed by the university but by the Department of Health. In general, the research-intensive university thus took on the form of a bogeyman, frightening but otherwise rather insubstantial.[31] And yet, this bogeyman alienated these doctors.

Like speakers at the round-table discussion, at no point did Crowley criticise the idea that doctors should be familiar with knowledge production or produce knowledge themselves; what she refuted was the inflexibility of the expectation that *all* staff members should do so. She explained that in her experience some of these roles were not for everybody. Therefore if one person was good at administration, he or she should be able take on more of this role, for example, and free up time for a colleague to pursue research. But the university did not want to seem to allow flexibility for people to take on roles according to abilities and interests:

> The university is trying to wave a big stick, our consultants don't like the university waving a big stick because they say, "What does the university do for me?", when they do a lot of teaching, training, exams, etc. So they haven't enjoyed the recent discussions and big stick attitude … You don't manage people in their forties and fifties who are staying on and doing a good job in the public sector, teaching, doing what is expected of them, that is not how you tell them they must publish … I don't think the university understands the joint staff and I think my consultants' reaction was, "We're joint staff and you don't understand us! We are not the department of anatomy or the department of physiology, etc. We actually look after sick patients under difficult circumstances".

Her words describing people "staying on" were similar to a myriad of well-used phrases I heard in the field about people holding the hospitals together or running the hospitals. Joint appointees used a discourse that positioned themselves as individuals responsible for the functioning of huge and complex dysfunctional institutions, rather than as actors, albeit powerful ones, within them.

My interlocutors described the dysfunctional state of infrastructure, supplies, and human resources and this dysfunction informed their assertion that they were keeping things together. Clinicians of varying levels of professional experience described wide-ranging problems at a variety of public healthcare facilities, including Wits teaching hospitals — often considered better managed and better-equipped than district hospitals, for example. To give a relatively

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[31] This situation contrasts strongly with my observations in the Humanities Faculty at Wits where academic staff were generally well aware of the minimum yearly research publication and research requirements necessary for academic promotion.

short but fairly representative list of examples, interviewees reported the following: difficulties getting nurses to put up drips for patients; having no emergency blood supplies for complicated births; blood products administered to the incorrect patients; operating theatres unable to function because of a lack of sterile linen, blunt surgical instruments, and dirty theatre equipment; surgeons operating by cell phone light while electricity supply is interrupted; using paediatric equipment for procedures on adults; emergency trolleys in casualty and theatre not having the required equipment; lack of beds available in the intensive care units; the futility of resuscitating patients who would die subsequently because of a lack of critical care equipment and nursing expertise; frequently hostile relationships between nurses and doctors, and between healthcare professionals and hospital management.

Dr Aisha Jabaar was a Wits registrar, a qualified doctor training in Wits' academic hospitals to become a specialist. She spoke frequently about her exasperations of working in a system with which she had a love-hate relationship:

> We have such a healthcare system that is basically falling to pieces and you are trying to keep it together … You will be regularly frustrated by a lack of equipment or a lack of medication or delays or no lights, no water. And then at the end of the day you still have to get done. So whether you started at ten because there was no electricity and finished at seven, no one really cares … I don't think it is the actual practice … that most people are frustrated with; it is the environment that you have to work in.

Numerous other interlocutors revealed that they found their work "a grind" because getting the simplest of tasks done was challenging and sometimes futile. In some instances, interlocutors revealed their anxiety and even panic about having to make do with incorrect or insufficient resources that could literally threaten life and limb of patients. Younger doctors and registrars in particular indicated a profound concern and even anger about the lack of accountability for professional mistakes made in this working environment. During interviews some doctors, often rather tentatively, brought up occasions when they worked in circumstances that they found untenable and approached their seniors or professional bodies such as the Health Professions Council of South Africa (HPCSA) regarding these. These interviewees explained that anything approaching criticism, the reporting of unacceptable or dangerous work place practices, and suggestions for alternative ways of functioning were not well received. Doctors felt that their complaints became grounds for punitive treatment from seniors and in some cases felt compelled to leave their hospital posts.

Younger doctors especially, with their training not that far behind them, spoke about the fact that nothing could prepare you for the transition to clinical work and responsibility. Some admitted that if they had known what it would be like they would probably never have studied medicine in the first place. I was struck by the way people spoke to me about their personal experiences of professional challenges. Once I scraped the surface of their talk about crisis and they were reminded I didn't have the same first-hand experiences, their narrative had the quality of giving testimony.

When describing medical training some interlocutors mentioned nightmarish experiences of the long shifts and massive workload and inappropriate levels of responsibility. This was particularly the case with young doctors doing their community service in rural facilities. For example, Dr Elizabeth Gale, a Wits registrar, explained that for her first three months of community service at a rural hospital she was the only doctor. Dr Helga Wagner, now working full time at Wits clinical research unit, told me about her community service where she was responsible for the care of 80 ward patients. This was at height of HIV crisis when anti-retroviral treatment (ART) was not available in public facilities and she described these 80 in-patients as being "very, very, very sick". Dr Ingrid Marx, who went on to train as sub-specialist physician at Wits, shared harrowing details about her community service post at a peri-urban secondary-level hospital:

> So, all the stuff we learnt, we learnt [by] ourselves, but we never had mentors. It would just be like, "Oh shit, do you know how to do a Caesar?" or "Won't you just come and show me?" There was a surgical book on like being a bush doctor or something … We would take the book to theatre and the one person would dope [anaesthetise], the other person would cut [do surgery] and the other person would read, like, "Okay, you need to look for this".
>
> It sounds like so gung-ho but what you are tossing up is, there is a senior doctor who is not coming to help you and someone who is going to die if you do nothing. So if you do something and kill them, or nothing and they die — that's the kind of choice you are making in your head. So we would do stuff like that and we did everything, we did paeds [paediatrics], we did adults, we did gynae [gynaecology], we did Caesars [caesarean sections], we did laparotomies, lymph nodes.

Aspects of Marx's professional narrative might even seem like an embellished anecdote or a scene from a film. But her experiences were not uncommon. Marx also shared openly about her time as a registrar training on the "Wits circuit" — its teaching hospitals. She explained that she felt she worked slower than some of her colleagues. She felt obliged to take detailed patient histories and examine her patients thoroughly, as she was anxious she would overlook something important. In this manner she was only able to manage 35 patients per day. But sometimes, especially at the mammoth Bara hospital, she had to get through larger numbers of patients, for example a clinic of 60 out-patients in a day. It is worth bearing in mind that the patients Marx was caring for would not just have had the sniffles, they were severely ill – seeing her in her role as sub-specialist in a tertiary hospital.

In addition to talking about the amounts of patients she had to care for, Marx described the long shifts that she worked as a registrar. During her rotation at Helen Joseph Hospital, she was always either on pre-call, on-call, or post-call and covered weekends as well.[32] She described this time in the following way:

> You were completely, excuse my French, but were completely fucked by the time your Helen Joseph rotation was finished.

The long hours and burden of responsibility junior doctors and registrars face, many would argue, is exacerbated by the Remunerated Work Outside of Public Service (RWOPS) arrangement between the Department of Health and academic hospitals. Technically this concession was intended to permit consultants (specialists) to operate their own private practices after working hours (Bateman 2012c; Kwinda 2016). However, this is reportedly heavily abused by some doctors, leaving the remaining staff overworked (Bateman 2012c, 2013b, 2013c, 2013d, 2013e; Benatar 2014; Caldwell et al. 2013; Kwinda 2016; Taylor and Kahn 2014). (This of course may have a knock-on effect with the regards to research that I discuss in Chapter Four.)

Among the doctors I was acquainted with only four verbalised a slightly different narrative and challenged the idea that doctors in public healthcare had an extraordinary workload or that responsibilities had increased with time. One registrar posited that hospitals bred a “culture of complaining” and that doctors were often oblivious that other professionals also worked long

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[32] Pre-call means the day-time hours before going on duty for a night shift (having worked the day shift the previous day); being on call means being available for consultations at during a night shift or over weekends, for registrars that usually means remaining in the hospital overnight (rather than consultants who, unless there is a dire situation, give phone consultations while on-call); and post-call means the hours after being on on-call , resting before the next shift starts and being available for any follow-up queries.

hours and had serious responsibilities. Two retired doctor-researchers fobbed off the idea that younger doctors had it tougher, with longer shifts and more patients, than previous generations. In their day their working hours had not been monitored and no one had had fanciful ideas about having time to themselves, especially as an intern or a junior doctor. However, even these dissenting voices did not challenge the idea that work in hospitals was difficult and that many state facilities were in disarray. The most scathing of these two retirees, Prof. Aida O'Grady, said with characteristic candour that:

> Clinical work is challenging, the X-ray machines don't work, there aren't enough theatres. God help you if you haven't got medical aid [medical insurance] in South Africa, that's all I can say!

Contributing to an experience of ill-functioning facilities and burden of clinical responsibilities was the exposure of medical professionals to trauma cases caused by severe traffic accidents and physical violence. Of course, medical doctors and nurses around the world are exposed to the consequences of human physical violence in society, yet the rate of trauma cases in South Africa is significantly higher than in other parts of the world. It is also a relatively under-addressed component of South Africa's quadruple disease burden[33] (Matzopoulos and et al. 2015; Norman et al. 2007). There are inadequate human resources to cope with this, meaning that a huge clinical burden is placed on trauma units (Hardcastle et al. 2016).

Dr Keenan February described training in casualty as a "war zone":

> If people knew what medicine was like in South Africa we would be filming cowboy documentaries in, like, Baragwanath or whatever! There is some rugged stuff happening.

Not only does medical work entail exposure to brutal aspects of South African society, but doctors — particularly those who worked in emergency medicine or trauma surgery for prolonged periods — spoke of themselves as having been brutalised by this exposure. Dr Sheera Govender, a Wits registrar, hinted at the personal effect of this work. Rather casually

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[33] The rate of South African injury-related mortality is reported to be six to eight times the global rate, and the rate of traffic accident injuries double. Furthermore, as Prinsloo et al. (2017) reveal, South Africa's statistics for injury and violence are not reliable, with homicide in particular being underreported. South Africa's trauma rate makes it an appealing place for registrars from abroad to train.

she described the more distressing aspects of the work, particularly over weekends or at month-ends, after pay-day. Patients would come in badly injured, sometimes "with their bowels hanging out", many of them drunk and uncooperative, occasionally trying to grope her. Govender noted:

> We live in a very violent society. People hear about killings, murders, and shootings, and fighting and stuff. But we always tell [say] this amongst ourselves "if our family had to see what we see in theatre, they wouldn't be normal again".

Dr William Wallner, a Wits-trained specialist surgeon was explicit about the effects this kind of work had. He said that all surgeons trained in trauma and this was what he called a "hood", somewhere where you got surgical experience and kudos:

> But trauma is all preventative. So it is so soul destroying, especially in South Africa, because it is, just, you just get emotionally and intellectually sick of it, you just get tired of it … It is just another *oke* [guy] [who] drank a bottle of brandy and walked onto the highway, and now I must get out of bed and sort it [out] … When you are a youngster, doing it is great, but after a while you kind of have to protect yourself from it.[34]

Wallner was explicit in sharing with me the damage this work can do, whereas February and Govender stressed the idea that people outside the local healthcare profession would never understand. As South African-trained doctors, they had exclusive insight and intimate knowledge of the brutality of clinical work — a particular "hood", as Wallner described it. This "hood" was the environment that gave doctors the opportunity to develop technical expertise, but could also be damaging; it would also set them apart as a professional group with exclusive insights and responsibilities.

Yet, while venting their frustrations many interlocutors explained that their work in this dysfunctional system was important and valuable. Practicing medicine in conditions that caused concern and even disgust did provide some of my interviewees with a sense that they are practicing meaningful, real medicine. For them it was important to provide a service precisely because of these conditions of crisis and large volumes of very sick patients who

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[34] A trauma surgeon proposed for me to do an ethnographic study of the trauma unit where he works to see how affects all those involves. He gave the example of child who had recently been run over and flattened by a car, saying that this had to have an effect on the doctor as a person.

relied on them. Some doctors who had spent time working abroad (mostly in the United Kingdom) or in local private healthcare, in an attempt to recalibrate after working in dire conditions, especially during the height of the HIV pandemic with no ART, felt upon return to the South African public sector that work there was much more meaningful, as it helped people who were very poor and very sick.

Not a single aspect of the *narratives of crisis* above is necessarily exceptional to South African public healthcare. Colleagues and interlocutors from elsewhere in Africa have reminded me that South African institutions are comparatively well-resourced on the continent, even if there is a large degree of dysfunction. But it would be disingenuous to deny that local doctors are not working in real situations that are frustrating, dangerous, antagonistic, distressing, and even traumatising. Collapse, as the prelude to this chapter indicates, was not just figurative. And the elite project of the purportedly research-intensive university sat in tension to this context of collapse or at least dysfunction.

Perceptions that the challenges of professional training significantly transform an individual are not limited to a medical career, but the literature suggests that medical training is more extreme in creating the need to develop competence and responsibility and in so doing a shared professional identity (for example, Becker et al. 1961; DelVecchio Good 1998; Luhrmann 2001; Wendland 2010). Clerkship in accountancy, for example — while busy, underpaid, and hierarchical — is not equivalent to working in a trauma unit at month-end. Furthermore, not everything in medical care, even at South African teaching hospitals, is about a matter of life or death. Some of it is ineffectual, badly administrated, and even damaging. But it is the obvious entanglement with human crisis that lends moral fortitude to a professional group. People who work at sewerage works and water treatment plants are similarly important figures in preventing disease and death, but their work is not as proximate to human suffering and human crisis as that of medical doctors, and they are not afforded the same social status, glorification even as the latter (Geissler 2015b: 2).

During my fieldwork, it was difficult not to empathise with doctors' persuasive accounts of the crisis they perceived themselves to be working within. This ubiquitous account of and employment of crisis, with its base in reality, was reinforced by powerful, existing tropes of the selfless and the exhausted doctor persevering against all odds in trying circumstances, armed with their wits rather than the best or even adequate resources. My interlocutors' accounts correspond with scholarly literature that simultaneously laments and celebrates doctors as creative, enterprising professionals, particularly those who keep things ticking over in places and times of scarcity, where states are reported to be weak and institutions do not tick over on their own, and where they perform “real medicine” for the world’s needy (for example, DelVecchio Good 1999; for example, Feierman 2011; Hannig 2017; Human 2012; Iliffe 1998; Kaufman 1994; Livingston 2012; Mika 2016; Oppenheimer and Bayer 2007; Raviola et al. 2002; Redfield 2013; Street 2014; Wendland 2010).

In South Africa the medical doctor is a compelling social figure manifest in various forms — for example, the missionary doctor, the noble doctor, the struggle icon, or the technological hero — presented in local popular fiction and non-fiction, including autobiography, documentary, and journalism.[35] The discourse of doctor’s practicing, and struggling, burdened by crisis and constraint, is not proclaimed — at the round-table and numerous other events — in a cultural vacuum but rather replicates and reinforces familiar forms.

Conclusion

The vision, purpose, and mission of Wits to become an elite research-intensive African university has permeated the professional lives of doctors working as joint appointees, traversing hospital and university life, and as well as those working as full-time academic members of university staff. The ambition of research production, and the threats and cajoling of the Wits Faculty of Health Sciences, have seeped into the clinical work of academic hospitals — but not without resistance. A bureaucratic discourse about the crisis of knowledge production is met with a powerful, morally-imbued professional discourse about the crisis of clinical work in a context of resource constraint. The common threads that make up the moral claim, the professional privilege that allows doctors to mount a public challenge against the institutional demands of the research-intensive university are: the responsibility that doctors in public service take on in conditions of constraint; the obvious moral value involved in this

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[35] Examples in fiction are Galgut (2003), and Kendal (2010); in non-fiction, Barnard and Brewer (1993), Phalime (2014), and Ramphele (1996); as documentary, “Doc-U-Mentally” (Wahl 2016); and in journalism (2016), Khan-Gillmore (2016) and Wiese (2015). There is also public fascination with medical doctors as more malign figures, as, for example, Wouter Basson as “Dr Death” because of his involvement in experiments with biological weapons during apartheid (Grootes 2011); unethical doctors implicated in human rights abuses during apartheid (Baldwin-Ragaven, London, and de Gruchy 1999); or doctors who were complicit in problematic race science, like Phillip Tobias (Kuljian 2017).

work, particularly when people are professionally mobile and could leave public service; and the profound transformation this professional experience has on clinicians that cannot be fully comprehended, and hence publicly questioned, by others. As a result, it becomes difficult for a university such as Wits — as an institution parallel to this medical labour — to create extended expectations of this professional group. Collapsing roofs can eclipse framed certificates.

As remaining chapters will do more detail, my findings here show a confluence in anthropological and sociological literature on the medical profession I used in framing my fieldwork – namely, not dismissing the human difficulties of professional life while simultaneously recognising the professional privilege of doctors. Although in the case of this chapter I note this privilege in the university space in relation to academic staff, rather than other health professionals or patients in the institutional space of the hospital. This chapter with its focus on the connection between hospitals and universities, also concurs with recent medical anthropology and science studies commentaries noting the power of and investment in state institutions rather than the otherwise assumed weakness or absence of the state in postcolonial Africa.

Moving beyond the institutional and professional context that is dominated by a professional resistance to research, the chapters that follow describe how some doctors attempt to foster research communities and actually do research. But crisis, hierarchy of value and professional privilege remain. These discursive tools are instead employed in different ways, such as invoking crisis to justify locally-embedded research as a means to keeping hospitals together. As I show in the chapters that follow, it is unmistakable that clinician-researchers actively engage professional privilege — hierarchies of value in health sciences research and the easily appreciable social good of clinically-informed insights — to negotiate the research making process itself.

Chapter Three —
Conferencing: The aspirations and politics of creating communities of research

> To speak "as a doctor" is not quite the same as speaking "as a poet". Access to scientific truth more often requires sufficient apparatus and assumes an active network of colleagues.
>
> — Peter Redfield, *Life in Crisis: The Ethical journey of Doctors without Borders*

Introduction

Attending conferences I was exposed to a surprising range of people, performances, and pronouncements — from listening to musical numbers explaining the function of clinical trials, to chatting with research celebrities while waiting in line at a lunch buffet, to seeing the clinical equivalent of international rock stars encouraging all and sundry to contribute to research. Conferences, congresses, symposia — whatever they may be called — allowed me a view into the ways doctors spoke to other doctors about research, in plush surroundings where the agonistic institutional life of university and hospital receded.

This chapter describes the aspirational professional discourse I observed at medical conferences, including efforts to grow a community of research-producing doctors, or at least research-literate doctors who address the deficiencies in local healthcare. Unlike the defensive discussions about research as professional burden described at university events in the previous chapter, views about research in professionally convened spaces are considerably more optimistic. The publicly stated aspiration — that any doctor can endeavour to be part of this burgeoning scientific community, a culture of research — also contrasted starkly with the plaintiff testimonies doctors shared about their working lives, as I described in the Chapter Two.

At conferences research was not just portrayed as a generic professional imperative to improve practice and keep up with the times; it was frequently imagined as an ethical or political response to dysfunction in local systems and an attempt to improve these. The complex work of using new medical knowledge to fit local practice was also prominent in conference presentations. Analysis of these ethnographic descriptions shows that in this narrative or discourse reasons for producing research are somewhat politicised. But the possibilities for research production itself is comparatively depoliticised. Larger socio-economic and historical contingencies that affect research production, and the question for whom and when opportunities to develop research expertise arise, are not interrogated. These contingencies include practical challenges of workload and time; the unequal power, resources, and ability to determine research priorities in a global knowledge making field still dominated by the global north; and a history of segregated medical training and racial and economic disparities in South Africa.

The Wits Biennial Surgical Congress and the Southern African HIV Clinicians Society Biennial Conference are two key conferences in the region. The ways research is made, used and politicised is significantly different in these two medical fields. But there are also substantial similarities between them that help to illustrate widespread tropes about the ambitious and ethical dimensions of doctors' knowledge making. Regarding the surgical congress I focus on discourse urging doctors to be engaged with research in order to navigate the benefits and challenges of evidence-based surgery; a moment of local expansion of research in the more obviously political field of global surgery; as well as the contradictions inherent in international keynote speeches intended to encourage research in the South African context. For the HIV clinicians conference I focus on the ways established researchers used their personal narratives of their professional and political responses to the HIV crisis and denialism as means to encourage doctors and nurses attending the session to contribute to ongoing operational research to improve the healthcare system. What emerges from thick description of specific conference sessions are the contradictions, disavowals, and silences present in the attempts to create a democratic community of researchers at these professional events.

Fly-on-the-wall fieldwork

Figure 3: Conference name badges and lanyards.

Entering the world of conferences was surprisingly simple. Sending an RSVP email, paying conference fees, or joining a clinical society allowed me quick access to these professional worlds. Then, once in these spaces, I was just another audience member, and came as close as I may ever come to almost fly-on-the wall-type observation. The fact that I was different from the rest of the audience was marked, though, by the fact that I took copious notes, something that seemed uncommon in these audiences that either listened passively or compulsively fiddled with their phones. I also positioned myself to the sides or at the back of venues so that I could count the number of audience members and try to ascertain the gender and race composition of the audience (though this tended to be challenging, sometimes impossible, in particular at well-attended speeches).

Outside of the auditoriums, I was exposed to an unfamiliar world of "industry" that was appended to many research events. There were stands staffed by representatives of industry or (as at HIV events) by advocacy and activism organisations. In my interactions with them I was often taken to be a doctor. Hospital group recruiters wanted me to set up a practice in small South African cities, and representatives of pharmaceutical and medical equipment companies were keen to give me a dense informative run down on a range of products. They were surprised that I was actually interested in talking to them about their work and dealings with healthcare professionals and reading pamphlets rather than denuding their displays of freebies. Indeed, the excitability of conference delegates to get a free hairbrush, a waffle, or a small bag of biltong would fool you into thinking that they were not well remunerated professionals.[36]

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[36] On a tangential note: I am aware that the presence of "industry" at professional events is a complex social and economic arrangement, as often noted within the medical profession and in the general media, both globally and locally (Bateman 2009, 2013f; Clarke 2011; Kahn 2016; Krumholz and Ross 2009; PMCPA n.d.) and in the social sciences (Forrest 2017; Oldani 2004, 2014). In recent years a range of regulations have been issued to limit the ways that companies may communicate information and sponsor professional events for doctors. Nonetheless, these arrangements may have various effects on the relationship between new medical evidence and medical practice. Further ethnographic research focused on these relationships, although challenging to conduct, may reveal more about its impact on South Africa healthcare, most likely more evident in private practice where doctors have greater personal choice in the products they use or recommend (although this is to some degree curtailed by medical aid schemes). The limited insights I gained in my fieldwork was that people with various relationships and ethical stances on the issue had a range of opinions (with few substantiating facts), ranging from seeing the relationship between state procurement systems and equipment and consumable companies as complicated and ugly, to saying that the pharmaceutical landscape was rather different and less mercenary in South Africa than, for example, the USA.

There was a tension between the luxury of conferences with the glamour of people performing their research and the everyday clinical world of many of the doctors attending the conferences, especially those working in public healthcare. Medical professionals traversed these various and vastly different spaces as part of their working lives.

The precarity and austerity of tertiary education at the time of my fieldwork created another awkward institutional juxtaposition. This was especially uncomfortable for me, given my status at the university as postgraduate student and the research funds I doled out to attend the events. Despite the fact that I often received a reduced student rate at the more expensive events or I limited the days that I attended so as to reduce costs, as I did for example at the HIV biennial where I attended only two of the four days.

A lot of the ethnographic experience at professionally convened events felt like a lottery of ethnographic decision making. There was a great deal of second guessing such as which of the parallel sessions to attend, a question huddles of conference attendees seemed debate among themselves. I wrestled additional questions, such as which interlocutor to see in action presenting his or her work, or which potential-interviewee to try to sidle up to during lunch-time.

Yet the vexing choices and costs were worthwhile: this fieldwork exposed me to a wealth of professional discourse. The participant-observation gave me access to (at least) the public pronouncements of expert doctor-researchers, whom I would otherwise have struggled to meet or pin down for an interview. By attending events I became familiar with the material culture of this research activity, not just the free merchandise but also the carefully curated conference packs, programmes, welcome notes, and speakers' biographies. The events intended to draw together expertise from across institutions, disciplines, and continents and made visible networks of relationships between local and global authority and evidence.

Participant-observation at conferences thus gave me the opportunity of triangulating in-depth interviews and published clinical research with public discourse, across clinical disciplines. There is indeed little ethnographic precedent and methodological exploration of attending professional events as location of research (exceptions being, for example, Benton 2016; Biruk 2018; Geissler 2013; Leivestad and Nyqvist 2017; Luhrmann 2001: 158–202; Pollock 2012; Saethre and Stadler 2017: 185–94; Sharp 2014). Nyvist, Leivestad and Tunestad (2017) likewise note this lack of precedent and advocate for the value of ethnography of large-scale professional events as temporary spaces where knowledge and experts are made and circulated in relation of the local to the global. In these spaces, professionals make themselves visible to one another and create or reinforce a specific professional identity, and they make visible emergent aspects of their collective knowledge.

During my fieldwork I attended 17 research events ranging from inaugural and memorial lectures to regional (Southern African) conferences, including one international conference held in South Africa. Four of these events were what I am terming professionally-convened events, namely events convened by professional groups — even be it a university department — as means of providing practical or research-related updates and guidance to practitioners in a particular clinical field. It is important to note that these events were not university-convened events, such as those described in the previous chapter that were driven and organised by a university faculty for academic purposes.

Using my networks at the Wits School of Clinical Medicine and associated research units, many of my interlocutors were in the fields of HIV and surgery. I attended two professionally-convened events in each of these fields because some of my interlocutors would be presenting at these events, or because interlocutors encouraged me to attend in order to get a better sense of their fields. To demonstrate the similarities and differences between doctors' research communities and aspirations in these fields, I have chosen to describe one event from each of the two fields: the 2016 Wits Biennial Surgical Congress and the 2016 Southern African HIV Clinicians Society Biennial Conference.[37]

Surgical research, a moment of expansion

The anthropology of surgery has predominantly centred on two fields, the first being the gendered, racialised, classed, and religious aspects of cosmetic and reconstructive surgeries, including reconstruction after cancer surgery (for example, Edmonds 2008; Jain 2007; Kaw 1993; Manderson 2011; van der Wiel 2013) and, more recently reconstructive surgery for

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[37] The other professionally-convened events that I attended, which I do not describe here, but that correspond to descriptions in this chapter were, the International AIDS Society "AIDS 2016" conference, and the 2016 44th Annual Southern Africa Surgical Research Society Symposium.

women with fistula from traumatic childbirth (Hannig 2017). The second major field of interest is organ transplantation. Anthropologists explain these life-saving surgeries as problematising personhood and Cartesian ideas of mind and body, and highlighting the inequalities in global political economy that allow for the poor to be a source of so-called spare parts for the wealthy, and embodying the "biotechnical embrace" of medicine (for example, Cohen 1999; Helman 1988; Ikels 2013; Sanal 2011; Scheper-Hughes 2000; Sharp 2014).

My findings regarding the South African surgical field contributes to this literature in the sense that I also focus on citizens' access to surgery. But my focus in not on the perspectives of the patients who access a particular kind of service but on the surgeons themselves. In this sense my work has some parallels with a much smaller body of ethnographic work that studies surgeons' experiences of training, clinical decision-making, and professional identity formation (for example, Casper 1998; Cassell 1991b; Fox 1993, 1994; Katz 1985; Prentice 2013). The findings I discuss here, which correspond with the findings I made at other surgical research lectures or workshops I attended, offer insight into surgeons' experiences of the healthcare system and, particularly, into how they related to knowledge production emerging from this system, including access to appropriate care.

The biennial — "not a research event"

The Wits Department of Surgery dates back to 1920 and the opening of the Wits medical school; it eventually expanded to include sub-specialities like trauma surgery (Veller 2008).[38] The department's pride in its history is physically palpable in its corridors on the ninth floor of the Health Sciences building. Rows and rows of photographs of surgeons who qualified in the department line the walls. Annual research prizes and travel grants within the department and at regional surgical research forums, and even a large seminar venue, are named after prominent heads of department. Part of this illustrious history is the department's biennial congress, a celebrated showcase of the department designed to keep specialists up to speed with developments in their field.

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[38] The department is technically the department of general surgery, with various sub-disciplines. Orthopaedic, plastic, cardiothoracic, and paediatric surgery and urology have separate departments.

"Standard of Care meets Evidence-Based Medicine" was the theme for the 25th Wits Department of Surgery Biennial Symposium in 2016. Despite this theme, a few of my interlocutors told me that it was not in fact a research event, despite the fact that the term "evidence" was in the conference title. This surely pointed to research? The reason they gave was that the speakers were not presenting their own research, or evidence. Rather, as experts in specific fields of general surgery, they gave their colleagues an update of the developments in their areas of expertise. They thus presented synthesised reports of what already existed in the public domain, the research of others.

Despite my perplexity at my interlocutors' statements that the surgical biennial was not a research event, a great deal of the programme was explicitly about research. Presentations and chapters were not just about new data informing nitty-gritty clinical work, such as whether or not to operate on an elderly hypertensive patient with diverticular disease who was also HIV-positive. Rather, many sessions explicitly explained what research was: the different forms it could take; the hierarchies of evidence; how to make sense of meta-analyses; how to prioritise professional reading to make sure to keep updated with relevant information without being inundated by a deluge of new research. The content and didactic nature of much of the biennial revealed that the organisers of the event did not imagine their audience as being entirely competent in understanding or producing research. To me it seemed beyond dispute that the Wits Department of Surgery put forth the commandments that surgeons should integrate new, reliable research more effectively into their practice and that their professional work should ideally also extend to include research and advocacy for better policy for the provision of surgery.[39]

The biennial symposium — or congress as surgeons sometimes called it — took place over two and a half days, from 27 to 29 June, at the Wits Education Campus in the suburb of Parktown. The days were jam-packed: the first day's formal programme, for example, ran over ten and a half hours, ending with a guest speech by well-known journalist and public intellectual Justice Malala, followed by a social cocktail event thereafter. On the third day the biennial ended at 13:00, at which time people dispersed at speed. When arriving and registering

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[39] Some articles in the *South Africa Journal of Surgery*, particularly speeches from symposiums by the Surgical Research Society, indicate that this is not necessarily a new development.

at the event people received name badges that designated them, rather formally, as "delegates". The name badges were attached to lanyards sponsored by Sanofi, a pharmaceutical that had also sponsored other local surgical events. We, the delegates, also received a book bag branded with Wits and Sanofi logos. Inside the book bag, I was surprised to find a thick book, not just containing the programme, abstracts and lists of sponsors, for example. It was a volume that bound together over 500 pages of chapters, or papers, each corresponding to a presentation in the programme. Also inside the bag was an inexpensive (surprisingly unbranded) A5 feint and margin notebook, and a small foldable programme that could be secreted away in one's pocket. Given that I was not a healthcare professional I was rather surprised also to find a clear plastic document holder with an A4 certificate officiating my attendance, carrying the reproduced signature of the head of the Department of Surgery, Prof. Martin Smith. Surgeons could use this certificate to earn points for their Continuing Professional Development (CPD). This is a system instituted by which the Health Professionals Council of South Africa that requires all registered healthcare practitioners to develop further in their fields by reading up on new developments in their areas of expertise in professional journals, by attending conferences, or by attending courses – for which they accumulate CPD points.

At this biennial, there were no breakaway rooms and no parallel sessions. Just the main stage, as it were, in the Wits School of Public Health auditorium.[40] In the front of the auditorium was a large black desk, height-adjustable to accommodate differently proportioned presenters. It had a built-in microphone and a panel on which presenters could manage PowerPoint presentations. Behind and above the desk were two very large, adjacent screens, each showing the same projection. This technical set up was designed both for the ease of the speaker and, of course, so that the audience could easily see the content of the projected slides — most beloved being graphs and tables, as well as cartoons plagiarised from the internet. But this arrangement effectively trapped speakers in one place, in front of the microphone. With the lights slightly dimmed so that the all-important altar of PowerPoint presentation could be viewed by all, the bodies of most speakers, especially men in dark suits, disappeared against the dark wall panelling behind them. They became disembodied hands and floating heads atop shirt collars and tie knots (see Figure 4).

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[40] This is the same venue as that described in Chapter Two where the Faculty of Health Sciences Research Day keynote address took place.

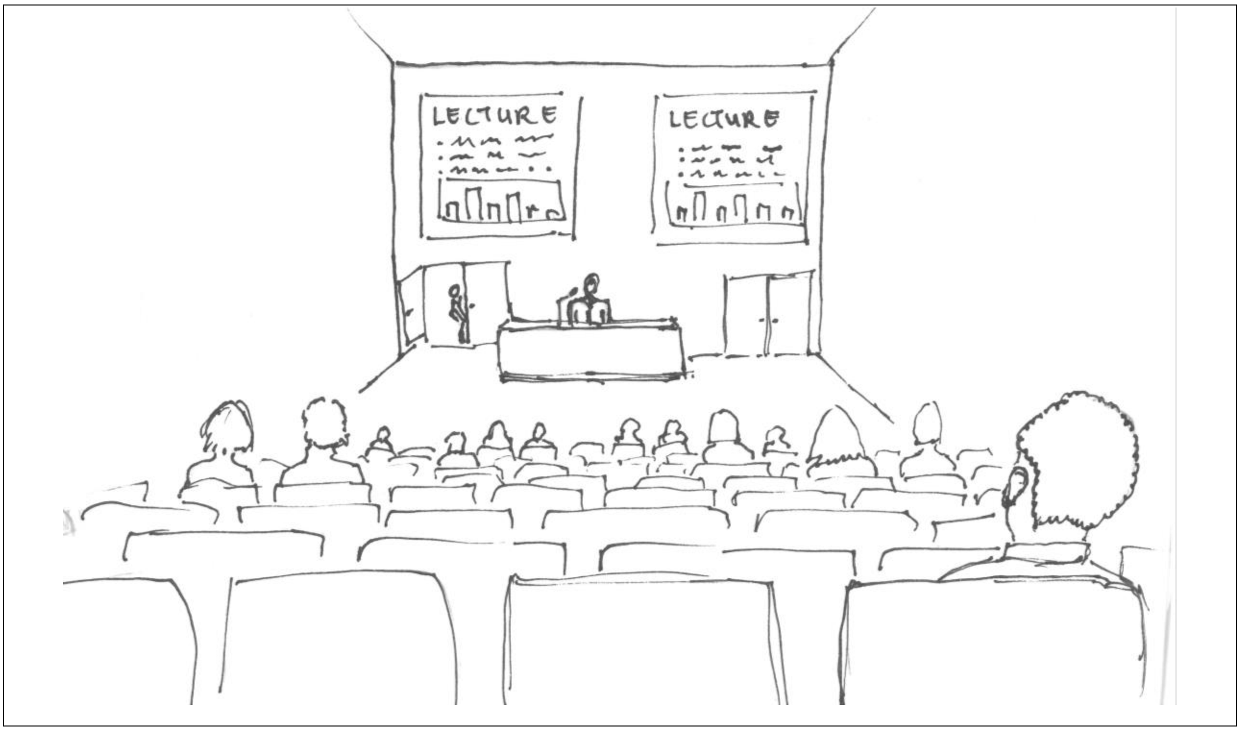

Figure 4: Fieldwork sketch of the auditorium at the Wits School of Public Health.
This is a popular venue for public lectures and conferences, such as the 2016 Wits Biennial Surgical Congress and the Faculty of Health Sciences Research Day keynote address (described in Chapter Two). (Sketch drawn at a less well attended event than either of these).

During the symposium I often looked at the crowd around me and wondered who was looking after the operating theatres at the Wits teaching hospitals with the large number of surgeons present, who might have to rush back for an emergency, and who amongst them were private practitioners haemorrhaging hard cash by the minute. I recognised many registrars and consultants, and scholars from disciplines outside of clinical medicine whom I had come across during other aspects of my fieldwork. During the tea breaks and lunches delegates who knew each other greeted with warm, heavy-handed pats on the back or vigorous handshakes; evidently the event was an opportunity for convivial reacquaintances, not just the formal learning and CPD-point earning.

The biennial programme largely consisted of 15-minute slots, clustered into sessions pertaining to a specific subfield of general surgery, such as breast surgery or colorectal surgery. In each slot an expert in the subfield gave a synthesised presentation of changes in their area of expertise. They attempted to settle old debates or make sense of new surgical and medical developments. They relayed information about current research including discrepancies between large trials, new techniques, relevant new physiological knowledge, medico-legal issues and even new medical coding systems, especially for surgeons working in private practice. For example, experts shared information on how to remove a parathyroid with minimal access surgery; which antibiotic treatments were effective for certain hospital acquired infections; and which biomarkers might or might not predict which burns patients would develop sepsis. Some of these presentations were impressively comprehensive, abridged explanations of vast amount of information. Thus the chair of a session praised the presentation by Dr Nadine Harran, a recently qualified consultant who presented an update on rectal cancer treatments, as a “magnus opus” due to the volume of work she condensed in simple and understandable terms for the audience. Non-surgical experts — such as health economists, gastroenterologists, and pathologists — also delivered updates on issues in their fields that impacted surgical practise. An example of this was the discussion by well-known oncologist Prof. Ruff on “Angiogenesis inhibition in advanced/metastatic gastrointestinal cancer”.

Most of the subject experts were Wits-trained and worked at Wits teaching hospitals. Many of them were heads of department of specific kinds of surgery, such as trauma or hepatobiliary. There were also some renowned figures in attendance from UCT, the University of KwaZulu-Natal (UKZN), the University of the Free State (UFS), and the Sefako Makgatho Health Sciences University (SMU),[41] as well as some private practice doctors from Johannesburg and the Western Cape.

The experts’ presentations were packaged as concise instructive lessons. They were followed by very short question-and-answer-sessions — though some did not elicit any questions from the audience. This added to the didactic flavour of the sessions. It was almost always senior, well-known expert surgeons who asked questions. These figures were usually seated towards the front and centre of the auditorium and looked earnestly interested and decorous. Many younger surgeons, for example registrars, sat closer to the back entrance of the auditorium and at the very sides of the long rows of chairs and appeared more distracted and less attentive. I was unsure whether the generational difference in asking questions was related to these varying levels of interest and attention among the delegates. The social dynamic of the question sessions may have been the result of a culture of generational deference in this apparently

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[41] SMU was previously known as the Medical University of South Africa (MEDUNSA).

extremely hierarchical medical field and thus juniors' reluctance to pose a question in this forum — especially given that the older generation of experts and heads of departments were well-acquainted with each other through their training, by working together in theatre and as examiners for the South African Colleges of Medicine, or as researchers on joint projects. Or, this may also have been a reflection of the extent of expert knowledge necessary to be able to formulate a question on the content of the presentation and its relationship to practice.

In their presentations, some speakers stuck faithfully to the text they provided in the biennial book, others expanded considerably on the content of their comparatively short chapters, and others added a great deal of flare. There were recognisable forms, or templates, for these presentations. It was not uncommon for speakers to open their talks with a few, often slightly decontextualised historical facts to lead their audience into their talk — perhaps to add some credibility or clout to their lesson (although I did wonder if some of these brief facts might not make much sense to people with little knowledge of biomedical history). Many made use of apparently self-explanatory quotations from famous people to add gravitas to their more controversial points. Others relied instead on copious comics pilfered from the internet to add humour to their presentations.

Unlike some other research events at Wits, the presentations tended away from the death-by-PowerPoint variety. In general, these were experienced speakers who delivered material that I, as a non-medical delegate, found rather stimulating. There were times when my understanding snagged on a few technical details, but generally I could follow the content of the talks. (This was not necessarily the case during my fieldwork in disciplines outside of clinical medicine and public health, for example in molecular biology. When I indicated my struggle to comprehend, clinicians and medical students alike confided that they too often did not understand much of this "basic science stuff".)

I learned a great deal about the discipline of surgery, the fascinating and tricky technical procedures that surgeons perform, and more especially the complexity and uncertainty of the clinical decisions they make routinely as part of their professional lives. This uncertainty was something that the biennial was aimed, at least in part, at ameliorating. I was also intrigued by the sessions that dealt explicitly with the nature of research and complications of using new knowledge.

On their own many of the biennial addresses, PowerPoint presentations, or papers — steeped in a rhetoric about "best evidence" and "knowledge generation" — would suffice for an entire chapter's worth of anthropological analysis on the relationship between South African surgical practice and research. Instead I compiled three ethnographic examples from the biennial that illustrate the ways in which professional aspiration, rather than defensiveness, is promoted in professional spaces, and the ways that research is positioned as an ethical response to informing the improvement of the local medical practice. The three examples are the opening session of the symposium; the session on global surgery; and the keynote address. I discuss each in turn.

Problematising the profession

On the opening morning of the biennial I was settled in my seat at the back of the auditorium for the second presentation of the morning. Prof. Martin Smith was due to give a talk entitled "Defining Standards of Care". Smith was head of general surgery and the hepatobiliary surgery unit at Chris Hani Baragwanath Academic Hospital, and the academic head of the Department of Surgery at Wits. This meant that he was in charge of the teaching of surgery throughout the medical school. He was the overall chair for the Biennial and in various sessions often rustled up questions for presenters when there were no questions from the floor. He had a kindly and wise demeanour.

In his presentation, Smith gave a brief overview of surgeons' often troubled relationship with biomedicine. Barber-surgeons, for example, were initially not accepted as healers, and until the 1940s surgeons were still on the outside of the medical establishment (Gonzalez-Crussi 2008; Porter 1997). This only changed when there was a collective embracing of research to prove efficacy of surgical interventions. Smith emphasised new and best evidence as critical to adjust and improve the standard of care. Standard of care — from Smith's somewhat vague definition and my previous observations and reading — could loosely be defined as the most comprehensive, currently available, currently agreed-upon standard practice at any particular time, within the constraints of a particular healthcare system.

Smith cautioned delegates about the conundrum of evidence in surgery. The discipline still had a problematic relationship to contemporary biomedicine, with its great emphasis on hierarchies of evidence with randomised control trials (RCTs) being at the top of this pyramid of course, an approach that suited singular pharmaceutical interventions in particular. It was difficult for surgical research to comply with this gold standard because of the variability of surgical procedures that depend on the skill of individual practitioners, because placebo treatment is not possible, and because the learning curve in acquiring new technical skills affect outcomes. Smith indicated that “evidence-based surgery” was something different to evidence-based medicine in that it did not simply deal with latest evidence but was the combination of “best available evidence” and technical skill. Not unusual in a conference forum such as this one (Nyqvist, Leivestad, and Tunestad 2017: 8), Smith presented the distinctive professional identity of the surgeon as exceptional within the broader medical profession. Historical research suggests that, in tandem with surgery’s ostracisation from other forms of medicine, surgeons themselves played an active role in positioning themselves as distinctive from other forms of medical practice. One reason for this was for surgeons to retain authority over decision-making often related to the level of expert embodied knowledge and “craftsmanship” of individual surgeons and the anatomical and pathological anomalies they encounter in real time during surgery (Cassell 1991b; Prentice 2018).[42]

Smith’s talk did not have a corresponding chapter in the biennial book, but aspects of his talk were reflected in his foreword in the book. These aspects pertained to professional obligations to engage with new research to provide the best care and be accountable for clinical decisions made, and the responsibility the Wits surgery department carries to inform specialists about new research through the forum of the biennial. The conclusion of Smith’s foreword included this quote he ascribed to Claude Bernard (undated and with no explanation that Claude Bernard was a well-known nineteenth-century French physiologist) with which he underlay his argument about evidence: “There is no place in science for consensus or opinion, only evidence”.[43] But the final words of the foreword were Smith’s own: “The practice of surgery is not only a science but must be based in the best available, high quality evidence”.

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[42] This persisted even into the later part of the twentieth century and the twenty-first century, particularly in places like the USA where systems of medical insurance required greater rationalisation and standardisation of resources used (Michel and Johnson 2002; Prentice 2018: 19).

[43] I was unable to find the exact source and date of this quote, this may be related to the fact that Bernard wrote in French and this quote would have been translated from French and therefore this quote may not be a standard translation, or perhaps Smith is quoting from a source in which the quote itself is inaccurate or incorrect.

Smith's presentation corresponded to an otherwise pervasive imaginary of the teleology of a modern doctor with a progressive practice, a well-documented tenet of contemporary biomedicine and the “medical imaginary” (DelVecchio Good 2001: 397), here tweaked to the discipline of surgery. The surgeons attending the symposium were called to be modern doctors keeping up with the times, incorporating new evidence into their literally hands-on practice, being part of a scientifically-minded community — and able to assess the developments in light of their own expertise and patients. They should labour in the spirit of Claude Bernard, not to mention the embodying the work of Archie Cochrane, thought of as the father of RCTs and evidence-based medicine (EBM).

While Smith’s presentation painted a picture of the challenges of contemporary surgery, the next presentation, by Prof. Damon Bizos on “The evolution of evidence-based medicine”, went further back in history. Bizos, was a Wits-trained surgeon and head of surgical gastroenterology at the Charlotte Maxeke Johannesburg Academic Hospital, explained the changing ideas of evidence, developments of EBM, the historical standardisation of medical training, and the continuing challenges globally to include more EBM into an already packed and ever-expanding medical curriculum. He also highlighted the problems entailed in using EBM approaches in practicing surgery saying: “Statistical significance doesn’t equal clinical significance”. Similar sentiments were pronounced by many of the other expert presenters, whether addressing research directly or reporting on developments in their clinical fields. Practice was not the straight-forward application of general rules, thought had to go into managing individual cases.

Almost as if planned as a follow on to the quote Smith employed, Bizos inserted an undated, uncontextualised quote attributed to the German polymath Goethe: “Knowing is not enough; we must apply. Willing is not enough, we must do”.[44] Surgeons should thus not just know about new evidence but should also enact it. The brief question-and-answer session that followed Bizos’s speech brought out points that were echoed in many of the remaining presentations of that morning. The first question touched on the issue of “surgical inertia”, as a later speaker called it. A delegate posed what he termed a philosophical question of why it

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[44] Johann Wolfgang von Goethe’s original quote in German is: “Es ist nicht genug zu wissen, man muss auch anwenden; es ist nicht genug zu wollen, man muss auch tun” (von Goethe 1829).

was that surgeons were opposed to EBM: was it because of cost and outcome, or because of the fact that trials were badly designed? He asked whether they should be more focused on patient concerns and quality of life. In his answer, Bizos used the example of the system of continuing professional development (CPD) to explain that continued learning was restricted by time. Even though people could complete a CPD form on their comprehension of a journal article, and earn CPD points in the process, this did not mean that doctors would change their behaviour.

Although they conceded the reality of the time constraints that doctors work under, speakers and their question-asking colleagues in the audience were making moral or ethical evaluations in what they said. The speakers, many of them national stalwarts in surgery, delineated between doctors who were truly modern and scientifically informed, engaging meaningfully with new knowledge, and those with an inauthentic engagement with science, merely going through the motions of externally imposed continuing professional education. Yet, woven into the predominant discourse of aspirations for a scientifically progressive medical community doing right by their patients was also a more pragmatic, self-preserving concern, relatively obscured in the discourse of zealous speakers like Smith and Bizos. The concerns raised went beyond CPD points to issues about protection against litigation. This was captured in particular in the presentation entitled “Guidelines and the Medico-Legal Landscape: Friend or Foe”, delivered by the Faculty Dean, Martin Veller.

While I wondered how much the idea of “inert” or “stubborn” surgeons who were seen to refuse to apply new knowledge was a stereotype or an anecdote, the self-criticism of the profession did expose the myth of a great, utopian flow of knowledge mingling with practice. Blockages and realities were uncovered. Translational research, knowledge with clear findings that ostensibly result in straight-forward shifts in practice, was not necessarily translated. The honesty that speakers and audience members showed in terms of the difficulties of practising as a surgeon was a refreshing contrast to a good deal of literature from medical professionals that assumes and praises the importance and utility of doctors’ research and to the enthused sentiments I heard at just about any Wits Faculty of Health Sciences research event. At the biennial people were speaking with at least a little more honesty about the challenges involved in this knowledge changing practice (even if, from a social science perspective, it may seem a bit naïve not to realise that information does not predict action).

Smith's and Bizos's presentations and audience responses initially made me feel a little redundant as a social scientist, eager to employ my social science arsenal of critique and contextualising information. Their contextualisation of surgery as a latecomer to the biomedical fold and a problem child of evidence-based medicine corresponded with literature from within the medical field (Barkun, Ergina, and Meakins 2008; Horton 1996; Meakins 2009; Michel and Johnson 2002). The biennial discourse also corresponded with a genre of popular non-fiction, less steeped in the technicalities of the discipline than the biennial but assuming the authoritative public voice of the doctor, that presents surgery as an unsure pursuit that requires the singularly demanding combination of bravery, lightning-speed decision-making, alongside manual dexterity and the persistent practice of technical skills (for example, Gawande 2002, 2015; Kalanithi 2016; Marsh 2014). The Wits speakers' problematisation of their profession and their discipline made it seem that my job had perhaps already been done by the very people and the field I was studying.

In the surgeons' relatively merciless deconstruction of their discipline and in their debates with each other, they addressed issues anthropologists and sociologists, for example, have written about. This was a long list of themes, representing many hours of my reading in preparation for my fieldwork, including: problems with hierarchies of evidence and an overreliance on truncated quantified evidence, including in projects governmentality that rely heavily on numbers to direct development projects in the global south (Adams 2016; Colvin 2015; Lambert 2006; Lambert, Gordon, and Bogdan-Lovis 2006; Rottenburg and Merry 2015); tensions between the art and science of medicine (Kleinman 2008; Schlich 2007); concerns about the rationalisation of medicine and difficulties of implementing standardised treatment protocols (Castel 2009; Feierman 2011; Human 2012; Kaufman 2016; Lock and Nguyen 2010: 176–96, 2010: 176–96; Martin 2012; Mol 2002, 2002; Timmermans 2015; Timmermans and Berg 1997; Timmermans and Epstein 2010); dealing with medical uncertainty (Cristancho et al. 2013; Fox 1959, 1980); the tensions between professional expert knowledge and new information and changes in one's field of expertise (Fox 2003; Prentice 2013; Schubert 2007); acknowledging the interrelatedness, rather than opposition of, evidence and authority (Hogle 2002; Kuipers 2013); and the particularities of developing technical expertise in order to be able to take on the responsibility over life-and-death decisions in uncertain situations, and developing a surgical professional identity (Casper 1998; Cassell 1991b; Cristancho and Fenwick 2015; Fox 1993). In addition, this professional forum strongly demonstrated Mol, Moser and Pols's concept of tinkering (Mol 2006; Mol, Moser, and Pols 2010) by which doctors adapt generalised guidelines, norms, and protocols to individual situations (see Chapter One). The concept of tinkering, the productive and popular analytical tool of many a medical anthropologist, was plain as day in this professional forum. Also clear from my observations was that large professional gatherings are precisely the place where experts can confirm what is known and safely confess what is still unknown within their realm of expertise (Forrest 2017), and admit that knowledge is "something continuously produced, organised, used and diffused" (Nyqvist, Leivestad, and Tunestad 2017: 13).

Beyond the Wits surgeons' overt discussion of tinkering there were two additional anthropologically interesting discourses. The first was the stark contrast drawn between the defensive discourse used to push back against the university demands for research, such as I described in the previous chapter, versus a significantly less exasperated discussion of research at conferences like the biennial. The second aspect was how the South African context was woven into what is otherwise likely a similar discourse present at any surgical conference, in Sweden or South Korea, about generally improving the profession. At this South African biennial, speakers began to bring the messy world of the political economy into the frame. This was more than a stiff, genial discussion of generic professional deficiencies or inertia. The perceived crisis of constraint in contemporary South Africa was ever present, yet it was not discussed as source of professional burden but rather as the source for new professional action in terms of research.

The fact that ideas for new research specifically addressed local contingencies of practice was brought home in the second question Bizos received from the floor. The question was asked by Veller, he wanted to know where surgeons were going and whether new data was being appropriately shared. Bizos admitted that the evidence accessed in South Africa was often from other countries and that local surgeons had to assess whether it was possible to implement solutions suggested by this evidence, seeing that they had quite different equipment and costs to deal with. As many of the biennial experts were lamenting, tailoring and tinkering was not just necessary when figuring out treatment plans for individual patients but was also a tool essential when dealing with the provisionality and contingency of the local institutional context in which they worked.

During a talk entitled "Evidence to Implementation, in the Resources [sic] Constrained Environment" later during the day, Prof. Frank Plani, head of Bara's trauma unit, bemoaned the lack of relevant literature from what he called the developing world. Citing a systematic review of literature from 2002 to 2011, he said that few studies from the developing world discussed outcome measures, many were case studies or case series, and that 21% were publications with international collaborators (Pauyo et al. 2015). He argued that to equitably distribute resources in South Africa and ensure that there was no waste of resources surgeons needed to understand EBM better and more local research was necessary.[45]

The idea that research could be drawn on as tool to secure resources, not just in the general sense of improving individual patient care, but to improve the local healthcare system, was central to the discussions of global surgery on the second day of the biennial. The presentations on the second day went well past discussions of research literacy and enacting new science, but they became a political rallying cry especially in a series of presentations relating to the field of global surgery.

Politicising the profession — global surgery

Access to basic surgical care has been a global concern at least since the 1980s (Benton 2016; Mahler 1980). I had read about such issues and the history of surgery and surgical research before I entered the field (Farmer and Kim 2008; Grimes et al. 2011; Luboga et al. 2009; Søreide et al. 2013). But 2015 was the year that global surgery, as a fledgling term and as an emerging field, shot to fame (Dare et al. 2014; Smith 2015). The Lancet Commission on Global Surgery published in 2015 reported shocking evidence about a dire shortage of surgical skills across the globe. For example, it stated that five billion people do not have access to safe and/or affordable surgical care, a figure that includes 93% of the population in sub-Saharan Africa (Meara et al. 2015: 574). In the same year, the World Health Organisation (WHO) released a resolution on improving essential surgical services as part of universal access to healthcare (WHO 2015). Surgery became a significantly more prominent global health concern, framed in terms of the United Nation’s Sustainable Development Goal of universal health coverage.

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[45] Later during the same month, Prof. Hussey, Acting Dean of UCT’s Health Science Faculty, also expressed his dismay at the lack of publications when speaking at the Southern Africa Surgical Research Society Symposium that took place in Cape Town. When searching for publications using combinations of the search terms “African”, “surgery”, “advocacy”, and “policy”, he only got 25 “hits”. Hussey used this as part of his argument to further motivate people at the symposium to produce more quality research.

The South African medical community responded to the report in a number of ways. The *South African Medical Journal* published a number of related articles, and the Wits Department of Surgery held a National Forum of Global Surgery and Anaesthetics in December of 2015 (Bateman 2016; Biccard et al. 2015; Patel et al. 2016; Seggie 2016; Spence et al. 2016). Since then, there continues to be a steady flow of publications regarding global surgery, including on strategies to increase high-quality, methodologically sound outcomes-based and relevant surgical research (Rayne et al. 2017). Therefore these series of professional events and investigations, including the emphasis on global surgery at the Wits Surgical Biennial Symposium, form part of what ethnographers of conferences would label was a "field configuring event" (Nyqvist, Leivestad, and Tunestad 2017: 7).

Surgery and surgeons have historically been perceived as being less politically-oriented than other clinical disciplines, such as family medicine (for example, Benton 2016: 352). But it seems that the reformulation of longer-standing concerns about the availability of surgery into the nascent and golden child of global surgery has shifted this, moving surgery into a realm of ethics and social concerns beyond the doctor-patient relationship.

There was a lot of excitement and hype in the ways people spoke about global surgery, both in formal public settings and in private discussions — and in particular by Prof. Smith, on this and other occasions. There was a hint of the evangelical in this discourse (as there often are regarding global health issues). Over the course of my fieldwork global surgery was talked about as a matter of urgency. Surgeons were called not to continue with business as usual in a situation where a dire need for extended surgical services, framed as a political and social issue, was recognised by global health organisations. Global surgery, as a politically charged topic, was presented to the delegates as inextricably tied to a lack of local research and the need for research to improve local challenges in practicing surgery. Certainly, this seemed to be the case at the Wits biennial, captured particularly in Prof. Smith's presentation.

The symposium programme indicated that Prof. Smith's presentation, "The Place of South Africa in Global Surgery", was in the ethics session on the second afternoon, just before the session on global surgery. I had originally assumed that this placement was a proofreading or design error and that his presentation should have been placed in the latter session. But much of the content of his presentation did in fact pertain to the ethical imperative of global surgery research and the extension of this into health and economic policies. In fact, the talk pushed an overtly political aspect of the discipline. Smith took his cue from the Lancet Commission on Global Surgery, explaining the three focus areas of recommendations that the commission's report presented: management and delivery; training and education; and research. The area that Smith homed in on was the need for increased research — the need to produce data to inform policy and bring about changes that would improve the provision of surgery. Smith explained that addressing these global surgery recommendations should become surgeons' professional responsibility. To bring about change surgeons should be researchers and be what he termed "champions" who advocated for policy change.

Similar ideas depicting research as politically entangled were put forward in another presentation in the ethics session, entitled "Best Buys for South Africa" by Prof. Karen Hofman. A paediatrician turned public health scholar, Hofman stated that certain politicised diseases or conditions — I understood her to refer to HIV/AIDS — got more attention than other healthcare priorities, such as surgery. She urged the surgical community to help fill the research gaps so that they could show surgery to be a health priority and solicit resources from the state to improve local health systems.

In my observation, the global surgery discourse throughout the biennial was steeped in a public health lexicon about systems, life years lost, economic burdens, and numbers of medical procedures per 100 000 people per year.[46] The vocabulary I noted with regards to global surgery seemed decidedly different from other surgery discussions, for example about removing sufficient margins of tissue around tumours or recent technologies for rectal imaging. The content of many of the other presentations, especially from the first day of the biennial, had already encouraged surgeons to expand their professional work to include the production of new knowledge. But Smith and Hofman threw in an additional, explicitly political, professional obligation. This was more than nudging one's purportedly stubborn colleagues to keep up with the times. Global surgery "speak", as quantitative and system-centric, really took the discussion of surgical research and the implementation of evidence-based medicine into a different ethical and political terrain. Statements about patients needing good care seemed a little less axiomatic or clichéd than in some of the other sessions.

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[46] This is also noted by Benton (2016: 351) in her brief ethnographic description of the 2014 Global Surgery Commission, and by Prentice (2018) in her explanation of the changing nature of surgical authority and culture due to surgery's incorporation into the broader field of global health.

Although the call to action around global surgery is portrayed as a reaction to and attempt to improve the local, it is inextricably connected with global knowledge production and the possibilities these allow. Prof. Delawir Khan's question on Smith's presentation touched on this. Kahn was a transplant surgeon at Groote Schuur Hospital in Cape Town, former UCT Head of Surgery, and at this point close to his retirement. From my observation at this and other events, he tended to ask tongue-in-cheek questions. (In his presentation on the previous day he criticised surgeons for not having sufficiently enquiring minds and simply rehashing "gross", old-fashioned surgeries.) In this session now, Kahn asked in response to Smith's plea for more research: "Why do I need someone from Johns Hopkins telling me what to do?". Smith's response was that South African surgeons needed to "stand up", be proactive, and look at and integrate with a broader system and not just see what they do right at specific, local sites. After the event, reflecting on my fieldwork notes I was a little unsure as to what this exchange meant to these two men and what contextualising information I possibly did not have at hand to make sense of it. Yet, it was significant that Kahn related global surgery not simply to local needs and local professional responsibilities but, critically, to agenda-setting from the global north, revealed by his reference to the prestigious Johns Hopkins medical university in the USA. His words suggested that while responding to the local may appear to be at the heart of global surgery when viewed from a South African position — almost a type of postcolonial endeavour — the stark delineation between centre and periphery was still prominent in the field, as it is in most global health work.

The global surgery session ended off with a presentation by Prof Damion Clarke. Despite the trendiness of global surgery and its rise to prominence in northern-based international institutions, some figures like him had for years been working on these issues documenting and auditing local resources and needs. Clarke worked at the Edendale hospital in Pietermaritzburg in the province of KwaZulu-Natal and was a professor of trauma surgery at UKZN. He had established an extensive database of surgeries at his hospital and all provincial district hospitals that referred cases to Edendale.[47] His speech thus related global surgery to this South African context.

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[47] In the South African public health system district hospitals (which can be rural or urban) are secondary healthcare facilities that provide a crucial link between primary health clinics located across the country and the specialised services offered at large, tertiary hospitals in urban areas and that have more specialised services and equipment.

In the symposium programme, Clarke's presentation was titled "Essential surgical care as part of Universal Health Coverage", And this appeared on the rather sparse first slide of his presentation. However, the second slide of his presentation had the striking heading "Modern Surgery: Dream Deferred". He argued that while modern surgery had a lot to offer people and was able to save people's lives — by offering emergency appendectomies, caesarean sections, repairing gunshot wounds — these were often not available to the most needy. One part of his presentation was an explanation of some of his research from the KwaZulu Natal area that showed that there were not enough surgical skills at the level of the secondary district hospitals. He demonstrated the need of ensuring that doctors at these district hospitals were proficient in the Bellwether procedures — a set of basic yet critical surgical procedures — such as the Caesarean section, emergency laparotomies, and open fracture management. To make this point, Clarke spoke specifically about local statistics of emergency surgical services and outcomes, and how these stood in comparisons to similar data from other countries. Clarke's rather erudite sub-heading of "Modern Surgery: Dream Deferred" certainly made other presenters' remarks about resource constraints appear rather mild. While much of the conversation at the biennial up to then had been about the contingent nature of surgical practice in relation to forms of evidence, this session exposed the contingent nature of surgery in general — its relationship not just to new evidence or resources at particular hospitals but to national and global economics and politics.

While expanding surgical research had been a concern for doctors for some time (Søreide et al. 2013; Thomson and Baker 1994: 703–4), the fact that global institutions like the WHO took up these concerns enabled South African surgeon-researchers to push their colleagues more firmly to lend a hand in producing research and attempt to change a system that they experienced as resource-constrained. And yet the manner in which these global surgery sessions promoted knowledge production among medical colleagues contrasted strongly to what I observed to be a more common manner of doing so — the keynote address, an almost universal feature of conferences.

Inspiring and aspiring — keynote as contradiction

"You can do it too!" "Don't be discouraged!" These are examples of aphoristic, inspirational statements that litter keynote addresses delivered by international, distinguished medical professors, usually from the global north, at medical conferences in South Africa. In their speeches they share highlights from their exceptional careers. These are intended as informative and inspirational examples of how it should be possible for local doctors to become knowledge producers, in addition to performing their clinical work. However well-intended these statements are, they sit in tension with the lived professional experiences of South African medical doctors. An example of this kind of keynote address at the Wits Surgical Biennial Symposium was delivered by Prof. Kees Dejong.

Dejong was a visiting professor, a specialist hepatobiliary surgeon from the University of Maastricht in the Netherlands. The symposium programme explained that he was the 2016 Miller Professor supported by the Michael and Janie Miller Trust, a trust set up in 1965 to support research and the mobility of professors to and from Wits University to facilitate a circulation of expertise and learning (also in, Veller 2008: 50). Introducing the address, Smith explained that he had been a fellow in Edinburgh, funded by the trust, when he had first met Dejong.

According to the programme Dejong was an “Invited International Speaker”, a title also used to describe keynote speakers at other research events. His biography, reproduced in both the pocket-sized programme and the biennial book, clearly and succinctly stated his kudos, signalling why the audience should take his address seriously. Dejong had done a PhD and clinical training at Maastricht, had worked as a fellow at the Royal Infirmary in Edinburgh, was a member of various prestigious organisations, and an editor of the *British Journal of Surgery*. A prominent man in his field, he brought to South Africa his clinical acumen as well as his knowledge making expertise.

Dejong made three presentations at the symposium: in addition to the keynote, he held a 30-minute talk on “What Makes an Article Publishable?”, and another one of the same length discussing the “Uses and Abuses of the Nasogastric Tube”. At his first appearance, the keynote address just after the morning tea break on the first day of the symposium, he lectured for 40 minutes, almost three-fold the amount of time afforded to other speakers at the biennial, who were expected to cram the developments of a clinical sub-speciality into a mere 15 minutes.

Dejong based his keynote address entitled “From Evidence to Implementation: ‘Mind the Gap’” on the premise that good evidence from relevant research did not necessarily translate into changed surgical practice: implementation did not always smoothly fall into line with new information about better ways of doing things. But the implementation — the “we must do” that Bizos had emphasised with the help of Goethe’s words -- was important to improve clinical outcomes. With an interesting blend of Dutch and Scottish accents, Dejong recounted his career, especially the research parts of it. He tracked the trials and tribulations of his own research, giving examples of success were the gap had been closed and where practice had been changed because of good evidence. His speech was ostensibly about several surgical trials that he had been involved in, such as the appropriate lengths of a hospital stay for surgery patients; peri-operative care and discharge criteria; appropriate uses of nasogastric tubes; and surgery patients’ experiences of nausea and vomiting.

After months of fieldwork it was clear that keynote speeches had shared characteristics and compromised a distinguishable cultural form that reflected broader professional aspirations to produce local research in order to improve the dire state of South African healthcare system. The explicit clinical content, of course, varied from speech to speech. But the form and didactic message of Dejong’s speech was almost identical to similar addresses given by other invited international speakers at prestigious lectures or keynote addresses. In my field notes I had begun to dub these “big man speeches” or “the big man’s ‘how to’ speech”. I did not intend this to be entirely cynical as it looked when I was typing up my notes later. But these terms became useful shorthand descriptors of the social significance of the type of people invited to speak and what they spoke about.

These “big man” speeches generally followed the form of “a famous person from elsewhere tells us how to do that which we aspire to”. If it were not for the restrained manner in which the addresses were delivered and the solid scientific research facts they provided, these men would seem markedly like motivational speakers. The esteemed speakers would disclose their own lives as examples of and encouragement for how it was possible to achieve greatness. In my experience these “big man” speeches were certainly never boring. Generally the invited guests were confident if not charismatic speakers who certainly were not in the habit of hiding their light under a bushel. These were not third-person accounts. These were first-person narratives, intended to give some facts but mainly to inspire. The manner of speaking was a stark departure from the general glorification of quantitative explanations of observable phenomena, “hard fact” as such. Aside from the odd humorous anecdote that a doctor-researcher might add to his or her presentation, these keynote addresses were the only times that speakers were allowed this kind of latitude to draw on personal experience as a form of evidence to change professional behaviour. The distinguished keynote speakers addressed the audiences with humour but in places also a touch of self-denigration. Their talks were peppered with clichéd inspirational maxims, such as “collaboration is key”, “I have great hopes for this next generation”, “challenge the status quo”. Their speeches included a few handy, inspirational, if not necessarily substantial tips of how other people, namely the local doctors in the audience, could achieve greatness. Dejong, for example, said “and you can do the same”.

Inevitably these men — and they were always men, and almost always white men during my fieldwork — had exceptional careers. Of course they did, otherwise why would they be asked to present. The narrative they provided for their audiences gave ample evidence that they were extremely driven, high-achieving individuals. In fact, their life experiences and biographies were so impressive that I doubted that just anyone could take up the gauntlet and “do the same” to achieve the same success as these men. These were not easy careers to emulate. People do not all have the same external resources available to them, or the same intellectual interests.

However, as with university- or institution-driven discourse, in this professionally-driven discourse there was a disjuncture between aspiration to produce locally-relevant new knowledge and what research activities were actually achievable in the local context. Never mind minding the gap between practice and evidence — what about the gap between the local practices of research and the evidence that overseas overachievers were able to produce?

An (obvious) critique of these keynote speeches would be that they implicitly positioned institutions and professionals in the global south as inadequate or lacking. Therefore, people from better-resourced settings in the global north, even if they were expatriate South African alumni, were required to show the audience how things are done. Dejong’s lecture, along with other attempts to instantiate research through encouraging evidence of other people’s successes, indicates a democratic urge to extend a scientific community, an attempt at equality among professionals, a sentiment that “we should all be able to do it”. Yet critically, these public inspirational incantations were contradicted by my interlocutors in their testimony-like descriptions (see Chapter Two) of the overwhelming and challenging nature of clinical work and the difficulties of conducting research in local contexts which were markedly different to the conditions the doctors in better-resourced countries had available. My interlocutors pointed out that internationally there were higher numbers of specialists, working in much better resourced academic hospitals, so that doctors had specific research-career tracks available to them with protected research time; and they had institutional support and resources including the most basic of present-day research tools and electronic record systems in hospitals — all of which was almost non-existent in South Africa.

In their keynote speeches international professors tended to discuss the reasons why local medical practice should engage in knowledge production: namely that relevant evidence may be produced to better guide local practice in the South African resource-restricted setting, rather than relying only on research from the global north in better-resourced hospitals among wealthier populations. Yet at the same time these speeches, as a recognisable discursive form intended to inspire locals to live up to such professional aspirations, did not take any heed of the local context within which that knowledge was to be made. These speeches therefore did not serve as an example in the local context; they rather functioned as a celebration of exceptional men, enacting a hagiographic tendency pervasive in medical history. The cultural form of the luminaries' keynote addresses, which does nothing to address the intractable problems that exist in the medical working conditions, sits in contradiction to the general aspiration and thrust that it should become a common practice for every-day, rather than extraordinary, doctors to produce research.

As Dejong had made full use of the time allocated to his address, there was no time for a question-and-answer period; instead Smith encouraged the audience to talk to Dejong during the break. Given the ways in which my clinical interlocutors cited workload and lack of resources in a powerful pushback against university expectations of research productivity, it was a little surprising that even during tea breaks following keynote speeches I never witnessed the same kind of pushback against keynote speakers in unofficial conversations. It seems unsurprising that reactions to these leading figures in a clinical discipline would be different from the reactions of Wits doctors to university bureaucrat overlords. Part of the cultural milieu of conferences was also a cordial treatment of invited visitors, regardless of their decontextualized cheerleading.

One notable exception during my fieldwork, which happened to be in the field of global surgery, was the 2016 annual A. J. Orenstein Memorial Lecture hosted by the Wits Adler

Museum of Medicine on 30 August, just two months after the biennial.[48] The lecture was by Dr Emmanuel Makasa, a prominent Zambian doctor who had already visited and spoken at a global surgery event at Wits in the previous year. Although he was also from the global south, he like the global keynote speakers, had a list of impressive credentials, including working at the United Nations. He was a key player among a Zambian contingent that played a pivotal role in bringing access to surgery to the attention of the WHO, with Zambia being one of the first countries to co-ordinate with the Lancet Commission on Global Surgery to improve its health system to provide access (ASSA 2016; LCoGS n.d.). It was clear from people's interactions with him at the lecture that there was great reverence and admiration for this black, southern figure and his team's ability to do what South African surgeons had yet been able to coordinate with the Department of Health.

Makasa's lecture complicates the reading that the circulation of inspiring big men came only from the global north, a region that South African clinicians were only too eager to compare themselves and their working environments to. However, it does not override the general sense of malaise that South Africans need to catch up to someone else — even if this someone or something else is very occasionally also in the global south. It also does not negate Kahn's point that well-funded and powerful agenda-setting largely arrives via institutions, such as universities and international health organisations, based in the global north (also noted by Connell et al. 2017, 2018). The Zambian delegation influenced the WHO and the Lancet Commission, which spurred action among surgeons elsewhere; this impetus cannot be attributed to these SADC compatriots alone. It also does not override the fact that the increase in international collaboration by South African health researchers since the early 1990s, when academic sanctions came to an end, have mostly been with academics from the USA and the UK, and only to a lesser extent in the form of "south-south" partnerships with India and Latin America (Pouris 2012; Sooryamoorthy 2009, 2010). There has been comparatively little collaboration with other African countries, likely related to flows of resources as well as prestige associated with collaborating with northern partners.

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[48] A. J. Orenstein, an American-trained doctor who played an important role in developing healthcare services for miners on the Witwatersrand, was a prominent Wits clinician (Adler Museum of Medicine n.d.). The Orenstein lecture was one of few public lectures that took place in the Faculty of Health Sciences and was largely attended by alumni and not students; in these ways it was unlike much larger, more frequent prestigious lectures on main campus.

While speeches like Dejong's avoided the clinical and institutional realities of different contexts, they generally also did not consider the unequal relationship between knowledge producers from the global north and those from the global south when it comes to publications. This was raised rather briefly during Dejong's a 30-minute talk he called "What makes an article publishable?". Drawing on his experience as a published journal author and as journal editor of *British Journal of Surgery* — he gave instructions on how to go about publishing an article. Like all other talks on publishing I had been to over the course of my fieldwork, this lecture included quick lessons about: coming up with an interesting idea and feasible study; tips for writing clearly; who to include as co-authors; which journals to aim to publish in; aiming at a simple title; and how to respond appropriately to reviewers' comments. Like the prestigious lecture, this instructional session also had a familiar and trusted form across institutional settings and clinical disciplines. The question-and-answer session that followed his talk held more interesting contents that revealed issues about forms of privilege in clinical research publication. One delegate asked Dejong about editorial feedback that she had got on one of her articles. She explained that her article was rejected because reviewers claimed that the data may not be reliable because it came from a centre with a publication record that was not as vast and illustrious as some American and European universities. It seemed to her that if she had submitted the exact same data together with a more illustrious (i.e. northern) colleague or from a more well-known research centre, the reviewers would have reacted completely differently. Rather than taking up the issue of power that the delegate was pointing to, Dejong answered purely on the practical level to recommend that the delegate write a letter of rebuttal to the journal editors, who as editors should trust researchers and the data they present, regardless of the institution they are located at.

As I knew this delegate well, I was aware that this was not the only challenge she had faced in terms of her publishing. On another occasion a paper was rejected from an international journal because it was considered too locally specific. She told me she interpreted this to mean that her data was collected in too poor a setting, one not considered relevant to an "international" journal — to her, code for a northern journal. This phenomenon is not limited to biomedicine, research indicates that an insidious "old boys" network and research agenda-setting pervades academic publication more broadly (Connell et al. 2018: 49; Dalu et al. 2018).

This delegate's concerns, along with Kahn's tongue in cheek comment about Johns Hopkins University, began to point towards the problems embedded in the dream of a scientific surgery community: not only were the practical contingencies of producing research and treating patients diverse and different, but the surgeons across the globe did not go into research making on an equal footing. The global world of knowledge production was not equal with regards to the ability to elicit resources, determination and control over research agendas, or even credibility. These small, but significant comments begin to trouble the democratic ideals of expanding a research-literate and research-making community and surgeons better fulfilling their professional duty to do good by their patients. The ethnographic description in the chapter thus far serves as an example of the tensions that exist between global and local means and motivations for doctors producing research (even if these are not always as simple as a binary between north and south), and how local contingencies can affect a moment of expansion in clinical research. The chapter now turns to examining the tensions within the local South African medical community as played out in the expansion of HIV-related research.

HIV research and continued expansion

Unlike surgery, there is an astonishing amount of anthropological literature written about HIV/AIDS in Africa and in relation to state-making, humanitarian aid, large-scale trials, and global health agendas. Moyer (2015: 260) suggests that HIV/AIDS is arguably the most widely studied and written about medical issue in anthropology. Since anti-retroviral medication become more widely available a good deal of anthropologists — applied and academic — have shifted focus from cultural beliefs and practices that relate to the spread and prevention of HIV infection to studying how global biomedical interventions play themselves out across Africa (for example, Geissler 2011a, 2015b; Moyer 2015; Nguyen 2009, 2015a, 2015b; Prince 2013; Redfield 2013; Saethre and Stadler 2013, 2017). This field has contributed substantially to understanding and demonstrating postcolonial, post-cold war geopolitics, and neocolonialist biopolitics (for example, Comaroff 2007; Schoepf 2001). The disparity in power and resources between researchers from northern and southern institutions has been noted regarding the rapid growth of HIV research as a branch of global health (for example, Crane 2010, 2011; Okwaro and Geissler 2015). Regarding South Africa specifically, aside from research on suffering and local conceptualisations of HIV/AIDS, there is a substantial literature about the relationship between expertise and politics during the Mbeki-era of HIV-denialism, and the complicated, fractious connections between scientific and clinical expertise, civil society, and post-apartheid political power (for example, Colvin 2012; Fassin 2015; Green 2009; Mbali 2009; Robins 2008, 2009; Van der Vliet 2004)

My aim here is not duplicate this literature, but to build on it, using it to contextualise and frame my university-based ethnography that scratches the surface of a powerful, rapidly-established, post-apartheid research field that is dominated by clinical trials, reliant on money from the global north, and often undertaken in partnership with some of the powerful research bodies in global health. As stated in the introductory chapter, I am primarily concerned here with the knowledge production by doctors in relation to their clinical experiences in local institutions, rather than with HIV research units as a productive periphery feeding global health research.

HIV biennial, "the best minds in the field"

"To rub shoulders with the best minds in the field, in the region, the S[outhern] A[frican] HIV Clinicians Society Conference is the place to be". This was a quote from Prof. Yunus Moosa, the chair of the society's 2016 conference. It appeared in the advertisements in the society's journals, *HIV Nursing Matters* and *Southern African Journal of HIV Medicine*, in the lead-up to the society's biennial conference. Perhaps a slightly disconcerting mixed figure of speech, Moosa's comment succinctly explained the purpose of the society generally and the biennial event in particular. The society offers continuing medical education workshops, produces two journals and a newsletter, and creates and distributes treatment guidelines. In 2016 the society's annual membership fees were a nominal R300 for a nurse and R400 for a doctor. Like the surgical biennial, the biennial event of the HIV society was intended to keep healthcare practitioners up to speed with latest developments in their field.

The theme of the 2016 biennial conference was "Our Issues, Our Drugs, Our Patients". The conference included a wide range of events, such as plenary lectures by international experts; an evening debate open to the public; dinners sponsored by pharmaceutical companies; and local general practitioners (GPs) presenting unique case studies. The bulk of the programme consisted of parallel sessions, each made up of three to four presentations by HIV experts invited to speak on a particular topic, such as "Taking Care of the Voiceless and Vulnerable Groups" or "National Reflex Lab Screening for Crypto [cryptococcal disease] — Making it Work for Patients and HIV Clinicians".

Upon entering any session, conference centre staff would scan the bar-coded name badge that all delegates and speakers had been provided with at registration. The reason for this was to track the CPD points for people attending the conference. PowerPoint slides of many of the presentations were available on a complementary flash drive that delegates received in their conference pack; they were also later made available on the society's website. Possibly as a result, almost no one took notes though some audience members took pictures of slides that were of interest to them with their smart phones or tablets.

According to Moosa's speech on the closing day of the conference, approximately 1 000 people attended the conference, the society's third biennial gathering, with 90% of them being South African. Roughly 90% of the delegates were doctors, with about 10% nurses and allied health professionals, counsellors, and medical aid employees. The event spanned four days, beginning at lunchtime on Wednesday, 13 April, and running until lunchtime on Saturday, 16 April. It took place across many variously sized venues on the upper levels of the swish Sandton Convention Centre. The central location was the Pavilion, a massive industrial like space that had been divided into two by expansive black curtains. The one side of the pavilion formed an exhibition hall with stands occupied by groups as diverse as pharmaceutical companies such as GlaxoSmithKline to South African rights-based organisations such as Section 27. The other side of the venue was where the professional "theatre" took place, the main, plenary venue. The space contained neatly arranged oblong blocks of chairs. Apart from the stage, the venue was extremely dimly lit, placing the focus on two huge screens flanking the stage that either displayed a speaker's presentation or the conference title and society logo (see Figure 5).

The aim of growing the clinical research community in the region was woven into this conference programme (although relatively less prominently than at the surgical biennial). Prior to the conference ordinary society members across the region were encouraged to submit their original research for consideration as a poster or an oral presentation. The society's scientific committee then selected 41 posters for display in the exhibition hall.[49] The committee accepted 24 of 65 submissions of oral abstracts for presentation, most of which were part of two specially designated conferences sessions.[50] I attended one of these oral presentation sessions, late on the Friday afternoon. The presenters and audience were largely GPs, some working in public practice and others in private practice, but none associated with big research

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[49] One of the members of the organising committee informed me that 41 posters were displayed; later, however, the society's website stated that 50 posters had been displayed (SAHCS n.d.).

[50] A handful of the oral presentations with direct links to topics covered in the conference programme were slotted into regular conference sessions.

institutes. They gave short presentations based on their research, including case studies, which they passionately delivered as they explain their trials and tribulations treating patients with unusual conditions or with complications, such as the excruciating disintegrating perineum syndrome. According to Dr Sarah Seigel, one of the conference organisers and a prominent member of the society, this was part of the society's attempt at "grooming new people and giving them an opportunity". Another avenue was by inviting "up-and-coming" figures, as she called them, to participate in the scientific selection committee.[51]

Southern African HIV Clinicians Society

3rd Biennial Conference

13 - 16 April 2016
Sandton Convention Centre
Johannesburg

Our Issues, Our Drugs, Our Patients

www.sahivsoc.org
www.sahivsoc2016.co.za

Figure 5: PowerPoint slide depicting the logo and title of the 2016 Southern African HIV Clinicians Society biennial conference.
Courtesy of the South African HIV Clinicians Society. Source: Complementary flash drive given to conference participants.

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[51] Also part of the research capacity-building part of the programme was the 7:30 am Thursday morning session entitled "From Patient to Policy: Ensuing that your Clinical Practice is Positioned to Inform Evidenced [sic]-based Policy", hosted by the Wits Health Economics and Epidemiology Research Office (HE^{2}RO). Unfortunately this was one of the sessions I was unable to attend due to the conditions imposed by the reduced conference fee I paid.

“Meet the professor/clinician”

Another session that attempted to expand the community of healthcare practitioners contributing to research was the session “Meet the Professor/Clinician”. The slash between the two nouns in the title intrigued me; in my experience a hyphen was more common. Nonetheless, this kind of compound word was a homing beacon for my research interests. Unlike the descriptions of the other sessions in the programme this was a particularly brief and ambiguous title. Indeed, I imagined that this 45-minute Saturday morning slot would in some way touch on the connection between university expertise and clinical know-how and to be an opportunity to “rub shoulders with the best minds in the field”.

Where I had thought I would slip discreetly into a seat on the side of the Pavilion for this 7:30 am session, I was surprised to see a small group of people sitting on chairs arranged in a circle in front of the stage. The “professors/clinicians” we were to be meeting were sitting amongst us, the conference audience. This was indeed a change from the polished, high-production value performances that took place in this venue during the conference. I was not sure if the professors had always had in mind to hold an intimate forum, or whether they decided to improvise on a new format after seeing the low turnout on this, the third day of the conference and the morning after the conference dinner.

The programme listed five experts and a chairperson. Two of the speakers listed in the programme were not present — Prof. Yunus Moosa, chairperson of the conference, and Prof. Gary Maartens, a prominent pharmacologist from UCT. Their absence was not explicitly discussed during the time I was there. Three of the remaining professors/clinicians ended up all being Wits researchers, accompanied by an American colleague. The members of the panel, if one could call them that in this casual setting, were all familiar with each other, referring to each other by first names.

The session was chaired by Prof. Ian Sanne, a tall silver-haired man and a commanding, confident figure. He was the CEO of Right to Care, an HIV treatment centre based at Helen Joseph Hospital, a Wits teaching hospital in Johannesburg, and director of the Clinical HIV Research Unit at the same hospital. He started the session by asking everyone in the circle to give a brief introduction of themselves with names, profession and place of work. He then asked the professors to explain their career trajectories and to describe specifically when they started to see a change in their careers.

The first expert to share his narrative, his origins story, of becoming an HIV expert was Prof. Joe Eron. He was the odd one out as the only American and only non-Wits-trained doctor in the panel. He came across as a soft-spoken man of gentle demeanour. He explained that he had become interested in becoming an infectious diseases specialist and researcher when HIV erupted right during the time of his residency (registrar training). But he did not want to be only a researcher; he still wanted to be somebody's doctor. He thus remained a practitioner and worked on changing HIV treatment regimes in North Carolina because he wanted to see that HIV patients were going to be okay.

He was followed by Prof. Francois Venter, a household name in the South African HIV field. Venter had a reputation for being outspoken, provocative, and sometimes even contrarian. He was wearing spectacles and donning a t-shirt with the name and logo of the Wits Reproductive Health and HIV Institute, the prominent organisation where he worked as deputy director. This institute was the jewel in the crown of the Wits Health Sciences Faculty, annually securing vast sums of external funding and under the leadership of internationally prominent Prof. Helen Rees. Venter described the circumstances that transformed his professional career into one of HIV research as a "weird transition": when he was a medical student in the very early 1990s HIV was "not in the ward", presumably meaning that patients with HIV were not common in teaching hospital wards; but by 1993 30% of the patients in wards had HIV; this rate increased as he went on to become a registrar in internal medicine with wards becoming a "mass of death". At this point his description reminded me of the narratives recounted by many of my interviewees who had trained during this era. Venter explained that at first he and the other doctors with an interest in HIV or infectious diseases more generally were professional exiles. Senior Wits doctors, blind to the impact of HIV or hopeless about the treatment of HIV and its related opportunistic infections, encouraged them to rather move into other, more prestigious fields of medicine, such as cardiology. For Venter his "big moment", a career-changing event, came when he ventilated an HIV-positive patient and "reversed that patient", by which he meant that he saw the patient getting better. And then when Sanne offered him a job, he accepted. "Research actually happened despite politics", he said, presumably referring to the political context of HIV-denialism under President Thabo Mbeki at the time, one that presumably everyone attending the session was aware of. Venter said that research got better after 2010, presumably because of increased funding and because denialism no longer remained of concern under the presidency of Jacob Zuma. Again, he left the specific details of these reasons out of his narrative.

The third professor/clinician to share her story was Dr Francesca Conradie. Although she did not formally have the title of professor, she was at the time president of the Southern African HIV Clinicians Society, and she was a researcher at the Right to Care and Clinical HIV Research Unit at Wits. She gave a candid and humorous account of the development of her career as a research doctor. Placing herself into the same generation as the preceding speakers, she noted that in her medical school immunology notes from the early 1980s there had been precious little about HIV. She explained that her career briefly took a back seat after starting a family but when she took up her practice again she realised that she would not be "any kind of doctor" if she did not learn more about HIV. She joined Sanne's unit and became involved in clinical trials. She said that it was "great fun seeing people get better". As HIV and its treatment had become controlled in the meantime, she was now becoming more interested in research in multiple-drug resistant tuberculosis (MDR-TB). She ended her short retelling of her professional life saying that in her experience individual healthcare professionals see things around them and want to do things better, ranging from the individual to the system.

The last to relate his personal story was Sanne, the facilitator of the session. Like Venter, he had felt that he had to struggle against the grain at Wits. As a young doctor his seniors had encouraged him to do other specialisations, suggesting that the field of infectious diseases was on its last legs, a professional dead end. The development of the HIV pandemic had been a tough time, with no treatment to offer patients. He became involved in ART research through Right to Care, this name itself indicating something of the politics of the time (and like the global surgery proponents, research was motivated by a lack of access to appropriate healthcare). But it was not always easy to keep organisations like Right to Care running. In 2003 they nearly closed because of a lack of funding; for a while they were unable to pay the salaries and everyone was very demoralised. But then they began to apply for grants and managed to win some. Regarding his career trajectory, Sanne said that the tipping point for him to change his professional route to include research was as a registrar treating a childhood friend. He had been to nursery school with this patient, whose life had turned out quite differently from his own. Sanne had to ventilate this long-lost acquaintance. After 21 days his friend died, and there was nothing the medical team could do for patients like him. "We had to step up to be able to treat patients" were the words with which Sanne ended the story of his genesis as an HIV expert.

The professor/clinicians moved on from their testimonies to the drier logistical detail of having a research career — thus moving from positions as joint appointees in academic hospitals to working full-time in non-profit research units. The setting at these units was often not ideal, as Sanne indicated: there were growth phases, the work environment could be unstructured, and one took on financial risks, but that it is possible to "have a life" working for a non-profit organisation and to live on "soft money", sourcing grants to fund projects and salaries. He suggested that it was probably wise to start such research work in a well-established research group. Venter added to this explaining to everyone that the soft money meant that the state did not pay your way, that one has to source research money oneself. He laid out the disadvantages and advantages of such a career. On the down-side it was not a stress-free life, this professional life involved a lot of time spent writing grant applications, there was financial and work uncertainties. But the beauty of this career path was that one got to work on what one wanted to do — critically, this meant doing the right professional thing at the right time, presumably a reference to HIV denialism. And this career involved working with interesting international collaborators. For Conradie research work was not just about pursuing one's own intellectual pursuits but about working with colleagues in the pre-clinical sciences, at a university and in private healthcare. By designing and carrying out trials one could contribute to changes in policies and treatment guidelines. This work was fulfilling as it translated into actual changes in the medical field. (Possibly there was more potential for this in the field of HIV/AIDS, once the massive roll-out of HIV treatment in South Africa was initiated, than in some of the other medical disciplines.)

Although this biennial session involved experts giving their professional testimony, it did not quite follow the conventions of the "big man's speech". First, all except for Joe Eron were local experts. Second, unlike autobiographical keynote speeches at other events, none of the speakers at this session listed their accolades. Eron, for example, did not mention the grand achievements listed for him in the conference programme, such as having been the principal investigator on drug trials. Third, the professor/clinicians' speeches were all made off the cuff and did not involve slides or scripts. Nevertheless, it is likely that the speakers had shared much the same narratives at other professional performances and that they were part of their professional repertoires. Sanne's story about the turning point in his career has, for example, been documented in Oppenheimer and Bayer's (2007) oral history entitled *Shattered Dreams* about HIV doctors and nurses in South Africa. At the 2016 annual Prestigious Lecture at Wits Faculty of Health Sciences, Venter highlighted for the university audience, the professional context in which he chose path-less trodden to become HIV specialist, despite dire need for clinical HIV expertise at the time. Yet regardless of how formal or personable the package in which these origins stories were presented at the HIV biennial session, they clearly reproduced the trope of the clinician-researcher relying on professionally privileged insights as the foundation of their research endeavours.

The discussion moved from narrative sharing to a question-and-answer session open to the group that had grown to approximately 60 people, as people had trickled in during the session. Delegates from across Southern Africa asked questions that touched on family planning, pharmacovigilance, and the 90-90-90 campaign initiated by the United Nations programme on HIV/AIDS (UNAIDS).[52] With an impressive show of expertise, quickly recalling relevant information, all four of the professor/clinicians participated in answering the questions, rather graciously and generously so, given that the questions in no way corresponded with the content of their speeches. The delegates were not picking up what the professors had put down, so to speak.

Judging by the questions from the audience there were many delegates for whom this intimate discussion was an opportunity to get expert answers to pressing clinical quandaries. It seemed to me that given the professional working lives of the delegates that "professor" in this context was a designation for someone who could give advice about practice, and not necessarily as someone whose careers they intended emulating. The title "professor" in this context did not just mean a person who could provide information about research processes but who, because of their involvement in research, could answer burning practical questions. The prestige of the professor title, or association with the university, was of practical relevance.

Towards the end of the session, Sanne began to refocus the conversation on growing a community of researchers by adding onto the answers given by the other speakers. When

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[52] The aim of the 90-90-90 plan was that by 2020 90% of people living with HIV will be aware of their diagnosis, 90% of these will be on ART, and 90% of the latter will have achieved viral suppression (UNAIDS n.d.).

Conradie, for example, answered a question about the availability of Pre-Exposure Prophylaxis (PrEP) for pregnant women exposed to HIV by voicing her concerns about feeding even more people through an already heavily burdened healthcare system, Sanne picked up on this thread arguing that South Africa needed a different model of care, one that, for example, did not involve people regularly going into clinics to get their medications. He suggested to the group that the government healthcare facilities where they worked could become research sites — to answer some of these questions about what different models of care could be implemented. He called on the audience to attend the society's conferences and workshops, to improve their own training by taking university research methods courses, and to find research collaborators. And he encouraged them to look out for adverts for jobs or collaboration to apply for opportunities at organisations like Right to Care. In the earlier days of HIV research things were much more competitive, he explained, when there was a smaller pool of money that everyone competed for. This was not the case anymore as it was a well-established field of research, a veritable knowledge producing industry in fact, with an explosion of HIV publications at South African universities (see, for example, van de Laar et al. 2018: 5–6).

Putting expertise into context

I was puzzled by the "Meet the professor/clinician" session. Initially I was fascinated by the apparent mismatch between the experts' narratives or testimonies and the audience members' far more pragmatic demands of them. But the session was also significant in that it simultaneously highlighted and downplayed various contingencies in the development of the research community and expertise. The experts' narratives clearly highlighted the ways in which research was a means to "do the right professional thing at the right time", as Venter had stated. At that time, for example, research tied to drug trials was the only way to secure treatment for patients (Oppenheimer and Bayer 2007). Similarly the discourse at the surgical symposium positioned research as an ethical professional response to constraint or even crisis in the local context.

The professor/clinicians openly pointed to the fact that resources for research had become considerably more widespread as a result of HIV being recognised as a global public health crisis. Yet other contingencies that played a role in the establishment of this research community and its expertise were less clear. It was not as simple as people wanting to improve a system or to do stimulating work. What was less obvious is that the HIV crisis, globally, produced specific and unique opportunities for a then relatively young generation of doctors to establish themselves extremely rapidly as clinical and academic experts in the field. This has been quite widely captured in the literature, with Iliffe (1998) making the observation regarding East Africa and Oppenheimer and Bayer (2000: 248–56) in the American context, in a chapter section titled “AIDS has been good to us”. Epstein (1996) traces the expansion of pathways to establishing credible scientific HIV expertise in a context of clinical urgency and social activism in the USA.

An established HIV researcher whom I interviewed several months after the biennial, highlighted that his choice to go into HIV medicine and prevention was a response to a dire need. But he was clear that going into HIV research then had been relatively easy because “the field was wide open”. But who that field was open to was not random, a limitation that was not only based on political ideals or professional interests but also, critically, on race. While there are a number of internationally prominent black HIV clinician-researchers, such as Salim Karim, it is certainly no coincidence that most prominent South African HIV experts at this conference, the best minds in the field, were white people from prestigious, previously white universities like Wits or the UCT. Indeed, the proportion of white experts to black delegates at the biennial was, unsurprisingly for South Africans, not at all reflective of the demographics of the population. Rather it was reflective of a segregated past that continues to have ramifications in professional fields — particularly those of medical specialisation or clinical research which take over a decade of training. It was thus not surprising that in the “Meet the Professor/Clinician” session it was mostly black healthcare practitioners who asked crucial clinical questions of a group of older white professors.

Sanne’s comment about taking a research methods course and Venter’s about living off soft funds as a trade for doing stimulating work both hide the fact that research is not just as easy as deciding that one would like to do it. This is particularly so when issues of class are taken into account in the South African setting where black professionals tend to have far more extensive financial responsibilities towards extended families in comparison to their white colleagues, and public discussions about “black tax” are ongoing (for example, Nt’Sekhe 2017; Ratlebjane 2015). Committing to making a living in a soft money environment (although HIV research in particular is considerably less financially insecure than in the past) would require a researcher to have a level of independent economic security so that one would not jeopardise the survival of one’s immediate or extended family. The public comments of the white professors and clinicians also underplayed that being a researcher is difficult in terms of locality, advantaging people in urban areas. I could just not imagine that the nurses attending the conference from rural KwaZulu-Natal would find it easy to just take up a research methods course.

This is not to say that the development of "up-and-coming" knowledge producers was not taken into cognisance within the Southern African HIV Clinicians Society. As one of the conference organiser, Seigel, explained it had indeed been a challenge to diversify the speakers at the conference sessions. She commented on the fact that people usually only looked at race as a marker of diversity (a point I could confirm from a handful of interlocutors' critical remarks about the racial composition of the biennial expertise) but did not see the diversity in the programme in terms of profession (thus including nurses), gender, race, geographical location, and public and private practice. In the sessions on the oral abstracts and the posters, Seigel explained that the society was indeed making a conscious effort of developing a new generation of researchers, a fact certainly reflected in the racial composition of presenters at the GP oral presentation session I attended. But for the prominent, more widely-attended plenaries this was certainly not the case. In my interview with Seigel a few months after the conference she reflected on the limitations she had to work with:

> If you are going to have a very controversial expert debate, and there are [just] three people in the country that … have [the expertise to participate in] that debate, and, yes, they are all white men in their fifties.

While these older men have younger researchers working with them who could take on these kinds of presentations, she explained, these protégés would take much longer to prepare their speeches when the older experts can do it on the plane en route to the conference.

> In the big [sessions] you have to have someone that can just pull a year's worth of research into a twenty-minute presentation. So, you need that level of experience, and the experienced people are white people.

In addition, the conference chair chosen for the biennial had a strong influence on the programme and on the importance given to diversity and drawing in a newer generation:

> With the 2016 conference, Yunus Moosa was the chair and he insisted that we go with gravitas and not diversity.

Regarding generational gravitas, similar dynamics of race had been evident at the Wits Biennial Surgical Symposium, although there were some exceptions — the programme included some older black presenters with academic clout, notably trained at previously black medical Schools at UKZN and SMU, such as Prof. Thembinkosi Madiba and Prof. Thifhelimbilu Luvhengo. Certainly, the younger generation of presenters was a significantly more diverse group of up-and-coming consultants and the audience was made up of larger numbers of black and female registrars (although the registrar population is not yet representative of South African demographics, at least not in surgery).

The legacy of the Wits Department of Surgery is built largely on the prestige, research and clinical work of white men — a product of prior segregationist educational policies. Unlike the HIV field or, indeed, research in disciplines such as paediatrics or family medicine, women have tended to be excluded from surgical disciplines, with their gruelling hours and reputation for gendered gate keeping. Women have thus been excluded from surgical research and the prestige and public recognition that accompany this. Indeed at the surgical events I attended it was surprising if there were more than one or two women surgeons over the age of 55 years present. Prof. Sarah Rayne (2017), a Wits trained specialist surgeon, commented on the inappropriate lack of diversity in the cover photographs of the *South African Journal of Surgery*, particularly given the changing demographics of medical students and registrars, as it created the impression that the role models in surgery, including surgical research, were only white men.

Conclusion

The span of social science literature attests to the fact that the existence of expert groups and expert knowledge transfer has always been determined, or at least affected by, one of or a combination of the following: gender, class, generation, race, ethnicity, geography, or religion (for example, Barth 2002; Boyer 2005, 2008; Crick 1982; Pollock 2012; Summerson Carr 2010). South Africa is in no way exceptional in that specific moments allow for more rapid expansion of a profession or of research, and that at these moments opportunities for individuals to develop research expertise is dependent on the broader social context. But the history of segregated and discriminatory professional training and tertiary education, the political transition and HIV denialism concurrent with the rapid spread of HIV infections make for noticeable forms of research communities at particular institutions. Yet, compared with the more common professional complaints raised and crises mentioned, such as limited time and resources and large workloads, the wider social factors affecting who can or has been able to participate in these communities were not explicit for a significant part of my fieldwork. Aspiration is not enough.

It would be unreasonable to deny that figures like Damion Clarke or Ian Sanne are not exceptional, hardworking people who should be recognised for their contribution to medical research, in particular for the democratic ends they aim to achieve in terms of providing more equitable access to quality healthcare. However, to fully understand the attempts at expanding a culture of research in South African healthcare broadly and at the Wits School of Clinical Medicine in particular, it is important not only to take into account the complexities and challenges faced in local practice but also to recognise the complexities and challenges of local clinician-led research. Getting involved in research is not as simple as Dr Conradie's encouraging comments of it being "great fun" would seem to indicate. The feasibility of research production and career-making in this field is not simply related to personal interest or individual capabilities but rather to sets of conditions present at specific times and places for particular members of a professional group.

These dynamics are obvious — literally to the naked eye — when looking at the generational gravitas of experts lined up at research events. Similarly gendered, classed and racially exclusive trends are common across the globe. It is also arguable that, because these dynamics are often inescapable, particularly among the older generations, some South Africans may feel these exceptions and exclusions go without saying. This disregard of explicit social exclusions in communities of knowledge producers is particularly striking given established clinician-researchers' reliance on personal testimony in their origin stories deployed to inspire others to join the community of knowledge producers. Privilege in these professional performances is bisected from the impetus of a moment of disciplinary expansion.

Lastly, to revisit my analysis in this chapter as it relates to the disciplinary literature I describe in the introduction to my thesis, my findings about clinician-researchers reinforce arguments in contemporary medical anthropology of Africa that the state is very much a reference point for medical work and investigation in Africa. The clinician-researchers I observed certainly framed their own work as pertinent to resurrecting well-functioning institutions in post-apartheid South Africa and themselves as contributors to African modernity and social good. Also, the discourse among clinical colleagues, critical of their own practice and its relationship to scientific knowledge production, provided room for candid reflection on the social science critique I was trained in and which was foundational in my ethnographic approach. Their discourse acted as a reminder that anthropologists, for example, do not necessarily have exclusive insights into the mutually constitutive relationship between theory and practice in biomedicine.

Chapter Four —
The making and unmaking of the research and the clinician-researcher

Clinical research is a tender and delicate organism requiring constant care and attention, but as with all other species two attributes are vital: the capacity to adapt to changing circumstances and the ability to reproduce.

— Christopher C. Booth, *Doctors in Science and Society: Essays of a Clinical Scientist*

Science is not done by paragons of virtue, but by individuals who are as prone to self-interest as anyone else.

— Malcolm R. Macleod et al., “Biomedical Research: Increasing Value, Reducing Waste”

Introduction

> You look at your patients, you see your patients, you identify what you want to do research on, and you collect your data. You do it yourself, nobody will do it for you and you can only do that in between your work. There is no allocated time that you can do it … The clinicians that progress [in research] are doing their work after hours. They would go home six o'clock, seven o'clock. And the clinicians that go home at four o'clock are not researchers. So that is how difficult it is for clinicians, and if you are on call you have to go to {the hospital} until twelve o'clock at night, then no research for that day.
> — Professor Emeritus Josiah Mngomezulu

With Chapter Two having described the institutional conditions of constraint and Chapter Three the professional aspirations to produce local, clinically-inspired research, this chapter turns to examine how clinicians actually produce research, a set of problems that the opening quote by Prof. Mngomezulu already begins to point to. In this chapter I thus move from observing large, public events and performances of research to scrutinising intimate interactions — interviews and my own participation in clinical research — to get to grips with the figure of the clinician-researcher.

The first part of the chapter describes how doctors make research and how the figure of the clinician-researcher is constructed through this. I use Prof. Mngomezulu's narrative of his decades of experience doing research as the framework with which to explain doctors' third professional role of making research firmly rooted in clinical experience (after their first two roles of treating patients and teaching). The conditions that joint appointees face in state academic hospitals both enable and limit their knowledge production. The conditions of resource constraints, high disease burdens and high patient numbers that make for challenging clinical work also provide clinician-researchers with a resource for privileged professional insights, a basis for locally valuable knowledge production. The imagined outcome of this is to produce modest research, aimed at making visible otherwise undescribed and unanalysed local clinical phenomena, and creating greater certainty about the best possible practices to use in local contexts. But doctors were limited in time, methodological expertise, funding, or flexibility in terms of career tracks, so that their research was often modest in scale and possibly also modest in terms of translating into improvements in practice. The contingencies of my interlocutors' research production also contributed to a powerfully pervasive trope about the clinician-researcher as exceptional, curious, hardworking, virtuously committed to medicine, astutely observant, and set apart from their clinical colleagues. Indeed, my interlocutors described how knowledge making transformed their sense and value of professional labour and expertise and the professional self in environments where hands-on clinical work is often considered the real work of doctoring.

The second part of this chapter dissects clinicians' portrayal of their labour of research and of the trope of the clinician-researcher as exceptional by looking more deeply at the locally-specific institutional and professional contexts of knowledge production. First, I develop a critical view of clinicians' research from outside the profession. Drawing on the culture shock I experienced as a participant in research I draw attention to hierarchies of labour in research that do not align with the discourse of the lone, struggling, self-made clinician-researcher. Drawing on interactions with non-clinicians, I describe how the way that doctors straddle university and hospital affords them professional privileges in research. But, also, this straddling of institutions results in methodological and epistemological limitations linked to the normativity of intervention-oriented research. Second, I present a damning critique of the virtue, value, and quality of clinicians' research from within the profession itself, by drawing on the disillusionment expressed by a minority of clinicians. I discuss the reported lack of research expertise in clinical medicine, especially at Wits, which allegedly allows clinicians to produce research of dubious quality and casts doubt on the potential of research to positively transform local medical practice.

Overall this chapter makes evident that the conditions in which doctors produce their research both underpin the value of this research and the exceptional qualities of the professionals that produce it, but also undermine the transformative potential of this research and call into question the powerful trope of the clinician-researcher as an exceptional form of doctor.

Part One — The making of the clinician's research and the clinician-researcher

On a warm winter's day, in a narrow office filled awkwardly with clunky furniture, I sat nervously and reverently in the presence of Prof. Mngomezulu. He was an emeritus professor in clinical medicine and still prominent in his field. In our pithy, straightforward 45-minute interview, he concisely put across an account of doctors' research.

Mngomezulu was not a "Witsie" — he had not trained or worked at Wits University or its teaching hospitals, and my interview with him was relatively short. For these reasons I initially resisted giving Mngomezulu's narrative much weight in framing my findings on the work of clinical research. However, his formal, no-frills approach to answering my questions, providing clear detail and chronology about his work as a doctor and researcher over several decades, meant that his narrative provided a very concise description of the work involved in doing research as a practicing doctor, one I realised I needed to draw on centrally. I have thus used his narrative as a focal point through which to illustrate the trope of the exceptional, hard-working, astutely observant clinician-researcher that was pervasive in my fieldwork; I augment his account with relevant insights from his clinical peers. My findings suggest that this trope did not differ between universities; it was rather a recognisable narrative describing joint appointee researchers — those doctors employed by the Department of Health in university teaching hospitals. (It was also not wholly different from the narratives of many doctors now employed as full-time educators in the Wits Faculty of Health Sciences, or the clinician-researchers employed in research institutes with significantly reduced clinical work. These two categories of clinician-researchers are of course personally familiar with the working environments of joint appointees.) Using Mngomezulu's description of his research spanning from the 1980s to the present I thus highlight a number of traits common to the narrative accounts on my interlocutors.

When I began my fieldwork and familiarised myself with the field, I came across Mngomezulu's research profile, when searching for prolific, older clinician-researchers in South Africa. It was fortuitous that I heard a presentation he gave at one of the events I attended and saw him engage with younger researchers. Emboldened by my prior knowledge that he was an important figure to interview, I introduced myself and managed to secure a formal interview. As for all my other interviews, I prepared by familiarising myself with Mngomezulu's work, surveying his research publications and noting prominent research themes, designs, and collaborators. I scanned through as many of his first-author publications as I could. I trawled through the metrics of his research provided by Researchgate and Google Scholar. I also read online press releases and university publicity pieces, which touted him as an eminent figure in his clinical speciality.[53]

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[53] Due to time constraints, I was unable to consult Mngomezulu's Master of Medicine (MMed) thesis and doctoral dissertation in clinical medicine in my preparation of the interview, as they were not available online.

The morning of the interview, an administrator buzzed me into the foyer of the department where Mngomezulu still worked. I waited briefly before she showed me to his office. As I followed her through a door leading to a stairwell, I wondered if perhaps she had misunderstood where I wanted to go. But I was indeed on the right track as she showed me across the landing to Prof Mngomezulu's office. As I settled down, I told Mngomezulu about my confusion at being led out of the department and into the stairwell. We joked a little about the fact that emeriti professors — while still being kept on for their expertise — were no longer able to take up space in a department's more sought-after offices.

Mngomezulu was formal in dress and demeanour and explained that he only had half an hour set aside to talk to me. Although officially retired he had a busy morning in the department — from what I could make out consulting with postgraduate students. Like most interviewees he ended up giving up more time than he had originally committed to; but unsure whether this would indeed be the case I immediately posed my first question, namely how he would explain his journey through medicine and how he become a researcher.

Developing questions, creating visibility

"My journey into research was actually serendipitous", Mngomezulu began his answer. It had begun when he recognised his interest in the clinical discipline, in which he specialised after several years working in various disciplines, including in private practice. When he became a registrar in the early 1980s it was not clear to him how doctors became involved in research. Rather, there was an "aura" that suggested that if one remained in teaching hospitals associated with the university one might become involved in research. Many of my interlocutors, especially those in their forties and older, described having had similar impressions. Some indicated that when training in medicine they were vaguely aware that clinical research went on in the university. As one retired professor put in, research appeared to be "something magical" only reserved for "clever people". Yet, how research was done and how people came to do remained opaque for most of my interlocutors.

As a registrar Mngomezulu gradually became aware of research going on in his clinical department and took steps to ensure he could take part in it.

> While I was here interacting with the senior consultants and professors then I realised how they were presenting their work, going to congresses and things

> like that. They talk about, there is a congress [coming up], will people submit abstracts? Then I started asking what you need to do to do things like that. Then I learnt that you work first, get a project, do something and present. Luckily, I had two senior professors and one senior consultant who were prepared to give me projects that I can work on. Because when you start, you don't know where to start. You have to create a research question. You don't know where to start. What is that research question? You don't know what it is. So if there is someone at a senior level who says, "Can you do a project on this?", it helps you. So then the two professors — I did work with them, I would be doing the legwork. Getting the data and everything, and then writing it up. And they would make corrections for me and that actually stimulated me as a registrar.

Mngomezulu described his early research under his mentors as "general" topics in his field and "not anything in particular". He described his projects as "clinical research, getting a few patients, follow them up, and look at their outcome", thus analysing how they had responded to a particular drug or procedure. After he qualified as a specialist he stayed on at the university hospital as a consultant. He completed his Master of Medicine and several years later a PhD on a subject that he developed as his own research niche. Enrolling for an MMed was not a common academic undertaking at the time that Mngomezulu engaged in it. Since 2011, however, registrars are required to complete this degree in tandem with their clinical exams to qualify as specialists, thus making it an increasingly common degree among younger specialists (explained further in Chapter Five). However, a PhD in clinical medicine remains an exceptional achievement for medical doctors in South Africa.

While Mngomezulu was a very calm and collected interviewee, his tone became more animated when he spoke about developing his own, more specialised, research interests that his "heart is in". Presumably his heart remained in these interests as decades later he is still producing research in this field. Building on the foundations of doing legwork for seniors and learning the ropes of data collection and writing, Mngomezulu developed his career — in terms of both clinical and research work, which he presented as having always been intertwined. Presenting a form of professional common sense that I encountered throughout my fieldwork, he explained that clinical work was the crucial foundation for developing research questions:

> I realised that in order to have a research interest in something you must have some expertise in that area. So this is why I started specialising in {specific diseases}. The advantage of that will be that it will be my speciality, at the same time I will be doing research on it.

Mngomezulu was able to establish a specialised unit within his department, which allowed a synergy between his patient care and his research production.

> When you develop a speciality and you develop a clinic on a certain condition, the patients begin to come. So that is what happened. So I started getting patient referrals.

As my review of his earlier publications in his burgeoning research niche indicated, his research entailed small-scale, usually hospital-specific, epidemiological and demographic studies. His articles described disease profiles within his clinical speciality among different "population groups" at the hospital where he worked, in other words within the race classifications inherited from the apartheid system. An illustration of this would be Mngomezulu noticing that he frequently saw condition X, among his patients at his specialist out-patient clinic. He would then put together a retrospective review of his existing patients' information noting the demography — race classification, age, and sex of his patients — in relation to the prevalence of condition X . In this manner he was able to provide concrete evidence that there were relatively high rates of X among a particular demographic group, or indeed the South African population generally, which had not been captured in the existing medical literature that emanated largely from the global north.

In South Africa this kind of research has been the mainstay of doctors' knowledge production. South Africa has been seen as a fertile and necessary place to produce research because of its racially diverse population and because of the disease burden of illnesses, ostensibly caused by both poverty, such as infectious diseases like tuberculosis, and affluence, such as hypertension (explained in Chapter One). Through this form of descriptive review, doctors have been able to fill in gaps in their knowledge, which then help them adjust their practice. For example, after reading Mngomezulu's article they would when examining patients be aware that a higher proportion of patients have condition X than previously imagined. Doctors would therefore not rule out condition X when sending patients for diagnostic tests and determining an appropriate treatment.[54]

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[54] An example of filling in the gaps of knowledge, and pushing against stereotypes about African patients, is the clinical evidence collected that disproves the assumption that cancer is a first world problem and that Africa has very low rates of the illness (see Chapter One). To test the assumption, researchers documented the types of cancers that African people develop, at what ages they do so and the aggression these cancers tend to show.

Later in his career, Mngomezulu prospectively studied, for example, the outcomes of a new intervention for patients at his clinic with condition X. This method meant that he designed the research first and then collected data from new cases, rather than collecting data, retrospectively from patient files, on medical work already done. Documenting the outcomes of treatments, retrospectively or prospectively, gives South African doctors more certainty about the appropriate treatment to offer their patients — using improvised interventions with the resources available to them, or when possible testing out internationally recommended "best practice" interventions. The latter would be to gather evidence of how these treatments work for South African patients who may have different co-morbidities or genetic predispositions than patients in the UK, USA, Japan or India, about whom there may be more existing research. It is of course highly significant for local doctors to know the likelihood of a specific treatment resulting in recovery, morbidity, or mortality for their patients. Feierman (2011) describes a similar desire for gathering and analysing local data among doctors in Zimbabwe and Ghana.

The interconnection that Mngomezulu described between what he saw in his clinic — and how it did or did not correspond with the international literature — and his own research was clear in his oeuvre of published works. His work resembled the most pervasive forms of doctors' research, especially facility-specific retrospective or prospective studies. And, as such, his work also corresponded with a widespread and rather generous definition of research that my fieldwork exposed, which sheds light on the imagined value of research within the South African context. A recently qualified surgical consultant, Dr Yael Brom, described research as having two branches:

> I kind of see it with two branches. I think one branch is to document what you see and put it out there so that people will know — "Is this common or not?" If you're not reporting it, then things seem to remain rare until you start reporting it, and there's also a lot of often regional variations. So I think that information needs to be collected and documented and put out there.
>
> The other branch is to try to test out new ideas — if you have a new way. Doing controlled trials if you have a new type of technique, or renew whatever [treatment] protocol, something that you might put together and test it out. So that you can see if you can come up with new and better ways to do things.

My time in the field suggested that there was a general sense in clinical medicine of a "hierarchy of evidence", with a randomised control trials being at the pinnacle (also noted, for example, in Colvin 2015; Lambert 2006). (Although as my findings in Chapter Three suggest this "gold standard" was not uniformly nor uncritically glorified.) But, given the apparent lack of even the basic information about South African clinical work, my interlocutors were very generous in their perception of the immediate and translational value of the first branch of research — description. They explicitly linked descriptive research back to the local context, firmly arguing that it was necessary to know facts about medical care and what would work best in South African facilities. In a sense the lack of local clinical research is itself a resource, effecting a moment of expansion in this field, and assisting the development of clinicians' research careers.

Prof. Aida O'Grady was an emeritus professor and previously a specialist clinician. Like almost all my interlocutors, she was adamant that historically and presently "practicing clinicians are in a position to notice things that are never going to be noticed on the [laboratory] bench". In noticing things, they are able to address gaps in knowledge, ideally at a universal level. While addressing these gaps in knowledge in South Africa was less glamorous, it was nonetheless important:

> Real research in any field is saying: "What is the big question? What is the big unanswered question? What is the gap in the knowledge?" … Then there is local research [that asks] "How do we do it in South Africa?" It is not that interesting, but "How do we do it in South Africa?".
>
> Of course, the answers to the big [universal] questions can then be adapted down to local. "How do we do it in South Africa? How do we do it at Wits, etc.?"

Both the work of my interlocutors and their definitions of research indicated that through knowledge production, dependent on place and profession, they attempted to make the clinical realities in the South African context visible. In order to analyse their work I borrow concepts from Street's (2014) ethnography, in particular her chapter on research at Papua New Guinea public hospitals and the tension that developed there between international researchers and local doctors who shared the space and patients. Like similar ethnographies of health in the global south, Street is concerned with the tensions between local practical expertise and international scientific expertise. It is her ideas of "epistemic value", "epistemological emplacement", and "ethical emplacement" that are particularly helpful here.

In South African doctors' academic endeavours, the conditions of constraint, high disease burden and a lack of prior research provided epistemic value for making phenomena visible and making healthcare better. Doctors imagined that from this value they would create research that would make things visible by describing them or testing them in the local context to ascertain greater certainty in medical practice.

Numerous ethnographies of clinical research in the global south have indicated that the epistemic value of a clinical locality and internationally scientific endeavours, often directed and funded by institutions in the global north, are frequently misaligned and ethically problematic (for example, Biruk 2018; Crane 2013; Geissler 2015a; Geissler and Molyneux 2011; Okwaro and Geissler 2015; Petryna 2009; Street 2014). Researchers from the global north extract medical knowledge that they circulate in international scientific literature and in conference performances where it accrues greater value for individuals and institutions, and where it extends international fields of knowledge, such as on global health or HIV network trials. These are fields largely still moored to institutions of the global north. The research has considerably less value at its site of origin and little practical value for local doctors who continue to work with inadequate resources regardless of an expansion of knowledge at a global level.

The research of the people I studied in the South African healthcare system, by stark contrast, has a kind of "street cred" — being from the local and for the local. It retains an epistemological and ethical embeddedness as it is produced by the practitioners who continue to work in the same conditions in which the research arises. This is not to say that doctors thought their research did not meet international standards or was not a contribution to a global pool of disciplinary knowledge. But their research was, as Mngomezulu made clear, intimately intertwined with their position as practitioners in the local public system. It was embedded in ways that are not commonly reported in contemporary ethnographies of health and research in the global south (exceptions being, Feierman 2011; Pollock 2014). As with local professional conferences, research and publication was an opportunity for a knowledge field to simultaneously become visible as well as emerge and expand (Nyqvist, Leivestad, and Tunestad 2017).

South African clinician-researchers' forms of small-scale research therefore — at least ostensibly — secede from the problems of "ethical emplacement" of knowledge production. In the global south very broadly these problems are usually addressed through building capacity among local healthcare workers and/or some consideration about the continued care for patients involved in trials. In the context I studied ethics of doctors' research response to the local constraint was not — at least not often and rarely publicly — under question.

The research of South African joint appointees went further than just responding to local particularities or needs, as stated in public discourse and interviews, and improving the general health of the population. Intertwined in their research was also an expanded project of visibility. This is within a landscape where HIV research has dominated and been the most conspicuous. In their choice of research topics, doctors were not just making visible previously opaque details of clinical realities in South African public healthcare. They were also making visible problems and improvements within their specialisations in a national and continental research field that has been dominated in the last two decades by HIV/AIDS research. As health economist Prof. Karen Hofman made clear at the Wits Surgery Biennial (see Chapter Three), there was a need to expose and correct the shortcomings of a public health system with regards to illnesses that were not as "politicised".

Another aspect to bring to the fore here is that joint appointees — as Mngomezulu described — draw on their own clinical domain for research ideas and for developing their expertise. While research is embedded in their clinical work and responses to understanding and improving health, it is also a manifestation of a level of professional privilege or liberty to determine one's own research interests. The autonomy of a consultant's professional self is clear: the doctor runs a clinic, and creates research from it if he or she so pleases. The clinician's research is relatively inexpensive or entirely unfunded, leaving such researchers free from the obligations to funders and larger research institutions, including universities.

A note on categorisation in research

A symptom of the local embeddedness of South African doctors' knowledge production was the stubborn traction of questionable racial classifications. My interlocutors' ubiquitous use of race categories, or population groups — whatever euphemistic gloss such concepts were given

— is ontologically problematic.[55] These designations — black/African, coloured, Indian, white, and other — have their deep roots in the machinations of the apartheid state. There is extensive literature on the ways racialised ontologies can affect the design of medical research and potentially produce problematic scientific results or reified, incorrect, and damaging portrayals of categories of people (for example, Epstein 2008; Pollock 2012), including in South Africa (for example, Avera 2009; Baldwin-Ragaven, London, and de Gruchy 1999; Erasmus 2017; Saethre and Stadler 2009; Tsampiras 2015; van der Wiel 2013b).

From my observations I recall only one occasion in which someone publicly and critically reflected on doctors' continuing and unquestioning use of these race categories in portraying medical realities in their research. A minority of interviewees was critical of these categorisations, pointing to the problematic way in which race has been used as proxy for genetic ancestry or economics, for example. However, in interviews, in conference presentations of their research or in their publications, researchers made explicit that the use of race categories had helped them solve clinical riddles, such as why some patients had poor responses to otherwise effective medication; or why some patients developed certain conditions and if this was related to a clinically-meaningful correlation between race group and co-morbidities or pharmacological efficacies. One of my interviewee's work revealed that black African people are far more likely to have a small anatomical anomaly that accounts for significantly higher rates of a related condition. This was important to doctors' daily problem-solving to ascertain greater certainty about ruling out other possible environmental causations, preventative measures, and best choice of treatments.

Spending time with clinician-researchers, I developed great empathy with some my interlocutors whose racially-premised research revelations solved vexing clinical problems and helped them provide better care for patients, who were often critically ill. I saw how race provided the imagined benefits of locally informed clinicians' research. As a social scientist, not responsible for enacting insights that had the potential of positively impacting people's health, I could only imagine how clinician-researchers might see sociological contestation of inherited racial ontologies, no matter how materially significant, as a distraction from, and even

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[55] One clinician-researcher I was acquainted with even wrongly used the term "ethnicity" to refer to race classifications.

oppositional to, the attempt at instilling certainty through local research. As the next section indicates, these clinicians had more pressing concerns when producing research.

However, the continued use of race categories may be damaging with regards to larger scale public health interventions which cast disparaging moral claims about the behaviours of whole groups. This was clearly the case, for example, in early HIV/AIDS awareness and prevention campaigns which, at least in the African context, demonised African male sexuality in particular. But I would argue that this is significantly different from a specialist, like Mngomezulu, being on the lookout for the prevalence of condition X among patients attending his clinic. The scale and instrumentality of research premised on racial distinctions presumably makes some difference to the harm these distinctions might cause. I recognise that this is an area that I will need to revisit (possibly with additional fieldwork) to do justice to my interlocutors. However, for the purposes of my thesis it is more relevant here to flag the uncritical reproduction of apartheid-style categories in research design as just another instance that race was conspicuous but moot in the field I observed.

The work of research: Data, analysis, writing

Once Mngomezulu had established his own clinical unit within his department and established intellectual interests that he was passionate about, finding the material to answer his research questions entailed practical challenges.

> I learnt pretty quickly that in order to be able to do research in any area you must have a database. The hospitals don’t have good databases. You go to hospital and you want to investigate something on {a particular condition} they say, ‘The files are there, you can go and check’, and there is a big [records] room there. It is difficult.

Interlocutors of all generations reported this frustration: they related how they sat during lunch breaks and on the days they were off-duty in dusty records room pouring over piles of hundreds of files, often to find many of them incomplete. This frustration was not only about a lack of time and labour. A lack of data could also result in an incomplete research project or lead to a result that was statistically weak, “underpowered”. Therefore they would not be able to give a definitive answer to a research question.

A common way around this quandary was to bypass the hospital system in the attempt of gathering the raw materials for research. Mngomezulu explained that he learnt a good deal from his mentors about being hands-on in a hospital system that did not support doctors in gathering data. One of his mentors, for example, would himself take the specimens he required for his research to the laboratories for testing and not rely on someone else to do so, even if consultants would not commonly perform this type of a lowly job in the hierarchical world of the hospital. Mngomezulu went on to say:

> You can't sit and say, 'I am waiting for a research assistant to collect data for me, I am waiting for someone to collect the data', because nobody is going to do that for you … I learned that in order to have something done, you have to do it yourself. Maybe when you have got research funding you can hire a research assistant, but in the beginning you have to do it yourself. So that's what I did then for all my databases — I collected it [data] myself.

Mngomezulu's research career began in the 1980s and he gained more specialised research interests in the early 1990s. This was in the years before the internet, electronic databases, and even access to personal computers became widespread. The generational differences in the production of research from this time to today is striking and fascinating. Mngomezulu explained that he had to teach himself to type in the days before personal computers because department administrators rarely did typing for people who were not professors. He also mentioned the lengthy process of ordering or collecting hardcopy journal articles to put together literature reviews before the existence of electronic journals.[56] Even sending out journal articles by post to be reviewed was a protracted process, as another emeritus professor explained.

Easy to regard as quaint or amusing, these ways of doing research evidently meant more labour for these time-deprived clinician-researchers. Mngomezulu gave another instance of this:

> If you have four hundred patients that you are analysing you need to put them down and find out what the average age is, how many males and females, how many had this complication or that complication. You need to have a spreadsheet down and, in those days when I started, I didn't have an Excel spreadsheet. I would put a piece of paper and draw lines.

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[56] Electronic databases and expanded access to medical research and increased production of medical research since the 1980s have arguably increased the workload for doctors doing literature reviews for their research.

I imagined Mngomezulu as a younger, more spritely man with furrowed brow collating data on large hand-drawn tables after hours. "Yes!" I interjected excitedly, with my interest piqued by these details, "I don't think Excel even existed then!". He agreed:

> Yes, and then by the end of three hours doing that you have a headache because you have been calculating this and the numbers don't tally, and you have to start again.

When older interlocutors pointed out these practical challenges in producing research in the past they presented these humorously or pointedly to indicate how time consuming being a doctor-researcher had been. The state of technological affairs and data collection are not, however, exactly as convenient as one might expect nowadays. Doctors may now have access to user-friendly software for collating data. But, for example, Wits teaching hospitals have only in last few years had Wi-Fi installed to facilitate research and access to online journals, and a vast majority of hospital departments still operate with paper patient files. During my fieldwork at Wits, the establishment and expansion of electronic systems for patient data at teaching hospitals, and the proliferation of the technology to do so, was of great concern. (And is likely influenced by larger political and academic concerns about the dearth and the value of "big data" in Africa and the infrastructure and expertise needed to produce [Adams 2016; Leetaru n.d.; Mellado 2015; University of the Witwatersrand 2017b]). Some doctors indicated that this was only feasible if or where the university carried the costs of these systems, as it was implausible for the Department of Health to pay for or reasonably maintain these. This means that with persisting infrastructural constraints, the specialist with a database is still nowadays better established than her or his colleagues to do research.

Aside from technological difficulties and setbacks that research could involve, Mngomezulu also described what was, from other interviewees' pained explanations and from my own personal experience, the timeless and persistent problem of writing. When he had explained his research interests and how the labour of research was entangled in his day-to-day work, I could fathom coming up with research questions and collecting data as part of a working day. I could not, however, imagine that writing research reports or publications could possibly be something that even the most brilliant of professionals could just casually fit into a few spare moments between resuscitating a patient and doing a ward round. I asked Mngomezulu how he managed to do the work of writing given the demands on him as a full-time specialist. Just as the tallying up of tables of patient data, he explained, the work of writing happened in his spare time in the evenings or on weekends. Regarding writing, he said:

> You need time for that. You cannot have ten minutes [here] and thirty minutes there. So, I put that [for] afterwards, after four o'clock. Then you sit and do it, and when six or seven o'clock comes you leave it there. You go home and come back tomorrow and do the same.

Speaking of his early attempts at writing articles he said:

> Well, I write easily now, but in the beginning it was difficult … You put [in] all your effort and everything, and you give it to your supervisor. He brings it back to you and there are a lot of red lines and you have to start afresh.

Other doctors confessed in more graphic detail their first mortifying attempts at writing research proposals or articles. It was not a skill that had been fostered in their medical training. And yet it was a skill they persevered with and one that, with the help from critical and attentive mentors, they managed to strengthen. They came to enjoy the iterative, generative process of writing as something quite different from the immediacy of clinical work.

Recalling some of the drudgery of Mngomezulu's research work it might be easy to assume that research was a mostly a joyless, arduous pursuit. He was very staid in his description of the hardships he experienced in his career. Many of my interlocutors, not usually engaged in qualitative research, saw my interviews and even casual conversations with them as opportunities to unburden themselves of the tremendous ill-will they felt towards their institutions, colleagues, and students. During most of my fieldwork I was overwhelmed by the level of dissatisfaction, confusion, and the sheer slog that doctors described was required in knowledge making. I often thought the field I was studying was tragically devoid of joy.

But, entangled with discussions of difficulties and burdens were the pleasures of the labour of research. After my fieldwork, and away from the emotion and hyperbole intrinsic in the fraught institutional field I studied, I listened again more carefully to my interviewees' words and tones. Although Mngomezulu was at pains to communicate the burden of producing research, he showed hints of enthusiasm and enjoyment when he described his after-hours academic pursuits — reading journal articles, analysing data, and seeing the fruits of his work come together in published form.

From the beginning of our conversation, Mngomezulu presented his clinical experience and research endeavours as being inseparable. For example, he started off explaining the serendipitous start of his research as embedded in his discovery of his enjoyment and interest in a clinical discipline. He framed the outcome of his labour as clinician and researcher as an intertwined expertise:

> You learn a lot by doing research, which people don't realise and there are still people here now who do not do research. They say, "I learn, I learn every day as I teach students, I learn". You learn when you teach students, but if you are doing research on {specific conditions} you will have more expertise in that area and you will become an expert.

The outcome of the tremendous sacrifice for him was recognition and opportunity to extend his expertise. To do the research, Mngomezulu had to spend time away from his understanding family at night and on weekends, and use disposable income that could have paid for family holidays and luxuries to attend congresses, especially early on in his career when these were not sponsored (partly or in full) by university or international professional associations. Yet, these sacrifices were clearly worthwhile for Mngomezulu who proudly related how he received local and international acclaim for this expertise. He received a scholarship to visit centres of excellence abroad to learn more about his speciality and he also did additional, international practical training. Over the years he has been invited to speak about his specific research field at universities and congresses across Africa and further afield. A further outcome, a return on investment, for establishing databases related to his specialist unit, was an extended work and publication record by collaborating with junior researchers. He began to attract junior staff — particularly registrars needing to complete their MMed research requirements — who wanted to work with him, be supervised or mentored by him, often drawing from his databases for their research projects. In this way he received "kudos", as he expressed it, for his efforts and was able to develop a larger publication portfolio by co-authoring papers with these junior researchers.

Limitations and exceptions of the clinical

Compared to almost all of my other interlocutors Mngomezulu spoke about the work environment in public academic hospitals with considerably little emotion, cynicism, or cursing. He nonetheless made it very clear that the present configuration of clinical work at university hospitals, with large volumes of patients with advanced diseases and comparatively low ratio of doctors, made it difficult for doctors to do research and to take on a third professional role beyond clinical work and teaching.

In addition to lack of accessible data, Mngomezulu explained other challenges involved in producing research, such as a lack of time and large numbers of patients, which were not unrelated to the reportedly rich clinical experience seen to be the basis for clinicians' contribution to new knowledge.

> The problem with research as a clinician is that it's not easy because, unlike our other colleagues in the university: they come to school at eight o'clock and, I am not belittling them, but they come to school at eight o'clock, they have a few lectures to do, they have a few students — well not a few, however many students to look at — and then they have time to do research. We … come in the morning — you have a contract with the Department of Health, eight to four [o'clock] you must look after your patients — so, you come in the morning and you go and look at your patients, do ward rounds, clinics … And if you find time in between doing your ward round, you teach students. And then you have a lecture to do at twelve o'clock. You leave whatever you are doing and you come and give a lecture and you go back. The only time for research is after four or, if you are lucky, you finish at half past two or three o'clock and only then do you do research. So that makes it different from our other colleagues who are not clinicians … Doing research as a clinician is not as easy as our other colleagues in the universities.

Although rather pragmatic Mngomezulu's detailed description of his efforts as researcher reveals an evaluation of the work of clinician-researchers relative to that of purely academic staff, a point that appears quite pervasively in other interviews with clinician-researchers. Mngomezulu's narrative extends on the professional discourse that joint appointees' burden of clinical labour is exceptional, underappreciated, and misunderstood in the university environment. Exactly because of the burden of clinical labour in resource-constrained teaching hospitals, the research labour of clinicians is not comparable to that of university-appointed academic staff.

In his narrative Mngomezulu's explanation of how resource constraints tangibly impacted research echoed the comments by Prof. Johnny Mahlangu at the Wits Faculty of Health Sciences Research Day round-table discussion (as described in Chapter Two), as well as in the narratives of most of my interlocutors. Mngomezulu said:

> People have suggested that clinicians should have protected time. They have suggested, for example, that you have a half-day off where you can do your

> research. It is happening in the US, it is happening in the UK now, simply because the doctors put pressure on the governing authority. Here the authorities understand that that must happen. But it cannot happen because of the shortage [of doctors] because if there are only four of you in the ward, in the clinic there are patients waiting for you there. You cannot leave at one o'clock, say, and go for your research when there are still twenty-five patients waiting there. So in principle the Department of Health and the Dean [of Health Sciences] know it must happen, but physically it cannot happen.

Mngomezulu, like other joint appointees, seemed resigned to the fact that it was an unfeasible, almost fanciful, idea that there might be different configurations of work, or career tracks, for doctors in South Africa. Like the doctors at medical conferences expressing their grievances, he looked northwards for a comparison with better-resourced systems that are more accommodating of research within the medical profession. It is important to note that interlocutors' experiences abroad were almost always at well-resourced institutions in the global north, specifically in the UK and the USA. Their narratives set up a simplistic binary between north and south, and showed little appreciation for the fact that there are institutional discrepancies and inequalities across the global north and that there is not a homogenous level of resources (noted, for example, in Meyers and Hunt 2014; Sunder Rajan and Leonelli 2013).

Doctors' complaints about time and resource constraint were commonplace, overwhelming, and almost definitive of my fieldwork. In this flood of pathos, it was easy to lose sight of the more complex effects of these constraints on research production. But Mngomezulu did more than just raise the resource-constraint flag. He explained something that I had long noted in my textual analysis of research produced by doctors and in my observations of research activities and conferences and other events. Not only did time limits, lack of funding, and clinical burden affect doctors' ability and will to do research; these factors in fact affected the nature of the knowledge produced. South African clinicians' research was less a "bench to bedside"[57] endeavour and more a "records room to bedside" or "desk to bedside" task.

Mngomezulu described the difficulties that clinicians face when doing laboratory research, which requires not only financial resources but also time. Laboratory tests and experiments require specific, rigid schedules that involve, for example, feeding microbial cultures,

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[57] The popular phrase in medical history, mentioned in Chapter One, to describe the process by which research that doctors did at the laboratory bench was informed by their work at the patient's bedside.

examining cultures within particular timeframes and, as in the case of some surgical laboratory work, consolidated time to perform experimental procedures on animals. These are of course impractical for clinicians at South African academic hospitals. Dr Keenan February, an interviewee I introduced in earlier chapters, took great pains to explain that doctors require significant extra training to be able to perform complex laboratory procedures, for example flow cytometry.[58] Indeed, an expert laboratory technician explained that in her experience clinicians had little awareness and appreciation of the need for stringent consistency and calibration in laboratory tests so that that research results are correctly reported, reproducible, and valid.

Regarding lack of funding available for clinicians to do research, Mngomezulu told me that:

> The difference between clinical research and laboratory research is that you can do clinical research without funding because if you can collect your database all you need to do is collect your information into a pro forma [information sheet] and keep it somewhere and make sure that you collect all the patients … So you are able to collect all the information and follow the patients up. So you don't need a lot of funding.

Expanding on the quote with which I opened this chapter, Mngomezulu emphatically stated that:

> the only way to do our research is to do clinical research, because you look at your patients, you see your patients, you identify what you want to do research on, and you collect your data.

This complicates the powerful ideal — present in private conversation, university discourse, professional publications, and hagiographic historical accounts — that the value that doctors bring to research is unique, astute clinical insight. Practicing doctors realistically and pragmatically are only able to do research that draws directly from and comments directly on clinical practice. This refers back to the descriptive or local branches of research that Dr Brom and Prof. O'Grady identified (in the section on "Developing Questions" above).

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[58] Flow cytometry is a laboratory process designed to flow cells through a laser beam to determine the composition of the cells based on the frequency of light waves they emit.

In his descriptions Mngomezulu defined his early generalised research projects in his department as “clinical research”. He explained that this was “getting a few patients, follow them up, and look at their outcome”. This form was conspicuous in my research findings, especially in reviewing clinicians’ publications. This form of relatively small-scale, quantitative research was dominant, almost exclusive, among my interlocutors, and in my broader review of research produced by Wits joint appointees.[59] This differs, for example, from the global north, particularly in the USA, where practicing clinicians in university hospitals may be granted career tracks that allow them to work reduced hours in hospitals and have protected time for laboratory work (for example, Schafer 2009c; Schwartz 2011). These clinicians can then contribute to the basic science understandings of a disease (as, for example, the molecular mechanisms involved in the development of a disease) and can possibly contribute to the design of new drugs or diagnostics tests.[60]

South African clinician-researchers’ projects generally related directly to patients within a specific facility or city, based on data extractable from records or a self-made database tracking basic epidemiology and demography of the patient population. There is the appearance of their research being close to the clinic and easily translated into changes and improvements in doctors’ practice. It creates the imaginary of a tight feedback loop between practice and clinically relevant research. My interlocutors’ research addressed the interventionist imperative of biomedicine, which, for example, Redfield argues (2013) makes it impossible to speak about healthcare problems without offering solutions. Therefore clinician-researchers’ knowledge production, ostensibly, links the “moral valence” (Geissler 2015b: 2) of medical practice and the presumed social good of research. Doctors do research that “does something”.

Rather than being the manifestation — only — of the ideal of doctors bringing unique local clinical insights to the research process to improve local practice, this form of research is also

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[59] This was not the case, however, with a small number of clinicians who worked within well-resourced university research units and who had left clinical practice.

[60] In the USA the role of the MD-PhD degree, combining clinical training and basic science training and research, is frequently debated in discussions about the disappearing clinician-researcher (for example, Bonham 2014; Schafer 2009c; Schwartz 2011). In the South African context, what is known as an intercalated degree — allowing medical students to take some years out of undergraduate training to pursue an honour’s or master’s degree in basic science — was not a pressing issue for my interlocutors, although some mentioned that this was more common and easier to pursue now than in previous decades.

a reflection of a more complicated context in which doctors are often not able to do other forms of research. Research interests come from clinical experience in the South African public healthcare system — of treating large volumes of demographically diverse patients, with advanced or unusual pathologies generally not reported in literature that originates predominantly in the global north. This experience — within conditions resource-constraint, at least compared to many global north contexts — also affects the kind of research that is possible.

The valorised, idealised, and revered closeness or interconnectedness of practice and practitioners' research is more compromised and complicated than imagined in the professional discourse that I observed at conferences about the value and virtue of doctors producing knowledge to improve local medical care. Researching the local is not necessarily only about an ethics of improving South African healthcare provision; it is also a product of material limitations.

As discussed in Chapter Three, medical practice is a form "tinkering" (Mol 2006; Mol, Moser, and Pols 2010) or improvisation (Livingston 2012; Street 2014; Wendland 2010). Although guided by global or universal professional or scientific knowledge, it is put to work in specific contexts producing a kind of "local universality" (Mol 2002). A significant motivation for expanding knowledge production among clinicians in South Africa is to address this tinkering to make practice slightly less improvisational and provide more certainty about how best to put universalist knowledge into practice, given the local contingencies. But in an attempt to get at greater certainty, South African clinicians' research is constrained by locality, a made-to-fit adaptation of scientific methods. It is, therefore, a second level of tinkering, because it is fundamentally informed by clinical experience it is not far from the tinkering of the human work of being a doctor. The knowledge production of the clinicians I studied shows not just the manifestation of a local universality of the practice of biomedicine — a response to the contingencies of the context in which medicine is enacted — but also the converse, namely that knowledge production also has a local universality.

In the intersection between university and hospital, there was fertile ground for my knowledge-tinkering interlocutors to imagine themselves as a separate, unique group of "thinkers" within a profession of "doers" or practitioners. Several described themselves as a "special type" — intellectually curious, with a special aptitude for developing writing and methodological skills, and the strength to weather the ups and downs of writing and peer review. This was a far cry from the aspirational imaginary present at clinical conferences of a democratically inclusive community of researchers. Tacit in Mngomezulu's narrative was that doctors' research involves a level of commitment and labour that is not fully recognised in the university and among other clinical colleagues who are generally unfamiliar with the labour of producing knowledge. Other interviewees were considerably more explicit and critical about this.

Prof. Wade Habana was a Wits trained specialist who had completed a PhD in clinical medicine and worked in the Wits Health Sciences Faculty. In his experience his joint appointee colleagues in public hospitals saw their work with patients as a more tangible social good than research. He described these doctors as valuing clinical practice as the central work of doctoring:

> People who see themselves as not producing a lot of research feel they are treating patients and therefore that is more important and there is ongoing tension … We make this declaration as a university that we have got three responsibilities: service, research, and teaching. People always feel that the other two can be shafted because they are working with patients, research can be minimum … People believe that it's the work on the patients that is the fundamental activity.

My interlocutors, including Habana, contested these evaluations. But the comments of a younger clinician-researcher, to whom Habana introduced me, most frankly summed up how researchers pushed back against these evaluations of professional work. Dr Mohammed Cassim was in his late thirties. He had done his academic and clinical training at Wits and in Wits hospitals and worked as a specialist at Bara. Towards the end of his registrarship he took up the opportunity to do a research rotation in an associated Wits research institute, during which time his passion for research was ignited. He subsequently went on the complete an MMed and a PhD. He spoke highly of the research process, candidly revealing his initial lack of skills, and recounted that research had awakened him to the limits of his knowledge and medical knowledge more generally.

Cassim was emphatic that if there was one thing that I should quote from his interview it was:

> If I want to procrastinate, I go to the ward to do a ward round, because I know [that] to sit on my butt and do research is much more difficult.

Speaking about his colleagues, Cassim said that clinician-researchers — despite being, in his mind, the most important investment the university could make — struggled to find a place within their profession:

> The clinician in the hospital who doesn't want to research thinks that I am sitting and looking at my emails and will say it [research] is much easier to do. I am saying it easier to do a clinic. It is much more difficult to research … It is much more challenging in terms of your intellect than clinical medicine is — because clinical medicine can only grow if you do research.

Research was the reason the field of clinical medicine transformed and improved. Therefore, according to Cassim's reasoning, it was logically more intellectually demanding than clinical work itself. It required something extra.

This thesis opened with a quote from Dr February in which he compared clinical work in South Africa to war: doing the work of doctoring was like working in the trenches or flying a fighter jet; it was obviously difficult and always potentially traumatic. But stepping away from the trenches or designing weapons to fight the war, although not mired in the urgency of the battlefront, held its own difficulties. According to some interlocutors, research could be more personally and emotionally taxing than everyday hospital work, even if it took place a step removed from the trauma of the clinic, ward, or theatre. Prof. Isak Saher explained more about this to me:

> Research is a very personalised, individual thing whereas clinical work is a much more shared thing. So, when you are doing laboratory work you are doing an experiment and if an experiment doesn't work — which it [does] quite often — you kind of think I am absolutely useless and pathetic and [you] go into [a] depression. When you do an experiment and you get a fantastic p-value and a fantastic result then I am God's gift to {medical} science. [In] … clinical work you fix {a condition} and you *just* fix {a condition} and it is the team that has fixed the {condition}. But research is a very individual, personal thing and the highs and lows are quite high. (Emphasis in original)

A medical colleague mentioned in a casual chat at a workshop that clinical work was easy because it was passive in nature: doctors had to react to a situation presented to them, like soldiers in the trenches. Sitting down and doing research, on the other hand, creating something rather than reacting to a situation in a prescribed way, was significantly more difficult.

For South African doctors this kind of creative and thinking work was unfamiliar and required self-directed learning, often a baptism by fire. This was evidently the anxiety-provoking, depression-inducing experience many of my interlocutors described. But I argue that there were several additional anxieties implicit in my interlocutors' narratives. In the context of a busy public academic hospitals where doctors almost ubiquitously feel overwhelmed, perhaps my interlocutors' words imply guilt: guilt about stepping away from the real work of the clinic, which they are embedded in, to take a longer view on improving practice and engage with doing research at a remove. With the profound professional authority doctors enjoy and exert in the clinical space (for example, Freidson 1970, 1975), it is not surprising that the hard work of research becomes anxiety provoking. First, doing research and delving into one's own practice is an act that exposes the limits of an individual doctor's clinical expertise and highlights the vulnerability of medical knowledge more broadly. Second, through their painstaking work doctors create a research product that stands alone in the public, scholarly realm, stripped of their social status as doctors. Their aura of bedside authority is weakened in this third professional role, even though the origin of the research is, or is at least imagined to be, based in clinical experience.

Overall, becoming a clinician-researcher rather than just a clinician brings about a profound change in the professional self. Prentice (2013: 36), referring to her findings on surgical training, suggests that "the construction of an object of inquiry often involves the simultaneous construction of a scientific self". Fox (1988), writing about clinical investigators in Europe and North America, argued that becoming a researcher over and above a practitioner entails a complex process of attempting scientific distance and objectivity while remaining embedded in clinical practice, as well as being emotionally invested in one's research. Aull and Lewis (2004) compare doctors who take on additional roles as popular authors, or as public intellectuals, to Edward Said's concept of "intellectual-as-exile" in that they subvert professional boundaries and expose the shortcomings of biomedicine.

Medical doctors are well known for producing quasi-religious testimonies of the transformation from mere mortal to doctor through enduring the hardships of training and overcoming the brutal socialisation involved in clinical training and/or in practicing in conditions of perceived crisis (for example, Becker et al. 1961; Cassell 1991a; Elton 2018; Fox 1959; Kalanithi 2016; Marsh 2014; Phalime 2014; Redfield 2013) (as well as findings I describe in Chapter Two). It is not surprising that my interlocutors who took on an additional burden — the third professional role of research — reproduce a similar or rather extended narrative about hardship, exceptional aptitude in managing institutional uncertainty, and a righteousness in exposing the vulnerabilities of their own professional authority. They undergo a second professional transformation from mere clinician to clinician-researcher.

This finding is not limited to my fieldwork. Chapter One has made clear that testimony of transformation indicates a mirroring, if not circulation, of ideas between local and global, present and historical contexts. A similar trope can be seen in historical and contemporary medical and social science accounts of clinician-researchers, and is strongly linked to popular image of the physician-scientist of the eighteenth and nineteenth century during the birth of scientific medicine (Davila 2016; Harvey 1976, 1981; Olmsted and Olmsted 1952; Porter 1997; Porter and Bynum 1993; Schafer 2009a; Schwartz 2011; Shook 2007; Urman and Ehrenfeld 2012). Common traits in these accounts of doctor-researchers are a serendipitous introduction to research; development of research interests through an ethical as well as intellectually curious response to clinical experiences; struggles as a self-made researcher challenging anti-intellectual aspects of professional culture; and an exceptionally hard-working disposition. I suggest that the constraints and limitations in South African clinicians' knowledge production dovetails very neatly with this hagiographic, historical figure of the nineteenth century doctor. It gives credence to the narratives of my interlocutors and the public professional discourses I encountered. (This is in addition to the more recent discourse that research-literate and research-producing doctors are responsible modern doctors engaging with EBM rather than falling back on professional expert opinion [see Chapter 3]). But regardless of the moral traction this trope of the exceptional clinician-researcher may have globally and in South African institutions, it is not beyond dispute. I examine this in the second part of the chapter.

Part Two — The unmaking of the research and the clinician-researcher

Figure 6: T-shirt graphics humorously celebrating quantitative methods in health research.
I got this T-shirt from the exhibition stand of the Wits Reproductive Health and HIV Research Institute at the Faculty of Health Sciences Research Day in 2016. Despite the intended humour, the little red sheep was sometimes an uncanny reminder of my position relative to the field I was studying.

Doing research: A view from outside the clinical

While the constraint of the contexts in which my interlocutors produced research made their knowledge production admirable, these conditions of research production also confounded the powerful imaginary about doctors who make new knowledge. In Part Two of this chapter I read past the public professional discourse, past the self-conscious personal narratives of toil, and past the artifice of authorship and published descriptions of methodology that obfuscate more complex arrangements of research labour. These arrangements obscure the accepted half-truths about doctors' work of research as exceptional and especially burdensome. To provide a more balanced and critical description and analysis on the work of clinician-researchers and the figure of the clinician-researcher I begin my describing my observations of the divisions of labour and the hierarchies of doing and thinking in producing research.

My awe and amazement at the extraordinary aptitude and commitment of my interlocutors sat in tension with the profound culture shock I experienced when I observed the production of research in this field, and — to be frank — my condescension and distaste for what I often perceived to be a façade of scholarly production and the performance of research.

Taking my cue from a revised view of reflexivity (Davies and Spencer 2010; Spencer 2010) the emotive content here is not a new revelation about the sticky, murky methodology of ethnography, about which there is already an extensive literature. I draw on some emotional aspects of fieldwork not in the usual ethnographic tropes, such as a confessional to explain the ineptitude of myself as research tool (for example, critiqued by van Maanen 1988); or as a reflexive impulse to situate my identity politics to flag the moot and problematic nature of power and knowledge production in the post-colony. Drawing on radical epistemology (as proposed by Davies 2010) I use my strong reactions to the field as an epistemologically valid finding rather than as a pre-emptive defence of ethnography and the ethnographer. It allows me to note situations that not only prompt a strong reaction in myself as an anthropologist outsider but also as a temporary and neophyte insider. The admiration and collegiality as well as the resentment I felt simultaneously towards my interlocutors told me something about the contrast between anthropology and clinical research. But, more importantly, it also indicated something about the internal inconsistencies and injustices in the culture I studied and the pretexts of the quasi-religious configuration of the clinicians' burdensome research work.

Because of South Africa's political history and a strong focus on dispossessed people, anthropologists have predominantly seen interlocutors through a compassionate lens as victims of structure, but this needs to be balanced with a more critical assessment of the actions of some interlocutors and what these may evoke for us as ethnographers (Niehaus 2013b; van Wyk 2013). Although my interlocutors were powerful professionals, they did bear the brunt of a less than functional system for which I empathised with them. Drawing on van Wyk (2013) I resist a knee-jerk reaction to suppress dislike or aversion but rather use these emotional experiences for productive reflection.

I begin this section by describing my participant-observation as an assistant for a clinician's PhD research project. I then move on to more general findings about the way doctors disperse various aspects of research labour, from data collection to analysis and writing. These arrangements of work allowed doctors to do research and contribute their clinical insights and observations to furthering their field, yet it does problematise the narrative that the clinician-researcher's burden of work was solely responsible for this.

For a year during my fieldwork, I worked as a data collector and capturer for a specialist clinician. Once a week I would attend this clinician's weekly outpatient clinic, enrolling newly diagnosed patients into the study and taking them through the 10-page quantitative survey on their personal experiences of the diagnosis, understanding of the disease aetiology, access to healthcare, and family support. I volunteered my time as a form of thanks for the prior assistance the clinician and the clinicians' colleagues had offered me. Also, I openly had a more self-interested aim to use this time in a clinical environment to connect with the wider medical community in search of interviewees. This arrangement seemed simple enough.[61]

I soon realised, however, that this weekly work as a research assistant curtailed my fieldwork. I also found the work unbelievably emotionally taxing, and thus physically exhausting, regardless of how long I spent at the clinic. Whether it was three or six hours, I had to cope with an emotional hangover that left me incapable of simply re-immersing myself in my own

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[61] The initial arrangement was that I would not receive payment for this work. However, approximately a year after I had completed the practical work, I received a payment, for which I was pleasantly surprised and extremely grateful. (However, if calculated at an hourly rate I received less than half of what I earned for research work I did for other professors in earlier years.)

research. I managed to organise for the clinician to pay another postgraduate student to do the data collection every second week, yet I continued to do the data capturing for all data whenever I had some spare time and energy. The sketch below of my experience as a participant in this research process is a useful tool to guide my description of the emotional labour involved (see Figure 7).

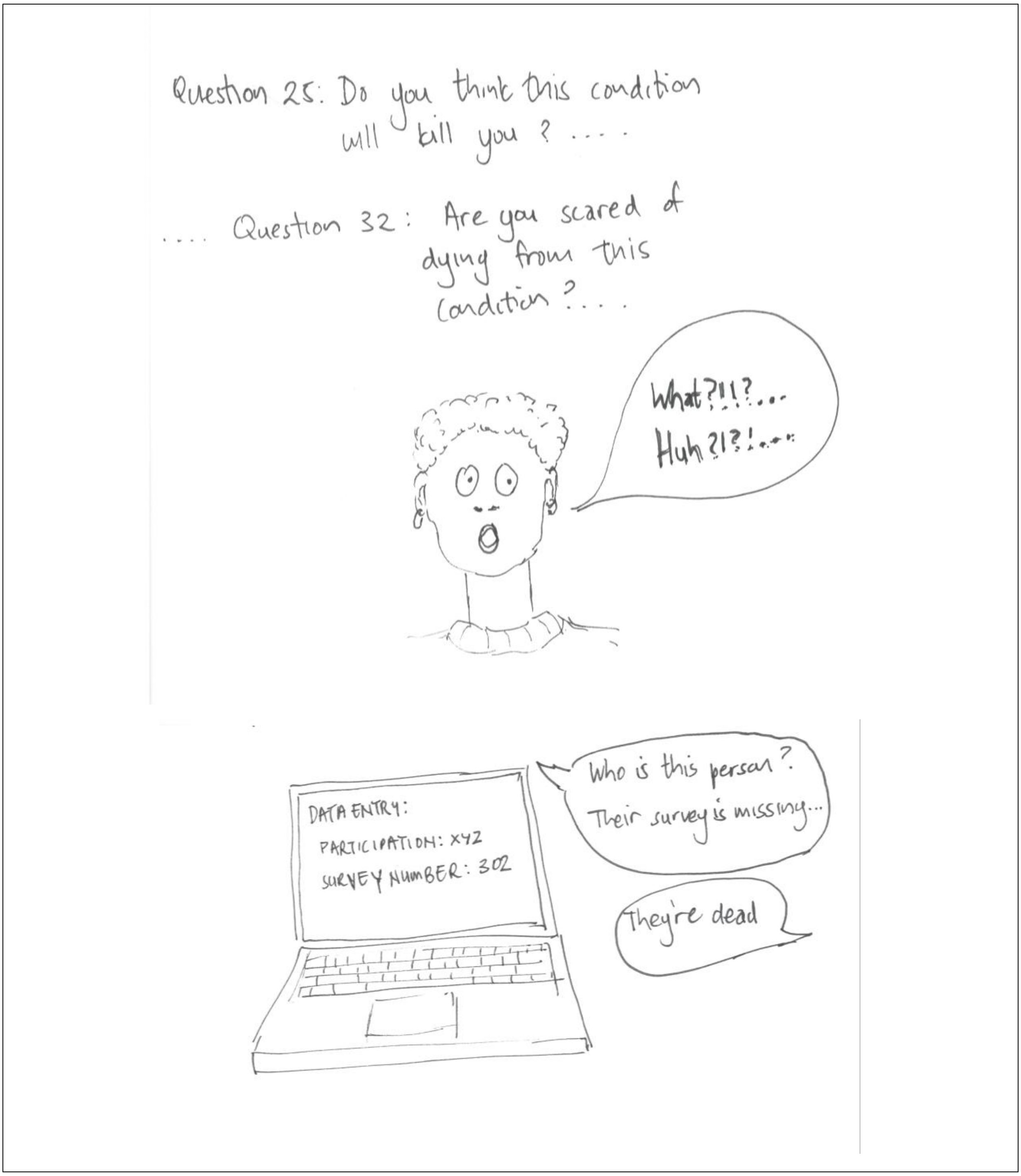

Figure 7: Fieldwork sketch depicting aspects of my work as a clinical research assistant.

The top of the picture illustrates the ordeal that the survey was for participants, as well as for me, the assistant. It illustrates some of the survey questions I had to ask and the face of a shocked research participant, surprised by the questions. Some participants, after agreeing to participate and being enrolled in the study, were happy to complete the survey themselves, though most were not. Many participants were older people who could speak and understand English but were not comfortable reading it. I thus had to read the English text aloud, often I had to translate it into Afrikaans or ask an accompanying family member to translate into another African language, such as Setswana. Or, as was most often the case, participants had left their reading glasses at home and needed my eyes.

I spent up to an hour with each participant while they painstaking decided on their answers to the questions, using a Likert scale from “strongly agree” to “strongly disagree”. To achieve internal validity, the survey contained questions that were asked multiple times using different wording. This meant I had to read out and wait for answers to multiple, slightly differently worded questions about the participants’ ideas about their mortality and morbidity. Participants often replied in surprise — if not about the potentially mortal consequences of their diagnosis, then at least the peculiarity of having to report their thoughts about these profound issues to a stranger. I am not insinuating that most participants were not emotionally fit to take part in this study — something that the clinician-researcher, colleagues, and ethicists had deliberated about. My point here is rather the unsettling process and emotional labour of collecting and simplifying this complicated information. I felt that I as research assistant was left to mop up work left over by the clinicians and/or counsellors in the facility: they had picked a fresh scab and I was left to deal with the bleeding. Particularly the many older patients used their audience with me to try to air or to clarify their life story as they saw it relating to their diagnosis, something they felt they had not had a chance to do fully when talking to the very busy staff. When I have previously worked as an ethnographer in hospital settings, I had relished listening to older interlocutors’ life stories. As a surveyor trying to get through up to ten surveys in a few hours, I was frustrated, frightened, and tired by these senior citizens sharing their life stories. It was challenging work to revert their attention back to the specificity of the survey questions. As the year went on I fear I did this work with less and less tact and patience.

The interpretation of long-winded and narrative answers and their conversion into Likert scale answers took a great deal of time and focus. Entering the participants' answers into a data management system for later statistical analysis was a smoother and swifter process; although I always remained fearful that I had not have done a thorough enough job and had mistakenly marked an "agree" instead of a "strongly disagree". I was fascinated by the data entry for this project as I was very hopeful that I could experience the process of converting human messiness into dry, socially-removed, quantifiable and comparable variables. The procedure was far less tedious than I had expected, and because of my qualitative training it was rather thrilling, heretical even, to play a pivotal role in converting incoherent human experiences to statistical analysis. I played an active role in this ontological conversation, often critiqued by my social scientist colleagues who were wary of a scientistic fetishisation of quantification (see, for example, Adams 2016; Rottenburg and Merry 2015). I was not alone in this experience: becoming a temporary agent in the very processes one is scrutinising is something other anthropologists, for example Biruk (2018), have also felt simultaneously ambiguous and excited about.

The bottom of the sketch indicates something a little more chilling about the data entering process. I captured data from surveys from over 300 patients with life-threatening and life-altering diseases. This number did not escape me. More terrifying was that when I tried to collate actual people with anonymised numbers as identifiers, there were times when I could not find data for a patient, even if it was simply the note that they had declined to participate in the study. When I alerted the clinician about these cases and asked whether there was something I could do to follow up on the patients involved, the answer in most cases was that the patients had died — after they had been diagnosed just a few weeks or months earlier.

In addition to collecting and entering the raw data based on interpreting participants' personal lives, I also contributed, on a very small scale, to refining the survey itself prior to the data collection and gave feedback on a number of pragmatic and other glitches. Presumably this was more tangibly intellectual work, compared to the data collection process itself. But the pre-arranged conditions for my work on the project did not involve any discussion of how my labour would be attributed in the final research output nor a possible role in the "writing up" process. This was a general feature: in the clinicians' culture of research, someone like me would not ever be imagined as or invited to be a co-author, nor would assistants doing the same work as I did ever imagine this for themselves. The assumption was that I, and others doing the rough and raw work with the data, did not contribute intellectually to the project and could not be legitimately deemed co-creator of research. During my fieldwork, only one emeritus professor mentioned adding people who made data available as co-authors of research. In this case they were laboratory staff who had challenged him on their exclusion from authorship because they had performed all the laboratory tests to produce his data.

There is of course a difference in the labour involved in an assistant entering positive or negative laboratory test results or patient demographics into a spreadsheet, for example, and interpreting complex social experiences or ideas of research participants and converting them into clear answers on a survey sheet. This human contact and interpretative process is not just challenging but considerably more intellectually and emotionally demanding than is often appreciated. But irrespective of this data collection is not deemed an intellectual task and people doing this collecting are frequently viewed as “interchangeable cogs” (Biruk 2018).

Globally academic publishers have instituted more stringent regulations regarding authorship to deter people, particularly predatory senior academics, from including themselves as authors in work conducted by more junior colleagues in order to boost their publication portfolio without doing the work involved (for example, ICMJE n.d.). It is now a widespread practice that all authors and co-authors must sign a declaration about the intellectual contribution they made to a publication. Yet this regulation is not concerned with apparently basic work of data collection and capturing — an entrenched blind spot.

In my own case, I felt that the process was unjust. This process that rendered invisible my gut-wrenching efforts made me painfully and acutely aware of the exclusions and hierarchies that exist in producing research — and what is considered simply the “doing” of a task compared to the “thinking” work of designing questions and writing. If my labour in the clinical research process had only been to get the project done and produce some interesting and helpful information about a medical facility, which I had become personally and academically invested in, I might not have felt as unsettled about this arrangement; I might have played what I knew to be an important part in this process. However, that the work did more than just produce hopefully, at least locally, useful research. It progressed someone else’s academic career and earned the person accolades, prestige, and bureaucratic status in the institution — and a PhD degree. I had spent just over 160 hours collecting and entering data in this project, not including the preparatory meetings or conversations. I was sceptical that co-authors (other clinicians and statisticians) on the publications emerging from this PhD project had spent close to that amount of time contributing to co-creating the published outputs. Certainly they had not been emotionally worn down in the same manner by their work.

Another very blatant and perhaps extreme example of this intellectual hierarchy was during my interview with a non-clinician managing a clinical trial at a prestigious Wits research unit in which he worked closely with clinicians. Due to the cramped working quarters at the research site, we were in earshot of women capturing data for the research project. Unflinchingly my interviewee told me that data capturing was “grunt work”. This was a term I had heard doctors casually use (although almost never in a recorded interview) for work they deemed inappropriate for themselves, as well-qualified professionals, to do — such as trawling through files in dusty records rooms. This research manager described the work as so mind-numbing and repetitive that he would not be able to do it; he needed more stimulating work.

Although it was not a focus of my fieldwork, an inkling I had from the observations in the field was that people working on large-scale research projects like drugs trials or demographic projects — such as “grassroots” workers, “community liaisons”, or people enrolling participants or collecting social and medical information — were acknowledged by well-known clinician-researchers and managers, perhaps fairly earnestly, for their invaluable contribution to the research production. But these research workers remained anonymous and invisible in the public realm of knowledge production. Excluded from the “community of inquirers” (Whyte 2011: 54) these men and women were seldom even given any feedback about the final research product, let alone acknowledged in it. Their skills were framed as esoteric, and their work therefore as non-intellectual or “unskilled labor” (Biruk 2018), located at the bottom end of the hierarchy of research labour — more a doing than a thinking kind of work. The people classified in this manner were researchers who negotiated with real people and used their intellectual faculties to document and produce quantitatively useful depictions of otherwise complex social realities (for example, Biruk 2018; Whyte 2011). The complexity and thoughtful effort involved in this comparatively poorly paid work is probably unimaginable to the hobnobbing international interventionists who paraded around conferences and global organisations like the WHO speaking about implementing research projects, as if these were a unilateral affair.

Given my own experience with the lengthy process of qualitative work and the fact that I am my own research tool, making it impossible to outsource much of my labour, except possibly for some transcriptions, one could write off my experiences as culture shock, as irreconcilable differences between etic and emic perspectives. But this experience, admittedly more complex because of the social nature of the research I was assisting with, revealed inconsistencies in the pervasive discourse about the work entailed in clinicians' research and the trope of the edified clinician-researcher. And, I was not the only one feeling a little dissatisfied with the way doctors dispersed the tasks of research.

Many of my interlocutors who were registrars in academic hospitals, or who shared experiences of when they were once at this level, were displeased or at least confused about collecting data for consultants in their departments. Registrars and some postgraduate supervisors reported that seniors in hospital departments expected their juniors to get patient approval to use medical information such as laboratory tests for research, or to administer short questionnaires with patients. These men and women felt ostracised from these intellectual projects and rather put out at being used as free and unacknowledged labour in producing research and prestige for people above them in the hierarchy of academic medicine.

Prof. Mngomezulu, for all his detailed descriptions of the burden of doing research, confessed with a lighter tone that he, for example, used a proforma information sheet for collecting data from the patients in his clinical unit:

> Obviously, if you are a consultant you have got people working under you to fill that in. But you have to make sure they fill that in because they just want to make sure that they fill it in quickly and get rid of it and you have to make sure that they fill in all the information.

I do not doubt or deny Mngomezulu's labours of research, certainly in the formative years of his research career. But it is interesting how this burden remains present in doctors' narratives even years after the "you do it yourself" phase, when they have become professionally more senior and have access to wider resources — if not to hire a research assistant then to draw on the free labour of their clinical juniors.[62]

By all accounts Mngomezulu was a seasoned mentor and worked more fairly with his juniors if they showed interested, aptitude, and hard work. According to rumour this was certainly not always the case for other senior consultants, despite some of them being highly regarded clinicians and teachers in academic medicine. But, to Mngomezulu and a number of other interlocutors this borrowing of labour, a privileged resource, was "obviously" usual practice. At the same time doctors working below them felt unappreciated and unthanked, and considered the research in their departments a unilateral and disempowering process. To me this was not a sign that senior consultants were being disingenuous in their explanations to me. It was rather a normative blind spot, symptomatic of professional privilege and hierarchies at the hospitals that extended into research production. These hierarchies corresponded seamlessly with the historical hierarchies and exclusions characteristic of many forms of knowledge making at the university. (Although there are hierarchies in the labour of research in many disciplines in the university, the fact that people can obtain their PhDs with this level of "outsourcing" seems surprising and unusual.)

Beyond the apparently mundane and non-thinking work of data collection, my fieldwork showed that it was perfectly acceptable to outsource other aspects of research production too. "I can't do analysis" and "I wouldn't trust myself with analysis" are two jarring statements that Dr Alice Sutton made during my interview with her. This was one of my earlier interviews and I presumed that I had not heard or understand her correctly. Surely, she would not be suggesting that, as a seasoned clinician-researcher with over a decade's experience and with tens of publications under her belt, she was not proficient, or sufficiently proficient, to play a significant analytical role in the production of research? But as she expanded the explanation of her work as a researcher and as a supervisor of postgraduate research in clinical medicine, it was clear that she meant exactly what she had said.

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[62] Interestingly, the privileged position of senior clinician-researchers caused some confusion among registrars doing their MMed projects: they were surprised that they had to collect their own data for their postgraduate projects, hoping that they could delegate this task to someone else. Also none of my postgraduate interlocutors indicated that could develop their MMed research from data they had collected for their seniors.

Data collection was not the only thing that clinicians did not actually do or did not do alone. Like Sutton, almost all interlocutors divided research into discreet processes. Thus Sutton told me that her strong suite was framing research questions, research design and writing articles — and she was weaker at "analysis", as a neatly parcelled off task. With this, she was not confessing to a guilty secret, or letting her deficiencies slip in a moment of candour with me, a relative stranger and professional outsider. In her research experience, which ranged from working on large international network pharmaceutical trials to supervising small-scale postgraduate research, analysis was something neither postgraduate students in clinical medicine nor clinicians were obliged to do.

From my fieldwork it was evident that most doctors producing research at Wits used the expertise of statisticians, in particular biostatisticians, who were often trained at the Wits School of Public Health in statistics relating to health-related research, such as epidemiology or drug trials. Clinicians commonly made use of statistical consultations available free of charge at the Health Sciences Research Office. Some doctors consulted with friends or colleagues who were statisticians at other institutions. Allegedly some postgraduate students and staff members also paid outsiders for these services. Clinicians often consulted with a statistician before completing a protocol (proposal) of their research and/or after completing a small pilot study, even though this is not necessarily a fool-proof or uncontested process. Inexperienced statisticians who may not understand what the researcher is after may provide every possible and often unnecessary permutation and interpretation of data. Alternatively, a clinician's poor research question and design (allegedly often not well suited to reductionist research) meant that data gathered were not entirely relevant or statistically powerful. This apparently Fordist conveyor-belt system of building research through discreet tasks was not actually a slick process for the time-stressed professional with little formal training in research.

There were of course clinician-researchers who, to varying extents, did their own descriptive statistics or, in a few cases, even more advanced inferential statistics.[63] Certainly, these researchers prided themselves in this and even said that their work was superior because it meant that they were both the designers of research questions and the analysers of the data,

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[63] These were mostly clinicians who started their research careers well before the Health Sciences Research Office began to offer support to students and staff in the form of a wide range of short research training workshops. I describe more about this in the following chapter.

creating more consistency in the apportioning of the thinking work of the research. They perceived their work as being of greater professional value and a more authentic and effectual contribution to the social good than the work of their colleagues who had less methodological acumen. Of course, the level of statistical expertise required for a research project varies significantly: thus more straightforward audit-style research, for example, is unlikely to require the specific insights of a specially trained statistician.

By scanning my interlocutors' and their colleagues' publications and observing the work of my interlocutors, it is clear that statisticians or statistically skilled colleagues are more often officially recognised as contributors to the research process. They become co-authors. This simple observation reveals a great deal about the hierarchies of labour entailed in the research process. The labour of analysis is acknowledged in the outcome of the process — in other words often, but not always, recognised and rewarded in terms of co-authorship with the doctor-researcher. These people make the status of co-author, their work considered further removed from the raw production of data and more directly associated with intellectual work.[64]

Within this hierarchy the doctor is at the peak — as creator of questions, presumably informed by exclusive clinical insights, and as writers, even though they are not often the collector of the data or the analysers of the facts. The primacy of the research question, ostensibly based on restricted, valuable professional insights, recognised through first authorship, means that medical doctors retain their centrality as investigators and authors in the production of research. They brought epistemic value based on their personal professional experience. As Mngomezulu had clearly stated: they saw their patients and decided what to do research on.

There are yet more aspects of authorship that are of interest in terms of the broader networks of labour and the vested interests in clinicians' research production that undermine the righteous trope that generally surrounds clinicians' narratives of research. As I explained above, quite stringent recommendations and regulations today stipulate what journals recognise as co-authorship. Despite these formal arrangements to promote transparency and research integrity authorship continues to remain a highly contested and competitive terrain in

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[64] A comprehensive bibliometric study could provide more categorical and detailed information regarding what level of statistical training co-authors have, if and when statisticians are included as co-authors with clinician-researchers, and what level of formal expertise these statisticians may have.

clinical medicine. Mngomezulu reported, for example, that while he had not had any big problems with seniors demanding authorship on his papers and while he tried to be transparent and fair with students when publishing work resulting from mentoring them or providing them with raw data from his database, this approach had not always been the accepted one in the field of medical research. My impression from Mngomezulu and others was that disputes over authorship or predatory authorship were like cannibalism, as ethnographers of yesteryear might have said. It was in the realm of rumour, it was the people over the hill that did these things. In the case of academic medicine, it was the people in the department next door, or a hospital down the road, who did these despicable things.

While this issue could be examined in much greater length, for this chapter it is perhaps enough to mention that from what interlocutors and acquaintances told me about publication, quite frankly authorship seems a dubious measure of intellectual productivity. This was especially the case the bigger the stakes were in publication and the higher the profile in terms of international or research institute publications. It is almost laughable that anyone would take the list of authors on a publication — including the first author — as a genuine indication of the division of labour that had been involved in producing the work. There was an institutionally tolerated level of performativity present in the authority of research productivity and expertise.

My preparation for my fieldwork, including learning some statistics and clinical trial methodologies, as well as years working and studying at universities made me aware that — particularly in quantitative fields — research was often a linear series of discreet tasks. Therefore, tasks could be dispersed to different people or entities. This did not come as a complete surprise to me. The culture shock I experienced was rather about how removed and hands-off doctors were in much of the research processes: it was thus a shock not only about the way knowledge was produced but the claims that doctors made regarding the burden they had to carry in making knowledge. The vignettes I have provided above stand in stark contrast to the neat narrative of self-sacrifice and burdensome work, and the exceptional labour and exceptional value of doctors' research.[65]

Research that does something: A view from outside the clinical

Beyond the division of labour, there were other inconsistencies and compromises in the knowledge production of clinicians that not only I felt ambivalent about. My interview with Elsa Steenkamp, which I describe below, was just one example of non-clinical interlocutors having similar experiences and scepticisms. These were men and women who were allied health professionals, basic scientists, and social scientists who worked as researchers, supervisors, or support staff within this field. I have chosen my conversation with Steenkamp because it was a relatively long and especially candid interaction. I focus here on our mutual admiration of clinicians and our difficulties, insecurities, and frustrations regarding the research methodologies that positioned us as peripheral to the research process. These aspects of the interview highlight a pervasive normative evaluation of types of research that obviously describe clinical reality or are relevant to problem-solving in clinical work.

The interview is also an extension on Mngomezulu's discussion of the pragmatic limitations of time and funding affecting the form of clinicians' research. We elaborate, from an outsider, or non-clinical, perspective, on the methodological and epistemological constraints. These observations reveal limitations in the research work of clinicians, in particularly a naiveté regarding the value of knowledge production beyond their scope, and indicates that their expertise and reputation as academically-inclined professionals is limited and does automatically permeate the university more broadly. This is therefore a further description of how clinician-researchers, at least those who are joint appointees, straddle two institutions — the hospital and the university. While clinicians' professional dominance in a hospital and faculty context is beyond dispute, it is not unlimited. This power — like the products of their research — has a particular locality or embeddedness. Hierarchies of doing and the thinking work of research are contingent.

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[65] Of course, with an anthropological gaze it is easy to see how the findings I present in this section have links to neoliberal labour practices as well as academic tradition and convention. These links may provide for productive analysis in another forum. For this chapter these observations are important with regards to the trope of the clinician-researcher and their exceptional labour.

Elsa Steenkamp had a background in basic science and was a non-clinical staff member in the Wits Health Sciences Faculty. I became acquainted with her when I attended a faculty skills workshop. Over the course of my fieldwork our paths crossed several times: she had an easy-going demeanour and when we met we chatted easily and openly about life among clinicians and about our struggles with our own PhDs. I was fascinated about her experience of working closely with clinicians and eager to interview her about her work assisting them with technical and methodological aspects of their clinical research. My interview with Steenkamp was the last I did, having already largely left the field. Yet it was at a time when I was still grappling with my relationship with my interlocutors and trying to understand their exceptionalism as well as their limitations. My interaction with Steenkamp revealed that she had similar concerns. It was reassuring to hear about her struggles, similar to those of my other non-clinical interlocutors, in relating to this world of clinical medicine at Wits and its teaching hospitals. Like me, these interlocutors were insiders in the university but outsiders to the practice of medicine.

Asked about what it was like to work with academics of different backgrounds, basic scientists, statisticians, and clinicians, she said enthusiastically and without hesitation, “I must say the clinicians are amazing people … they are a very dedicated bunch of people”. She had worked with a lot of people across the School of Clinical Medicine and we had mutual clinician acquaintances in the school. Steenkamp went on to describe her perceptions of these doctors.

> They give up a lot of normal human family life and relationships. They are often very driven and motivated people. Especially the ones that stick around in the public sector are usually a very special bunch of people — not motivated by money, you know. They really want to change things and they usually stay in a position, often against adversity and in resource-scarce situations where they don’t have {equipment} or [where] the medication runs out. These are really highly-skilled people; but they stay because they know they can still help some patients. So it has been absolutely amazing for me to work with them. And, then, also in this exceptional bunch you … find these research drivers.

Working with these “research drivers”, exceptional within an already admirable group of doctors, left her feeling “a little in awe and humble”.

But our discussion became more critical towards these “research drivers” later in the interview when I asked Steenkamp whether she had any questions for me. When time allowed, this was a question I liked to pose to all my interviewees. I suspect that because of her own postgraduate studies and her experiences of working across disciplines in the health sciences, Steenkamp eagerly grabbed this opportunity to ask me about my own methods — and how clinicians reacted to them. This led to an excited confiding about the content and methods of our doctoral research and the reactions from clinician-researchers to these, and our own conflicted perceptions of our research.

Steenkamp's PhD project involved an open-ended study of an intersecting aspect of non-clinical sciences and clinical work on a particular group of diseases. Despite her background in the so-called hard sciences and my training in qualitative research our experiences were remarkably similar. Steenkamp was interested in my methods as her own were also open-ended, which she experienced as "daunting" and evaluated as "not so structured". She wondered how I coped with carrying out open-ended fieldwork, especially alongside doctors among whom my methodological approach was certainly an outlier. In a moment of candour — being at my wits end after over a year of fieldwork and feeling perplexed by this culture of research and my place within it — I confessed, "It is terrifying". Describing my methodology I revealed some of the methodological-existential crisis I was experiencing. I had found it hard to explain my methods to my interlocutors and challenging to hold onto the value of my research in light of the kinds of clinical work and clinical research I encountered. Our discussion developed in the following way:

> It has been very difficult for me to operate in a field where what I am doing is not obvious. I don't yet know what I can say about individuals or institutions at the end of the day. As I go through my fieldwork I don't yet know what I will find, or what I will say about individuals and institutions. And I'm coming up against people every day who are helping people.

"Plugging holes in people's guts!" Steenkamp interjected enthusiastically. I agreed, saying:

> Yes, literally! And making interesting articles about it, which are often translationable [sic], like, "We shouldn't be doing open appendix operations, we should do keyhole", or whatever.

It was not insignificant that I mentioned appendectomies, according to some interlocutors the most common surgical procedure globally. During my fieldwork I had read about and heard research presented on this procedure arguing that it could easily be translated into improving best practice.

In conversations like this one with Steenkamp, my mind often conjured up my experience at a surgical research symposium the year before when I was listening to appendectomy research. The conference participants were mostly practising surgeons, with some registrars and medical students. They presented on mostly small-scale research studies performed at their own hospitals in six- or eight-minute slots — discussing rates of illness or procedures, the effectiveness of new techniques, cost efficiency, and "outcomes", such as infection rates and mortality. It was at this conference, in an awkwardly broad, dark, hotel conference room, that one presentation really hammered home — simultaneously — my sense of inspiration and my own scholarly impotence. The design of this study was simple, its conclusion relevant. In the conference booklet the aim of the paper was rendered simply as "To share our experience and techniques in using hand-made consumables to makes Laparoscopic Appendectomy cost-effective". From the prior presentations, I had learnt that laparoscopic appendectomies (LA) reduced the risk of infection. The young, smartly-dressed presenter — who I speculated was a registrar — did a good job of explaining the subject matter so that even I, quite ignorant of the anatomical and surgical specifics, could get the gist. He spoke of theatre nurses fashioning saline drip bags — the insides of which are sterile — into a "consumable" necessary to remove the appendix from the laparoscopic incision and ready for laboratory testing. The research showed that these handmade consumables were almost a thousandth of the cost of the run-of-the-mill manufactured consumables. Their retrospective review of the usage of the hand-made consumables showed no significantly different rates of complications with these saline bag contraptions compared to using the standard industrially manufactured consumables. The conclusion was clear, as stated orally in the presentation and in print in the conference booklet — "This study suggests that hand-made consumables are [a] safe and feasible cost-saving alternative measure in performing LA". This clinician's research spoke directly to local experience and gave doctors greater certainty in their practice. As Mngomezulu had indicated, this was clearly about assessing one's own practice for epistemically valuable research possibilities.

Steenkamp and I had mutual respect for clinician "research drivers" and had uneasy feelings about our exploratory research methods in their company. Yet our conversation also revealed shared perceptions about the intellectual limitations in clinicians' culture of research (not unrelated to the conditions of constraint in which they did research). At one point, describing her experiences working with and being supervised by both scientists and clinicians, Steenkamp drew back from the conversation. She took her time arriving at a description of what she perceived as a difference between people who were more scientifically-minded than clinically-minded and finding many clinicians' research simplistic and stiff:

> There is this scientist side, which does all this ground work and experiments. … [Scientists] build up this elaborate framework and fill all the pieces — as opposed to somebody who just kicks a ball into a goal post.

While Steenkamp recognised that some of the clinicians she worked with appreciated or had an aptitude for more painstaking or elaborate scientific research, most of them were goal kickers.

I had thought something similar several times, including while reading a number of Wits PhD dissertations in clinical medicine. As my fieldwork showed, a PhD in this field is the process through which clinicians differentiate themselves from their colleagues and begin to define a research niche as academics. It is a high-level scholarly project that, imaginably, contains expertise that is opaque to readers whom are not trained in or at least familiar with the discipline. Yet, when reading most, though certainly not all, of these dissertations, I was amazed by their apparent simplicity and legibility to me as non-clinical researcher, of this seemingly formulaic work. (Although, given the dispersal of labour to non-experts in producing clinician's research, including their dissertations, it is perhaps not surprising that their research expertise was not obviously opaque).[66] Regarding the kinds of research I imagined Steenkamp to be talking about, I confessed my own circumspection about this method of kicking the ball into the post:

> I am being exposed to the ways different disciplines put together a bundle of knowledge to answer a question and it seems to me — and maybe correct me — in the clinical [disciplines] you have a template and you stick with it. It is very obvious what your end point is going to be, which I find is different to the way a lot of other disciplines do it. And I certainly find that [when] compared [to] myself where it's a very open-ended kind of model.

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[66] Although it might seem like this critique could be applied to a number of scientific endeavours within the so-called hard sciences, it is important not to conflate an experimental methodology with an instrumentalist methodology, even though they may share some common reductionist, quantitative characteristics. In numerous basic sciences research projects, including at a postgraduate level, are iterative and do not have a clear outcome. Research questions and experiments most often have to be revised and completely overhauled in order to arrive at any finding that is novel and interesting (Alon 2014; Schwartz 2011).

Within the medical field it was difficult for me to always articulate to myself and others the importance of inductive, non-numerical, non-quantitative means of producing knowledge that were not inherently pragmatic. I told Steenkamp that among doctors my experience was that

> To a lot of people, it is a radical thing. But basically it [my research] is investigative. It's not me going in and going, "Well, I want to find out this!" It is, "I want to find out what is there!"

Getting to the heart of what she wanted to confide, Steenkamp excitedly said:

> I can sympathise with that, because to me also, while I understand the necessity for it… [for] research where you kind of know already what you are going to get — you are just confirming it, just doing the grunt work of getting that support for your hypothesis.

Explaining her own research methods, she said:

> I guess I am more there to take something apart to see how it works. Yes, it is also very exploratory: I don't know what I am going to get and that makes it very difficult to write up a proposal, because you get told [by clinicians] you are doing a fishing expedition.

Fishing expedition was a metaphor implying recreation, frivolity, perhaps even irresponsibility. It was pejorative. Steenkamp laughed and went on about her "fishing expedition":

> Well, yes, I am [on a fishing expedition]! But I don't see what the problem is. Because as long as you don't go and interpret your results as if it is anything other than a fishing expedition, that is okay. We need research that confirms your hypothesis and builds up a solid sample and a good [statistical] power for your test. But you also need research to find new hypotheses and you don't do that by looking for things that you already know. So, I think both are necessary, but people find it so undefined that it's hard to do and people shy away from it.

When I had asked other interviewees the question that had triggered this reaction in Steenkamp — whether they had any questions for me — their responses demonstrated the normative values that she described in her account. Indeed, Steenkamp's reference to the idea of a fishing trip was not surprising. Interlocutors frequently asked me about my methods or my future plans. Many clinicians could barely conceal their confusion or condescension about what I intended "doing" with my research — how was my work going to make an impact in the world, what would my research "do". These discussions usually took place during the last few minutes they had available for our interview, and sometimes our conversation carried on while walking down a corridor as they hurried to their next appointments. It was not an ideal situation in which to explain paradigmatic issues, that my work was a theoretical and methodological intervention in my own field; that I was not required to make a practical intervention in theirs. It seemed foreign, taboo even, in the world of clinical medicine to admit honestly that I could not give a quick answer or even a practical solution to the institutionally and professional complex world of clinicians' research and their desires to expand their so-called culture of research. My ethnography did not have p-values or t-tests (see Figure 6), therefore, in the eyes of many, the significance of my results was in question. In response to my interviewees' inquiries I often gave vague, non-committal answers in an attempt to cover up the fishing expedition I was on. I had internalised and begun to comply with the normative values of the culture I was studying. I had started to perform like the people in the field I was studying. I began to behave as if I had to be seen to be doing research that was "doing" something. I began performing a purpose and pragmatism that was not inherent in my work.

These interactions with interviewees went beyond my own insecurities as a qualitative researcher and beyond a relatively common unfamiliarity and accompanying prejudice regarding research methods doctors were unfamiliar with. In fact, I experienced a surprising amount of interest in my skills as a qualitative researcher, and some earnest respect regarding the time-consuming and iterative nature of qualitative research. Of course, as I explained in the previous chapter, doctors were often, at least in certain contexts, honest about the contextual complexity of their work. It was not entirely unimaginable that some of them would be eager to have a qualitatively-trained colleague decode this complexity. Indeed, while doing fieldwork I received several offers to work on or establish projects with interlocutors. However, these offers were most often linked to a clear problem and the attempt to ameliorate it, even if it was a complex one. [67][68]

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[67] I have elsewhere written about how this openness might be related to South African doctors' particular sensitivity to ideas of crisis in their practice (van der Wiel 2018).

[68] However, the only outright encounter of territoriality, intolerance, hostility, and an ungenerous and frankly anti-intellectual response to my doctoral research came, in fact, from a basic scientist and a powerful figure in the faculty. Although not someone I had interviewed, she was incredulous that my research would not provide some concrete recommendations for their faculty. I, in turn, was quite incredulous that an academic member of staff would be so eager to rely on a doctoral students' research in such a complex institutional landscape while being so blatantly dismissive of my work and unashamedly showing no knowledge of my discipline.

Surprisingly, no one was averse to me studying them — even with my ostensibly outlandish methods. As my observations in Chapter Two indicated, doctors perceived their collective production of research to be a problem. It was something lacking that needed fixing. No one in the field seemed openly suspicious or ungenerous about me studying their culture of research. But given that they understood and experienced it as a problem, it was difficult for them to reconcile that it was not a problem I was necessarily trying to solve through my extensive academic work. Likewise, Steenkamp's project — although apparently less alien to their concerns than my anthropological project — that investigated aspects of clinical work and connections to basic science was open-ended and had no clear end point that would provide a solution to some problem. At the heart of our research rationales were academic problematiques, not pragmatic problems. We had different responsibilities in our intellectual work.

Clinical interlocutors' judgement of the value and purpose of the research of others was about a predictable epistemological othering and unsurprising fetishisation of quantification, a scientism that attempted to achieve certainty (for example, Adams 2016; Rottenburg and Merry 2015; Ruckenstein and Schüll 2016). But perhaps more importantly and interestingly, my fieldwork indicated that normative evaluations of knowledge production were about the assumption that at the heart of knowledge production should be at least some consideration for the application or instrumentality of research specific to clinicians' own professional reality. Research could not be open-ended or exploratory, it had to "do" something, or at least appear to do so. It had to be closely tied to the clinical. Although taking on the role and hard work of thinkers, these clinician-researchers were still doers largely unable to let go of the idea that there should be a tight feedback loop between knowledge making and the doing work of medical practice.

The clinicians' observation of non-clinical, peripheral participants such as Steenkamp and myself in this culture of research, drawing on an aspirational professional discourse, was that research had to be a remedy for crisis and uncertainty. It needed to lessen the level of "tinkering" and improvisational aspect of practice, or at least lend it some scientific authority. Knowledge production, for them, was not intended to be a means for introducing further complications. Problematisation was not the intellectually luxurious domain of doctors — they were doers, practitioners.

The position within which I found myself was, of course, not an unusual one for an anthropologist nor were my observations unusual within the discipline. This is particularly the case in large global health projects where intervention-minded researchers and clinicians subject comparatively slow, open-ended, problematising research to a sceptical surveillance and a "politics of relevance" (Pigg 2013), referring in particular to the need of having to report to funders the tangible outcomes of research (also, example, Adams, Burke, and Whitmarsh 2014; Biruk 2018; Saethre and Stadler 2017).[69] This is not only a feature of health research: embedded in medical intervention is a solution-oriented core (Redfield 2013: 229). Mol indicates that, "for the medical profession, what to do has always been an important question, indeed recognised as having a normative dimension" (2002: 172).

But the intentions and accountabilities of a large internationally-funded project are rather different to the small-scale work of individual joint appointees, whom — as I have made clear in Chapter Three — are capable of appreciation of the complexity and uncertainty of their work. I therefore occasionally found their attitude towards my methodology surprising, irreconcilable, ungenerous, and conservative given their professional discourse of confessing and professing the nuance and complexity of daily clinical practice. It is not my intention to depict my medical interlocutors as unintellectual or anti-intellectual, and certainly not as intellectually incapable. My findings did not indicate anything that simplistic. It was instead clearly evident that, simultaneous to moments and forums where complexity was appreciated, there was a pervasive sense that all research should directly describe clinical reality, directly problem-solve, or — usually at a basic science level — reveal something new about things clinicians encounter or need to understand in their practice.

Compared to our joint appointee colleagues, Steenkamp and I were desk jockeys. We could take pleasure in open-endedness, uncertainty, exploration. Given the conditions of production of research that Mngomezulu and others had described — despite the partial truths regarding the labour of research — it is not surprising that there might be a resounding lack of appreciation for knowledge production that was more luxurious — in its objectives at least.

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[69] I would argue that while there is some overlap between my research and the kinds of global health projects that ethnographers describe, these latter are not entirely the same as university-level research:while there is emphasis for these projects to produce metrics and statistics, they are not beholden to these factors as the university projects are.

There were some exceptions among my clinician interlocutors about the value of research production. Professor Isak Saher told me his interest and evaluation of making new knowledge was different from that of his colleagues. He said: “I have always had an interest in research, I have always enjoyed doing research and I have a philosophy of doing research for research’s sake. Other people would say you must only do research if it’s a good [clinical] question. I would do research just for research's sake”.

The fact that Saher, a clinician-researcher and insider in the profession, told me that his colleagues would chastise him for doing research beyond their practical clinical concerns confirms the normativity of problem-solving in knowledge production in this field. Although there were exceptions, like Saher, it was generally non-clinical interlocutors who expressed dismay at clinicians’ discombobulation that research should not be clinically descriptive or should be problem solving and provide greater certainty. These interlocutors were peripheral to hospital or clinical life. Given my observations of the faculty, they had less social capital or public voice than clinicians in these circles. However, these non-clinical interlocutors were more deeply embedded in the university than joint appointees: they were not peripheral in the university and knowledge production more broadly.

Within their culture of research doctors claimed that their practice was intertwined with scientific evidence to progress their local practice. But their claims to the gloss and authority of science and the scholarly world diminished when their research was viewed a step removed from the site of clinical insight and their sphere of clinical influence, and one deeper in the university. This is because their research processes and products were viewed in relation to other forms of knowledge making.

In various combinations, non-clinicians could be disparaging, nonplussed, frustrated, or disappointed with what they perceived to be a limited scholarly disposition or insight among most clinician-researchers. Steenkamp, for example, described the limited methodology and aims of doctors’ research as “grunt work” — a term doctors or research institute managers usually used for unintellectual labour in research. By appropriating this term Steenkamp flattened out the hierarchy in clinician-led research with the clinician as the thinker at the pinnacle of the research process. Whether or not all doctors were doing their own grunt work in the records rooms, their clinical insight and dedication to public service did not apparently elevate them or their research products above being simple, unsophisticated, and unimaginative research. It remained research that kicked a ball into a goal.

Another non-clinical interlocutor, Dr Antjie Smit, a seasoned researcher and supervisor in the School of Clinical Medicine, said that from her experience doctors undertook simplistically designed studies, equivalent to an Honours project. The only difference was that they enlarged the data sets to include larger numbers of patients or samples than they would have for an Honours project. In Smit's opinion clinicians had no appreciation for the fact that doctoral research needed to shift an academic discipline. She generously conceded that because of their professional lives doctors had little research training and exposure to the university more broadly and other kinds of intellectual projects. In her estimation doctors were therefore often ignorant of their own limitations. In the way she presented the situation, doctors' statements or criticisms about research often betray their authority, letting a kind of naiveté poke through. An aspect of this lack of awareness is perhaps present in Mngomezulu's description of the working lives of non-clinical academics as straightforward and neatly contained in content and in timeframe, conveniently slotted between the hours of 8 am and 4 pm. I knew no academic who was able to boast of such a straightforward academic life that included ample time for research. The abundance of literature on the pressures of productivity in the neoliberal university, steeped in an audit culture and, in South Africa, affected by the so-called massification, suggests that the academic work week stretches significantly past its formal forty hours. This is especially so because professional progress and increased salaries for academic appointees is far more directly and stringently linked to research outputs than is the case for joint appointees. Also, Mngomezulu's comments and those of others deny the fact that many postgraduate students, for instance, are in fact working full-time or part-time and do their own research in the evenings and weekends.

Neither I nor any non-clinical interlocutors ever dismissed the real work of the clinic that our medical colleagues were up against, nor the challenging conditions of their knowledge production. But in pointing out the hard work of the "other" forms of knowledge making we were engaging in — that went beyond the so-called clinical research that Mngomezulu had talked about — we were painting ourselves as a "special type" within the landscape of clinical medicine. In these intellectualist or scientific terms, we were subverting the otherwise tremendous professional power wielded by doctors. The authority and expertise of clinician-researchers and the power of the trope about their exceptionality was weakened, strained among members of this culture of research who did not share the institutional locality, epistemology, and methodology that joint appointees inhabited.

The "empty hotdog" of expertise: Criticism from within

"I want to say stop wasting your time dabbling". This was a phrase Wits stalwart Prof. Raymond du Toit repeated throughout our conversation about clinician-researchers and what he considered their feeble attempts at creating new, but irrelevant and poor-quality knowledge. Focusing primarily on Du Toit's narrative this final section of the chapter takes an even more irreverent turn — as I draw out a discourse within the medical profession that undermines the valorisation of clinicians' research. Cynical clinical interlocutors broadened the contextualisation of clinicians' research beyond the crisis and constraint of hospital life that Mngomezulu and others provided to explain the limitations of "clinical research". The critique I expose here describes a scenario in the Wits School of Clinical Medicine specifically where a reported shortage of research expertise created a level of professional privilege in producing research of dubious quality. This casts significant doubt on the scientific validity and relevance of doctors' contributions to knowledge production.

Although now a self-confessed bureaucrat in a research institute, Du Toit held more than two decades of experience in the Wits School of Clinical Medicine, in the university's teaching hospitals, and in doing research. He had seen the Faculty of Health Science's attempts to invigorate a culture of research in the School of Clinical Medicine and experienced the conditions of resource constraint that informed clinician-researchers' testimony-style narratives of the real work of the clinic and the hard work of research. Du Toit had a reputation for being a public intellectual and had an impressive list of publications to his name. I had indeed witnessed university bureaucrats tout him as an asset to the university. As in my interview with Mngomezulu, I here found myself nervously seated across a table from a man with a professional and research reputation that preceded him. But this time I was not with a decorous emeritus professor in his out-of-the way office but with an irreverent professor in a coffee shop in Johannesburg.

I had various interactions with Du Toit over the course of my fieldwork, when he had made passionate statements about all manner of things including local clinician-researchers. While a small number of my clinical interlocutors expressed cynicism about the exceptionalism and expertise of clinician-researchers and their knowledge production, Du Toit was one of the most candid to do so, both among my clinical and non-clinical interlocutors. He frequently used words like “crap” or “shit” or their derivatives to describe the research efforts of many doctors. Eventually I pinned him down for an interview in the hope of eliciting more in-depth explanations for these expletives.

In the interview we enjoyed a vibrant discussion about all manner of subjects regarding medical research — ranging from the medical profession writing history in such a way to cast doctors as good-willed and all-knowing; to problems with research designs that, for example, rely too heavily on what patients report about their own behaviours; up to the moralising tone of much public health research, particularly around diet and sexual behaviour. As in my previous encounters, Du Toit had an astounding amount of information at his fingertips, especially the latest published evidence in his field. In the past this had made me sceptical of his exceptional recall and I often went home after my encounters with him to verify his statements, only to find that they seemed reliable. Although he had his own research niche, Du Toit was clearly very widely read, more so than most doctors I was acquainted with. He also seemed to have broader insights into the university beyond the School of Clinical Medicine than many of my other interlocutors. Like many of my clinician-researcher acquaintances he seemed exceptional, talented, insightful. But he discussed the process and product of clinicians’ research in a more scathing tone than most.

I asked Du Toit to tell me a little more about comments he had made on prior occasions about the questionable quality of doctors’ research, the lack of a research culture as bemoaned in national journals, and the university attempt to extend research opportunities to existing clinicians. His extensive responses to my prompts indicated an opinion that belied a good deal of the public discourse regarding the virtue of clinicians’ contributions to knowledge making in South Africa. Comparing the research that was expected of joint appointees with other forms of scholarly work Du Toit explained:

> You won’t find anthropologists dabbling in research, it’s what they do: they teach and they do research. Clinical medicine is supposed to be a full-time profession for most people. You don’t dabble in the research.

His discussion of the dabbling doctor-researcher stood in contrast with ideas about tinkering in biomedicine. In fact, Du Toit commented that medical practice was by its nature a makeshift endeavour, something that was appropriate to the complicated challenges of practice. A lot of clinical work, especially in conditions where doctors could not always rely on adequate resources to diagnose and treat patients with advanced pathologies, required a good deal of intuition and improvisation. This was, as far as Du Toit was concerned, not necessarily compatible with the rigidity and meticulousness of well-designed research. As a result, most doctors were — by training or aptitude — inadequate for the thinking work required in research. Many clinicians new to research were thus producing “crappy” research, just because they wanted to achieve the professional prestige that comes along with publishing research. But they were naïve to the gruelling processes of producing good research. Describing these dubious researchers, Du Toit said:

> They want to travel, they want to stand up on the podium and be the world experts. And what they don’t see is the tediousness and dullness and absolute hideousness of the whole thing [of carrying out research], in my view, to get there. In fact, most people can’t cope, most clinicians get bored very easily, which is not good in research.

Du Toit spoke of the dry tedium of research — which even Mngomezulu described and that I had experienced first-hand as research assistant. Particularly with regards to trials he said that research involved painstakingly following the minutiae of a protocol, and ensuring that a vast amount of paperwork was completed to, for example, correctly record consultations with patients.

In a sense Du Toit reproduced the trope that doctor-researchers were in fact exceptional, among their medical colleagues, in their ability to do work beyond the real work of the clinic. But he made clear that there were many crappy researchers hiding under the moniker of the clinician-research; and that doctors were not necessarily more exceptional than other academics. Doctors, he posited, were generally inadequate in fulfilling all three roles — clinical work, teaching, and research. Expecting doctors to do all three meant that many only dabbled in research — compromising the exceptionalism of clinician-researchers and the prestige of research expertise in the School of Clinical Medicine.

Du Toit was appalled at the lack of research expertise in the Wits School of Clinical Medicine, and that within this institutional context doctors had been able to, for example, enrol for PhDs with little to no research experience. But before I analyse his concerns about this, I turn to the explanations of two other Wits stalwarts that contextualise du Toit’s cynical narrative. These two women — whom I also knew over an extended period — provided more specific details about a set of institutional contingencies that afforded clinicians the privilege, at least over the past two decades, of taking these sorts of steps in academia without the requisite expertise.

Prof. Aida O'Grady, whom I introduced earlier, had over four decades of experience at Wits. She explained what had happened at the university over this time. Like many of my older interlocutors she reminisced about heavy-weight clinician-researchers who had taught her or had elevated the intellectual standing of the school more broadly. Several older interlocutors who had been at Wits for decades showed nostalgia for a past when clinical departments were led by professors with prestigious research portfolios. O'Grady acknowledged that at present many senior staff members in the School of Clinical Medicine had extraordinary clinical acumen and that such people were important in academic hospitals, but that there was a dearth of seniors who had research expertise. Like others, she expressed great dismay, even vitriol, about a period from the late 1990s to the early 2000s when Prof. Max Price was the dean of the Wits Faculty of Health Sciences. This was when intertwining factors led to institutional change in the School of Clinical Medicine and an undermining of research capacity.

In the 1990s older clinicians were leaving public tertiary healthcare in large numbers. This movement was due to increasingly difficult working conditions because of government's shift of resources to primary healthcare while hospitals were overwhelmed with the burden of HIV at a time when ARVs were not available in public facilities (see Chapter One). I have yet to find specific statistics on the attrition of joint appointees during this period, as my interlocutors' descriptions of this period tended towards the hyperbolic. For example, O'Grady said "basically Wits went through a terrible time where the medical school people were leaving it in droves".

During this period, the faculty under the leadership of Price allowed the introduction of the Remunerative Work Outside of Public Service (RWOPS) system for consultants at the university's hospitals. In 2000 the South African government, drawing on provisions in the Public Service Act, conceded that public service doctors could do a limited number of hours per week of private practice work, after hours, provided this was submitted in writing to and approved by hospital managers (Bateman 2012c; Kwinda 2016). This was instituted to retain senior clinical expertise in academic hospitals as well as provide training opportunities for registrars in the private sector, which meant registrars' exposure to patients with different diseases and to using technologies that were not available at public hospitals (more recently there seems to be more consensus about this latter point than the first) (Bateman 2012c; ‘Professor Max Price: Interview’ 2006; Taylor and Kahn 2014)). In 2002 what was previously the Kenridge Hospital complex was converted into the Wits Donald Gordon Medical Centre, roughly 1.5 kilometres away from the Wits Health Sciences Faculty campus and the Charlotte Maxeke Johannesburg Academic Hospital (Keene 2012b: 46). In the process, a number of senior consultants opened private practices at the Donald Gordon.

The concern about the RWOPS arrangement was that doctors would abuse this concession and spend more hours, and not only when they were off duty, running their private practices — a concern that applied across the country and not only at the Donald Gordon. Not only did RWOPS hours eat into any available time consultants might otherwise have spent on research, consultants’ abuse of the system left departments understaffed, leaving the remaining staff — especially younger consultants and registrars — burnt out and less inclined to do research. [70] [71]

O’Grady explained that this institutional context undermined a strong culture of research that had existed up until that time:

> Professors were being appointed with [just] three publications. Some of them are still there. And the [research] output, I think it was falling, never mind not growing. And it was compounded by RWOPS people being able to go out: it was compounded by a terrible decision that Max Price made, which was basically to say yes to RWOPS and allow the Donald Gordon Hospital to function. People just … wouldn’t do any research as compared to twenty years ago.[72]

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[70] Another criticism aired by interlocutors was that under Price the School of Clinical Medicine had to focus its labours on the introduction of the Graduate Entry Medical Programme (GEMP), leaving staff members with less capacity to focus on research.

[71] Wits Donald Gordon Medical Centre does now have a dedicated Clinical Research Office, one of its objectives is to specifically produce research about private healthcare, on which there is little research in South Africa. This may assist in drawing private healthcare specialists, including RWOPS doctors, into research. Yet, seeing that the hospital is technically an academic hospital, it arguably does not alleviate the effect of RWOPS practices in public hospitals.

[72] The RWOPS system remains a contentious issue and people still bring this up to explain why the culture of research is so difficult to re-establish. There seems to be some kind of stalemate regarding this system, particularly as played out over the period 2012-2013 in the *South African Medical Journal*,

O’Grady again emphasised her incredulity at the way in which senior appointments were made at this time: “Honestly, seriously, people were being appointed as full professors on a handful of publications!” One could argue that this lack of expertise in Wits Clinical Medicine, allowed for its own moment of expansion in clinical research, as in the fields of HIV or global surgery, but a career-launching period for some of the more suspect clinician-researchers. O’Grady said that many of these ersatz professors were still employed at the Wits hospitals and that their appointments were an embarrassment to the university, to clinical departments, and to the individuals themselves. She felt this was especially the case given, the turning of the tide, the fact that more stringent requirements were now being set for evaluating research expertise for promotion to senior positions.

In my research it was obvious that doctors almost never clarified the type of professorship they held. They rarely prefaced their professor title with the appropriate adjective — adjunct, associate, or full — on Faculty of Health Sciences documents, promotional material, conference booklets, Researchgate profiles, and in author details on publications. Unlike, for example, at American universities, lecturers in South Africa are rarely referred to as professors until they have earned the title of associate professor. While faculties might have slightly differing criteria for a person to be designated an associate professor, the title everywhere takes many years to achieve and requires a doctoral degree and numerous research publications. In this context the title of professor is extremely prestigious. However, in the School of Clinical Medicine a considerable number of people who are officially called professor were in fact adjunct professors, most often not holding a doctorate. This title is uncommon in South African academia more broadly and is relatively meaningless. However, my observations indicate that the title “professor” is an extremely deferential title in the School of Clinical Medicine where juniors rarely address their seniors by first name. The abbreviated form of “prof” (not the full

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including comments by prominent Wits figures weighing in on the debate (Bateman 2012c, 2013b, 2013c, 2013d, 2013e; Benatar 2014; Caldwell et al. 2013; Kwinda 2016; Taylor and Kahn 2014). One side painted RWOPS doctors as greedy and unethical while RWOPS doctors cast themselves as saviours of the public system and threatened that if they were to leave public service entirely the academic hospitals would cease to function. A more moderate opinion is that, if properly managed, RWOPS doctors can be an asset to both the private and the public sectors and assist in providing training to registrars in private hospitals. However, the salaries of doctors in public hospitals has increased substantially since the early 2000s. In 2009 the Occupational-Specific Dispensation was implemented and many commentators on the situation — particularly in the national Department of Health — believe that doctors need to choose whether to be in or out of the public service.

word “professor”) was commonly used — without surname — almost in the way “Sir” or “Ma’am” might be used. And I often heard students or registrars using the abbreviated term when addressing people who I knew were not even adjunct professors. It was ironic that, in a school that was so palpably hierarchical in comparison to other parts of the university, the title “professor” was used so misleadingly.

Public intellectuals have brought similar issues to light, saying that in some cases the use of the title of “professor” is tantamount to fraud and jeopardises the South African academy at a time when the quality and international reputation of local universities are under scrutiny (Jansen 2018a, 2018b). While hiding the “adjunct” designation and using only the title “professor” may not necessarily be fraud, it certainly casts doubt on claims of scholarly expertise and indicates a level of artifice or performativity, such as authorship practices in this field.

While academic titles do not attract much scorn and scrutiny in the field I studied, RWOPS is a contentious issue and likely deserves further focused fieldwork. But for the most part RWOPS seemed to remain in the realm of rumour and morally-charged speculation, regardless of whether it was raised in public discussions, interviewees brought it up on their own, or I asked direct questions about it. The discourse around RWOPS and research indicates overlapping moralising discourses about the ethics and virtues of doctors. With regards to a more generalised discussion of RWOPs as undermining public service, the logic is that the RWOPS doctor is the greedy, unethically motivated professional. In the research discourse RWOPS doctors are presented as lacking ethical professional interest in reporting and improving local practice through research — choosing both not to fully dedicate themselves to public service and not to commit themselves to knowledge production to improve local practice. In this professional context RWOPS doctors are cast as greedy, irresponsible villains in dereliction of duty. Clinician-researchers appear in an even more favourable light when contrasted to these colleagues. The exceptionality of researchers is amplified (even though some clinician-researchers I knew were in fact RWOPS doctors).

Dr Ingrid Marx had her own perspective on the sense of crisis that ensued from the era that O’Grady described. Marx was a Wits-trained sub-specialist and researcher and was a contemporary of Du Toit’s. She used the metaphor of an empty hotdog to explain the generational gap in research expertise that had been caused by the period of expert attrition from the School of Clinical Medicine. In her mind, a generation of retiring clinician-researchers were one side of the hotdog bun, a younger generation of emerging researchers was the other. But the generation of senior staff members in the school who should be contributing the most to research and developing the younger generation were the missing sausage meant to hold the entire system together. With this she was specifically describing her department at Wits but also felt that it equally described what was happening the School of Clinical Medicine more broadly:

> We had top, top scientists that could compete in the world arena and now I think we have far fewer of them … Where is the middle[, the] sausage in the hotdog? Because there you have got all these people at the top who have retired, left, died, who were A-rated international scientists.
>
> So, you have got very good clinicians now who are heads of units and they are very good hands-on, but they are not researchers. So I think there are very few with a strong research focus that [are] left. I think that kind of layer of resource is thin … I think it has kind of almost whittled away insidiously and now everyone is going, "Oh God, we've got a crisis!" But the crisis has happened over the last two decades, it hasn't just happened in the last year.

This contextualising information about the Wits School of Clinical Medicine and a crisis of expertise added another layer to the broader university sense of urgency in increasing research output to maintain its status as research-intensive institution and reap state subsidy for publications to remain financially solvent (as described in Chapter Two). A good deal of my more critical interlocutors thought that in the situation of two parallel crises — in healthcare and in tertiary education — much of the contemporary research that doctors in the school produced was not about tinkering and improving local practice. But rather, as one disillusioned faculty member said, clinician-researchers were concerned only with "ticking bloody boxes". In private conversations clinician-researchers were thus a little more candid echoed the comments made by Prof. Scarpa Schoeman at the Wits Faculty of Health Sciences Research Day round-table debate that not all research was inspiring or had much impact on practice or teaching, a comment that had then stood rather ignored and isolated.

Within this institutional context, as interlocutors explained, research was not necessarily an idealistically imagined organic, professional and ethical response to understanding, describing, and improving local practice or a restless intellectual curiosity. In a context where bureaucrats like Prof. Martin Veller or Prof. Zeblon Vilakazi, patently concerned with metrics, had to be appeased, publication became a means to an end. In this scenario, not only was the scientific veracity of clinicians' research under question — but so was the intellectual and ethical motivation for their research. By looking at the institutional context of clinicians' research we can see, as Sunder Rajan and Leonelli argue, that "the *stakes* of translational research take many more forms and interpretations than the simple linear definitional mantra 'bench to beside' suggest" (2013: 472, emphasis in original). Doctors' knowledge production has multiple purposes and values.

Some of my interlocutors described their colleagues' work as "boring" or "rubbish", and accused them of peddling "lies" that research would change practice, policy, or teaching at university hospitals let alone beyond. The researchers were merely complying with an audit culture, a pervasive feature of neoliberal academia (Strathern 2000a). Despite the power of the discourse that celebrated the insights that doctors bring to research, the concern about the quality and relevance of the research did not remain unnoticed in the medical profession. As I began reading more broadly for this chapter I found a fair amount of literature, including in globally prominent journals such as the much-referenced and prestigious *The Lancet*, questioning doctors' research (for example, Ioannidis 2016; Macleod et al. 2014).

One staff member of the School of Clinical Medicine, Dr Ana Teixeira, explained that in her observation a lot of research was "not necessarily to answer an important clinical question or to add something to the field". This certainly stood in contrast to the intellectual efforts of figures like Mngomezulu who firmly believed that research was a direct response to clinical experience. Teixeira did not have much research experience herself and planned to improve her research skills and outputs the year following our interview. But one thing she had already learnt about research from people with more experience than herself was that a researcher had to be able to answer the "so what?" question about their research: why was it of any value, academically or clinically. Speaking of research in her previous clinical department, she said,

> A number of people were just picking sort of unimportant questions or things that had already been addressed. You know how, whenever you talk about research, people always say you must ask the question "so what?" And that was … certainly what I felt about some of the projects, like "so what?" You know that there wasn't a really good answer to that question for some of these projects and that they, a lot of them, were — as I said — done just for the sake of completing.

Just as RWOP doctors were framed as unethical, the research by these box-ticking clinician-researchers was framed as unethical in that it did not truly answer professional questions. The social good of this research was under question. The importance of clinical insights and responses to local clinical problems was merely performative, farcical even — like the appearance of research expertise and prestige in the school. The social value of this research was tainted by a drive to address a bureaucratic crisis. The engagement by these clinician-researchers with knowledge production was cast as inauthentic, not entangled with but rather bifurcated from everyday practice of medicine and unable to address the "so what?" refrain.

The purportedly inauthentic nature of clinicians' engagement with research generally but with PhD research in particular was noted by Du Toit. In the previous section of this chapter I provided a sceptical (and possibly limited) view on the labour and simplicity of these dissertations and speculated about the professional privileges used to produce them. While I critiqued from an outsider position, Du Toit led a full-scale attack on PhDs in clinical medicine at Wits from his position embedded in the field with insider knowledge of hospital and university. He was sceptical of the quality of academic work, and the level of commitment and sacrifice of those on this academic trajectory. He spoke disparagingly about what he perceived to be the recent Wits trend of clinical consultants enrolling to do PhDs in order to attain research credentials that could boost their own careers, but also to fill the embarrassingly empty research hotdog in the School of Clinical Medicine. Du Toit was appalled that in the recent past doctors had been able to enrol for doctorates without having any substantial research experience.[73] He condemned it as "reckless". He was also baffled by the level of financial support available to these clinical PhDs. To assist expanding research expertise in South Africa and at Wits, there were a range of full-time scholarships available for clinicians. These were positively luxurious compared to the funding granted to other PhD students, as they were meant to compensate doctors for forfeiting their salaries.[74] From what I understood from my interviewees as well as from rumour, these PhD students were often able to negotiate job security at the hospitals they worked at so that they could return to their posts after their scholarships, which usually lasted two to three years. Du Toit saw this as a catastrophic side-effect of the attempt to swell the

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[73] This was something non-clinical interlocutors also told me. But no one would share any substantial details or point me in the direction of any reports on this matter. I have, therefore, not been able to verify this.

[74] A PhD scholarship in clinical medicine ranged between R400 000 and R500 000 per year, almost four times the value of PhD scholarships in other fields (Discovery Foundation n.d.; NRF 2018; SAMRC 2016). At the time the university in general had capped scholarship funds for doctorates at R180 000 per year.

ranks of clinicians with research expertise. He described it as a situation where “people are being given a free ride”. To avoid developing crappy clinician-researchers, he said: “I don’t think you molly coddle … You have some decent mentors, you have some tough love”. He meant that no matter how keen bureaucrats were to fill the “middle sausage”, and regardless of the clinical kudos these individuals had, they should not be let off the hook regarding the quality of their work.

Not only was the academic standard of their work under scrutiny, Du Toit also questioned the sacrifices doctors were prepared to make to pursue academic goals. He compared doctors attempting a PhD degree with the academic development of doctoral students and academics in other disciplines. In other fields intellectual curiosity drove someone into research, where they gave up income and years of their lives to pursue scholarly interests, develop academic expertise and enjoy institutional prestige. Du Toit considered the current way in which Wits clinicians were pursuing their PhDs as a contravention of this calling and the sacrifice common to other academic disciplines across the university. He considered PhD students in clinical medicine — at least those on scholarships — to be expensive in basic economic terms, especially when weighing in the (insufficient) quality of their research.

In contrast to the narrative of hardship and sacrifice presented in the first part in this chapter, Du Toit, equally as familiar with the hardships of hospital life in South Africa but not letting these determine his opinions, said that these PhDs students were not experiencing anything near the sacrifice of “true” scholars who faced considerably more professional precarity than their privileged medical colleagues:

> People that do PhDs must be people who are willing to give up something and the PhD in basic science [is] essentially a vow of poverty. Honestly, I don’t know what it’s like in the social sciences and I can imagine it’s probably similar. [But] in clinical medicine it’s like, “I am *kind of* interested in research, so I think I will do my PhD, but you can continue paying me my massive salary and give me the sabbatical”.

This mocking interpretation of a culture of research steeped in broader institutional contingencies and allowances pushed back against the second level of personal and professional transformation that clinician-researchers like Mngomezulu, Cassim or Saher professed took place when they moved from the “real work” of the clinic to the “hard work” of research. Du Toit also distanced himself from the accepted logic that clinicians had, even if only in better circumstances or with better quality research, something indispensable to offer knowledge production and the improvement of local practice:

> I just don't understand why we are so obsessed with clinician-researchers. Just having good epidemiology research or good methods people would be fine. We don't need expensive doctors to do this stuff.

According to this counter-narrative which I uncovered in the field, clinician-researchers did not (or at least did not necessarily) have privileged professional insights. They were just privileged. Although Du Toit was the only one of my interlocutors to go this far in his critique of clinicians producing research, there was certainly a good deal of evidence that called into question the scientific contributions doctors could or should make to biomedical progress.

The findings of Part Two of this chapter challenge the idea that all clinicians' research embodies the solution-oriented normativity of biomedicine or necessarily has a local epistemological embeddedness and value, as sketched in Part One. The faux experts that O'Grady and Du Toit describe undermine the hierarchy of value in knowledge production, as, for example, displayed in the Faculty of Health Sciences round-table discussion, positing clinical research as tangible and life-saving. Doctors' research can be just as much an "academic exercise" as in any other discipline in a university.

Conclusion

This chapter indicates that the narratives of clinician-researchers and their non-clinical colleagues, and the work of clinician-led research, do not neatly correspond with public pronouncements about clinician-researchers at Wits University in particular and in South Africa more generally. The evidence I have analysed is a far cry from Dean Veller's insistence at the faculty round-table debate that university-associated doctors are "health scientists". This chapter, with its corollary parts, has brought together a range of ethnographic interactions and insights that provide a window onto the complex actuality and imaginary of clinicians' research. I have described the local professional and institutional contingencies that attribute to a particular trope of clinician-researcher value, virtue, and labour, as well as how the same contingencies simultaneously compromised these very qualities. The person, process of, and product of this knowledge production is, therefore, both exceptional and tainted.

The fertile yet fraught context in which doctors' research is produced within academic medicine in South Africa indicates that the value and exclusivity of clinical insights are not necessarily as indispensable an intellectual contribution as might be imagined. But that the conditions of production of research make the clinician-researcher an exceptional, virtuous, and comparatively intellectual professional figure. However, my own and my interlocutors' observations about the conditions of the production of this research, including the dispersal of the labour of research, limited methodologies and epistemologies, as well as institutional loopholes in developing research expertise, indicate that at both the periphery and the centre of this culture of research there is a sense that some clinicians' research is illegitimate. For at least a portion of clinician-researchers, their research expertise was performative rather than substantive.

To briefly re-examine how this chapter relates specifically to the literature around which I framed my research, in this chapter I append the literature on the relationship between science and practice with my argument that research in resource constrained settings may be a second level of "tinkering" in biomedicine. Clinical knowledge-producers, like doctors, improvise with the limited tools at hand in their local context. Findings presented in Part One also provide some alternative reflections on the possible limitation of social science criticism, initially informing this project, of terms and categories inherited from colonial and apartheid eras that doctors and scientists still employ in solving hands-on clinical problems. This chapter also brings together two related though often conflicting strands of social science of medicine, first, the more expansive body of work damning the systemic professional power of medical doctors, and second, that which studies more empathically the development of the professional self and its intrinsic hardships. It is clear that both these strands need to be considered in conjunction with each when looking critically at the professional privilege and significant personal challenges doctors have in producing new knowledge and the contradictions in what Rose (2013) would term their "operative philosophies".

The next chapter extends on several themes raised here, and specifically assesses them in relation to the more deliberate development of a new generation of specialists and attempts to embed a research expertise in clinical departments.

Chapter 5 —
Creating a new generation: Postgraduate research at the intersection of hospital and university

Coming-to-know, like becoming a subject, occurs through the lived experience of the inhabitants of bodies, places and fields of meaning.

— Zimitri Erasmus, *Race Otherwise: Forging a New Humanism for South Africa*

Prelude: Re-examining Prof. Mngomezulu as young researcher

"It wasn't easy" was a phrase Professor Emeritus Josiah Mngomezulu repeated several times in answer to my question about how being black had affected his transformation from clinician into a clinician-researcher in the 1980s, under apartheid. According to all my older interlocutors, in the past clinicians' exposure to and assistance in developing a research career was patchy at best and often relied on chance exposure to research and also on limited networks of mentorship and patronage. But inclusion in knowledge production was more elusive for some than others.

Mngomezulu described what he termed a stereotype, an exclusionary aspect of institional culture, that hindered his development as clincian-researcher. The stereotype was that as a black doctor he was expected to "just work", to busy himself only with the "doing" of medicine. He expereinced this in academic hosptials when training first as a generalist, and then later as he trained to be a specialist, itself not widely encouraged for black doctors. Historical accounts of South Africa, and of the USA (Noble 2013; Pollock 2012: 1–42), indicate that the stereotype Mngomezulu experienced was widespread.

Mngomezulu explained to me that he felt specifically excluded from research during his registrar years when he was training as a specialist:

> You would find suddenly your other colleagues who are not black will have research projects that they are going to present at a congress. You don't know how they got them, nobody came to me and said, "Do this". So, I just thought, now I have to find my own [research]. So what I did, I became proactive. I would go to that senior person and say, "I want to present at the next congress, I need a project". So that is how I worked, I became proactive.

After this Mngomezulu enjoyed remarkable support, from three mentors in particular (one of whom was himself black). But as he developed a research niche and completed a Master of Medicine and a PhD, he also had detractors, definitely in the 1980s but even into the 1990s, despite it being clear at this point that the racial profile of academic expertise needed to become more inclusive. He said:

> There was pressure now at universities. You couldn't have only whites in the departments. So, the departments needed to have black people. So they were under pressure. But again, the stereotype was [that] a black person will come and just work. So if you come now and you want to do research, it was unusual.

> So those who are pro-research will support you, they supported me. Those that are not pro-research will come and discourage you. “Why are you working so hard, why don’t you finish at four o’clock and go home?” That will be the stereotype.

Mngomezulu’s hard work, personal sacrifices, international recognition and professorship (which I described in the previous chapter) are even more exceptional in light of this institutional context in which he first began his research career.[75]

Most clinician-researchers cast themselves as being the thinkers within their profession. During the apartheid era this was not a straightforward affair. It was more complicated than doctors self-selecting themselves as researchers, professionals of a special breed, because of their intellectual curiosity. The decline of a golden era of a research culture in clinical medicine in previous decades — as many interlocutors described it — had been the decline of an already limited field of expertise. The previous full “hotdog” of expertise had in fact been tainted. My interview with Prof. Mngomezulu, was emblematic of my fieldwork findings in highlighting how talking about race and inequalities in the medical profession past and present although not taboo was also not on the forefront of people’s discussions with me, even if it had a profound effect. Race did not overtly frame people’s explanations of their profession and their interest in research. It was a question I had to explicitly ask.

Introduction

Unlike Mngomezulu and other older interlocutors, a new generation of registrars were — through the Master of Medicine (MMed) degree — meant to have equal exposure to and opportunity to participate in clinical research. The chapter investigates the development of the ambitions and practical measures taken to create a more inclusive, democratic professional scientific community, overcoming the patchiness and inequality of doctors’ exposure to research in previous years.

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[75] Autobiographic literature indicates that becoming a professional and/or an academic — especially rising to the upper echelons of institutions and developing niche expertise — was definitively more complicated for black men and women than for their white colleagues during the apartheid era. These challenges were in the form of formal legislature or professionals prohibitions and/or personal prejudices or the unarticulated exclusions in institutional culture.

“MMed” was often an expression on people’s lips. It referred to the requirement that registrars must complete a research project, in addition to their gruelling training and exams, to qualify as specialists, a measure introduced only in 2011. It was a hotly-debated topic during my fieldwork on doctors’ research at the Wits School of Clinical Medicine. The MMed degree was optimistically imagined to be the cornerstone of attempts to build a culture of research in the institution. This degree was seen as the means to create responsible modern research-literate specialists, as well as to entice doctors into publication and PhD degrees and so fill the perceived lack of research expertise in the school. Around the country the MMed machinery was imagined as also making an impact beyond the university in clinical practice through the knowledge produced by these students.

This chapter begins with a description of the institutional context of MMed degrees at Wits, especially in relation to the changing professional requirements for the qualifications needed for medical specialisation. I map out the efforts by the Wits Faculty of Health Sciences and its clinical departments to support postgraduate research, against a backdrop of insufficient research expertise in the School of Clinical Medicine. I then move into an in-depth description of my fieldwork with a group of registrars writing their MMed protocols (research proposals). I highlight the prominent personal and professional sacrifices that go into producing such research and how these students, who are simultaneously qualified professionals, navigate learning research amid their hospital lives. I describe the compromises involved in producing this research, especially in relation to the ideal that professional experience and identity should guide doctors’ research interests and questions. Institutional constraints — including time and methodology — affect how registrars can feasibly do research and thwart the translatability of their research into improving local practice.

Analysing the narratives of members of the new generation of doctor-researchers, including that of a Wits PhD graduate, I challenge the discourse that all doctors are equally capable of research. I unsettle the prominent discourse that a compulsory MMed would necessarily provide a new generation of post-apartheid doctors who have all had equal exposure to research and equivalent opportunity to become researchers. This rationale ignores structural factors in post-apartheid society — such as race and gender — that may affect people’s professional lives and by extension their ability to contribute to research. Also, this rationale contradicts the medical imaginary that doctors who become researchers are exceptional people with specific aptitudes and interests. In this discussion I also highlight how methodologies employed in postgraduate clinical medicine research are limiting and allow no space for reflexive knowledge making that may in fact shed light on the unequal professional experiences that doctors have in South Africa (and that may affect their capability of becoming researchers), and how this undermines the ideals of an inclusive professional and research community.

Research requirements and faculty fieldwork

From 2011 the Health Professions Council of South Africa made it compulsory for registrars to complete a MMed research project to qualify and practice as specialist doctors (Health Professions Council of South Africa 2011). For administrative reasons, registrars at Wits have always had to register as postgraduate students, specifically as MMed students, in the School of Clinical Medicine. But since their qualification as specialists was determined by them passing exams set by the South African Colleges of Medicine, a professional body separate from the various universities, most did not complete the master's degrees. Yet, since 2011 registrars have had to actually complete this degree and fulfil the university requirements for a master's programme in order to qualify as specialists. At Wits this applied to students enrolled as registrars from 2010 onwards.[76] The number of MMed graduates at Wits increased by more than ten-fold over the course of a decade, from 11 in 2006 to 124 in 2016 (Papathanasopoulos and HSRO Staff 2017: 7).

Some of my interlocutors told me that another reason for this change of requirements was to make the local specialist qualifications equivalent to international qualifications. But beyond this the value of the MMed requirement, namely performing research, was intended to result in greater research literacy among a new generation of specialists, and the performance of

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[76] At historically Afrikaans-language institutions, registrars had generally not graduated by writing the national Colleges of Medicine exams but rather by achieving MMed degrees that entailed passing a set of clinical exams at their universities and completing a research project. As of 2011 registrars at all South African universities are required to quality by writing national college exams and completing a research project at their local university (University of the Witwatersrand 2017c).One interviewee who had done her registrarship at the University of Pretoria (UP), after completing undergraduate studies at Wits and working at a Wits hospital, said that she did not witness any panic among registrars at UP regarding MMed research because this had already been the requirement there. What has changed for them is the additional college exams they need to write to graduate. This no doubt resulted in a separate set of challenges at this and similar institutions, my story here pertains particularly to Wits. (Even though I did in fact attend a faculty research day at UP in late 2015, and two of my non-Wits interviewees had trained at previously Afrikaans universities.)

research was seen as the best way to achieve this. Throughout the university and professional spaces and in local medical journals, I observed an often alarmist explanation that research was a necessary skill to stay abreast of the ever-increasing volumes of medical evidence produced globally. At the same time, however, several doctors at Wits and other universities speculated with varying degrees of cynicism that universities colluded in the establishment of the new professional requirement because it promised them state subsidies for each postgraduate degree completed. Again, clinicians' knowledge production, in this case postgraduate research, was framed as bureaucracy incarnate.

The implementation of the MMed requirement, although ostensibly a professional requirement, also aligned with a broader university and state concern about increasing the number of clinical researchers, including actual doctors producing research (as discussed in detail in Chapter One). This requirement also relates to a larger national project that included the Department of Health to increase the number of PhDs in the health sciences (National Health Research Committee 2011). An increased number of people with a master's degree in the health sciences should, ostensibly, increase the likelihood that more people would continue with a PhD. And increasing the number of advanced degrees in the health sciences was hoped not only to enlarge the group of knowledge producers but to transform it to include higher numbers of women and black people. Theoretically this would eliminate the limiting stereotypes and forms of exclusion from knowledge making that Prof. Mngomezulu, for example, experienced.

Many of the supervisors and PhD students to whom I spoke to explained that the small-scale MMed was just a taster, an exposure to research, that would hopefully, at least for a small proportion of specialists, be kind a gateway drug to a career in research. Once hooked these doctor-researchers would contribute to the university and to improving local practice.

Annually Wits has produced one of the largest number of specialists and sub-specialists across all South African medical schools (NDoH 2011: 40–2, NDoH statistics include dental registrars; University of the Witwatersrand n.d.). In 2016, the year I did fieldwork, there were over 800 registrars in the Wits School of Clinical Medicine working at Wits academic hospitals.[77] Registrars are a substantial portion of the clinical workforce at secondary and tertiary hospitals in Johannesburg and Soweto where they undergo reputedly gruelling practical training. Working under qualified consultants they are responsible for a large amount of clinical work, teaching, and supervision of interns and junior doctors. According to my interlocutors and debates conducted in local medical journals, registrars' responsibilities had increased as a result of the RWOPS system, with some consultants not honouring their required working hours at the hospitals because they were running private practices (see Chapter Four).

The insertion of research into registrars' demanding professional training programme and exam schedule is of great concern. Articles in prominent medical journals indicate that although instituted in 2011 the compulsory MMed research project has continued to cause institutional anxieties in particularly regarding university capacities for supervision and support for large numbers of registrars with little to no research experience (Aldous, Adhikari, and Rout 2014; Bateman 2011; Biccard et al. 2017; Rodseth, Wise, and Bishop 2017; Rout, Sommerville, and Aldous 2015; Senkubuge and Mayosi 2013; Szabo and Ramlall 2016). Throughout my fieldwork I observed persistent concern being raised regarding a number of factors: doctors' lack of preparedness for and interest in completing an MMed; the lack of supervisors to assist MMed students; along with the high stakes involved for registrars who failed to qualify because of not completing a research project, even if they had met the clinical and exam requirements. The expansion of clinical research at a postgraduate level was a remedy for the "empty hotdog", or lack of research expertise at South African medical schools (see Chapter Four). But, it was also directly hampered by this lack of research expertise among consultants in academic hospitals.

Over approximately the last decade, the Wits Faculty of Health Sciences has stepped in to increase its efforts to develop a research capacity, including growing a new generation of medical doctors who produce research or who are at least research-literate (Chirwa, Kramer,

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[77] I am unclear whether this figure included supernumery registrars — thus international registrars working at public hospitals but with their own sources of funding. They received no salary from the Department of Health (DoH) and therefore did not occupy any official DoH posts. Many of supernumeries receive stipends from their own governments in exchange for gaining specialist skills in South Africa, though some seem to work at their own expense.

and Libhaber 2015; Kramer, Veriava, and Pettifor 2015; Kramer and Libhaber 2016, 2018).[78] Many older clinicians and non-clinical supervisors said that this help became evident in the faculty from 2009 onwards with a growing availability of workshops in research methods, statistics, and writing and an increase in research days as forums for new researchers. Some attributed this change to the Deputy Dean of Research in the Health Sciences Faculty, Prof. Beverley Kramer, who occupied this position from 2009 to 2016 and headed the Health Sciences Research Office (HSRO).

HSRO workshops were usually two hours long. They covered facets of research ranging from philosophical and ethical issues relating to research integrity and value, to advice about writing, and practical sessions on entering data into statistical programmes. The workshops included, for example: writing a research proposal; critical appraisal of literature; data collection and description statistics; inferential statistics and the use of statistical programmes; outcome measures; research integrity; overview of qualitative research; writing an abstract; making effective presentations; data analysis; and courses on supervision. Open sessions for data analysis were also frequently on offer. Supervisors and workshop facilitators emphasised that these workshops simply offered an introduction to or overview of a subject, and did not comprise comprehensive methodological training. Given that the vast majority of postgraduate projects in clinical medicine were quantitative, supervisors and workshop facilitators urged students to make use of free biostatistics consultations available at the HSRO. Some departments within the School of Clinical Medicine ran additional workshops for their MMed students, tailored to the specific research interests and the bureaucratic processes of their departments.

In 2016, when I did the bulk of my fieldwork, the faculty offered a series of research workshops that were repeated throughout the year — both at the Parktown Health Sciences Campus, usually in the third-floor computer labs, and in the Wits student resource centre on the extensive grounds of Chris Hani Baragwanath Academic Hospital. These HSRO workshops were available to all students and staff in the faculty (and the odd interested anthropologist). The workshops at the Parktown campus were extremely well attended and frequently required

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[78] Journal articles also appeared in local clinical journals with instructions of compiling MMed projects (for example, Bentley and Buchmann 2011; Biccard and Rodseth 2014).

booking long in advance. In contrast, the workshops at Bara were poorly attended, both in my experience and according to the accounts of people associated with the HSRO.

I attended nine HSRO workshops — five comprised a series workshops at Bara. At the Parktown Health Sciences campus I attended a data collection software workshop and three statistics workshops, including some elementary instruction in statistical software programmes.[79] Unlike the conferences sessions where I attended largely as an observer, I actively participated in these workshops. For instance, I worked through examples of statistical questions, or engaged in correcting written examples of style and grammar problems alongside the other attendees. During the breaks I drank tea, ate tiny triangles of sandwich, and struck up conversations with other students, particularly the clinical folks who were often distinguishable by their colourful scrubs or their self-ridiculing humour about their lack of familiarity with research methods. One sub-specialist attending a statistics workshop joked that she had only had "half an education" because she knew nothing about reading or writing research. (At these workshops I learnt that some MMed students were consultants and not registrars. As seniors in their Wits academic hospitals, these consultants were required to supervise the increasing numbers of registrars doing their MMed degrees. Yet, some of them did not hold a postgraduate degree themselves, even though they were qualified as sub-specialists, and thus felt the need to do on an MMed themselves.)

Faculty workshops offered me an opportunity to familiarise myself with the research methodologies students were exposed to and how a culture of research was inculcated in a younger generation of doctors, as well as to actually meet these younger doctors. As throughout my fieldwork it was relatively simple affair to gain access to these events, even including workshops where methods were taught. But pinning down interviewees or arranging occasions and appropriate permissions to observe people at work on research was another story

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[79] I also completed three Massive Online Open Courses (MOOCs) pertaining to medical research, including a UCT Future Learn course convened by a UCT-based surgeon-researcher, a requirement for UCT surgical registrars as part of their MMeds. While waiting for ethical approval of my project at the end of 2015 I did a week-long short course in clinical trials at the Wits School of Public Health. To track the learning and teaching of research production at the School of Clinical Medicine, I also attended three undergraduate lectures on research methodologies, the value of research, and EBM, as well as a research day for fifth year students presenting their quantitative, group research projects. According to staff members of the faculty, small-scale research such as this was intended to familiarise students with the principles of research in order to encourage interest in research.

altogether. I found registrars the most elusive group of the various clinician-researchers that I hoped to study. I was genuinely more successful in arranging meetings with senior faculty members in the Health Sciences than pinning a registrar down for an interview. I met registrars, many of them. I crossed paths with them, at public lectures, at congresses, at research days, at data software workshops, and at faculty statistics workshops. They seemed interested in sharing their research experiences with me, but almost none would commit to a time to do so. These workshops proved just another space where, with very little success, I had attempted cold-calling, as I started to call it. I approached strangers in a research-related space, explained my fieldwork to them, and tried to secure an interview with them. Many whom I approached were elated at the idea that someone was studying the MMed requirement and doing research within the profession. Many would then say abruptly, if helpfully, “Okay, give me the survey [to complete]”, expecting a physical questionnaire to complete. Instead I would give them an information sheet and ask for their email address to set up an interview. More often than not, when I followed up with them in writing, there was no response. Yet, who could blame them: they barely had time to do their own research, let alone spare an hour to participate in someone else’s — regardless of how sympathetic they were towards a fellow researcher. Moving into the second half of my fieldwork, I had managed to interview only two MMed students. I became despondent and exhausted by continually making my case to potential interlocutors. And yet, the slow return on investment in interviews also revealed something critical about the professional lives and the lack of exposure to qualitative research methods of these doctors, more so than on my ability to build rapport.

To my great relief I secured an opportunity to acquaint myself more deeply with MMed students and supervisors at a Wits clinical department, which for ease I call Department X, shortly before the end of my fieldwork. Here I interviewed four supervisors of MMed and PhD students, including the head of department. I already had a longer term acquaintance with two of the non-clinical supervisors who assisted the department, Dr Antjie Smit and Dr Pat Pollock. One of these four supervisors was black, the rest were white, one of them was a man and the others were women. Over a period of several weeks I became well acquainted with ten MMed students in the department. I spent time with them outside of their clinical work hours, mostly around the Wits Parktown Health Sciences campus as they prepared their research protocols. I attended departmental research workshops with them, spent dreary hours in the stuffy Wits Health Sciences Library while they prepared literature reviews, and chatted with them in the canteen and in the garden outside the brutalist Health Sciences building. I also formally interviewed all but one of them. Of the ten registrars in Department X, nine had done their undergraduate medical training at Wits, and most worked for their internships, community service years, medical officer time, and even private practice at hospitals and clinics in the Johannesburg region. Seven were married and three of the seven were parents. The group comprised seven black doctors (three black African men, one black African woman, three women of Indian descent), and four white women. Almost all of them were in their early thirties.

The supervisors in Department X stressed to me that departmental workshops were not widespread in the School of Medicine and that I should be cautious in extrapolating from my experiences with their registrars. The workshops nonetheless allowed me to create a thicker description of MMed development and registrar life. From what I garnered from interviewees and workshops and research materials from another department, there seemed to be a good deal of commonality in ideas about the purpose and experience of the MMed degree across disciplines. Nonetheless, I have deliberately altered minor details about my fieldwork with students and staff in Department X so as not to inadvertently reveal their identity, particularly as only a minority of clinical departments at the Wits School of Clinical Medicine run their own formal departmental research workshops. I observed workshops at one other of these departments. From my research it seems that most other departments required or encouraged students to attend HSRO workshops on research ethics and methodology.

“Reg time”

I was interested in the research that registrars at Wits were doing, or had done, and the manner in which they were learning about research methods and the value of knowledge making. Prior to my involvement in Department X, interviews with supervisors or people who had previously completed an MMed were an abundant source of student and staff perspectives and experiences of this postgraduate research landscape, including institutional attempts to increase support. All my interviewees broached the subject of postgraduate research — either their own or their supervision of students.[80] But I was not just concerned with research as an abstract thing, plopped into their professional lives. I wanted to learn more about their lives generally, their registrarship. This was to get a better idea of the personal and institutional contexts in which the bulk of postgraduate research was being produced in the School of Clinical Medicine. This was a means to get closer to doctors' experience at the intersection of hospital and university. Before I immersed myself with these registrars I only had dry information about of their training and a few insights from candid interviewees who shared their memories of being a registrar: an overwhelming time of working long hours and cramming for exams. The period I spent with the registrars in Department X granted me a more immediate view into "reg time".

"Reg time" was a term that I heard from my interlocutors, both postgraduate students and supervisors. It was pronounced like the first syllable of "registrar", with a soft "g". This term had a weight to it. It not only signified the approximately four years that a doctor trained to specialise but also referred to how rough those four years were. Reg time varied across different clinical disciplines. To get a handle on the logistical details for this specialisation, I observed many conversations and asked what I am sure seemed like daft questions. Slowly I deciphered some of the jargon that supervisors and MMed students were frequently using. The following is a summary of the general details of reg time, although it must be noted that these may vary from department to department.

Candidates for registrarship needed to have completed at least a year working as a medical officer (a post-community service doctor), with some rotations spent working in the discipline of choice. They also had to have completed a Colleges of Medicine diploma in the discipline before applying for a registrar post. During the time of my fieldwork a registrar salary without

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[80] I interviewed nine clinicians with completed PhDs (some of whom had completed an MSc though not necessarily an MMed, and one who completed the PhDs in basic science); six clinicians in the process of doing their PhDs, three of whom where completing theirs in basic science; three clinicians who had recently completed or were about to complete a Master of Public Health (MPH); three clinicians with an MMed degree only but who had experience in supervising MMed students; eleven students/registrars who were in the process of doing their MMed degrees; and three non-clinical supervisors of MMeds and PhDs. Throughout 2016 I also worked as data collector and capturer for a clinician completing a PhD (see Chapter Four).

overtime pay was roughly R50 000.[81] This monthly salary increased by a few thousand rand as registrars passed the first series of college exams and became senior registrars. Although registrars were employed and paid by the Department of Health, the Wits clinical department chose the candidates and allocated the available posts to them. According to my interlocutors, to address equity in the training programme, and therefore in the profession, departments used a scoring system with points awarded to candidates according to their race and sex, with black women being favoured in this scale. Each registrar held a post at one of the Wits academic hospitals but did extensive rotations at each of the Wits hospitals around Johannesburg, as well as in the Klerksdorp-Tshepong hospital complex in North-West province.

Registrars reported that their average day started at 7 am and ended any time from 4 pm onwards, depending on the work load. They were required to work eighty hours of overtime a month. During their junior registrar years, thus their first and second years, they wrote primary exams, also known as “primaries” or “part ones”. In some disciplines, these pertained to basic science aspects of their field. They became senior registrars in their third and fourth years. During this time, they needed to do what they called specialist rotations, which entailed longer hours at the hospital and more preparation and reading of journal articles and textbook chapters to manage more complex cases. Senior registrars also had to complete their research projects and study for their second set of College exams, which people called “part twos”. Lists of the names of people who have successfully completed their exams are posted on the Colleges of Medicine website for anyone to see: passing and failing exams was, thus, a very public affair. Most of the registrars I worked with at Department X had already passed their first set of Colleges exams and were preparing for their second set.

In my interviews and chats, I asked people about the details of their everyday lives: what they did in an average day, when they squeezed in studying, and how they might squeeze in their research projects. Most registrars reported that they studied late at night, after preparing and eating dinner and putting the children to bed and after spouses had gone to sleep. Some indicated that closer to exams they got up earlier in the morning to squeeze in an hour or two

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[81] According to online information, the annual salary including overtime for a junior registrar in 2016 was just under one million rand (Department of Public Service and Administration 2016; NHLS n.d.). In this manner, registrars earned roughly 25% more than associate professors and only slightly less than full professors at South African universities (ASAWU 2016). The salary of a senior registrar including overtime was just over a million rand and roughly equivalent to the salary of a full professor.

of studying before starting their day shift. Others worked better at night, sometimes camping out at the Health Sciences library to prepare for exams.

Exams, both the part ones they had already passed and the part twos they were due to write, were never very far from their consciousness. They were swiftly and frequently summoned up in registrars' conversations — in jest or with dread. This was also the case in the interviews with two MMeds from other departments. As an outsider trying to get at the mundane logistical details of these student lives, it seemed that the time required to study for exams and the breadth of information to learn were important factors in creating the sense that reg time was a gruelling rite of passage. Registrars spoke about how the knowledge they had to display felt nebulous to them. For days I listened to people talk about trying to borrow notes from people who had passed their part twos, and about needing eighteen months to prepare for the final exams. They despaired about the possibility of receiving a long question in the exam on a topic they could not remember or had never read about; about the feeling that they might as well leave the exam early and go home, assuming that they would fail. It took me a few days of being with the registrars to realise that — at least for part twos — there were no real guidelines as to what registrars needed to learn. Dr Sheera Govender succinctly explained that you were expected to know "basically everything". Supervisor Dr Antjie Smit explained that "the information they need to know is not getting smaller, it's getting bigger". The continuous expansion of research and medical knowledge meant that registrars needed research literacy and that their exams would include a section of research appraisal. But this expansion meant that registrars had to learn increasing amounts of clinical information for their exams, which put strain on the time available for doing their own research.

Two of the registrars, Dr Kgao Moiloa and Dr Helen Bassa, had a slightly less pessimistic and panicky take on reg time. They too experienced the time leading up to the exams as tough because they were required to work full time as they were doing "intensive studying", as Moiloa called it. But they said that nobody studied all the time, that it went in ebbs and flows depending on when they were scheduled to write exams. Both said that doctors were not extraordinarily intelligent, hard-working, or responsible, and that other professions similarly had serious responsibilities and long hours. Bassa diagnosed a "culture of complaining" among doctors: while things were indeed tough and the facilities they worked at were challenging work environments, many of her colleagues had no knowledge or consideration of the challenges of other careers. Regardless of this culture of complaining and a pervasive professional performance of virtuousness, my fieldwork as a whole indicated that registrars carried a significant workload during their reg time, which at times clearly overwhelmed many of them. It is not surprising that several supervisors, including Smit, deliberately and repeatedly used the word "traumatic" to describe students' MMed experiences:

> Most of the registrars actually find it extremely traumatic. Even the ones that are reasonably interested in research find it very traumatic, because it is not in their comfort zone.

"Not Nobel Prize stuff": An introduction to research

The Health Sciences Research Office workshops on research were open to all students and staff from across the faculty. Workshops within clinical departments introduced registrars specifically to what is required of them as MMed students — in less of a general or abstract fashion. In the workshops in Department X experts from within the department and a few across the faculty gave the registrars lectures on library skills, citation managers, writing skills, basic statistics, research methodologies, bioethics, and university ethics applications. The research supervisors running the workshops, Pollock and Smit, provided students with a proposed timetable of deadlines during allocating time frames for the following: submitting early and then final drafts of the research protocol to supervisors for feedback; submitting the protocol to the ethics committee, the departmental and/or the faculty postgraduate research committees for approval; conducting research; analysing and writing up results; submitting the research report for examination; and, ideally, publishing their research. My interlocutors told me that, technically, departments had to allow MMed students six weeks of leave for research purposes. This was allocated differently in the various departments, some encouraging registrars to take time off for these different stages. Most departments required MMed students to have submitted their research for examination before allowing them to proceed with the part two exams.

The purpose of the departmental workshops was to allay student fears, but also to help streamline the process for supervisors, many of whom were consultants at Wits teaching hospitals with little research experience and reportedly not clued up on or bothered by the more bureaucratic aspects of protocol and project submission. Overall the department's support was intended to prevent registrars being unable to qualify as specialists. Aside from getting these students through the system as efficiently as possible, the hope was that students would produce work that the department could be proud of, that they would present at local congresses, that they might publish, and that might ultimately even entice them to stay on as PhD students. The purpose of these workshops, as it appeared to me, was to encourage and be informative. But Smit's introductory lecture on research in Department X indicated these workshops also functioned to set a realistic tone regarding the possible scope of a project and, through humour, to eliminate any exaggerated ambition or arrogance registrars might have about their knowledge making prowess.[82]

At this introductory workshop, students' laptops were out, along with more old-fashioned exam pads and pencil cases. Smit and Pollock began the session with a quick round of introductions during which participants said their names and mentioned their research topics. There was a sense of informality and friendship between registrars, who had previously worked together closely in rotations, and a general feeling of conviviality and humour among the group at large, with people joking and grumbling about their work and studies. The introductory lecture kicked off. Like much of my fieldwork observations, it was in a darkened windowless room with a PowerPoint altar. With the lights dimmed so that we could see the projected PowerPoint slides the room was rather soporific. During later lectures people indeed nodded off despite the intimate setting of the seminar room. But on this first day people were attentive, perhaps even a little on edge. Students had printouts of the slides in front of them, though I was the only one taking any additional notes.

Smit stood in front of the students with a commanding presence and familiarity of the material she presented. She had over a decade of research experience and was well-seasoned in supervising MMed students. She began with an overview of the expectations the department and the faculty had of the registrars and their MMed reports: doing an MMed was not just about ticking a box but about being exposed to research and good research habits. This was an opportunity of developing critical and analytical thinking — which previous MMed students had found useful in completing the essay questions and research appraisal sections of their final clinical exams. It was also important for them to become critical researchers, to be able to assess new research, guidelines (particularly the methodological aspects of these) and to decide

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[82] The introductory lecture I observed at another clinical department at Wits put forward much the same argument as the one I describe here.

what was “rubbish”. In this way doctors would become more accountable to their disciplinary community and to the public at large — their putative patients.

Doing research was different to everyday practice, Smit explained. The registrars could not just rely on being doctors to convince people of something. As was clear in the research of fully-fledged clinician-researchers they would have to open themselves up to a form of intellectual vulnerability, where the authority of their profession was suspended. The MMed examiners would not just believe them, they needed to be convinced with evidence and analysis. It was important to develop good research practices, such as being pedantic about getting participant permissions, and being meticulous in recording and storing data.

Smit gave a brief overview of the different possible methods. She impressed on them, however, that they would need to gain a much deeper understanding of the specific method they would be using to answer their research questions and to consult a biostatistician if they were using quantitative methods in their project. She warned students wanting to do a retrospective study relying on patient records that this was a feasible method, but they should be prepared for the fact that hospital records were frequently incomplete. Students were not encouraged to undertake qualitative projects. This was clear in Smit’s comments, and generally throughout my fieldwork and from a textual analysis of past student projects produced in the School of Clinical Medicine. The reasons supervisors gave for this was that few supervisors had adequate skills to guide such projects; that qualitative data collection and analysis were labour and time intensive; and that students and staff members had little grasp of qualitative methods, including that surveys particularly compromised only of close-ended questions designed by the students did not count at all as qualitative work. Moving to the role of writing in the research process, Smit warned the students that “writing up” was not something one should do at the end of the process. Writing had to be embedded in the research process and should become a routine, a skill everyone needed to practice and hone, no matter how painful or unfamiliar.

MMed research “is not Nobel Prize stuff”, Smit declared to the students. I had heard this phrase used in many other workshops and lectures when people referred to MMed or undergraduate research. And yet, as a small-scale and often descriptive research project, an MMed report could help to refine local knowledge and be used to improve local practice. It was important that postgraduate research was not just research for research’s sake. The MMed project thus had to demonstrate a competent understanding of research principles; doing a bad piece of research was of no use to anyone. It had to make some contribution. She assured the students that small studies, like an MMed, could be important, for example, in showing a lack of knowledge about a particular condition or procedure within the department or within a hospital. It was not just randomised controlled trials that were important and “your study can change practice here”. Research had to be locally embedded and conceivably translate into changed practice. This was reminiscent of the hankering for instrumentality and certainty that I observed with more established clinician-researchers (as described in Chapter Three and Four). Smit stressed that is was an ethical obligation of researchers, including the registrars, to publicly promote and share their findings, through publications and presentations. She called on the postgraduates to contribute to and be part of a broader scientific community. This focus on MMed reports being a contribution to the discipline meant that in this clinical department, as in several others, the preferred form of MMed submission for examination was a manuscript of a journal article (not necessarily an as yet accepted or published article), as opposed to a longer dissertation format.[83]

But if the registrars wanted to be or consider themselves to be experts in research, Smit warned, they would definitely need to do more than this small project. She made it clear that their MMed did not require as much effort or depth as a master’s degree in another field.

With regards to identifying a suitable and worthwhile research question, Smit asked the registrars “what irritates you at work?”. The answer to this question about their frustrations at the hospital should be the basis from which to develop a question or topic. Like the research I describe in the previous chapter, Smit here presented a doctors’ insights as a valuable contribution to the production of knowledge. Explaining that the research process was not going to be easy and that it would involve tears, Smit emphasised the importance of choosing a topic they were passionate about and could bear facing in the early hours of the morning — for this might be the only time they had to work on their research reports, when doing long shifts and studying for exams. Flowing through these frequent warnings — trust us, we know what we’re talking about — was a sentiment of concern that was common at these research workshops. Smit’s lecture was a stern and candid warning from supervisor to uninitiated

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[83] One of the registrars, Dr Elizabeth Gale, whom I interviewed from another department indicated this was the opposite in her clinical department.

student about the hours and effort required for the completion of a research report made clear that, as doctors, they were ill-prepared for such a task. It was also meant as encouragement for them to use the compulsory MMed as an opportunity to push for change in their profession. Smit candidly summed up the tension that I had also observed, not only in postgraduate research but generally throughout my fieldwork. This was the tension and attempted compromise between firstly, the importance of postgraduates learning to read research and do research and the impact their small studies might have in local practice and secondly the complete unambivalence that the MMed was an onerous requirement, that registrars must not be overambitious, and that the research process was not something that every doctor could enjoy or even appreciate. It was the tension between the warning that the MMed research was "Not Nobel Prize material", but that, through hard and unfamiliar work and its local epistemological embeddedness, had potential value.

This was the prevailing public discourse that supervisors shared with MMed students. However, those supervisors — both clinical and non-clinical — who had their own extensive research experience shared more candid, even damning, details with me about the creation of this new generation of clinician-researchers, some off the record and others were quite content to state this openly. Implicit in their critiques was that MMed students (mostly registrars) and PhD students (mostly consultants) were privileged because of their professional status and that they were not held to same standards as postgraduates in other schools and faculties. Interlocutors speculated that research of dubious quality was being tolerated because the faculty and clinical departments needed to push registrars through the system as their clinical work would be of much higher importance in the future than this small research project, especially when it was the only thing holding them back from specialist qualification. These experienced clinician-researchers also indicated that clinical departments did not have the capacity of supervising increasing numbers of MMed students, especially if students got stuck on their research and thus effectively increased the cohort of postgraduate students that required research supervision. (Although it seemed to me that when qualified registrars and graduated MMed students took on consultant posts at Wits teaching hospitals they were automatically drawn into supervising students, at least as junior co-supervisors.)

Another suspicion that interlocutors shared with me were rumours or even their own experiences of students being leniently marked because their examiners were senior clinicians who did not have sufficient expertise in conducting research. The clinician-researchers complained about arbitrary comments by supervisors that indicated a lack of comprehension of student work. They (and even the students) also heard gossip that students who were supervised by heads of departments and other powerful clinical figures were marked more leniently because examiners feared they would suffer negative consequences if they marked these students more harshly. In these suspected scenarios, thus, networks of patronage did not function to support and develop emerging clinician-researchers but afforded them a privilege that protected them from academic rigour. Smit herself reported that the fact that students could not find journals to accept their MMed reports for publication suggested that the MMed machinery was malfunctioning in creating a generation of competent research. Never mind not being Nobel Prize stuff, this research was unpublishable. This was a result of the conditions of constraint and privilege in which it was produced.

A handful of interlocutors as well as personal acquaintances made off-hand comments suggesting that a cottage industry had emerged around the MMed machinery. The rumours reported that as well-paid professionals the MMed students had resources to potentially pay someone to complete their projects for them. This went beyond the faculty-provided biostatistics support in analysing data, which is a sanctioned and normative practice in quantitative clinical research. In fact, I was approached by someone at a faculty research workshop with the request to write their research protocol. This kind of "outsourcing" moved beyond giving assistance to a wholesale analysis of data and writing final research project. This surely nullified the declaration Wits students must sign and attach to their research stating that the work is their own.

Articles in local medical journals corresponded with these concerns about the quality and purpose of postgraduate research, suggesting that under constraints of time, funding, and methodology doctors' research was not necessarily all that it was made out to be (Biccard et al. 2017; Rodseth, Wise, and Bishop 2017; Rout, Aldous and Hift 2018). In these articles, clinicians at academic hospitals across the country argued that with postgraduate research, and to some extent knowledge production among doctors more generally, there was an emphasis on the quantity rather than the quality of research, thereby undermining its relevance and translatability. While MMed research often shed light on otherwise undocumented incidence of diseases or treatment outcomes, as one MMed supervisor based at another South African university explained, these small descriptive quantitative projects often just contained "tarted up" statistically insignificant results that did not make visible anything that would be of clinical significance. The supervisor was also adamant that departments would soon run out of cheap, easy descriptive statistical projects for their registrars to do.

Throughout my fieldwork and despite a handful of sceptical supervisors of both postgraduate and undergraduate research, there was implicit consensus in the Faculty of Health Sciences that doing research was the best and possibly only way to understand research; yet there was hardly any substantial discussion of the pedagogical soundness of this idea. A small number of articles broached this issue and questioned whether testing comprehension of research articles would not be a more comprehensive and less burdensome way of fostering research-literate specialists. If MMeds were producing "crappy" projects at great cost to the students themselves, what was the point really.

This discourse of critical revelations about building a new generation of clinician-researchers echoes the general concerns I raised in Chapter Four about the unmaking of clinician-researchers and their knowledge production. But there was an additional disappointment in the student context that what was being reproduced in the new generation were also bad habits, unworthy privilege, poor quality, and research that served the bureaucracy rather than locally embedded and valuable knowledge. While the dearth of clinical research was being addressed and there was an accrual of research expertise, this was not necessarily the product that had been envisioned. In private discussion at least this led to an unmaking of the optimism about the new generation of clinician-researchers.

Developing research questions and disappointment

Like supervisors, MMed students themselves held ambivalent views about their research. Unsurprisingly all registrars I interviewed reproduced standard, rote answers about why the MMed was introduced in the registrar programme — namely to verify the effectiveness of their local practice, and to critically engage with the "ever-evolving" field of medicine. But digging deeper into registrars' actual engagement with the research process exposed profound misgivings about it — beyond the publicly more common and acceptable complaints about the feasibility of the MMed programme because of a lack of time and the clinical workload registrars have. When discussing the process of arriving at a feasible research project, the registrars of Department X showed a more nuanced and doubtful perspectives that contradicted a lot of the explicit content of their research lectures.

The registrars' research topics included the following: the condition of equipment and hospital infrastructure; practitioners' knowledge of specific conditions and of the guidelines for treating these; an intervention to ease patient anxiety; auditing numbers of cases of particular diseases in specific Wits hospitals; and assessing the outcomes of certain clinical interventions. Registrars were going to collect data using the following methods: auditing hospital records; examining and recording the condition of medical equipment or conditions in parts of the hospital; and internationally "validated" questionnaires for practitioners or patients to complete.

From conversations with the registrars it seemed few of them could pursue their original ideas, which had been inspired by the frustrations and puzzles they experienced as doctors, the things that irritated them at work. This left some of them relieved and meant that they could do more straight-forward projects for which the data collection, for example, was simpler, or for which they could apply for an ethics waiver as they were not dealing directly with patients. But often supervisors' objections to suggested research topics and the way they steered students towards other topics left registrars dubious about their autonomy as postgraduate students and confused about the validity of certain methodologies and the value of their research. Some registrars felt they had made a huge compromise, abandoning a research question based on professional experience, to go ahead with what the supervisor considered a viable research project. The students' compromises mainly had to do with methodological issues and with research questions that were considered contentious with regards to hospital systems and questions of efficiency and waste. Although doctors' missteps or misinformation around specific diseases was a relatively common topic for MMeds, they were discouraged from studying the relationships between clinical departments or even collecting simple surveys in another department (to get larger numbers of participants).

By the time I met the registrars in Department X most of them had settled on a topic and been assigned or had selected their supervisors. I had not had the opportunity to observe the students' initial discussions with their supervisors about their suggested topics, the question of the validity of their research questions, or the plausibility and practical nature of their studies. Smit and Pollock's experience was that consultants often gave registrars "unresearchable" ideas. Regardless of this, among these registrars at Department X there was a palpable sense of disappointment in the research process and a sense of resignation to "just get it done". Dr Sheera Govender, for example, had been pushed to abandon her interest in investigating efficiency in a particular hospital system within and beyond her own clinical department (a problem many of her peers also felt bothered by, especially during long shifts and over-time) because her supervisors were concerned that this would cause a "big hoohaa", "a war", and advised her that "let's just stay away from that because we were going to tramp on some toes". (Perhaps this was a manifestation of the institutional stress and breakdown of professional relationships that von Holdt and Murray (2010; 2007) have described as pervasive in post-apartheid public hospitals.) Govender's idea of investigating the shortcomings and malfunctioning of this system had at its foundation her professional insight that this was something that inhibited her ability to do her job; indeed, it frequently frustrated her and at times even had life-threatening effects on patients in her care. With her research she aimed to make visible gaps in the local healthcare. It would therefore have been an ethical response to her professional experiences and would have fulfilled the ideal of locally embedded and meaningful research. But presumably the contentiousness of Govender's ideas overrode this ideal. Using research to expose failures in the status quo, in a hope of changing them, did not apply to all aspects of doctors' work.

Dr Grace Malahlela experienced a set of challenges around her chosen methodology rather than in her choice of research focus. She had difficulty in settling on one of the several topics she had originally identified. One of the topics she was most interested in was about a problematic habit among doctors in various clinical departments. She was going to rely on a questionnaire to survey doctors in various departments about this habit. Yet, her supervisors rejected this idea because they argued that, "No, people aren't honest on questionnaires". Malahlela described the confusion this caused for her:

> I was, like, if people aren't honest on questionnaires that would by implication mean that every single questionnaire that ever existed needs to be questioned. So, I was like, why does mine need to be excluded?

Eventually she put together a project on an aspect of hospital equipment:

> Now I am stuck with a research topic that I am a little unsure of, but was encouraged by the prof. So I think I am going to roll with it, I am not jumping up and down for it … I was, like, "Maybe I should do something around {equipment}" and then prof was like, 'Yes, that's great, you should do that because you can measure it. It doesn't depend on someone else, you don't need someone to collect the data for you or to write or to fill out a questionnaire. It is easy to do; you should be able to get the instrument or the equipment quite

> easily and go with that". I was, like, "Okay, if you said it then I am not going to question".

The way in which Malahlela developed her final research question sounded like the epitome of a convenient, compromised MMed Project — while locally relevant, it was really just about "getting it done".

Dr Kgao Moiloa, too, had his methods and topic rebuffed. During the time I spent with the registrars collectively I got to know Moiloa as a rather nonchalant, unflappable character, always teasing and poking fun at his colleagues. But during his interview he revealed the more earnest side of his personality. He had an animated explanation of his interest in research to understand patient recovery where there were aspects that did not quite make sense to him. But he was disappointed and jaded by the MMed process: he had wanted to do a survey on one aspect of doctors' behaviour that he had observed and thought was of grave consequence. Yet his idea was quashed by his supervisors as something that was not necessarily relevant to the age group of doctors he wanted to survey. He was pushed into a project gathering more pragmatic information from doctors in his department using an internationally validated survey tool, a project he felt no enthusiasm about:

> There is very little autonomy in the research projects, that's the issue with it. Like I said with the research topic, they allow you to choose your own topic, but at the end it will be modified to a way which suits the supervisors … Like I said, for me right now, I am just seeing it as something that has to be done to write my [final clinical] exams. I am not particularly passionate about it.

Contrary to a broader professional discourse about the value of research in positively transforming the clinician, Moiloa denied that the MMed process, as a particular version of knowledge production, had any great potential to create a positive experience that transformed his relationship to medical research. He told me that, "I am not letting this [MMed] cloud my views on research", meaning he tried to in fact compartmentalise the MMed experience. This was even though he had initially presented the MMed research requirement as important in producing modern doctors, up to speed with ever-evolving biomedicine and enticing them to become involved in further research.[84] When I asked him directly about the potential of his research to improve or transform as aspect of local professional life, he gave a short and jaded answer: “Honestly, I don’t. I just see it as a tick box to say there is another MMed submitted”.

Moiloa was unusual in this answer to the direct question about the value of his research. When I asked registrars directly about the possible impact of their projects most of them were modest but optimistic. Even registrars who told me with great exasperation that their research was a burden and they were only doing it to “get it done” or “tick the box”, had some optimism about the impact of their research. When I asked others formally about their projects they explained that these could make some small difference, particularly those surveying doctors’ knowledge of specific procedures or rare conditions, or new guidelines. The registrars thought maybe these could result in additional workshops held for specialists — organised by a professional body — or adjustments to the registrar training, something that had happened in the past and for which there was a precedent in their clinical field. But, in casual conversations amongst each other registrars were a lot more cynical about the impact their audit-type or survey-based research might have in an unresponsive public hospital system. Dr Aisha Jabaar, in fact, explained in an interview that knowledge-based surveys were not necessarily a panacea for postgraduate research. She admitted that supervisors tended to steer MMed students toward surveys that tested doctors’ knowledge of a particular area, and that students were often “told in not so many words that that is the easier way to go”. Passing these surveys around at department meetings, where there was a captive audience, so to speak, was then a relatively safe and straight-forward way to collect data. But it had, in turn, led to what she termed “survey fatigue” among the staff at clinical departments at Wits. In this manner Jabaar debated the purpose and value of the MMed requirement to relation to the limited methodologies available to MMed students:

> I’m sure when someone made it [MMed research] part of the programme, the point wasn’t to tick a box. It was to expand knowledge and useful scientific knowledge — not necessarily, you know, a hundred questionnaires. So I don’t know. But then also the timing is an issue and then funding is an issue — there is very little funding available. So as soon as you start doing anything that —

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[84] Wits staff members who supervised undergraduate research projects likewise questioned the pedagogical soundness of assigning unenjoyable research topics to students. The supervisors did not think that a negative experience really helped students to learn about the research process or that it encouraged their future interest in research.

> maybe you want to test drug concentrations or whatever — that is money: you are going to need research assistance, you can't do that by yourself.

As a result, MMed research was constrained: even if students strived for good quality research, they were pushed to produce research projects that were

> not things that are going to really change practice or discover something new and fascinating. I suppose it is good for our {department} because obviously South Africa has really poor stats and data collection and trying to get any sort of [statistics aboout] incidence [of certain diseases]. So even though those may not be life changing research projects, it is still useful.

MMed research, echoing Smit's lecture and narrative of clinician-researchers more broadly, was able to make visible the clinical reality of South African doctors and slowly contributed to more certainties about their context. It did not answer the big scientific questions, but rather demonstrated some of the quandaries faced by South African doctors.

Outside of the formal interview space and in general conversation registrars were more jaded about their observation that MMed research projects, beyond their own, generally did not result in change in practice. They spoke in particular about a certain research project that had revealed a dangerous aspect of doctors' working conditions, though this research had had absolutely no traction with hospital management. Jabaar explained that this research had indeed been very valuable as it had made a shocking discovery about an occupational hazard present at Wits teaching hospitals; it had, therefore, clearly identified a problem in local practice. But translating that research into changes on the ground was a different matter altogether:

> Nothing changed, he [the researcher] made [hospital] CEO's aware of it, but nothing changed. So, then you are kind of, like, well, he went through all of that effort, it should instil some change, especially where you are seeing a direct hazard, like an occupational hazard! So it is a little bit shocking to see, but then you see most of us [just]carry on. It just shows how desensitised you are, to the fact that you just accept and move on.

Jabaar's statement points to a general disillusionment that the translatability of straight-forward research. The constraints in the public hospital system do not easily allow much space for small-scale research produced in a constrained environment of reg time — even if good quality and professionally relevant — to be translated into change in the hospital system. Smit had previously mentioned a similar concern to me, that through the MMed programme clinical departments and hospitals at Wits essentially gave the public academic hospitals a free audit system. She expressed it as, “we are actually giving them a quality assurance programme on a golden tray”. But the hospital bureaucrats were short-sighted and unappreciative because they were concerned with the number of patients that doctors could see in a day and not about improving hospital care or practitioners’ working conditions.

From what registrars and supervisors explained, using actual cases and not just general descriptions or rumours indicated that doctors’ research, here in the form of an MMed, was often impotent in the hospital space. Simply identifying problems was not enough to address ostensibly intractable problems. The value of professional insight that doctors brought to new knowledge production was limited at best. The state hospital system effectively hindered the functioning of clinician-researchers in a clinical discipline and their aspiration to be a scientific community able to respond to the need of their patients and themselves. The bureaucrats in the hospital, by all accounts, remained unperturbed, immovable by new knowledge. The vision of a locally embedded research to improve a constrained system was itself institutionally constrained.

Professional insiders and outsiders

The relationship that the registrars of Department X had with the healthcare system and with the university was fraught. This palpably created stressful and unpleasant experiences for them. But there was a solidarity, a communitas even, among them as a group, something I also noted in other departments. The shared, and much commiserated, struggle of completing an MMed was just one aspect of this.

Spending time with registrars outside of their hospital hours, especially after working a frenetic overtime shift, I learned about the details of their work and their sentiments towards it. Understandably they complained to each other about being tired and being unable to get enough rest, unable to be with their families, or about doing their research. Yet there was usually a fervour and earnest excitement present in these collegial exchanges. In these conversations, it seemed to me as if everything else receded for them. It was as if I was not there, and as if qualms with supervisors, deadlines, citation managers, and an inconsistent Wits Wi-Fi connectivity did not exist.

During my fieldwork with the registrars I devoured literature about their clinical specialisation, attempting to gain some etic knowledge through text. I was trying to get a hint of the nature and volume of knowledge they had to learn and enact in their practice, and to understood a few of the technical terms, drugs and procedures they often mentioned in conversation. I accumulated a growing pile of clinical books, journals, and bound copies of PhDs from the Wits Health Sciences Library. I downloaded and browsed through several past College exam papers. Yet no matter how hard I tried — through personal interaction and by reading a tiny fragment of the abstracted information of their discipline — I did not know what it was to be a doctor, a "doer", and to have these professional responsibilities. Even if I could understand the gist of the registrars' conversations about their work, I had absolutely no experiential understanding of the scenarios they discussed. I did not have the responsibility of declaring anyone dead on a Saturday night. I was not compelled to have quick chat with a fellow registrar about how to use drugs I had never administered before. I did not know what it felt like to be denigrated by a senior consultant in my department one day and praised by him or her the next. I did not have to fathom my place in the hospital hierarchy — neophyte in my clinical speciality but responsible for complex cases and supervising junior doctors. For me there would be no clinical riddle solving, no advocating for patients in interdepartmental squabbles, and no thrill and exhaustion of weekend shifts. I had no sense of the personal liability for producing research that would cause a "big hoohaa" in an oftentimes hostile working environment. Whatever rapport I had established with the registrars, I was always on the outside of these conversations.

In the last week I spent with Govender I asked her about a particular ward she had mentioned working at over the weekend, and why she spoke with some excitement about it. She shared some details about large volume of patients there, some of them disappearing and reappearing. While in no way being hostile, she made it clear to me that this was not something I could ever imagine or understand — only someone who had been there could possibly know what it was like. This was somewhat reminiscent of the round-table debate I described in Chapter Two and the powerful professional discourse marking out the particularity and hardship of clinicians — although the registrars like Govender did so in a much less defensive manner. She, and others like Malahlela, said that as much as they complained about their work, they enjoyed it and missed it when they were away doing what they described as the less enjoyable but more mentally taxing work of research.

My fieldwork among these registrars was yet another example of a phenomenon I observed during my fieldwork where the strength of professional experience initiated a transformative personal process that led to a form of professional community. And, regardless of my interest and empathy, I was on the outside of this community. Of course, this solidarity and shared identity is well documented, both in anthropology and in the sociology of medicine (Becker et al. 1961; Cassell 1991b; Luhrmann 2001; Prentice 2013; Wendland 2010). I was almost envious of this collectivity, especially the shared sense — not only of struggle but also of purpose. Even though there were individual power struggles and interdepartmental politics, treating the patient was the central focus. When thinking about the registrars an image from my historical research often came to mind: an illustration of nineteenth century surgeons at work in the using a carbolic acid spray, a product of Joseph Lister's contribution to antisepsis control (see Figure 8). Evidently, surgery is more of a coordinated team task than work in wards, for example. But the shared focus, or gaze, in this illustration reminded me of the coherence of professional community among my interlocutors.

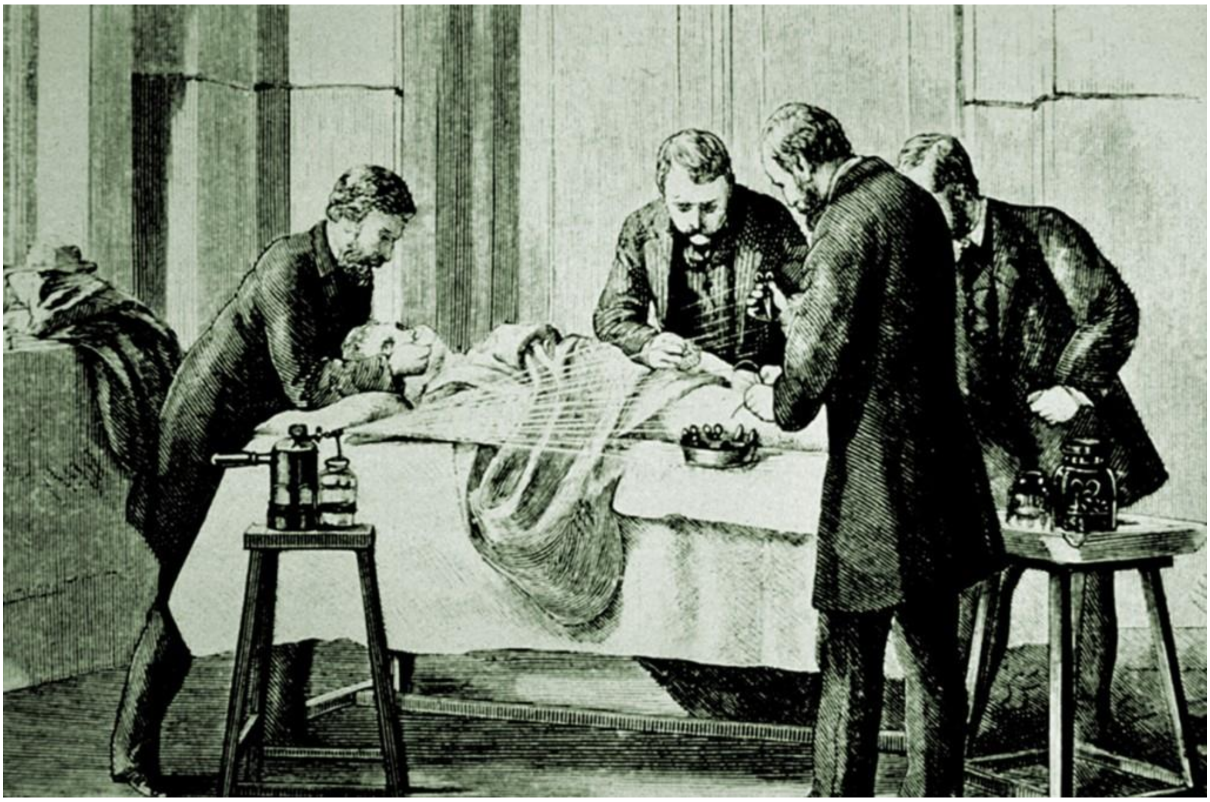

Figure 8: Engraving of late nineteenth century surgeons at work.
This image appears in many history of medicine books. It is accredited to the Wellcome Image Collection as Use of the Lister carbolic spray, Antiseptic surgery, 1882 (Wellcome Collection n.d.).

Simultaneously I was aware that I, as a fellow Wits student, was part of something these students were not: to a large extent they stood outside of the university. Their outsiderness was evident to me, for example, in their lack of what to me was self-evident everyday institutional know-how — such as their own student numbers, passwords, or proxy settings to access the university Wi-Fi and library systems. The library skills session I attended with these MMeds almost alarmingly demonstrated how little these master's students knew of the online resources that were available, such as textbooks and journals. But as professionals these were things they did not necessarily need to know. Another level on which these students' collective exclusion or apartness from normal student experiences was noticeable was the kind of complaints and preoccupations they had. Aside from personal affairs such as engagements, pregnancies, relatives, or holidays, the registrars' conversations were about government pay scales or hospital life.

During the time I spent with the registrars in Department X the Fees-Must-Fall protests and politics were still prominent on university campuses and in the national news (as described in Chapter Two). The student protests did come up in conversations among the registrars. A few of the women asked me whether I knew what things had been like on main campus. But when they spoke of rubber bullets it was not to discuss the politics and economics of securitisation on campus but their clinical manifestations. For example, Dr Angela Rahme raised the fact that she was confused about the design of rubber bullets. She thought they were designed to not penetrate the skin, but once had to dig one out of a man's leg where it had done a lot of damage. I seemed to me that for these doctors the university in crisis was something that was happening at a distance, something that was reported on in the news. Generally the more serious, ongoing everyday grievances that these students had were with different institutions — the hospitals and the Department of Health — and not with the university.

It also felt peculiar to use the word "students" to describe these doctors in my fieldwork notes, and even later in compiling this chapter. They were public servants and earned substantial salaries, especially in comparison to a great deal of postgraduate students and postdoctoral fellows in other fields whose entire annual funding ranged between one to four months of a registrar's salary. And as we saw above, these registrars earned more than some levels of academic staff at the university who were in fact academically more senior to them. "Student" is perhaps a misnomer.

For me my fieldwork with these MMeds was refreshing and anxiety-quelling, compared to life on main campus during the student protests. But at the same time it was deeply unsettling and jarring: I knew that on main campus (and among faculty-employed academic staff involved in undergraduate clinical medicine teaching) people were shell-shocked and concerned about public order police armed with rifles and rubber bullets on campus; if or how assessments would take place that year and how whole cohorts of students would progress; and, of course, about how to provide more equitable access to higher education, including ameliorating exclusions in institutional culture.

Professionally equivalent?

"Now that all of us have become doctors everyone has an equal opportunity". This statement reflects Dr Mohammed Cassim's belief that with equivalent professional qualifications and shared clinical experiences, like the registrars in Department X, all medical doctors were equally capable of producing postgraduate research.

Cassim, whom I introduced briefly in Chapter Four, was on the opposite side of his MMed from my registrar interlocutors. His MMed worked successfully as a "gateway drug" and as per the institutional plan he became "addicted" and enjoyed the process of knowledge production, even though he regarded it as intellectually tougher than doing clinical work. In his late thirties he was only about seven years older than the MMed students whom I knew. He was one of the doctors who has benefitted from the extended attempts by the School of Clinical Medicine and the Health Sciences Faculty to grow a new generation of clinician-researchers. He had been the recipient of a prestigious PhD scholarship allowing him to become a full-time PhD student while his clinical post was frozen for him. His research dealt with a disease that has a comparatively high burden in South Africa, and he felt that he had been awarded the scholarship because his work addressed the local context.

Cassim was eager to share his experience of becoming a clinician-researcher. In fact, my interview with him was one of the few "cold calls" that succeeded, after I emailed him on the advice of another interlocutor. Our comfortable conversation elicited a great deal of institutional information, and clear, in-depth chronological narrative of his professional research experiences — of which he had great deal relative to his age. His answers suggested that this man had thought deeply about his research work and its relationship the patients and colleagues around him.

Cassim felt strongly that the MMed requirement had collective benefits for the medical profession, individual clinical departments, and the public at large. Making a new generation of research-producing specialists meant that departments could better research the outcomes of their own work. Clinician-researchers made better doctors for patients and better teachers for medical students. These collective benefits far outweighed the hardships that individual MMed students experienced and the questionable quality research some of them might produce. Cassim was vehement that:

> Now everyone is given an opportunity to feel what it [research] is about, which I think is good because I think you are going to get a lot more people writing papers because they have got their MMed … Now, because everyone is doing an MMed, … 30% go on to publish later in life. That's a success.

Cassim was also very candid about his professional failings as a researcher, and the ways in which his professional training had not prepared him for life as a researcher. His initial forays into research were "horrible" and "embarrassing". At the time the Health Sciences Faculty did not offer the same kind of support and workshops that they did in 2016, when I met him. He learned to write through practice and taught himself statistics, not dissimilar to Prof. Mngomezulu's narrative despite being roughly thirty years his junior.

In Cassim's narrative, as in that of the other interlocutors, professional training and work was a prominent form of inspiration for his knowledge production, and the source of his embarrassing lack of expertise with which he began his journey to becoming a fully-fledged clinician-researcher. Given the strength of the professional identity of a doctor, and the purportedly fundamental relationship between professional experience or identity and doctors' contributions to research, I was intrigued by what was overshadowed or unsaid in this institutional environment.

In formal interviews, if an interviewee had not themselves broached the subject (as they often did not, such as with Prof. Mngomezulu), I tried to slip in a question about my interlocutor's extra-professional identity. I wanted to know whether this played a role in their professional lives and consequently influenced their knowledge production. As in public discourse at professional and university events, it was not as if gender and race were never spoken about or taboo subjects; but they also did not stand at the front and centre of discussions. The generic question I had on my interview script was:

> What effect, if any, do you think your identity as … (race, gender, marital and parental status) has had on your career/working life, including perhaps your research work?

I always felt conflicted about asking this question. It seemed too often to fall flat or feel like a clumsy addendum to a conversation. As a result I was inconsistent in asking it in interviews, and was often unable to ask it in situations where an interview was cut short. In addition people did not always respond to follow up questions I sent in email. The question often seemed inconsequential, misplaced, or awkward, especially after interlocutors' tirades about the difficulties of life at their particular hospital or after their waxing lyrical about enjoying their latest research accomplishments. The question also elicited a strange range of responses. Some people spoke about the advantages of affirmative action quota systems for entry to medical school and hospital posts; religious tolerance compared to other parts of the world; advantages of having a supportive family; and the fraught privileges of being educated as a white person under apartheid.

I noticed in particular how almost bizarre this question seemed in my interview with Prof. Mngomezulu, when I had asked him about starting out as a researcher under apartheid, and in a series of conversations with another retired black professor. The latter, for example, casually and calmly told me over brunch in a café about how he was forced into political exile when he was still a medical student and the extraordinary circumstances that eventually enabled him to continue his medical training abroad. These older interviewees never appeared reticent or resentful in answering my prying but relevant questions. But in our conversations that could otherwise be fairly pragmatic it seemed, at least to me, to be rather uncomfortable for me (as a younger white woman and non-doctor) to resurrect a discriminatory institutional and political past so easily with these older professors, whom this past had profoundly affected.

Many people of the younger generation simply brushed off the question. Several of them, including several black male doctors, seemed surprised at the question, answering along the lines of "No, that is not an issue". As with any interview scenario there are numerous factors that influence respondent's responses to questioning. For instance, my findings showed clearly that my interlocutors' professional experiences differed considerably between clinical disciplines and hospitals. But perhaps more significantly, interviewees might not feel comfortable enough or sufficiently well-acquainted with the interviewer to talk about sensitive matters. This could be because people are inconsistent in recalling of past events; because they did not know me well; or because my identity as interviewer made them uncomfortable with sharing about difficult situations, even though I feel confident that I had established good rapport with almost all of my interviewees, many of whom I knew over an extended period. I judged this by the ease and effortlessness of our general conversations and, more importantly, by how quickly and easily I found myself bearing witness to my interlocutors' narratives of tremendous professional struggles and personal suffering.

Cassim had not overlooked broader social issues in our conversation. Earlier in the interview he comfortably mentioned numerous aspects of his personal life and identity. For example, he talked about working after hours on research affecting his family life, the potential financial disadvantages of doing a full-time PhD, his wife giving up her career to raise their children, and his childhood in what was classified as an Indian area. Toward the end of our interaction, Cassim offered me the perfect opportunity to insert my big question and ask him directly about these issues to see what response it evoked. he dropped a comment about how it was a fluke that is was predominantly men who had been awarded PhD scholarships at the time that he received his. I took this as opening to ask:

> On that point do you think your position as a man, or an Indian man, or a family man, do you think any of those things have had an effect in your ability to progress in research?

Of course the question, towards the close of our interaction, was packed with multiple questions. It was plainly opportunistic. Without doubt, according all methodology literature I had read, it was a poorly posed and loaded question (for example, in the interview 'bible' by Wengraf 2001). Yet it elicited a fascinating reply from Cassim, which has been dwelling in my mind long after my fieldwork was over:

> Now that all us have become doctors, everyone has an equal opportunity. Like I said, I was dumb to research until I started my MMed, which means everyone who was a qualified doctor was exactly the same. We are all on the same levelling plane, so I don't think it matters what race you are from or what gender you are from. I didn't have a sophisticated schooling background … I think we are not undergrads and demographics shouldn't be playing a role; nor [should] gender [be] playing a role, in terms of race or gender, because we are all levelled. We are all postgrad now, we are all doctors … I don't see why another clinician won't have the ability to write versus why I write. Some people become more into it and enjoy it, and some people just don't do it.

I do not mean to single out Cassim's perception and critique his off-the-cuff comments. But the clarity of his statement is useful for understanding the reproduction of the widespread optimistic idealism of a democratised scientific community that was part of the social context in which he became a PhD graduate. It is helpful in analysing how doctor-researchers are imagined to be created, and the understated structural complexities and contradictions in this imagining. Doctors had equivalent shortcomings and were equally capable. It is the enjoyment of knowledge making and being "into it" that distinguishes some doctors as researchers, as a special type, as some doctors described themselves.

Cassim's confident assertion is reminiscent of the kinds of obligatory inspirational keynote addresses at medical conferences. Unlike overseas speakers, Cassim was certainly cognisant of the difficulties of working at a South African hospital. However, his words echoed the aphoristic idea that, "You can do it too!". Everyone can do research.

The context of doctors' research was, of course, embedded in the post-apartheid educational system, and in a historically masculinist profession. It would be quite likely that demographic classifications or identities played a role in people's academic and professional lives and possibly even leached into knowledge production. There was certainly enough information in the public sphere to suggest that being young, black, and/or a woman means that medical students and doctors are liable to experience disrespect, harassment, abuse, and even violence at the hands of patients and colleagues (Gous 2018; Khan-Gillmore 2016). The prominent case of Dr Yumna Moosa's victimisation at the Addington Hospital in Durban, with no subsequent redress by the HPCSA, indicates the institutional entrenchment of these problems (Moosa 2017a, 2017b).

Historical scholarship on the medical professional indicate that clinical work in constrained, hectic circumstances can create a strong and common professional experience with shared ideals regarding the provision of a public good, something that is abundantly clear in Horwitz's (2013) monograph on Bara. This resembles much of the literature I cited above about the social significance of medical training and identity. But these histories also indicate that in societies as unequal and as plagued by prejudice as South Africa's, this professional experience is substantially more complex than it may appear at first glance (Digby 2013; Horwitz 2013; Manganyi 2016; Noble 2013; Walker 2005).[85] Research indicates that even in the post-apartheid era there has been a lack of institutional and personal awareness of the historical differences between black and white people's ability to access tertiary education and develop

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[85] Shula Marks has similarly noted historical racial and class complexities in the nursing profession in South Africa (Marks 1994).

academic careers (Connell 2007). In the new generation of clinician-researchers, other doctors' answers to the question on identity, as well as my fieldwork observations and more informal conversations, showed that the institutional intersection of hospital and university was considerably more complex and exclusionary than sometimes imagined. It was not exactly a "levelling plane" — particular with regards to gender, language, and race.

For those of my interlocutors who had children, parenting and in particular the availability of time and energy to spend with their children and see to their needs was something that was never far from their minds. When speaking about their work lives and institutional obligations, these matters most often arose quite naturally in conversations without any prompting. (This was among all interlocutors and not just MMed students.) Dr Sheera Govender's account of her parenthood during her registrar training was an example of the personal sacrifice and guilt involved in being a registrar. She gave birth to her child shortly before she took up her post as a registrar. She described her child as only knowing reg time and that she relied heavily on a live-in nanny to take care of her son, as her extended family resided in another city and her husband also worked long hours. Govender explained that "some time from the beginning [of registrar training] you have to realise that my family life is going to suffer for this. But it is a sacrifice I am willing to make". She hoped that one day her child would be proud of what she had achieved and for providing her family with some social mobility. Making light of the situation she joked that, "It is only going to be four years and I am hoping that after the four years they still forgive me for it and they still love me, and they still take me back". Jokingly, but in an attempt to get clarity, I asked, "Your family or the hospital will take you back?" Her retort was insightful: "The family, not the hospital, because we live here, and the hospital loves us".

The sacrifice of women during the MMed period was significant. The gendered nature of the domestic burden was patently clear. In conversations with most registrars, and interlocutors more broadly, who were married and/or mothers it was almost unquestioned that women bore the burden of domestic labour in the evenings and over weekends. Many women did the grocery shopping and laundry, cooked meals for husbands, and looked after children when they got home in the evenings (even though as well-paid professionals these women mostly had some form of paid domestic help for cleaning and ironing). Women who did not have children were disturbed by the inflexibility of reg time and hospital life more generally for women with children. Dr Aisha Jabaar was married and spoke about being tired and reluctant to do the domestic duties that were required of her as wife in her private life. She decided that because of the constraints on her time it was not feasible for her to have a child while specialising. In our interview she made it clear that having women moving into more senior positions in the profession did not necessarily change institutional culture. She had overheard women consultants denigrating women doctors with children as not being able to "cut it" and questioning why these women became registrars if they could not fully commit to their work.

> There is a very old school boys club … it hasn't really changed. Because, even though people know it is ridiculous to work those hours, you will literally hear a consultant say, "I did it and I survived". They know that they barely survived, almost crying every day, but they feel, like, because they did it, why not you now? I mean, even being a woman, like, starting a family in medicine is highly frowned upon; not overtly because no one can ever tell you that you can't respect your reproductive system. But, I mean, they get irritated if your child is sick … I have heard a female consultant tell a registrar that "I also have kids and I never made personal issues work issues and you should learn to juggle that better".

Women's work and domestic responsibilities generally, and the setbacks they have asserting authority in hierarchical hospitals has long been a contentious issue and grounds on which women have been excluded from medicine and from specialisation more specifically, as these are deemed as requiring exceptional dedication to one's job and the hospital (Breier and Wildschut 2006: 52–64; Metz and Gordon 2016; Ramphele 1996, 2013; Rehman 2017; Walker 2003: 113).[86] Despite the "feminisation" of the profession in South Africa (Ncayiyana 2011), the non-progressive working conditions remain an issue. Knowledge production — as a third role of doctoring — does little to shift and meaningfully acknowledge systematic constraints on doctors' time generally. Doctors' discourse pushing back against research as well as discourse that aggrandised the research by joint appointees in this context hammers this home. Adding knowledge production to doctors' professional responsibilities means that women are included in attempts to diversify and grow expertise. But it simultaneously entrenches rather than addresses that time is not a resource equally enjoyed among this professional group.

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[86] Similar professional exclusions and stereotypes apply beyond medicine, as indicated in the recent furore in the South African engineering field about whether childrearing makes women poorer candidates in non-caring professions (Davis 2018; Mashele 2018).

If women do predominantly bear the bulk of domestic labour the difficulty of women with children to navigate the time-hungry hospital and androcentric profession is exacerbated by the demands made of registrars, and consultants in academic hospitals, to engage in knowledge production.[87] Attempts to produce a new generation of clinician-researchers did not make any substantial allowances for the actual reproduction of a new generation (similarly noted in the American context by Jagsi and Tarbell 2009). This is not to say that there was not a considerable number of successful clinician-researchers associated with Wits, many of whom had children. However, looking at the larger context, being a woman tended to be a liability in the medical profession, including in knowledge production. Prof. Mngomezulu and Dr Cassim mentioned the sacrifices they made in terms of time in the evenings or on weekends spent away from their families while developing their research careers. But the exceptionalism and commendability of their research labours are complicated by the fact that these men were not the primary caregivers for their children.

Before moving onto to other factors that affect doctors' ability to take part in research, and without dismissing the real and particular challenges for mothers in medicine, it is worth inserting the following brief reflection. Govender's personal quandaries and Jabaar's observations appeared to be based on more substantial, attentive insights of structural professional problems than compared, for example, to the dean of health sciences' ham-fisted sympathies for working mothers at the faculty round-table debate I describe in Chapter Two. Nonetheless these women's observations and complaints and bureaucrats' sympathies occupy much of the same, less-than-critical discursive territory. These comments do not imagine that women could not be the bearers of the bulk of domestic duties. They reproduce globally ubiquitous and recurring complaints about the appropriate roles of women in the home and the workplace, skirting around how to forge substantive feminist change, and they leave hanging the awkward and dubious question of whether or not women can have it all.

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[87] In my fieldwork I found that there were some pockets in clinical research that in fact enabled women doctors to find a fulfilling professional life while still having flexible work arrangements to accommodate their young children. Some Wits research institutes deliberately accommodated and attracted women with young children. In these situations, clinicians working in research healthcare facilities had limited or flexible clinic hours, especially when compared to the hours they would need to keep as doctors employed at public hospitals. However, this option was far from the norm: most other research institutes did not provide a particularly flexible work environment or limited work hours; in fact they rather seemed to inculcate harsh competition and long hours as the norm.

My interactions with supervisors, those men and women doing the academic legwork in creating a new generation of clinician-researchers, revealed that other resources were not equally shared by MMed students and affected their nascent knowledge production. Language, particularly written English, as part of the labour of research upsets the idea of equivalence between medical professionals *and* complicates doctors' exasperated narratives about training themselves to write as part of becoming a competent researcher. My interlocutors who supervised MMed students — clinicians, basic scientists, or nursing and allied health professions — had grave concerns about the challenges that students faced in writing research and the amount of work that they felt was expected of them as supervisors in revising and rewriting or in fact writing their students' work. This was a general comment about all students. But some interlocutors had additional observations. Smit's reflected on her extensive supervision experience at Wits in the following way:

> The majority of our students don't write in their mother tongue. That's a big challenge for research. Not that the English-speaking people can write! We have had appalling writers. And some of our best writers didn't write in their mother tongue.

She also vehemently argued that whatever writing skills students may have had, they lost during the course of attending medical school. But she again qualified this by saying, "But, it is a challenge if you don't write in your mother tongue".

Dr Alice Sutton, whom I introduced briefly in the previous chapter, was a Wits specialist who worked at a large research unit. She was a recent MMed graduate but was already supervising several MMed students when I met her. She spoke about students' individual temperaments, and their patience and persistence to withstand the iterative process of writing that was unfamiliar to all of them. But by her account this frustrating process was further complicated by historical inequality.

> I think there is still the sort of throwback from the schooling system in South Africa … The MMeds, some of them, really struggle to write in a scientific way. I wouldn't say its colour based, but certainly a good education is going to help you in terms of your grammar, or whatever, or your spelling or whatever. So, people can be excellent clinicians but may just not be that good at writing. Those people need a tremendous amount of support, you know. I have been supervising some MMeds as well, and the one particular guy, shame, he [is] … actually going to graduate this week. That is fantastic. But he has really, really needed a lot of support. I think it is a difficulty with English as a second language, and now you're having to write scientifically in

> it. It probably was never his initial aim ever to write a publication or write an MMed. The varsity doesn't always support the MMeds, and I think that is part of it to an extent, because for supervisors you are supporting quite a lot … So it's quite complex and I don't know if the university always thinks about all the different layers that go into getting an MMed, especially if you want to get a good product out that is publishable.

Smit and Sutton's concerns, which are representative of the opinions of the other supervisors whom I interviewed, are undoubtedly not unique to Wits or to South Africa, for that matter. But language proficiency manufactures exclusions in educational institutions, including at a tertiary level, with the country's abundance of indigenous languages and a pervasive reliance on English as medium of educational instruction well-documented in academia, news, and NGO commentary and journalistic literature (for example, Dikotla 2018; Mathiba 2018; Nyika 2015; Rudwick 2018; Stein 2017).[88] And these continue to plague the South African education system and were a point of contention in the Fees-Must-Fall student movement.

The participation of MMed students (and of doctors more generally) in knowledge production in South Africa combines two levels of exclusion. The first, clear in Sutton's and Smit's concerns, is the concern in the field of clinical research that students entering the medical profession rarely intend to become researchers and writers, and that their writing skills were thus not well developed. Supervisors lamented this profession-wide ineptitude in writing that afflicted their students. Supervisors were of the impression that whatever writing skills students might have had at school, they lost during the course of medical school. This is in line with Cassim's statement that he did not excel in English and writing skills at school and he had the same undergraduate training as his peers, but went on to teach himself to write, embarrassing though his initial efforts were. This exclusion, the difficulty in writing scientific work, seems to apply, apparently, to all clinicians and students of clinical medicine.

But supervisors' concern about student ill-preparedness, and their burden of having to compensate for this underdeveloped skill, is amplified when doctors' or students' home-

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[88] Although there are student support centres throughout Wits that offer extra-curricular assistance with academic skills such as writing, I noted during my fieldwork that there was some concern that these were not well utilised and not integrated into students' academic lives. Some South African universities offer degree programmes that incorporate academic development courses for students, largely black, whose university preparedness is in question (something Wits tried out for a while). However, these courses are not unproblematic, with these "special" degrees perceived as themselves producing a form of exclusion rather than assisting institutional inclusion.

language — not always, but often — provides additional hurdles to assimilation into the scientific community. This is an exclusion that is not experienced by all doctors. Of course, South Africa's well-established university infrastructure with dominant use of English has enabled South African researchers to access and become accessible in the global production of academic knowledge (Confraria and Godinho 2015; Connell et al. 2017). But this is not a simple matter for everyone. Language is not only a reference to or proxy for race, in that all students struggle to write; but it is indisputable that the interconnected issues around language academically disadvantage the already disadvantaged. Generally speaking this means that black students, in particular from poor families and/or from low quintile rural schools, will be the most disadvantaged in this process.[89] Cassim may have struggled with English literature and creative writing in high school, as he confessed to me, and initially had difficulties with writing journal articles; but his home language was English.

Sutton suggested that there is a disconnect in MMed research between, on one hand, university or professional (HPSCA) requirements and aspirations and, on the other hand, a lack of acknowledgement or action regarding institutional change or support that is needed to enact these. The burden on supervisors and students to produce master's students and as a result increase the output of publications does not address the disjuncture between institutional culture and the capacity of South African students. This is despite the fact that these MMed students, as registrars, are all equivalently qualified professionals with extensive shared knowledge. Sutton, correctly, regarded this to be a systemic issue. The institutions — the university, the HPSCA, and the Colleges of Medicine — are lacking, not the students.[90]

This is also a concern at undergraduate level. The 2018 Academic of Science of South Africa consensus report on medical undergraduate education indicates that quotas controlling the acceptance of students into medical training goes some way to address the limited access to the

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[89] Concerns about the challenges of the language of learning and writing in the local context did pale in comparison to the supernumeries who came from Arabic-speaking countries, were used to a different alphabet and had to learn English before joining as registrars and beginning their MMed research. However, this point was only mentioned by two interviewees, although I did observe it during my fieldwork.

[90] I regularly witnessed Wits lecturers, quoting real data or working from their perceptions, stating that the university as a prestigious tertiary institution attracted and could accept top students from across schools of various quintiles, as was university policy. They would then exclaim something along the lines of "If we're struggling with our students, can you imagine what it is like elsewhere?"

profession under apartheid (ASSAf 2018). But institutional support to ensure the success of academically disadvantaged students remains a major problem. Language, beyond written research, works to exclude doctors in South Africa, or at least makes their full inclusion into the professional fold more challenging. With regards to academic requirements and professional image, it would be impossible to neglect the fact that spoken language has a large role to play in the everyday professional experience. When I asked some of the registrars about the impact of their extra-professional identities, some of them, particularly white students and students with English as a home language, replied that they were aware that being white or at least speaking what might be called "good English" or being articulate in English helped in having senior consultants and patients take their professional opinions seriously.

With regards to unequal professional experiences, not only did what one sounds and write like make a difference but also what one looks like. This unequal struggle for professional legitimacy was resounding in the response that Dr Grace Malahlela gave to my question about identity. In our interview I asked her:

> This is one last question about whether you think your identity, or how you perceive it, as playing a role? Anything from being black, being a woman, being at a Wits hospital, any of these things — do you have any thoughts about how those might have affected your trajectory to becoming a registrar and doing this particular research?

Malahlela described the extra social labour her professional life entailed:

> The complexities of being a young black woman working with people of many different ages and colours it is very complicated. We have a very special relationship with the nursing sisters. For example, because there is hierarchy in my culture in terms of age and there is hierarchy in my culture — because my culture is quite patriarchal in terms of gender. So now if I am the "boss" of a resus[citation] and I have to instruct a nursing sister to get something for me, I have generally found that I do a lot of "Please" and "Thank you" and a lot of almost persuading as opposed to giving direct instructions. So small little nuances like that other people don't necessarily need to think about or need to implement in their day-to-day activities. Like you are at work, we are all here to work, but it's a lot more complicated for us. I like to say "us" because I speak to my peers and the other black women kind of feel the same way: being ignored in a ward round by consultants.
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> … What a doctor should look like that's a whole other [thing]. It is such an interesting thing, and I have had many, many incidents where I have had to explain myself a lot further than I should to assist someone. … Specifically private patients, black and white interestingly enough, and then in public

> specifically your non-black patients, all the time, I almost have to carry my ID badge all the time to say I really am a doctor, I really am here to help you and I am not a nursing sister, I'm not the cleaner, this is it.

Mentioning her experiences as a teacher in hospital contexts, Malahlela explained:

> You would be surprised at the number of medical students that don't come to me for advice or don't come and ask me because I don't look like what a doctor should look like in their eyes in 2016. So you just kind of live with it. First I tried to fight it and then I was getting tired. Maybe I will get my energy back again and fight the stereotype. But you can't fight battles every day.

The tedious and tiring "race work" that Malahlela described and suggested was widespread among her peers is not uncommon in South African universities, including at medical schools (Breier and Wildschut 2006; Erasmus and De Wet 2011; London, Kalula, and Xaba 2009; Thackwell et al. 2016). This literature indicates that entry into a community of expertise and professionalism is generally more challenging for women and black people. Powerful and painful frustrations like those Malahlela described affect professional experience generally, such that it is impossible to imagine that all doctors have same ability and amount of energy to respond to these competing institutional demands, such as research. If having to cajole nurses, explain yourself to patients, and justify your position and existence to junior doctors as well as senior white male colleagues is part of some doctors' daily experience and not others, then their professional experience is not equivalent. If professional experience is imagined to be the basis of the insight that doctors bring to research, surely this was not a level playing field.

Disturbing questions

None of the younger generation of clinician interlocutors indicated that they felt deliberately excluded from research making and were clearly included in the institutional make-over to make doctors' exposure to knowledge production more consistent and socially inclusive. But stereotypes, somewhat reminiscent to the kind Mngomezulu described in relation to his development as clinician-researcher, nonetheless indicate stubborn problems in the medical profession in South Africa. Regardless of the attempted make-over of knowledge production, a hangover remained in the institution. Despite Jabaar's reminder that women were indeed rising through hospital hierarchy, and despite and Malahlela's exasperation that in 2016 there were clearly a lot of black doctors and medical students around, there remained exclusions about what or who doctors, in particular specialists, should be. There is a striking disjuncture between doctors' claims about the progressiveness of local medical research to improve medical care and the lack of social progressiveness within their daily practice. This points to the elephant in the room: what professional insights or irritations are allowed to be visible in clinician's research? What research questions are encouraged and normatively valued and which ones are obstructed as too difficult for the status quo to handle?

My research indicates that for the group of MMed students I knew, the more contentious aspects of their practice, for example relationships between departments or destructive professional behaviour, were deliberately discouraged. Of course, this is influenced by the reductionist framework that is hegemonic in biomedicine, and the limited access to methodological training and time for conducting research. Given this context, considerably more difficult, weighty, contentious, intractable and potentially explosive issues like decolonialising everyday doctoring generally remains unacknowledged and invisible in the culture of research. Unequal professional experiences were unable to be funnelled into postgraduate knowledge production. Disturbing questions, for example, interrogating institutional culture or interpersonal relationships, were rarely asked. This was evident from my interactions with interlocutors as well as a broader textual overview of publications and PhDs in the School of Clinical Medicine, not just MMed research. As Kalanithi (2016) suggested in his autobiographical narrative about the overlapping terrains of philosophy and neurosurgery in understanding human experience and mortality, science may be an effective means of ordering the quantifiable but it reveals nothing of the complexity of human life. In striving for a modest scientific (or at least scientistic) piece of research, the process of the MMed cannot grasp fully the human life of clinical work.

The normativity of shared professional concerns and invisibility of varied and unequal experience in postgraduate research echoed the content of the round-table discussion at the 2016 Faculty of Health Sciences Research Day. Although the discussion was not a place where people expected answers and changes, but rather an opportunity to raise concerns, there seemed little sincere engagement about changing systemic issues, rather than simply describing them. There was some (rather patronising) recognition of women's hard work in the home, but how the work sphere needed to take account of this was not considered. The question about whether race affected people's research experiences was mentioned but left hanging. In the faculty's re-invention of a culture of research among clinicians, disparate experiences of race and gender remain raw and undigested in the professional nexus between hospital and university.

The pressing and persisting experiences of prejudices relating to race and gender are not entirely invisible if looking at publications from the local medical community. There is a relatively small number of mostly quantitative reports capturing surveys answers, for example, regarding women or black doctors and students about their experiences (for example, London, Kalula, and Xaba 2009; Thackwell et al. 2016; Umoetok, van Wyk, and Madiba 2017; van Wyk et al. 2016). As with other research in clinical medicine in South Africa, it is difficult for me to gauge if and how this research was translated in any meaningful way to improve local practice and institutional life. I suspected that this research did not result in a "big hoohaa" and any radical institutional changes as a consequence.

It did seem a waste to me — given the context of prolonged student protests regarding institutional inclusivity — that Malahlela's personal narrative was not channelled into scholarship. To me it seemed far more powerful than the research she was pushed to do on hospital equipment, especially if, as she said, her black female colleagues felt similarly about the difficulties of being a black woman doctor. Her professional experience could result in a reflexive study which could contribute to transforming the profession and changing local practice.[91]

But then again, I was not a professional insider. I did not work in a hospital where faulty machinery and systems affected my daily work and delayed my patients' treatments. Perhaps my concerns about reflexive research, inward-looking research in the profession, and preoccupation with revealing rather than ameliorating uncertainty was the luxury of my position in an academic field where I was not primarily concerned with instrumentality and intervention. The need for clinicians' research to reflect an outward clinical gaze, and the potential of translation to change practice — even though sufficient evidence suggested both students and staff alike were dubious about this — was normative.

As transient anthropologist in this field, it seemed beyond my remit to suggest that Malahlela would even have wanted to use her experience as an academic protest against the status quo

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[91] I am fully aware that this is possibly easier said than done. Tsampiras and Müller's (2018) pedagogical experiments with alternative epistemologies and reflections on gender and race in institutional settings was opposed by the UCT Faculty of Science ethics committee on the grounds that it was not objective.

and her own professional irritations. Imposing onto those who experience substantial institutional exclusions to use this as a basis for development of research, and that this was the only or most important means for them to produce locally-meaningful research, would create its own potentially oppressive normativity. It would mean that other conundrums and clinical curiosities would be off limits to those excluded in institutions. Prof. Mngomezulu would never have been able to pursue the interests that he described his heart being in and establish a globally unique research niche.

There seemed something emancipatory about producing research that might exceed the sum of one's identity politics: turning their professional practice to contribute to local knowledge production, in a way removing the peripheral status of their professional insights and knowledge making, allowing local practice to be informed by locally embedded knowledge and not by international literature that did not reflect the global south. Maybe it is possible to escape the gravitational pull of the postcolonial, feminist narrative that identity is omnipotent in determining knowledge production.

In my interviews I also explored with my interlocutors whether, in the land of clinical research where I had been told quantitative research was king, a doctor's data could be authoritative despite his or her identity and inequalities they might experience in the clinic. Prof. Aida O'Grady was a Wits stalwart emeritus professor who was convinced of this. She fully supported the imperative for rectifying the racial and gender exclusion in research expertise in local institutions. But at the same time she said that, in the broader field of global science where the big questions were answered, this was irrelevant: "I don't think *Lancet* are, like, 'Oh, here's a black, here's a woman, here is a this'". Rather, journals like *The Lancet* or *Science* were going to ask: "Is the science good?".

But this perspective bifurcates product from production. It ignores the fact that no black person has ever won the Nobel prize for medicine and physiology, that only twelve of the 216 awardees have ever been women (Morgan 2018; Nobel Media AB 2018a, 2018b) or that it is likely only a tiny minority of authors in *The Lancet* and *Science* that is African. This bifurcation is precisely the trap postcolonial and feminist scholars of science have exposed. It is assumed that all people would and could produce the same science. As long of black professionals have additional race work to do and often additional linguistic labour, and women bear the brunt of actual reproduction and endure professional abuse for this, the creation of a new generation of clinician-researchers does not take place on a level playing field. And it likely does not do so in most parts of the globe. Nothing suggests that South African medicine and research has a unique legacy of being a hierarchical, sexist, racist “old boys club”.

Conclusion

By tracing the development of a new generation of clinician researchers, this chapter indicates in yet another way that context thwarts the potential of research to positively transform professional practice. The manner in which the learning of research methods and carrying out of research is squeezed into an overwhelming clinical training programme stymies the success of creating research-literate specialists and fostering a love of research among registrars. Due to these constraints, my interlocutors questioned the pedagogical value of the MMed degree; the value of the scale and quality of research produced; and whether this postgraduate research cultivated the ability of doctors to independently develop intellectual interests based on their privileged clinical insights and address their substantial professional frustrations.

Despite postgraduate interlocutors’ revelations of the gendered and racial prejudices they face in their working environment, the constraints of registrar training erases the possibility of meaningful knowledge production beyond the algorithm of clinical pragmatism. To go back to the illustration above of the nineteenth century surgeons, the figures are depicted focusing only on the patient, not on each other or the surrounds or the operating theatre. The immediacy of their work and the clinical gaze this work employs in this instance do not appear to leave room for this. It is not only the humanity of the patient that is obscured by the clinical gaze but also that of the professional. The moral and mortal urgency of hospital work in South Africa, with a gaze firmly away from the unequal aspects the professional experience, means that thorny social issues can be sidestepped in the majority of the postgraduate research projects or even in clinicians’ research more generally as well as in the round-table discussion with its emphasis on shared professional constraints.

The MMed machinery keeps on, regardless of registrars’ struggles and privileges — those shared and those not — at the intersection of hospital and university. Bureaucrats in the university reap rewards and gloat about an increase in research production and throughput rates of postgraduates in the Faculty of Health Sciences. And the bureaucrats in the hospital, by all accounts, remain unperturbed, immovable by new knowledge made by a new generation of clinician-researchers, even when apparently of good quality and easily translatable into institutional improvements. This problematises the assumed social good of academic knowledge production and universities in contemporary South Africa.

Over the course of the fieldwork, and thereafter, the sense of crisis about institutional capacity and professional pushback against the MMed requirement for registrars seems largely to have waned, despite the continued trickle of local journal articles still questioning its appropriateness in the South African context. The impetus and immediacy of the Fees-Must-Fall movement and its insistent push for a change of the institutional culture for black students and academics has also waned. While there have been some gains in the university environment for young black academics, nothing has shifted at a systemic level regarding everyday hospital life of registrars. Seemingly intractable problems remain in public healthcare. In this context it is questionable whether there is an institutional incentive to remedy the disconnect between the unequal lived experience of postgraduate students and university expectations, or whether unequal professional experience will remain bifurcated from knowledge production, unable to become a professional insight with which to improve local medical profession.

To explicitly underscore links I make in this chapter to the literature I used in constructing my research focus and disciplinary approach, my analysis provides an extension to emerging postcolonial scholarship regarding the need to recognise and describe Africans as contributors to modern biomedical knowledge-production, and describe the opportunities and limitations that are entailed in this. In this chapter I also expose the practical institutional realities that compromise the carrying out and implementation of research in practice, and therefore speak to themes on broader ethical relevance and social good of scientific work that are overlooked in formal ethical reviews of research in institutions like universities.

Chapter 6 —
Conclusion: Constraint and critique in building a culture of research to bridge patient care and knowledge production

Science may provide the most useful way to organise empirical, reproducible data but its power to do so is predicated on its inability to grasp the most central aspects of human life: hope, fear, love, hate, beauty, envy, honor, weakness, striving, suffering and virtue.

— Paul Kalanithi, *When Breath Becomes Air*

Introduction

When I was starting out with my fieldwork, as an eager ethnographer in what I found at the time to be the intimidating but exotic Faculty of Health Sciences at Wits University, I had a most peculiar and unsettling experience. A high-flying basic scientist I was talking to about my project said that she would be able to right there and then write down on a piece of paper what data I would get out of my PhD. She would then lock the paper away in her desk drawer and read it again once I had completed my PhD. She predicted that her notes about the "problem" of clinician-researchers would be identical to what I would find after years of research. I was disconcerted by this experience, especially when she dismissed my suggestion that she should indeed do so. I knew that she was not familiar with my methodological approach, evident from her comments that my project had no statistical power, and that I would emerge with a humanistic interpretation of a problem she pragmatically attributed to quantities of time, money, and interest. I thought the hidden note could provide us with the opportunity for an engaging cross-disciplinary scholarly discussion upon my completion.

As I progressed with my project her comment at times came back to haunt me. Although I knew it was ungenerous, and frankly quite arrogant, and that my project was an academic intervention in the social sciences and not the health sciences, I was anxious that I might have nothing worthwhile to say about the institutions and experiences of my interlocutors. After all they were articulate, research-producing people themselves, many of them located at the same university as I was. I had used lots of bits of paper to write down observations and make sense of the institutions this scientist and my interlocutors knew intimately. How would these differ from her single hypothetical piece of paper?

I acknowledge, of course, that the very real and prominent contingencies of time, money, and intellectual interest that limit doctors' knowledge production in South Africa (and apparently globally), and more specifically at Wits and its hospitals, is indeed located at the centre of my ethnography. But my thesis has pulled together findings about institutional complexity that exceed just these contingencies and reveal the disjuncture between aspiration and constraint as well as the complicated experiences of powerful people in these institutions, including those who appeared to live up to the celebrated trope of doctor-researcher overcoming the challenges of constrained clinical life.

I begin this chapter with a brief reflection on the perspectives of a young clinician-researcher in connection with a recent tragedy in the field of clinical research in South Africa that highlights something of the tension between faith in progressive bioscience and intractable institutional problems. I then collate the major findings and arguments of the preceding chapters. Each of my ethnographic chapters focuses on either a particular forum for research or research-related discussion (Chapters Two and Three) or a specific group of clinicians and their forms of research (Chapters Four and Five). Here I draw together my findings to analyse more clearly how, overall, the actual production of research among doctors differs from the imaginary of research as a project of progress or transformation on the level of the institutional, the professional, and the personal. I also give an overview of the social scientific contribution of my exploration of post-apartheid institutional life and the usefulness and limits of "profession" as a social category in South Africa; of the relationship between local (peripheral) and global knowledge production; and of the improvised relationship between science and practice. I wrap up the conclusion by returning to the story about the piece of paper.

Clinical medicine as "most transformed"

> I think health science is probably one of the most transformed faculties out of the university already, and I think that is because of our link to the communities. You can't sit in your glass university box when you are dealing with healthcare … Our new dean is Bongani Mayosi who is a dynamic researcher and physician and public health advocate, and that is transformation.

This compelling statement is from Dr Nadia Levi a young clinician-researcher I interviewed from UCT. I had asked her about her experience of university life especially with regards to the Fees-Must-Fall protests of 2015 and 2016. Levi explained that unlike the humanities, for example, that needed to amend Eurocentric aspects of the curricula, the students and staff in the medical field were face-to-face with the suffering and the social fallout of an unequal society. Their work was inherently political and good. They were, therefore, the most transformed.

The social value embedded in the medical profession, as my findings in Chapter Five suggest, by no means protect young professionals from prejudices seemingly inherent in medical institutions. Service provision especially for the poor, as the foundation of medical training, does not translate automatically into progressive hospitals and universities. And as my findings overall make clear, neither does the social value of doctors' healthcare provision necessarily produce a correlating social good in their research.

Levi also pointed to the fact that the UCT Health Sciences Faculty had a black dean, and that this was transformative. One can take this young researcher's comment cynically and see the appointment as a tokenistic gesture towards transformation or affirmative action, now much maligned as ineffectual or superficial. But there is more to her comment than that. All my interlocutors who had had any dealings with Prof. Mayosi felt that he was a force of nature, with an infectious zeal that could improve and progress the Health Sciences Faculty into one that fostered generations of modern, knowledge producing African doctors who contributed to a better, healthier society. Mayosi was the quintessential clinician-researcher of the post-apartheid era. He was in fact the first author of the 2009 ASSAf report that sparked off action to improve clinical research across South Africa. He was a South African born black doctor, a renowned academic putting new findings in African cardiology on the global map and engaging governments to provide resources to combat rheumatic heart disease. He held numerous prestigious academic and professional positions locally and abroad, and was eventually appointed dean of Health Sciences at UCT.

In July 2018, just over two years after I spoke to this young clinician-researcher, Mayosi died, having taken his own life. His family's public statements emphasised his battle with depression, and an abundance of public commentary speculated about reasons, embedded in his work environment, for his mental illness and death (for example, Cairncross 2018; Fisher 2018; GroundUp Editors 2018; Jansen 2018c, 2018d; Koza 2018; Kumalo 2018; Mnguni 2018). These commentaries revealed the grave experiences he had before he died that may have precipitated or exacerbated his depression. His deanship at UCT, a previously-white liberal university, coincided with the height of the Fees-Must-Fall protests that were particularly protracted, violent, and academically disruptive at UCT. His family and colleagues reported that Mayosi had been harassed by "Fallists" who accused him of being a black sell-out. Mayosi may also have faced a great deal of pressure to prove his academic and bureaucratic mettle in an institution that is reportedly especially hostile to successful black academics in upper echelons of the university despite, for example, having had several black vice-chancellors, including one at the time of his death.

I observed a good deal of public and private opining and disagreement about this narrative as an oversimplification of institutional and identity politics. Regardless, it is telling that the story of institutions killing black professionals has traction in contemporary South Africa, where the value and relevance of state institutions continue to be fiercely contested and the prospects for African knowledge producers to solve African problems remain uncertain. As I have argued throughout my thesis, the precarious nature of knowledge production that takes place in the overlapping domains between tertiary education and healthcare is clear — but so too are the value, opportunity, and privilege intertwined in this production.

Assessing the transformative potential of clinical research

The nexus of factors that results in South Africa being imagined as an ideal and necessary place to produce research is intimately connected to the reported lack of research culture among South African doctors. A colonial past that lead to a racially divided patient population and a segregationalist political history that shaped the country's economic inequality and associated disease burden are not disconnected from the reasons that public healthcare is now a stretched system that puts limitations on clinicians, or from reasons that few black men and women were trained as doctors and able to negotiate institutional restrictions and become researchers — all of which stifled the growth of this culture of research. This history still haunts clinicians' knowledge producing pursuits, most clearly shown in the examination in Chapter Three of the career-making moments in HIV medicine and in global surgery and that in Chapter Five of the development of researchers among the younger generation of specialist doctors.

Clinician-researchers, even as a professional elite with profound privileges within the health sciences, cannot necessarily escape the longer cultural history of the institutions that they both seek to change and use as platform to build their personal prestige. A contemporary culture of research in clinical medicine may hold the promise of an inclusive community of experts with shared interests generated from a shared responsibility for the sick. But regardless of hagiographic histories and aspirational discourse, research takes place in a set of contingencies and clinician-researchers, as people rather than as personifications of a historical trope, work in contested and often unpleasant circumstances. The complexity of this is disguised in grand stories of the biotechnical embrace of heroic medicine in public academic hospitals. It is also overlooked in university spaces when, as I described in Chapter Two, medical research is worshipped as being "life-saving" and not "ephemeral" or academically "indulgent".

Overall my research indicates that the context in which South African clinicians produce research both enables and constrains their knowledge production. Because of a lack of local research, doctors' descriptive or small-scale research is necessary and this bestows value on their knowledge production as meaningfully intertwined with local practice. Aside from clinical work, in the Wits context, other watershed moments also enable clinicians to establish research careers — for example, the HIV crisis, the launch of global surgery, or the developing infrastructure and support for MMed and PhD students. But context also thwarts the research endeavours of local doctors. When knowledge production departs from a professional response to practical experience or from intellectual quandaries its value and local embeddedness changes. If research is a response, only or predominantly, to bulk up publication outputs, to replace the dwindling ranks of research expertise, or to fulfil requirements for a constrained MMed degree, then it means that research has in fact become bifurcated from clinical experience, as I argue in Chapters Four and Five. The transformative potential of research to produce meaningful research to guide improved patient care or to improve professional lives of South African doctors is thus stifled. This negates the imaginary of a research culture in clinical medicine as locally valuable and of clinician-researchers' insights as indispensable in medical knowledge production. Overall South Africa remains a fertile and fraught context for clinical research.

What emerges from my ethnography is that the institutional, professional, and personal project of creating clinician-researchers contains within it simultaneous and intertwined projects of inclusivity and an exclusivity. Expanding research expertise, encouraging doctors to make sense of their daily practice, and positioning research as an ethical and political response to clinical work, as I argue in Chapter Three, suggests a democratising, socially responsible scientific mission. But actual clinician-researchers say that the "hard work" of research, as intellectually more challenging than the "real work" of the clinic, makes them a "special type" among doctors. But doctors' research is not just about intellectual curiosity or dedication. Entry into a scientific community is affected by oftentimes opaque factors such as unequal English-language fluency, family responsibilities, or racial identity. This means that research it not done on a level playing field, in contrast to Dr Cassim's claims, explained in Chapter Five. The epistemological constraints of clinicians' research — affected by limited methodological training and time, and by interventionism inherent in medicine — means that the knowledge clinicians are allowed to make is somewhat stifled. These unequal, exclusionary professional realities that affect both clinical work and research are therefore not easily seen in the research that doctors themselves make. Clinicians' research reproduces a clinical gaze, outward-looking and patient-centric, leaving little room for introspective or reflexive knowledge production to transform the South African medical profession into one where doctors do not experience unequal professional challenges. I argue that although these challenges are not unacknowledged in clinical medicine, at least at Wits, they are neither meaningfully confronted, possibly (conveniently) lost in clinicians' occupational preoccupation with the crises of hospital life. Despite these profound challenges research may in fact act as an emancipatory space, a space for younger or previously excluded doctors to carve out a space of expertise, and a niche of research production that may be more than the sum of their identity; a space where they can solidify their (positive) identity as doctor, as a doctor in a particular location, and as a knowledge producing doctor in this location — and thus as part of a community of science, albeit a flawed one.

In addition, in terms of being an exclusive project, pushing doctors to produce research is undoubtedly about more than a noble aspiration of progressing biomedicine. It is also an effect of Wits's drive to be a world-class, African research-intensive institution, which, as I explain in Chapter Two, is heavily criticised as a rarefied, elite project given the South African context. This links to a poignant observation by Prof. Aida O'Grady:

> What do the universities in South Africa see themselves as being, generators of new knowledge, agents for social change? They don't know themselves. It is an ongoing debate really.

This same question could be asked of clinicians' research, as a product of the university. Many would argue that doctors' research is of course intended to do both, given the intertwined relationship between practice and science for doctors. But my study of the building of a culture of research and the figure of the clinician-researcher, specifically at Wits, indicates that when taking into serious consideration specific historic, economic, and intellectual contexts, the relationship between practice and science is uncertain, as is the social good of the knowledge produced out of this relationship.

The value of profession and potential future research

Local anthropology has, arguably, been inadvertently hampered by the lens of South African exceptionalism. Of course, this focus is a response to the tangible, disgraceful, powerful legacy of segregation, and scholarship has therefore centred on race, poverty, and gender, and to some extent on ethnicity. But this has been to the detriment of other analytical possibilities. Within South African anthropology there is a scarcity — or paucity, a word my medical interlocutors loved to use — of local ethnography investigating professional life and "studying up" more broadly. Therefore the power or palpability of professional experience as a category through which to understand social life has been limited. Only if profession is taken seriously can its usefulness and limits be ascertained.

In order to study clinician-researchers I paid keen attention to the idea of professional experience — as the imagined basis and value of clinicians' knowledge production. My research, across ethnographic descriptions of each chapter, indicates that professional experience and identity, possibility heightened by resource insecurity, is a powerful category of social experience. It was not only something observable between my clinician interlocutors but was palpable between myself and my interlocutors. I often felt empathetic about and alienated by the strength of this professional identity, which made me more deeply reflexive of my own scholarly endeavours. In particular I was aware of the stark differences in my day-to-day life of observing and interpreting, far removed from the "doing" of service provision, something I reflect on in depth in Chapters Four and Five. Profession is a worthy category to use to analyse social lives of institutions, including the fact that health practitioners, even though professionally mobile and privileged, do face significant struggles and forms of dehumanisation in post-apartheid hospitals and universities. Arguing for the strength and relevance of the category of profession does not erase the profound inequalities in professional experiences and how these related to research. But these inequalities are simultaneous to the shared responsibilities and the machismo of the hospital world, for example, that occludes them.

Despite the holes I have poked in the righteous trope of the hard-working insightful doctor who does research, clinician-researchers, across clinical disciplines, form a professional sub-group or elite, with their own solidarity, shared narrative, and sense of passion and commiseration. But Ruggunan (2013) indicates that in the small field of the social science of professions in South Africa there is a need to assess disciplinary boundaries in order to craft more nuanced analyses, rather than assuming the medical profession to be a homogenous category. Therefore investigation into profession can be taken further in future ethnography to unpack the elitism that is involved in developing research expertise in South African medicine. This is significant because this research is incorporated into registrar training, to produce modern specialists to work largely in tertiary and quintenary hospitals. How does this set up clinical knowledge production relative to healthcare practitioners outside this fold – general practitioners as well as among other professionals, such as nurses and occupational therapists? From my research this far, it is apparent that yet other guises of elitism and disciplinary inequalities exist between medical schools across South Africa. In future anthropological study it may be fruitful to assess the differences between schools, particularly because some are not as focussed on the training of specialists and sub-specialists as Wits University (as described in Chapter Five). For example, University of Walter Sisulu a previously black university is reputed to have greater focus on primary and secondary care in its medical training programmes and is generally an institution in a more financially precarious position. In Chapter Three I do present findings regarding the representation of professors from previously black medical schools at conferences. But attending more specifically to the similarities and contrasts between medical schools would provide insight into differences in resources available to grow fields of clinical knowledge production and which fields or disciplines are specifically promoted in various institutions and the ethical and intellectual rationales for this. These factors would reveal and explain forms of elitism that exist within the South Africa research landscape relative to levels of representation of certain universities in national or regional research forums and the value, in terms of prestige and/or social good, attributed to different fields of clinical research and by extension the medical schools that produce them.

While drawing my project to a close some social science colleagues still asked me whether my research was about biomedical doctors studying and incorporating African indigenous knowledge, particularly about plant-based therapies, as if this would be the obvious focus of the African clinician-researchers I studied. Taking professional work and identity seriously in relation to health and healthcare means committing fully to the idea that biomedicine is an African endeavour embraced by many Africans, including young black Africans. This means that social commentators have to concede some Manichean ideas of good and bad, south and north, and western and African. It requires, as analysts such as Pollock (2014) and Geissler and colleagues (2011) have argued, framing Africans not as victims of biomedicine, but as actively engaged in producing and publishing about a locally-embedded profession. This is particularly the case in the context I studied where, although clinicians consciously framed their work in relation to the global production of knowledge, their work was not directed by partners in the global north.

With regards to communities of research within the global south and unequal relationships — not only between north and south, but also within the south — future research might investigate the idea of "Southern African" clinical research and research societies. From my observations in the health sciences and the social sciences, this label represents an attempt to foster regional networks. But whether this is just paying lip-service or a genuine attempt at creating a more inclusive and diverse research community is worth studying, particularly with regards to South Africa's relative dominance in the region, academically and economically, and its assumed postcolonial exceptionalism. In this sense my thesis, a project of writing from the south, drawing value from its own local embeddedness or "epistemological emplacement", to borrow from Street (2014), is a contribution to providing a more nuanced, less binary framework in understanding hierarchies in biomedicine and academia.

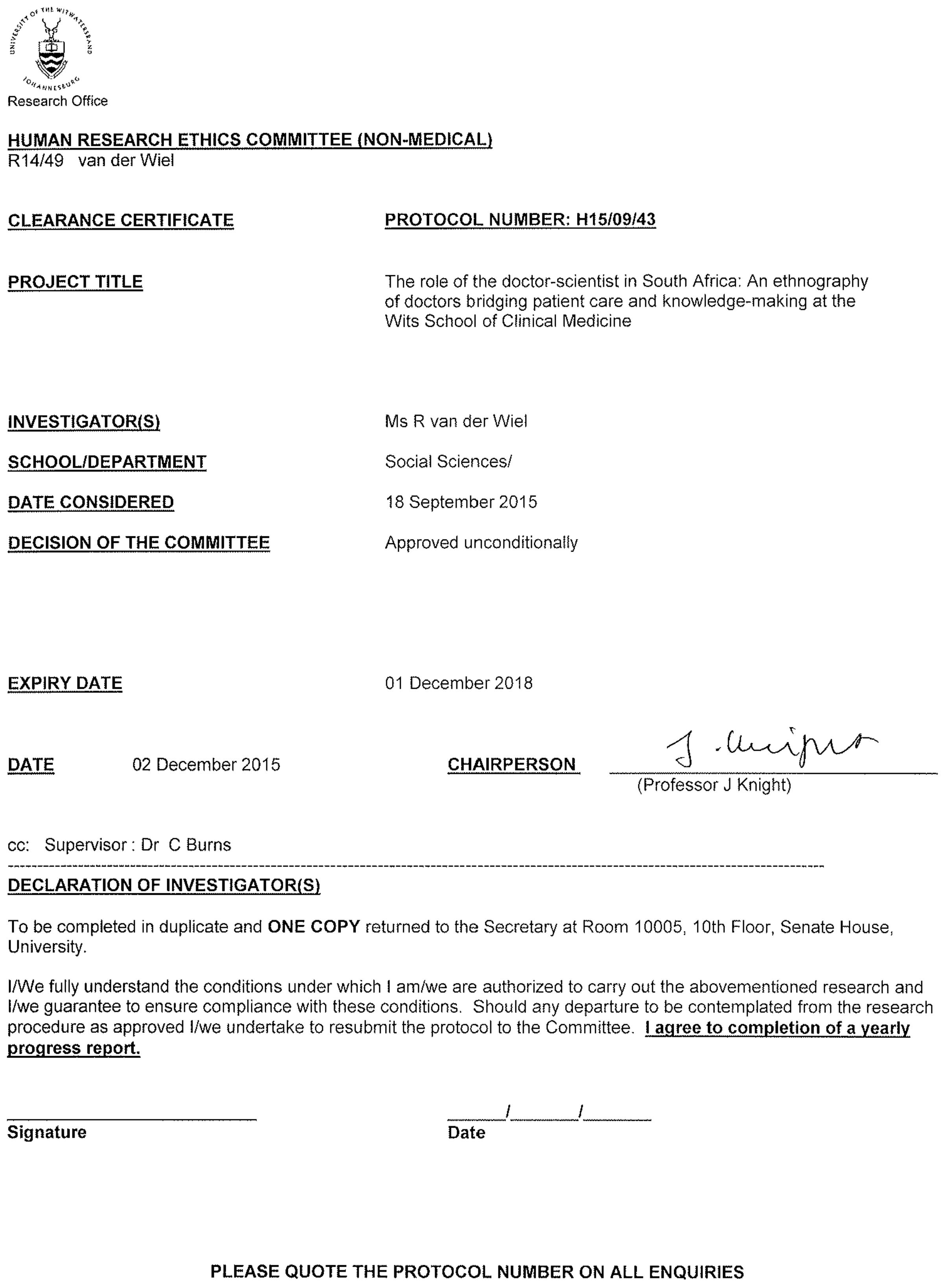
Recent work in medical and health humanities, including by medical anthropologists, published as I finalised the thesis, indicates that fertile ground is opening up for studying the complexity of professional life in Africa, especially through conversations and research across disciplinary and national confines. For example, Tsampiras, Mkhwanazi and Hume (2018) document the development of medical humanities projects in Africa and consciously reflect on these academic dynamics — specifically differences between countries and regions, and between disciplines within Africa. Pentecost and her colleagues (2018) and Tsampiras (2018) describe an impetus in South Africa related to recent student protests and movements, for serious reflection on the development of a medical professional identity and intellectual self-image, particularly in undergraduate training, and possible ways to "humanise" and decolonise this process and address the significant exclusions, often related to race, that students experience. My thesis as well as future directions for study that I have indicated above speak to this developing scholarship.

Conclusion: The piece of paper

I will never know what the uncommonly antagonistic scientist I encountered at the beginning of my fieldwork would have written about clinician's research on her single piece of paper, nor what she would think of the hundreds of pages I have written here to make sense of the project of building a research culture. But this scientist's words tapped into my existing anxious reflexivity about writing, as a non-doctor, about people who can and have articulated concerns about clinical research, their closeness to this field as well as the academic clout of their interventionist, quantifying epistemology. My ethnography offers a critique derived from the deep consideration of human experience in relation to larger contexts that affect the endlessly emergent knowledge field of biomedicine. I paid close critical attention to everyday post-apartheid professional experience in between the war-like hospital and the prestigious, metric-fixated university, noting the slippages in the moral valence of medicine and related knowledge production. Overall, I have argued that context makes and unmakes research and the clinician-researcher, and that this relationship and the value of the relationship between practice and knowledge production is not as straight-forward as pervasively imagined. This is a meaningful reflection of this local biomedical field that was clearly of concern to the doctors, scientists, and bureaucrats within it, as well as a contribution to a branch of African medical anthropology and to the developing field of medical humanities in Africa. I am hoping that this would be at least a little different from what would have been written on the hypothetical piece of paper.

Appendices

Appendix A: Clearance certificate from the Wits Human Research Ethics Committee (Non-medical)



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 van der Wiel

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H15/09/43**
PROJECT TITLE	The role of the doctor-scientist in South Africa: An ethnography of doctors bridging patient care and knowledge-making at the Wits School of Clinical Medicine
INVESTIGATOR(S)	Ms R van der Wiel
SCHOOL/DEPARTMENT	Social Sciences/
DATE CONSIDERED	18 September 2015
DECISION OF THE COMMITTEE	Approved unconditionally
EXPIRY DATE	01 December 2018

DATE 02 December 2015 **CHAIRPERSON** ______________________
(Professor J Knight)

cc: Supervisor : Dr C Burns

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

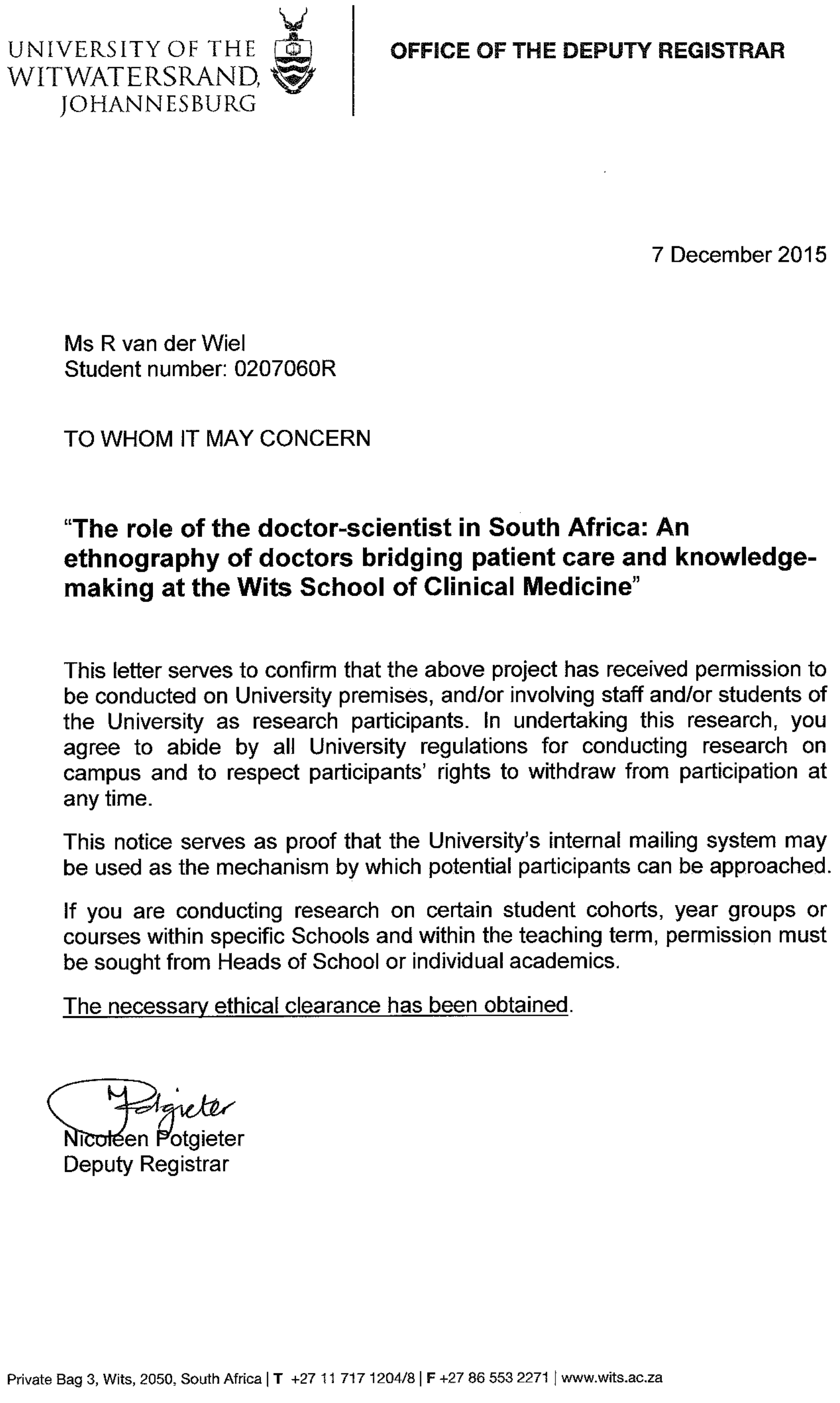
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

____
Signature

_____/_____/_____
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix B: Permission letter from the Registrar of the University of the Witwatersrand



UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

OFFICE OF THE DEPUTY REGISTRAR

7 December 2015

Ms R van der Wiel
Student number: 0207060R

TO WHOM IT MAY CONCERN

"The role of the doctor-scientist in South Africa: An ethnography of doctors bridging patient care and knowledge-making at the Wits School of Clinical Medicine"

This letter serves to confirm that the above project has received permission to be conducted on University premises, and/or involving staff and/or students of the University as research participants. In undertaking this research, you agree to abide by all University regulations for conducting research on campus and to respect participants' rights to withdraw from participation at any time.

This notice serves as proof that the University's internal mailing system may be used as the mechanism by which potential participants can be approached.

If you are conducting research on certain student cohorts, year groups or courses within specific Schools and within the teaching term, permission must be sought from Heads of School or individual academics.

The necessary ethical clearance has been obtained.

Nicoleen Potgieter
Deputy Registrar

Private Bag 3, Wits, 2050, South Africa | **T** +27 11 717 1204/8 | **F** +27 86 553 2271 | www.wits.ac.za

Appendix C: Permission letter from the Dean of the Faculty of Health Sciences, University of the Witwatersrand

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

FACULTY OF
HEALTH SCIENCES

9 December 2015

Ms R van der Wiel
Student No: 0207060R

Dear Ms van der Wiel

Research Project: The role of the doctor scientist in South Africa: Ethnography of doctors bringing patient care and knowledge-making at the Wits School of Clinical Medicine

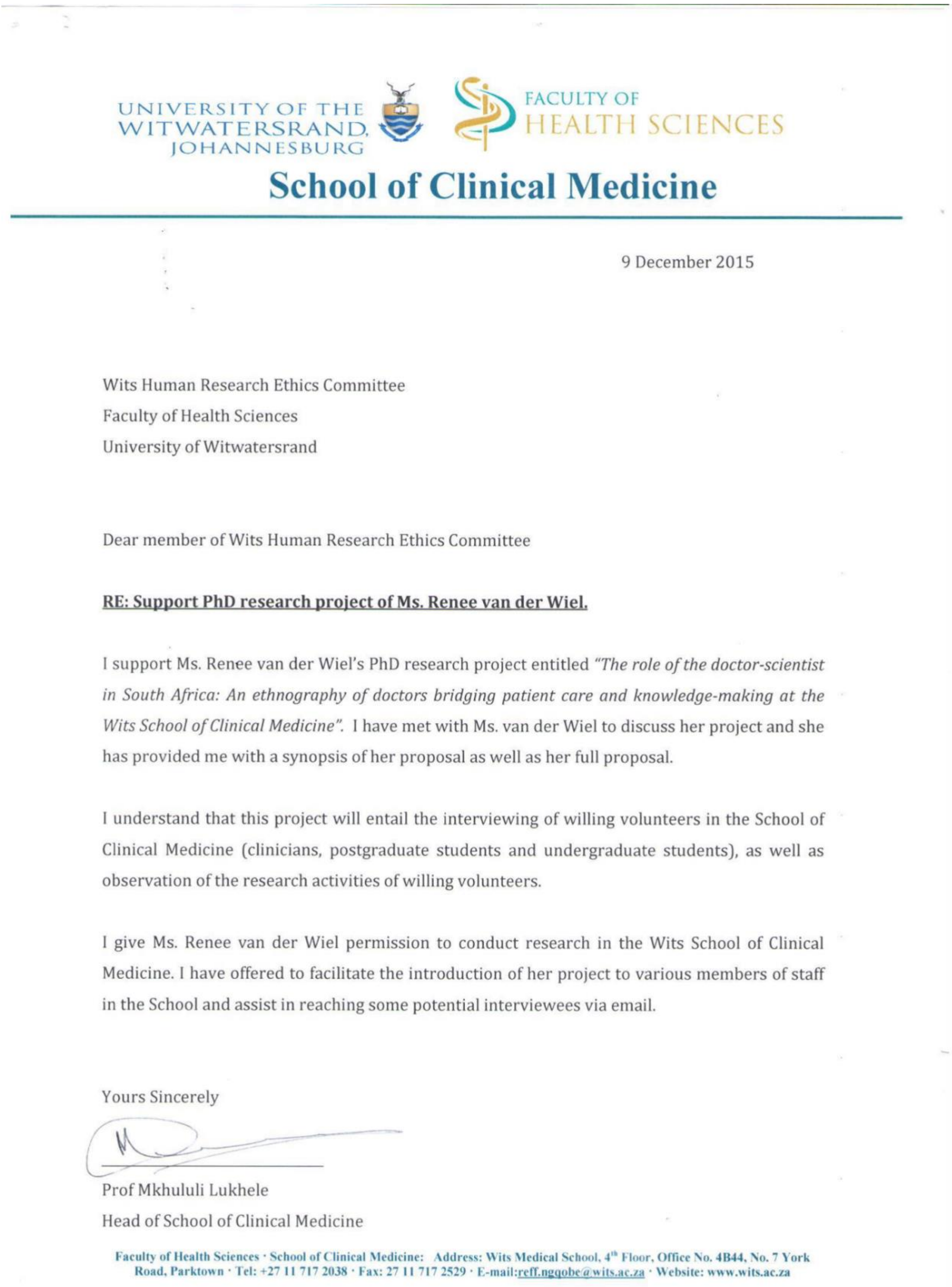
Thank you for your request to conduct your quantitative fieldwork in the Faculty of Health Sciences., and also for forwarding your ethics clearance documents.
This letter serves to grant you permission to interview fifth year medical students about their group research projects, and to name the Wits School of Clinical Medicine in your final report. This is conditional upon you abiding by all the University regulations for conducting research on campus and subject to individual informed consent being obtained.

Yours sincerely

Martin Veller
Dean, Faculty of Health Sciences

Phillip V Tobias Health Sciences Building | 29 Princess of Wales Terrace (cnr York Road), Parktown 2193, Johannesburg, South Africa
Office of the Dean | **T** +27 11 717 2555 | **E** poovy.govender@wits.ac.za | www.wits.ac.za

Appendix D: Permission letter from the Head of School of Clinical Medicine, University of the Witwatersrand



UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
FACULTY OF HEALTH SCIENCES
School of Clinical Medicine

9 December 2015

Wits Human Research Ethics Committee
Faculty of Health Sciences
University of Witwatersrand

Dear member of Wits Human Research Ethics Committee

RE: Support PhD research project of Ms. Renee van der Wiel.

I support Ms. Renee van der Wiel's PhD research project entitled *"The role of the doctor-scientist in South Africa: An ethnography of doctors bridging patient care and knowledge-making at the Wits School of Clinical Medicine".* I have met with Ms. van der Wiel to discuss her project and she has provided me with a synopsis of her proposal as well as her full proposal.

I understand that this project will entail the interviewing of willing volunteers in the School of Clinical Medicine (clinicians, postgraduate students and undergraduate students), as well as observation of the research activities of willing volunteers.

I give Ms. Renee van der Wiel permission to conduct research in the Wits School of Clinical Medicine. I have offered to facilitate the introduction of her project to various members of staff in the School and assist in reaching some potential interviewees via email.

Yours Sincerely

Prof Mkhululi Lukhele
Head of School of Clinical Medicine

Faculty of Health Sciences · School of Clinical Medicine: Address: Wits Medical School, 4th Floor, Office No. 4B44, No. 7 York Road, Parktown · Tel: +27 11 717 2038 · Fax: 27 11 717 2529 · E-mail:reff.ngqobe@wits.ac.za · Website: www.wits.ac.za

Appendix E: University of the Witwatersrand Vision Statement, Mission and Purpose Statement

Vision Statement

The University of the Witwatersrand aspires to be a leading world-class research-intensive university firmly embedded among international top league universities by 2022.

Mission and Purpose Statement

The mission of the University of the Witwatersrand is to grow its global stature as a leading research-intensive university and a gateway to research engagement and intellectual achievement in Africa. This it will achieve by building on the principles of intellectual excellence, international competitiveness and local relevance.

As an institution built on principles of intellectual excellence, we are committed to providing high-quality, internationally competitive education, founded on high academic standards, cutting-edge research, public engagement, and productive partnerships with leading institutions throughout the world.

In pursuing our visionary goal of becoming a top-league university located on African soil, we aim to:

- amplify our generation and dissemination of ground-breaking knowledge in niche areas
- optimise our international visibility and impact of research, and our reputation for teaching
- maintain a high proportion of international students and staff
- recruit highly talented students for undergraduate education
- maintain a high proportion of carefully selected postgraduate students
- produce highly influential graduates for the global civil society
- widen our footprint globally through extensive strategic networks
- attract and retain distinguished scholars and prize-winning leaders in niche and strategic fields
- attract and retain the best academic and support staff
- contribute to society through research, teaching and social engagement
- maintain a distinctive focus and reputation for ground-breaking research and scholarship in science, engineering and technology (SET) areas

- benchmark with top-league and top-100 universities, including the UK Russell Group, the Australian Group of Eight, and the Big 5 in South Africa
- provide a high-quality, supportive research and educational environment for students and staff
- establish and sustain a sound base for diversified sources of income
- retain a high degree of academic freedom and institutional independence
- retain our long-lasting legacy of high-level achievement and excellence

Source: University of the Witwatersrand (n.d.).

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