Materia medica and care: A study of the uses of medicinal herbs and remedies as a form of treatment and negotiating social relationships in Cape Town and surroundings.

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DECLARATION

I herewith declare that, **"**Materia medica and care: A study of the uses of medicinal herbs and remedies as a form of treatment and negotiating social relationships in Cape Town and surroundings," is my own work and has not been submitted for any degree, essay or examination in any other university. I have acknowledged all quotations and sources which I have consulted in this study to the best of my ability.

Date: 15 November 2012

Signed: 

ACKNOLEDGMENTS

I am greatly indebted to numerous people for their contributions to this study;

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ABSTRACT

This study falls within the framework of the larger multidisciplinary university health initiative (MUTHI) objectives to investigate and document the use of local medicinal plants for the treatment of HIV and symptoms of related opportunistic infections such as tuberculosis, thrush and shingles in the Western Cape. The study stems from twelve months fieldwork in Strand, Western Cape and the collection of plants from Mpoza, Eastern Cape for a variety of reasons. The study ethnographically documents when, under which circumstances and where plants are collected for use.

As far as I am aware this is the first anthropological study which 'follows' traditional healers in the Western Cape to a site in the Eastern Cape where they collect plants. Seventeen plants were collected from different genera which traditional healers reported to use as treatment for suspected HIV and related symptoms. For each plant I describe the medicinal uses, preparatory techniques and plant parts used as suggested by traditional healers. I also explore healer's aetiologies concerning plants, treatments and the social-material relations which are prevalent in my research settings.

Keywords: Ethnobotany, science, medicinal plants, traditional healers, HIV, opportunistic infections

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- **A cautionary note: The photos of healers and plants displayed in this thesis are from Mpoza, Eastern Cape. They were published with the permission of the participants. For reasons discussed in Chapter three photos of healers from the Helderberg sub-districts were not included in the thesis.**

Chapter one: Introduction

Entering a field of healers and plants

In the first quarter of 2011 a group of fifteen traditional healers and herbalists from Strand was hosted by our Department to participate in a workshop about traditional healing, HIV prevention and care. In the middle of an already crammed three-day programme, I received permission from the healers to have two focus group discussions with them. While the senior staff in my department had equipped me with the theory and the skills to conduct focus groups and do interviews, it did not prepare me for my first encounter with traditional healers. Although they were in a university space, sitting in a boardroom, they had managed to somehow make it theirs. They were dressed in their traditional clothing with beads, shawls, and headdresses, some carried fly whisks, others had beaded *knobkieries*, some had their faces smeared white. Candles had been lit and the sweet smell of mpepo (*Helichrysum aureonitens*) smoking away, filled the room; the setting was intimidating and managed to disconcert and distract me from the analytical nature of the questions I had prepared. Informed and captivated by the work of Ingold (2000; 2007; 2009) and inspired by a Master's thesis by a UCT student Josh Cohen (2009) on *bossiemedisyne* – one which I hoped to emulate - I pressed on and asked questions around plant procurement, cultivation, negotiating landscapes, healing and the aetiologies behind the heterogeneous practices of medicinal plant use and healing.

We were all congregated around the boardroom table. The conversation progressed back and forth through an interpreter, an MA student who is a Rastafarian/*bossiedoker*. Anxious about teasing from other students about ancestors, spiritual possession and *muthi* murders, as well as by the many academic and political discourses and contestations around indigenous knowledge and African healers (cf. Mulaudzi, 2000; Mchunu, 2000; Ashforth, 2001) I gingerly entered the room. One of the healers, who had negotiated on my behalf with the others, had warned me about potentially dire consequences if I upset anyone's ancestors, and admonished me to carefully negotiate my place in the group. When I reflect back on my position on that day I realise how, anxious, inexperienced, but altogether enthusiastic an anthropologist I was and how eager to enter the field of traditional medicine and healing for the first time. Much to my relief, at the end of the second focus group, one of the healers

ceremoniously placed colourful beads on my head. I had been accepted into the group, albeit only as a student researcher and young man, but for me it was the start of an intricate process of building relationships for future research.

I interacted with the healers from Strand throughout 2011, if at times intermittently. I was in the process of completing my master's course work. As part of an assignment for the module, Anthropology and Herbal science, I visited and interviewed healers in Bloekombos, Kraaifontein and Bellville. This module further sparked my interest in this research. The module dealt with contestations around plants in South Africa and around the world. It focused on debates about traditional knowledge, bioprospecting and intellectual property. The module challenged my fellow class mates and myself to think about plants in new and different ways. It also introduced us to related fields, such as pharmacology and botany, disciplines which approach and work with plants from different perspectives to anthropology.

In a combination of the course work module and field visits I became more informed about, and familiar with, healers. My initial anxiety about my ability to work with healers and learn about their practices lessened. I learnt about healing, relations, plants and the role the ancestors play in everything. By spending more time with healers in their local setting I began to theorise and systematically unpack their utilisation of medicinal plants, their practices concerning healing and the complicated relations in which they all were somehow enmeshed: healers, medicinal plants, ancestors, sick people, myself, staff in our department, *amayeza* stores, plant traders and, in time, staff and equipment in the laboratory of the Herbal Science and Medicines Institute (SAHSMI) at UWC. I will explore these further in the thesis as it unfolds.

The MUTHI project

I initially planned to do my thesis research with Healers from Strand and to focus on their practices of healing and their utilisation of medicinal plants and the ways in which these (plants) functioned and also the understandings of and ways in which plants functioned to strengthen social and spiritual relations. Then I was unexpectedly offered an opportunity to be part of a research project called the Multidisciplinary University Health Initiative (MUTHI). The project aimed to build research capacities on the African continent that will

set good standards for development of improved health security and health systems in the future.

The overall objective of the project was to create sustainable plant research and research networks between partner institutes in Africa (Mali, South Africa and Uganda). The project included a training module in medical anthropology and Ethnopharmacology which trained researchers (including myself) to conduct ethnobotanical studies of commonly utilised medicinal plants to treat a certain illnesses or disease. The training also focused on matters concerning ethics, intellectual property, memoranda of understanding (MOU), prior informed consent and collection permits. All are essential for working with healers as custodians of knowledge about medicinal plants.

Because staff at SAHSMI, with whom I would also be working, was interested in HIV, I had to focus on plants used to treat this condition. This was, however, problematic, because according to a public health survey conducted in 2010, the Western Cape has an HIV infection rate of 18.5%. This is the lowest infection rate of all the provinces of South Africa. I was personally more interested in working with healers about tuberculosis (TB), one of the most prevalent infectious diseases in the Western Cape. The HIV focus was, however, not negotiable for SAHSMI. I realised that in the case of HIV- tuberculosis coinfection, the mortality rate in the Western Cape accounts for 69% of fatalities for infectious disease (Fourie, 2011). HIV and TB are also approached as interlinked in South Africa's latest Health Policies (DOH - Strategic Plan, 2012).

I consequently decided to focus on HIV, HIV-TB coinfection, as well as two common opportunistic infections in people with HIV – namely thrush (or candidiasis – the most common opportunistic infection in people with HIV) and shingles (or herpes zoster).

The project required me to collect the most commonly utilised plants and to prepare an ethnobotanical reference collection (described further in the following chapters). The latter is important for scientific purposes. Especially since scientists at SAHSMI would subsequently study the three most commonly used plants for the treatment of HIV in the laboratory.

I then approached the healers in Strand again, but they informed me that they 'order' or collect the plants themselves from time-to-time from the Eastern Cape for a variety of reasons (also described later).

I initially arranged with two of the healers in Strand to go with them to the Eastern Cape to collect plants. Ultimately, they were unable to do so, but referred me to colleagues with whom they worked closely from Mpoza, Mount Frere in the Eastern Cape. I accordingly 'followed the plants' to Mpoza, Mount Frere. I was accompanied by two colleagues from SAHSMI. We collected seventeen plants from different genera which healers reported to use as treatment for suspected HIV and related symptoms. In the chapters which follow I describe the medicinal uses, preparatory techniques and plant parts used as suggested by traditional healers.

Once I had collected the plants, they were transported to the University of the Western Cape where I prepared voucher specimens. The plants were scientifically classified and stored at the Herbarium at the University of the Western Cape. With this component of the ethnobotanical study complete, further research was undertaken in Broadlands and Asanda villages in Strand, Western Cape where traditional healers practice.

Aims of the study

As far as I am aware this is the first time that an anthropological study follows traditional healers and medicinal plants from the Western Cape to the Eastern Cape where the plants are collected. My study presents a multidisciplinary endeavour for investigating the utilisation of medicinal plants to treat infectious diseases such as HIV in combination with TB. There have been few attempts to formally document medicinal plants of South Africa in relation to its use for particular diseases or illnesses such as HIV (MacPhail et al., 2002; Sebit et al., 2000; Zachariah et al., 2002; Fennel et al. 2004). Many of the ethnobotanical studies conducted in the Western Cape and the Eastern Cape are somewhat reductionist and detach the utilisation of medicinal plants from its social, cultural, material and economic contexts (Cohen, 2009; Hsu, 2012).

This study aimed to investigate the most commonly utilised medicinal plants for the treatment of HIV and related opportunistic infections. It also interrogates the aetiologies, symptomologies, practices and relations underlying the utilisation of plants by healers. Throughout my research with traditional healers, SAHSMI scientists, students at the Institution and others who work with and utilise plants, I observed a strong relationship or relatedness with plants. In the following chapters I argue that plants exist in particular relationships with people (Gibson, 2011; Terashima, 2011).

Overview of chapters

Chapter two explores the interface between people (scientists, traditional healers, science students) who work with and utilise medicinal plants. It frames the context around the practice of traditional healing in the Western Cape and the utilisation of medicinal plants as it is used to combat infectious diseases such as HIV and is contested within South Africa's health care system. The chapter presents a multidisciplinary review of medicinal plants. By doing so, I propose a 'holistic' interrogation of medicinal plants. Furthermore, I argue that plants, in the different settings of my research and, as material and social 'things,' acquire a variety of regimes of value and meaning. It can, thus, be said that plants have 'social lives.'

Chapter three discusses the methods used to conduct this research. It elaborates on the research techniques applied to conduct a multi-sited study. The chapter illustrates the complexity of conducting multidisciplinary work and the ethics involved in working with medicinal plants. It explicates the process of obtaining prior informed consent, drawing up memorandums of understanding with traditional healers, preparing a material transfer agreement for medicinal plants, collection permits and performing the necessary rituals with healers to allow research to take place and build rapport.

Chapter four is the first of three chapters which reflect the 'findings'. This chapter is about the practices and processes involved in testing medicinal plants for active compounds and synergy at the South African Herbal science and medicines institute (SAHSMI). By working with scientists and following the trail of plants through the various stages of testing, I begin to theorise about the process of scientific production and observed, following the work of

Latour, 1987; 1999), a ‘science culture.’ The chapter also explicates the relationship between SAHSMI scientists and plants.

Chapter five demonstrates the process of collecting plants as part of an ethnobotanical study and then the intensive process of preparing an ethnobotanical reference collection for scientific classification and scrutiny. The chapter follows traditional healers from Strand, Western Cape and scientists from SAHSMI to Mpoza, Eastern Cape to collect plants. It discusses the medicinal uses, preparatory techniques and dosages of each plant for the treatment of HIV and related opportunistic infections. It furthermore extends the argument from chapter two by discussing the relationship between healers and their environment. I argue that the local environment, as the place where healers collect plants, receive their training and live in, also have meaning for them.

Chapter six discusses disease aetiologies underlying the utilisation of medicinal plants in Mpoza, Eastern Cape and Strand, Western Cape. Healers generally rely on medical diagnosis to treat HIV and related opportunistic infections, but they also have their own knowledge base concerning infectious disease. They draw on these as well as on their connection with *Somandla* (God- for herbalists) and/ or the ancestors to inform their method of treatment. This chapter describes the process of treatment and the utilisation of the medicinal plants in more detail. The chapter furthermore unpacks the extensive relationships between healers which they employ in the treatment of infectious disease.

The final chapter concludes the thesis and summarises the overall argument.

Chapter 2: People,[1] plants and relations

Introduction

In this chapter I draw on several theoretical discussions in an attempt to frame the idea that traditional healers, scientists, plant vendors, *bossiesdokters* and others who utilise medicinal plants, use and understand them in different ways. I interrogate the idea that plants represent various forms in the practice of traditional healing and in science, e.g. in the search for and understanding of the pharmaceutical mechanisms of, and interaction between, active compounds in plants at the South African Herbal Science and Medicines Institute (SAHSMI) (Gibson and Kilian, forthcoming). Plants are material 'things' which are transferred and transformed across time, space and between actors. Plants are not mere 'things,' but also 'things' with meaning and value (Appadurai, 1986; Reynolds Whyte et al. 2002). Plants are understood differently; they acquire meaning from the time it is collected from the environment to its use in healing, among plant vendors, herbalists, traditional health practitioners etc., through its manipulation in the laboratory e.g. at SAHSMI and, sometimes, even in its testing for safety (and perhaps efficacy) in the laboratory (Latour, 1999).

In the past, investigations into plant knowledge have fallen into a reductionist trope (Verran, 2010). Nonetheless, there is a large amount of work being done in South Africa around traditional healers, medicinal plants and their role in treating diseases such as HIV and TB (Otang *et al*,. 2012). Yet, very little has been done on the interface of ethnobotany, science and medical anthropology. Hence, I scrutinized the literature in an attempt to meet a 'gap' in the framework of medical anthropology (Hsu and Harris, 2012). Accordingly, I investigate the utilisation of medicinal plants from various viewpoints. This is to engage with a balanced interrogation (holism) of the way plants are used among traditional healers to combat infectious diseases such as HIV and TB and investigated by scientists in their quest to understand how plants are utilised, in what dosages, with what meanings, value and such (Martin, 2007). It is not, however, within the ambit of this thesis to engage with the many ways in which medicinal plants are contested in South Africa.

[1] I draw on Mol (2002) and Turnbull's (2009) notions of an 'actant' to describe all the matter, processes and agents (such as people, including lay people, traditional healers, scientists, plants which are acted upon, the act of healing and such) in my study.

Ultimately, my own focus on plants, disease and the interface between biomedicine and traditional practices has to be placed within various categories of understanding and meaning making. I examine plants from a hybridized standpoint; from a material-relational framework, as material and immaterial 'things,' and also as 'things' which acquire meaning and value in the different settings of my research. I explore these issues in more depth in the sections to follow.

Traditional healers, disease burden and plants

South Africa has a rich plant biodiversity which has been utilised for its remedial properties in healing for a long time (Cunningham, 1997; Mander, 1997), but there have been few attempts to formally document medicinal plants of South Africa in relation to its use for particular diseases or illnesses such as HIV (MacPhail *et al.*, 2002; Sebit *et al.*, 2000; Zachariah *et al.*, 2002; Fennel *et al.* 2004). There are studies which document the use of medicinal plants in South Africa, but they are generic (Van Wyk *et al.*, 2009). Thus a South African pharmacopeia of plant knowledge that is 'focused' is of importance to address the challenges of ascertaining the quality and safety and, perhaps in time the efficacy of plants (Street *et al.*, 2008; Nyika, 2007; 2009). Despite some concerns about issues of especially safety (Street *et al.*, 2008; Nyika, 2007; 2009), up to 60% (the statistics vary from rural to urban and from one province to another) of South Africans make use of traditional medicine and/or choose to consult one or more of the estimated 200000 traditional health practitioners in South Africa to treat infectious disease such as HIV (Peltzer, 1998; Peltzer *et al.*, 2006; Van Wyk *et al.*, 2009). These statistics are contested though. A national survey done in 2008 found that it was especially the poorest people who also spend a large part of their household expenditure on consultations with traditional healers (Nxumalo *et al.*, 2011).

Soaring HIV rates, the rapid rise in the prevalence of coinfection with tuberculosis, as well as with other opportunistic infections exacerbate the disease burden in South Africa (Fourie, 2011). HIV and TB are now approached as interlinked in South Africa's health policies (DOH - Strategic Plan, 2012). Certain opportunistic infections are common in people with HIV – such as thrush (or candidiasis – the most common opportunistic infection in people with HIV) and shingles (or herpes zoster). Some of the country's public health care services are not always easily accessible, financially attainable (private health care) or utilized in certain regions. While this is not the case in the Western Cape, many people nonetheless also

utilise traditional healers, *bossiedokters,* Rastafarians, or grow or buy medicinal plant material for use (Ferreira *et al.,* 1996). The cost of over-the-counter synthetically produced medicine is also high.

Several studies in South Africa indicate that sexually transmitted infections (STI's) are a main reason why people consult traditional healers (Ndulo, 2001; Peltzer, 1998, 2000a, 2003; Wilkinson & Wilkinson, 1998; Zachariah *et al.,* 2002). Traditional healers reported that they were also frequently consulted in relation to children's diseases, such as *imimoya* (winds), *isisu ubuhlungu* (stomach ailments) and *khohlela* (general coughs and colds). Other frequent reasons for consultation are for tuberculosis and sexually transmitted diseases like *Tshofela/drop* (Gonorrhoea), *lLekhutlo* (ailment of a male who had intercourse with an 'impure women,' for example, an HIV infected woman or one who is menstruating), and assumed HIV cases (Peltzer, 2003; Peltzer *et al.,* 2006; Mintsa, 2009; Otang *et al.,* 2012).

In an attempt to better understand the local knowledge around plants used to treat diseases such as the ones mentioned above, the South African National Biodiversity Institute (SANBI) for example, established a comprehensive plant electronic database of a total of 566 plants reportedly used for the treatment of tuberculosis (TB) and 623 plants associated with malaria and or fever, as well as HIV. Such databases, however, are often generalised and also lack the meanings ascribed to, and context around the use of traditional medicinal plants; how they are used as elements in a more comprehensive healing approach, along with prayers, rituals and such. Secondly, treatments are often made up of highly complex plant based mixtures rather than the use of one specific plant utilised for a particular disease (Drews et al., 2006).

As indicated above, in the Western Cape, access to public health services are generally good. Nonetheless, many people use plants and consult traditional and other forms of local healers (*bossiesdokters* and Rastafarians e.g.) as alternatives to, or in conjunction with, healthcare services and synthetically produced medicines (Cocks and Dold, 2000; Mintsa, 2009). On the other hand, the Eastern Cape Province is less urbanized and, while access to healthcare services and synthetically produced medication are good, an even higher proportion (than in Western Cape) of the population use local plants and consult healers for their primary health care needs (Dold and Cocks, 2002; Stats SA Mid-Year Population Estimates, 2011). In a community survey among rural adult South Africans, Peltzer (2003) found that, from those who reported to have had an STI in the past year, 36% had consulted traditional healers for

treatment. A large percentage of the population therefore relies on healers and natural recourses to treat infectious diseases and for maintaining a sense of health and well-being (Ferreira *et al.*, 1996; Thornton, 2001).

The disease burden in the Western Cape, especially TB, is high. Coinfection with HIV is rapidly rising (Fourie, 2011). TB and HIV is attributed to poverty, overcrowding and lack of health education (WHO, 2008; Nyika, 2009). Even though access to healthcare services and synthetically produced medicines are good in the Western Cape, HIV remains one of the most prevalent infectious diseases. At the same time, TB has been affirmed as a national emergency (Karim, *et al.*, 2009). Yet, in most of the country, and in relation to my own study and its focus on Strand in the Western Cape, there are also readily available natural resources, as well as traditional and other kinds of local healers (Rastafarians and *bossiesdokters*) who fill a 'gap' in the health care market and help people to cope with the demands of an increased disease burden in their local communities (Nyika, 2007; Knapp van Bogaert, 2007; Tangwa, 2007).

While most people hold some knowledge of plants and remedies and they are capable of self-treatment, traditional healers are often seen as custodians of traditional knowledge of plant use. In the Western Cape the situation is more complex. There is some scattered information on the healing knowledge and practices of the local indigenous people (Khoisan) of this region. Most of it is fragmented and spread through sources over a period of time (Laidler, 1928; Lichtenstein, 1812–1815; Paterson, 1789; Shapera, 1930; Sparrman, 1785). One group of knowledge holders concerning medicinal plants who are consistently identified in the Province is that of the herbalists or *bossiedokters* (Archer, 1990, Gibson, in press; Cohen, 2009) and of older people (Cohen, 2009; Davids, 2010; Ferreira, 1987; Klaasen, *et al.*, n.d.; Nortje, 2012). The focus of my study, however, is on traditional healers, and especially diviners (*amagrirha: isangoma*) and herbalists (*inyanga*).

These healers have a crucial role to play in building the health system as well as in strengthening and supporting the national response to HIV and TB. Traditional health practitioners are often part of the local community, their language, cultural practices, meaning-making, understanding of health and illness and its treatment. Healers enjoy high social status and are frequently thought of as a resource for health and healing (Cheikhyoussef *et al*, 2011; Abney, 2011).

Traditional healers also exert a strong influence on local health practices and it is therefore important to consider them in relation to primary health care policies and to establish cooperation with them in the fight against infectious diseases through local knowledge and plant use (Pretorius, 2010). It is also very pertinent to be mindful of intellectual property, memorandums of understanding, collection permits and so on, around medicinal plant practices when working with traditional health practitioners and plants (Martin, 2007). The practice of healing and the utilisation of plants are equally of importance. I will return to these issues later, but will now focus on the practice of healing.

The practice of healing

The South African media frequently report on practices and claims concerning treatments for HIV by traditional healers. This is especially the case for the "claim to cure HIV" through the utilisation of herbal treatments or *muthi* (see for example, Mulaudzi, 2000; Mchunu, Ashforth, 2001 and Leeman, 2000). While such negative publicity is common, there are several attempts to incorporate healers into the fight against HIV infection by, for example by the Medical Research Council (Richter, 2003).

With the HIV epidemic and the vulnerability of increased coinfection of HIV and TB, there has consistently been a call for reconsidering the role of traditional healing and medicinal plants, but with it also an appeal for a holistic investigation of traditional healing in terms of ethical conduct and for ascertaining fir of all the safety, and if possible also the efficacy, of plants and remedies (Street *et al.,* 2008). Such investigations require a more inclusive approach of traditional healers and a more in-depth inquiry of the way plants are utilised and understood by traditional health practitioners and others (such as botanists, plant vendors and such).

According to Thornton (2009) there are six domains of healing in South Africa; divination, herbs, control of ancestral spirits, the cult of foreign *ndzawe* spirits, drumming and dancing, and training of new *sangomas*. In my study I focused on two of these categories, firstly, a the *sangoma* (Zulu) (*igrirha*- Xhosa) who is trained as a diviner and acts as diagnostician and secondly, the *inyanga* who is responsible for the treatment and healing-also known as a herbalist (Jolles and Jolles, 2000: 230; Richter, 2003; Ngubane, 1977; Wreford, 2007; Reihling, 2008; Thornton, 2009). One of the foremost reasons people choose to consult

traditional healing, other than for economics and accessibility, is that healers take a holistic approach to healing- treating both spiritual and physical well-being (Cheikhyoussef et al., 2011; Richter, 2003; Wreford, 2007; 2008; Thornton, 2009).

Munk (1998) for example, in her research in the Eastern Cape, explicates the mental-psychological role traditional healers play when diagnosing and treating HIV. She contends that healers have a counselling, comforting and supportive capability when dealing with traumatic events such as being diagnosed with HIV. For example, healers offer hope in a time of despair. They deal with diagnostic disclosure sensitively. They are able to relate more closely to their clients as they are often part of the same socio-cultural background and so on.

The knowledge of traditional healers about medicinal plants, as well as about the ways to utilise them, are very important for the conservation of biodiversity and also for community health care and, if possible, potential future drug development – although the latter is complex, expensive and very time consuming (Pei, 2001; Johnson *et al.*, 2007). Botanists, pharmacists, anthropologists, ecologists and practitioners from other related disciplines are trying to understand the practices concerning, e.g. plants used to treat HIV and related coinfections such as TB (Martin, 2007). Such multidisciplinary investigations about 'plant practices', e.g. knowledge of the use of plants, its collection, preparation, dosages, economic importance, political underpinnings of its promotion etc., I refer to later in this thesis as 'assemblages' (Latour, 1987; 1999; 2005).

Others have argued that the use of plants in treatment also has physical and ontological effects in healing. For example, plants as part of nature have strong connotations with *Somandla* (God: for herbalists) or the ancestors and hence are believed to bring the purity and goodness of nature, as well as *Somandla* to bear on disease (Cohen, 2009; Laplante, 2004). There is thus an understanding that medicinal plants have particular bodily effects in healing. These include, for example, senses, such as smell, the frequency of dosages, people's understanding thereof and the cultural dimension of illness and its treatment, all of which influence the physiological effects of plants on the human body (Helman, 2007; Low, 2007; Ingold, 2007). Merleau-Ponty (1964: 133) initially extended the idea of the senses through a phenomenological study of essences. With essences, Merleau-Ponty describes our embodied experiences in relation to the environment, or essences, to the ascription of meaning to such

essences, for example, the smell of *fynbos* in nature, the experience of wind, seasons, water and how these influence our sense of health and well-being.

As an analytical tool, Merleau-Ponty's (1964) work premises that all essences (smell, sight, touch and experiences of working with plants) in the environment are concentrated to attain and restore a basic and simple interaction with the environment. Since Merleau-Ponty's sensorial work, more recent investigations into the relationship between plants, people, the environment and the interactions between these (Law and Mol, 1995; 2008), have suggested that there is a developing dualism between nature and people (Green, 2008; Hall, 2011). In view of this, illness can be thought of as an estrangement from the environment (Green, 2008), and allopathic medicine has in a way reinforced this radical separation (Hall, 2011: 1).

Traditional healers, who use plants that are part of nature and, which in turn have various sensorial bodily effects in healing, can probably be seen as having a closer connection to the environment than allopathic medicine and its practitioners (Hall, 2011, Richter, 2003). In the case, for example of Zionist *Tshidi* churches for instance, Van Wolputte (2004) argues that, against a background of former political and social oppression in South Africa these churches achieved healing through employing symbols, for example the use of holy water, to alter the physiological body during healing. It is therefore also imperative to consider the spiritual aspect of traditional healing, including the role of the ancestors.

Jansen (1973), for example, in his work amongst the *Bomvana* (Xhosa), suggested that religion, medicine and magic are closely linked to healing practices. More recently, Wreford (2009) argued that many clients of traditional healers conceptualise illness as the result of the will of ancestors, or as the result of "pollution" or bewitchment. Scientific discourses, however, have often dismissed such descriptions as unfounded and irrational (Wreford, 2009). Attempts to understand and explain African healing practices and spirituality are not new, and make up the basis of much anthropological work in Africa. West (2007) for example argues that the practice of healing is inseparable from taking cognisance of that which is real and visible (plants, relations, the environment, etc.) and that which is not in healing, for example spiritualism (ancestral spirits, divine instruction, faith healing and such).

When scrutinising plants from this perspective, the intellectual apprehension is about meaning-making in the face of multiple realities. It is about understandings of plants, the environment and the invisible/ spiritual which (e.g. *Somandla* and or ancestors) have power and are linked to that which is real, for example, the process of connecting instructions by ancestors for healing, collecting specific plants, administering plants and *materia medica* in heterogeneous practices (Gibson, 2011). The following section extends the framework of the practices related to medicinal plants of by examining literature which suggests that plants are arguably 'social.'

The "social life" of plants

In Appadurai's (1986) 'The social life of things' and in a chapter by Kopytoff in the same book, the idea is presented that material 'things' have social lives. With 'thing' Appadurai asserts any material object that acquires meaning and value as it is produced and exchanged between human actors. Drawing on Appadurai and Kopytoff, Reynolds Whyte *et al.* argued in 'The anthropology of pharmaceuticals' (1996) and the Social life of medicines (2002) respectively that active components, lab equipment, and the broader category of medicines are 'things' that acquire meaning and value through their production and circulation by actors.

Hsu (2009: 112) argues that plants, their cultivation, circulation and use have importance beyond their chemical composition. Laplante (2009:12) also argued that the physiological effects of medicinal plants exceed their chemical structure. Reynolds Whyte *et al.*, (2002: 3) emphasise that medicines are the material 'things' in treatment. These 'things,' are also valued for the transformative powers that are accorded to them by social actors and perform various functions that are not restricted to the act of healing, for example, taking or giving care and bringing relief (Reynolds Whyte et al., 2002).

Healers and others who utilise local medicinal plants negotiate the material and immaterial 'thingness' of plants in ways akin to a process of production and circulation. This process includes collecting plants from the environment, preparation techniques, storage of plants and administering plants to clients. These processes are, in turn, relational and symbolise cultural form (Reynolds Whyte, et al. 2002: 5). For example, according to Hsu (2010), plants are collected, prepared and used in culturally located ways. Healers and others ascribe meaning

and value to the cultivation and circulation of plants between each other and their wider network of associations.

In different settings, such as the laboratory at SAHSMI, at the shrine of a healer, at the Herbarium at the University of the Western Cape, plants, as material 'things,' can perhaps be better described as 'actants' that undergo various transformations in the abovementioned settings (Latour, 1987; 1999; Law and Mol, 2008). I also draw on Appadurai (1986), Kopytoff, (1986) and Reynolds Whyte *et al.,* (1996; 2002) to demonstrate that plants, as they are utilised by the actors in my study (scientists, traditional healers, plant vendors, lay people, students and such), are material "things," but also actants that acquire meaning and value, and are thoroughly 'social.' One can therefore arguably speak about the sociality of plants. Medicinal plants can, thus, be said to have 'social lives.'

Medicinal plants act as material mediators for social relations. They are valued in relations for their ability to transform, but they also have meaning and acquire value as they move and are exchanged (Appadurai and Kopytoff, 1986). They are associated with nature in terms of smell, sound, touch and aesthetic attributes (Laplante, 2009; Cohen, 2009). Transformative powers are ascribed to 'things,' such as plants and remedies, based on the belief and experience that they will work. They are also powerful symbols and representations of hope, care, and of concern for people who are faced with illness (Munk, 1998). In other words, the past efficacy of a plant remedy brings a sense of continuity in terms of the ability to change people from a sick to a healthy state or from an undesirable to desirable state. For example, plant medicines bring the purity and goodness of nature, *Somandla* (God) and the ancestors to bear on illness and distress (Terashima, 2001: 43-47). They have connotations with the past in terms of narratives of illness episodes of long ago and the use of plants and remedies to treat it. Medicinal plants also bring about physiological changes.

Simultaneously, processes of collecting plants in nature, preparing remedies for treatment and sharing this knowledge amongst one another and passing it on to the next generation (Thornton, 2009), give value to the social networks around the tending, collecting and production of medicines and remedies from plants (Reynolds Whyte *et al.,* 2002).

As things, like plants and remedies, circulate they acquire a variety of regimes of value. In the South African context, good examples are for instance, *Artemisia afra* (Wilde Als), *Leonotis leonurus* (Wilde dagga), *Lessertia frutescents* (Kankerbossie) and a variety of others that are used and documented for their medicinal value (Thring and Weitz, 2005). They also have economic value. The regimes of value acquired, furthermore relate to, for example, respect for healers and the knowledgeable (about medicinal plants and their uses) elderly in the community. In Cohen's (2009) research about *Bossiesmedisyne,* he argues that the elderly (some healers also fall within this category) are perceived as experienced and capable with authoritative knowledge and skills to provide care to the family and others in the community. Their knowledge of plants and their general advice on ill health and healing form part, not only of the social circulation of plants, but also of advice and care.

This advice, knowledge of plant practices and skills are dynamic and adaptive (Rau, 1991). For example, Leslie (1980) argued that while some local medical treatments disappear over time, others are transformed, revitalised or reinvented. 'Traditional' knowledge is something that healers, the elderly and others maintain to meet their changing physical, economic and social conditions. This knowledge is passed on to trainees, such as family members through an intensive apprenticeship, observations and oral traditions (Ferreira, *et al.*, 1996; Thornton, 2009).

Plants, thus, are complex things that acquire meaning and value as they are cultivated, prepared, administered, exchanged, transformed and so on. Plants, therefore, exist in particular relationships with people (Gibson, 2011; Terashima, 2001). They are not mere material "things." Plants hold both symbolic, cultural and material meaning and value.

The following section extends the framework of people and plants. It shows that plants link people (scientists, traditional healers, plant vendors and such) to the environment, to other people, practices, past utilisations etc.

Towards an ethnoecological approach

In order to construct a non-dualistic and non- reductionist review of medicinal plants and the practice of traditional healing it is important to consider plants as something that, materially, intellectually, relationally and symbolically, can permeate the boundaries of many disciplines (cf. Latour, 1993). These disciplines attempt to engage with plants from different perspectives. Ethnobotany, for example, has developed into a specific discipline that looks at the people–plant relationship in a multidisciplinary manner such as ecology, botany, pharmacology and public health (Balick, 1996; Olajuyigbe and Afolayan, 2012). An ethnoecological approach encompasses all interactions between people and plants. Its multidisciplinary investigations of plants, such as ethnobiology, ethnobotany, ethnoentomology, ethopharmacology and such, seek to explore plants from different analytical approaches to understand how the same plants are utilised and understood differently. An ethnoecological approach describes all interactions between humans and their natural environment (Hal and Bawa, 1993; Giron *et al*., 1991; Homma, 1991; Reid, *et al.,* 1993; Wells and Brandon, 1992; Martin, 2007).

This study acknowledges the importance of the environment in plant research, but it departs from phenomenological approaches such as those of Ingold (2000; 2009) and Merlau-Ponty (1964) to incorporate multiple methods and to engage with medicinal plants to scrutinise how pharmacists, botanists and traditional health practitioners make sense of exactly the same plants in different ways. This is, in a sense, the argument of this thesis, and to do so, it is necessary to first show how healers and scientists come to such a point differently.

An interrogation of the environment may also overcome the antagonism between a naturalistic view of the environment as an impartial, peripheral locale to human social life and the culturalistic view that all environments are part of an ontological frame of thought (Ingold, 2009: 59). Instead, Ingold (2009), for example suggests that the environment is a material validation of the social life of those who have worked, lived and dwelt within it and also left something, for example plant cultivation, oral traditions and, teachings- all of which constitute knowledge. In a way, this view departs from an investigation of the relationship between people and plants. Ingold (2009) opposes the idea of a division between mind and nature.

On the other hand, Bateson (1972) observed that "things," such as plants as nature and practices such as scientific production were treated as separate disciplinary areas of study. For Bateson (1972), the "thing"/practice dualism epitomized a singular differentiation of conceptual assemblage such as method-matter, mind-nature, culture-nature and nature as Nature. Following Bateson (1979), rather than accepting the discourse of "science" (Nature) and the process of scientific production i.e. reductive materialism as it is contested for instance by Latour (1999), at SAHSMI I observed different 'possibilities' concerning plant research. Although most of the work is done in the laboratory, it would be incorrect to assume that what these scientists do, is necessarily aimed at ultimately developing plant products material or to search for fundamental compounds within plants.

In this way I explore possible ways of describing the relation between materia, plants, subjectivities and mind in general. The goal was not to follow a series of trials and systematic actions, but rather, by moving across disciplinary boundaries in this study, to observe and scrutinise the organised systems, both in the context of local, or so-called indigenous knowledge and scientific practice (Latour, 1999). Such an approach also lends itself to what Bateson (1979: 1) called "an ecology of mind", an endeavour to move beyond the duality that ensued in interpretations that were either "excessively materialistic" or "totally supernatural". Plants can be linked to people, processes, relations and more through the abovementioned practices (Latour, 1987; 1999).

To return to the environment, Ingold (2009) argues that it is not 'nature' in the sense that it holds weight or materiality. The sensorial experiences of the environment and plants are an imagined separation between the human perceiver and the external world (Ingold, 2009). For the purposes of this thesis the environment, as the physical space where plants grow - and where healers collect plants, transfer their knowledge and, receive their training - is also a symbol of remembrance and of continuity for them. It links past instances of disease, ontologies and even plants with present social and physical conditions. In this context, for healers, it may refer to a metaphorical place, which is perceived with bodies and minds and as having some physiological and ontological experiences of healing and in treatment. In this regard it is important to consider peoples experiences of their local environment, as well as the way in which these experiences nurture their decisions about treatment and ideas about efficacy. The body is the starting point for experiencing the environment, which is made up of material things like plants, soil, animals and so on (Hsu, 2010). There are many studies

that investigate the physiological effects of the environment (plants, senses, symbolic and such) on the body (De Feo, 2002; Cohen, 2009; Laplante, 2009). These, however, do not link the utilisation of specific plants to a disease such as HIV or tuberculosis.

In Mpoza, Eastern Cape, where a part of this study was done, the act of healing and of utilising plants from the environment - as well as of living in and forming part of the environment - is less about the phenomenology of the environment. In rural areas, such as Mpoza or Mount Frere, there are more traditional healers than medical practitioners (Olajuyigbe and Afolayan, 2012). Traditional healers are found within close proximity. They work with plants together, collect plants from the environment, perform rituals and live off the land (Rinne, 2001). The environment is reconsidered when there is a loss of valuable medicinal plants due to population pressure, overgrazing, agricultural expansion and deforestation (Abebe, 2001; Berhan and Dessie, 2002).

The context of studying an environment is important in ethnobotanical approaches to describe the different domains of the environment (landforms, soil, climate, vegetation types, land use, distribution of plants etc.) and, in turn, an attempt to understand how local people make sense of their surroundings (Martin, 2007). The phenomenological traditions describe the ontological foundation of the environment as a series of symbolic, metaphysical and sensorial depictions. Ethnobotanical research can bridge the analytical gap between science and local traditional knowledge of the environment, plants and such (cf. Latour, 1999). Dealing with local ecological knowledge therefore requires a certain analytical approach.

Emerging at the latter part of the twentieth century in response to criticisms of biomedicine was a kind of medical anthropology that makes use of a broad, holistic and interdisciplinary framework. It emphasised the health implications of, and interactions between, humans and their physical and biological environment which includes plants, environment and other actors (Fabrega, 1974: 46-59). Ethno-ecology is a one approach to doing medical anthropology – it emphasises the study of health and disease in environmental context, but it draws on various fields of study to theorise about people, plants and relations. It methodises interdisciplinary fields such as medical anthropology, pharmacology, botany and others to scientifically study the relationships between people and plants.

Conclusions

In this chapter, I illustrated that disease as a social and physiological occurrence, which occurs over time and across geographic space is directly related to human interactions with medicines such as plants and their identifications with the broader environment (Townsend and McElroy, 1985).The focus of this study is broad, but it ultimately revolves around plants, disease and the interface between biomedicine and traditional practices. I examine plants from a hybridized standpoint; from a material-relational framework, as material and immaterial 'things,' and also 'things' which acquire meaning and value in the different settings of my research.

The study attempts to fill an analytical gap in the framework of medical anthropology by moving away from the reductionist ways in which plant knowledge have been studied in the past. In an attempt to offer a balanced interrogation of plant practices, healing, knowledge, disease, treatments and so on, it acknowledges the relevance of several theoretical approaches, such as e.g. Phenomenology, ecology and the biomedical, but incorporates a kind of intersectional approach under the auspices of medical anthropology and ethnobotany. I explore this further in the chapters which follow.

Chapter 3: Methodology

Introduction

My interest in ethnobotany began during my honours year. Before participating in the MUTHI project, I had already begun to interact with traditional healers concerning medicinal plants. As mentioned in the introduction, I was very enthusiastic and perhaps somewhat naïve about traditional healers and medicinal plants. I became increasingly aware of the complexity of local ecological knowledge and the diversity of medicinal plants used. I also realised that healers in Strand, Western Cape ordered and fetched most of the plants, as well as the plant mixtures they used, from the Eastern Cape. One such area is Mount Frere, where I subsequently collected plants for the ethnobotanical part of my study.

Many of the ethnobotanical studies conducted in the Eastern Cape as well as in the Western Cape (cf Ferreira, *et al.,* 1996; Otang *et al.,* 2011; Olajuyigbe and Afolayan, 2012) are focused on single sites. Ethnobotanical studies involve different aspects of fieldwork; quantitative and qualitative data gathering, collection of plants, preparation, identification and storage of plants, and analysis of such information (Martin, 2007). Furthermore, ethnobotanical studies engage a number of different techniques and disciplines to encourage a "holistic" analysis of plants. It involves, for example, anthropologists who speak with local people, ecologists who assess the management of local resources, ethnopharmacologists who document local botanical knowledge and other disciplines which focus on applied research (Malhotra *et al.,* 1992; Phillips, 1993; Phillips and Gentry, 1993; Lewis and Lewsi, 1994; Martin, 2007).

My ethnobotanical study was somewhat different from most approaches because it was multi-sighted and made it necessary for me to adopt research techniques which were suited to my sites. As part of the MUTHI project I travelled to Kampala, Uganda for a training workshop in medical anthropology and ethnobotany. There was an interesting mix of anthropologists, pharmacists and biochemists learning about anthropology, plants and research methods, but also about intellectual property (IP), memorandums of understanding (MOU) and the techniques of conducting ethnobotanical fieldwork. This training helped me adapt an approach for my research in Strand, Western Cape.

In a way the medicinal plants linked me to other people (traditional healers, scientists, botanists and pharmacologists), places, disciplines and methods. While this was an interesting platform for multidisciplinary work, the research process was not always easy or straightforward. In this chapter I outline the methodology and experiences of my time in the field.

Exploring the fields, searching for participants and building rapport

My research was carried out across two provinces. The reason for this is that most of the isiXhosa-speaking traditional healers from Strand, Western Cape, with whom I worked, were trained in the Eastern Cape and prefer to obtain medicinal plants from that province. Although they live and practice their skills in Strand, the traditional healers with whom I worked contend that the soil in the Western Cape is "polluted" by "dirty" air, the saltiness of the ocean and the general effluence of a number of industries and a concentration of about half of the population of the Western Cape on the Cape Peninsula and surroundings (Abbu *et al.,* 2000; Binning and Baird, 2001; Okonko and Mothiba, 2005). This "pollution" (physical and spiritual), they argued; influence the power and efficacy of the local plants. Most isiXhosa-speaking traditional healers therefore order medicinal plant material or travel to the Eastern Cape from time-to-time to collect the plants themselves. The rural Eastern Cape is thought to be less "polluted" and the medicinal plants collected from its rural areas are believed to be more "powerful."

As part of the objectives of an ethnobotanical survey and also for the MUTHI project, the plants thus had to be collected from the Eastern Cape. I subsequently prepared the collected plants at SAHSMI and then took it to the Herbarium at the University of the Western Cape for scientific classification.[2] My focus was on healers in Strand and I focused on this site, where they actually practice. To actually collect plants I decided to follow the "route" of one of the healers to Mpoza, Mount Frère in the Eastern Cape. I thus traced the trail of the medicinal plants used in Strand to the Eastern Cape (S30.73500; E29.07556). Thereafter I returned to work with Strand healers in Broadlands and Asanda villages, Cape Metro Municipality, Western Cape.

[2] This process is described in more detail in the next chapter.

Going to the Eastern Cape

I was accompanied to Mpoza by two colleagues (one a scientist and the other an "in-betweener" who works as a scientist, but has an anthropological background) from SAHSMI who were part of the MUTHI project, as well as a visiting American social work scholar who was interested in visiting the Eastern Cape. We travelled from Cape Town to Mpoza by vehicle for 16 hours to cover close to 1600km. In the vehicle, we debated the polemics of plants and the context of healing in Cape Town in relation to what we were expecting to find in the Eastern Cape. Our different backgrounds made for interesting views about plants and healers. Our discussions concerned the ancestors, holistic healing and medicinal plants. The two scientists argued that plant medicines should be scientifically investigated for safety and for standardization, while I was more concerned with a balanced interpretation of traditional healing in general.

My previous experiences with healers made me very sensitive to the fact that holistic healing including methods such as talking, narratives, the influence of the environment etc. - all have remedial effects in healing. One of my participants from Strand once said to me, 'I like to make people smile. They come to me heavy hearted and burdened, but once we have spoken they leave smiling. That is what healing is all about; the medicine I give them is only a supplement' (field notes May 2012). Naturally the scientists argued that much of the use of plants by healers simply involve a placebo or meaning effect and has little scientific basis.

As we travelled, suffering from aching bodies, dried-up conversation, asking for directions and meandering along the N2 highway, we were all enchanted by the continuous change in landscape. The Western Cape's *fynbos* changed occasionally to dense forests, open grasslands to rocky mountainous regions and then back to *fynbos*. For me it became understandable why healers and herbalists from Cape Town prefer to gather their plants from the Eastern Cape. The region is fairly rural and the landscape seems unchanged and unchanging. I could imagine that, since the healers and herbalists had been trained in the Eastern Cape and had acquired their herbal knowledge there, the environment would have a particular salience of familiarity, past memories and experiences and beauty that would enhance also their own sense of well-being. Plants that come from the Eastern Cape would probably have great meaning in their imaginary and healing imagery (Abney, 2009: 18-19). Yet, even though medicinal plants are abundant in the Eastern Cape and local farmers regard

the condition of the soil as "good" for plant growth and for rearing livestock, the soil is degrading at a rapid pace (Lesoli, 2008). Overgrazing and soil erosion are the two main threats for medicinal plants.

Finally, we reached Mount Frere. We went to find an interpreter, Mr Dabula. He is an isiXhosa mother tongue speaker and established good relationships with local traditional healers through his dealings with them in the past. He is also experienced and has worked with other institutions and projects on health related topics. Mr Dabula also worked on the MUTHI project in the past and received training from SAHSMI for interpretation. He guided us around the town to visit the local municipality and police authority to inform them about our presence and the research we were intending to do. We obtained consent from the local authorities and we moved to Mpoza. Mpoza is less urbanised than the Helderberg sub-districts – where the Strand based healers I worked with live - in the Western Cape. Mpoza comprises nine sub-districts with a population of >1000 each. According to De Swardt et al. (2005) the average number of people per household is 7.4. Poverty and unemployment is also high in the greater Mount frère district and contributes to causal infections.

These villages can only be reached by means of rocky dirt roads and the journey from our Bed and Breakfast typically lasted an hour. Before we met with the local healers and herbalists, we visited the local Chief's wife to ask for her consent as well. She assumed the role of chief since her husband passed away. She is an elderly woman who took great interest in our research. She offered to arrange for a focus group discussions with the local healers at her home later in the week. Thereafter we visited the only clinic and health care centre in Mpoza. Once again we informed them of our presence in the village and our intentions for research. We also inquired about some of the statistics around common infectious diseases, mortality rates and infrastructure. The clinic is small and ill-equipped to deal with serious medical emergencies, but the staff seemed competent, were engaging and welcomed us into their village.

As a result of the limited time we had in Mount Frere we tried to visit as many herbalists and healers as possible. Mr Dabula knew of two traditional healers who lived in close proximity to one another. In addition we searched for more healers through a mixed snowball method (Heckathorn, 2011). This was because healers are often suspicious of researchers. Access to traditional healers from outsiders is not always easy, even with the help of a local liaison, and

so we utilised a mixed method snowball sample to put together an approach which was suited to the setting. In total we held semi-structured interviews with nine traditional healers (*amagrirha)* and three herbalists (*inyanga*). We spent three very intensive days visiting healers.

I assumed the role of main interviewer with the help of Mr Dabula's interpretation. The visits started habitually with introductions, asking for consent, signing consent forms and introducing our primary research tools; notepads, voice recorders and cameras. The healers were amused by our equipment and they expressed their gladness towards us for visiting and interviewing them. They were delighted that scientists had travelled all the way from Cape Town by car to interview them and that people from outside had taken an interest in their knowledge and their plants. They welcomed us with food, liquor and extensive walks through their gardens, the fields and veld to point out individual plants which they collected for easy access and for demonstrating the use of each.

Our time in the village ended with a focus group discussion held at the chief's house with the participants we had met during the week.[3] The chief courteously contacted local healers and offered her home as a venue for the discussion. Some people who had heard of our research team journeyed from neighbouring villages to see us. Through our interviews it became apparent to us that healers and herbalists from Mpoza have little knowledge of HIV or TB. They said that they had never been trained to deal with it, and requested more educational programmes around these diseases. They said this would give them more knowledge and, with the help of *Somandla* (God) and the ancestors, they will be able to treat and possibly cure the disease with plants and rituals. Healers and the general public took great interest in our project and as the news spread our focus group grew in numbers. In the end it involved six male herbalists and twelve healers.

We were flabbergasted one day when a school bus turned up with sixty children to attend our focus group. Teachers heard about us and that we were interested in HIV and decided to rally the children as part of their life sciences class. My colleagues and I decided that it would not be ethical to involve children in the project. We were uncomfortable with and not prepared for this happenstance. At the same time we did not want to turn the children and the teachers

[3] See appendix 1 pg. 91

away empty handed. So we agreed that the American professor would present a workshop on HIV for the children and their teachers.

After the final focus group discussion we bid our participants farewell. In the car on our journey back to Cape Town I reflected on my experiences in the Eastern Cape. As I watched the changing landscape[4] through the car window my perceptions of the environment and the people in the Eastern Cape who live in it and rely on it for their livelihood shifted too. The environment plays a key role in the way people live, eat, socialise and negotiate their health by using plants. The environment is the space where healers receive their calling and undergo their training. It gives them a sense of home and of connectedness. It also has, for healers, a sense of commemoration because they lived in the environment, practiced healing and farmed the way their ancestors had done before them.

The importance of the environment will be discussed further in the following chapters, nevertheless for me the significance of the environment in the Eastern Cape played an important role in thinking through the relationship between people and plants. I wondered whether this relationship was as strong in Cape Town, where the environment and even the plants were quite different. It is an urban setting where the closeness of the sea is apparent in the weather, the smell of the air and the presence of seagulls. The landscape is often sandy and much altered by roads, buildings, power lines and the pressure of its population on a small area. The fynbos is either prevalent, or it has been encroached on especially by Port Jacksons and other "alien" vegetation. In Strand the rural way of life seems far away and the environment altered.[5] With these and other observations in mind, I was eager to return to my local research setting in Strand.

[4] See appendix 1 pg. 92

[5] The environment in Strand, Cape Town differs vastly from rural Mpoza. Plants are collected or ordered from the Eastern Cape and have to be stored in plastic containers in their shrines. The plants are therefore typically used dried and this influences the power of the plant. In the Eastern Cape plants are collected from the veld and it can be used fresh. In addition, Strand is an urban area with a high population. The rate of unemployment is high and in some cases basic sanitation and other infrastructure is poor. It is surrounded by ocean. Herbalists and healers in my study often referred to the soil in Cape Town as sand with no nutritional value as opposed to the roseate rich soil which can be found in the Eastern Cape.

Figure 2: A few of the healers in front of the chief's house where we held the focus group in Mpoza.

Back in Strand, Cape Town

I commenced full time research in January 2012. The first few weeks were unproductive for research. Many of the healers, including my key participants, were continuously moving between the Eastern Cape and Cape Town to participate in traditional ceremonies, to visit family or bury those who had passed on. In this time I familiarised myself with the field sites. In Strand there are several informal settlements 16.7% (Helderberg district plan, 2011) and more formal areas demarcated by the central municipal administrative office as villages. According to the municipal office, each village houses approximately five thousand families. The municipal offices are located in Broadlands village and it marks the centre of all the surrounding villages. It is surrounded by taverns, a taxi rank and people selling freshly slaughtered livestock displayed for passers-by. This centre is also the place where I started my search for participating healers. I socialised informally with the municipal staff and others who passed by the municipality on their daily routines to get a scope of the way of life in the village. I often first stopped over at the municipal offices for directions before visiting a healer.

The key participant I started with lives in Broadlands village. She is part of a wide network of associations that spanned into Asanda village. She also worked as an administrator at the municipal offices and negotiated access to the facilities there to hold a focus group discussion. I therefore chose to focus on Broadlands and Asanda village because they were easily accessible. The healers live in close proximity to one another and I became well acquainted with the areas. The residents also familiarised themselves with me; as I drove or walked through the streets they frequently inquired about my visits. The rate of unemployment is high 25.5% (Helderberg district plan, 2012). Reported crime and violence in the area is also high (Gibson, forthcoming) and up to 5.4% of the population is affected by HIV and TB (Western Cape government health, 2012). As one walks through the villages both men and woman can be seen during the day socialising, drinking or playing dominoes by a fire. The municipal administrative offices are involved in seeking work for the unemployed. Mondays and Fridays are open days for the unemployed to submit their details for possible employment and they were often standing in long lines outside the municipal offices.

The municipal office board room became the setting for my first meeting and focus group discussion with participants. By this time most of the healers had returned from the Eastern Cape. I met with a participant and arranged a meeting with several healers who would participate in my study to discuss whether the ancestors would approve of my visiting and interviewing them. She returned from the meeting and after performing the necessary rituals announced that I was welcome to continue. I was instructed to bring along two chickens, a bottle of Smirnoff vodka, a bottle of Viceroy Brandy and a candle for each healer's ancestors per visit. At the focus group discussion I met the healers and they performed a welcoming ceremony in which they contacted the ancestors and asked for them to bless me as I journeyed to Strand on a daily basis and also that the interviews and my fieldwork with them would go well. The ceremony consisted of singing, dancing, the beating of drums and consuming liquor.

From this meeting I branched off from the group and started with individual interviews and observations. At this stage the study included a sample of 36 Traditional healers and 17 herbalists. In total five focus group discussions were held in Strand. Four of the focus groups took place at the Broadlands municipal offices and one at the home of a traditional healer. The authors utilised a local interpreter who received prior training in qualitative research and interview techniques.

The days started typically with my search for chickens, stopping at shops for the candles and liquor and then an hour long drive to Strand. I spent the rest of the day with a healer in his or her home, talking and asking questing, but equally spending time with them and their families as they continued with their daily routines. I helped them to clean their homes, drove them to nearby shops or meetings with other healers and most importantly, helped them to prepare remedies. I was a kind of trainee, a help, a gofer.

Healers have different specialities. Some are specialists with children, bone setters, mid-wives, some with infectious disease and others, especially in the case of the men, would take on other responsibilities like helping to rebuild other residents' houses which were damaged in the minor flooding which occurred in the villages due to the winter rains (Thornton, 2009). Many of the houses in the villages are shacks with no water and sanitation. I spent time helping healers rebuild others shacks. Healers and other residents have a strong sense of reciprocal relationships of care. They are always available to help and support others in illness or in fiscal need. Most of the clients who visit traditional healers do so between 12:00am and 06:00am. This made it difficult for me to sit in on a consultation or healing session, however I was able to do so at times. I negotiated to stay with a herbalist, but in the end he did not have place for me anymore. I then moved to a backpackers in the area.

In sum information was gathered from the predominantly isiXhosa speaking population in both study areas through semi-structured interviews, focus group discussions and by participating in the collection and preparation of plants from the environment and also through observations of treatment using medicinal plants. The sample (n=55) included nine male (*Izinyanga)* and forty six female (*amagrirha).* I employed methodological triangulation in an attempt to avoid bias and gain a deeper understanding of people, plants and their associated meanings. I also directly observed the behaviour and practices pertaining to healing by the healers. Participant observation or to borrow Signithia Fordhams' (1996) term, 'participant watching,' was a good method for gaining important subjective information about healers and infectious disease which could not otherwise be captured, for example as in an interview. In addition I spent several weeks with individual healers and their families participating in their daily routines and getting some sense of what life for a traditional healer entails. I took intensive notes of remedies and how healers had come to know about plants in their training.

Healers frequently expressed their thoughts and past experiences in the form of a narrative which often held much meaning for them. Throughout the research process I felt that more meaningful information was shared with me outside the formal setting of a face-to-face one-on-one interview session. Instead, the healers and I enjoyed our time together in their small gardens talking about plants, reflecting on life back home in the past (The Eastern Cape) or tending to their animals.[6] The herbalists also enjoyed having a young man with them to socialise and drink with. Although the rapport building process with healers was good, there were also moments in the field where my position had to be negotiated and where I experienced periods of discomfort. The following section discusses some of the difficulties I experienced in the field.

Reflexivity

Conducting research with traditional healers is a complex and not always easy process. I was sometimes caught between my research and my participation with scientists in the laboratory at SASHMI. Healers were sometimes demanding and tested me in various ways. They asked for additional liquor, money, cigarettes and even a lift to Cape Town and back (approximately a 150km journey). I was regularly placed in the position of being unable to meet their demands. In response they would not allow me to do anything or ask anything that they interpreted as 'being interviewed' on that particular day. Nonetheless, I helped and participated where I could and up to the point where they would allow.

The temperament of the healer also played a role in our relationship and the ways in which my days with them unfolded. While some healers were open and welcoming, others were demanding and difficult. They sometimes refused to talk with me about their knowledge or did not want to show me their plants. At one stage the entire research process became too onerous for me. I travelled to Strand each day, collected chickens, candles and liquor, as well as other materials for the healers, and did my research and the many things they expected of me. Then I decided to live in Strand for a few weeks.

I initially wanted to live with one or two of the healers for some time, but they seemed uncomfortable with the thought of me sharing their shacks where up to five people sleep on

[6] Most healers keep chickens, dogs, cats and sometimes goats and cattle. For healers, livestock is an indication of wealth, but also to substitute their basic income and for food.

the floor or on wooden structures. One healer was willing to accommodate me, but asked me an exorbitant amount in "rent", a contribution to the household for food and for electricity. I lived with him for two weeks, but my funding did not cater for this so I decided to stay in the nearby backpackers which was a short walk away. These walks were not only refreshing in the winter mornings, but it gave me time to think about the interviews and plan for the day. My interpreter sometimes met me along the way. We walked and planned our days; who to visit, where to get chickens and such.

Most of the discomfort I experienced during my fieldwork related to matters of etiquette and of learning to deal with the emotional constraints of conducting research among traditional healers. The healers sometimes prayed over me and committed me to their ancestors. It was a perpetual test of my own religion, but as an anthropologist I tried to eliminate ethnocentric thoughts and focused on the way of life and the practicing of traditional medicine and how these practices filter into everyday life.

I sometimes became frustrated with the long process of translation, of trying to ascertain that I understood the healers correctly. I picked up some basic isiXhosa, but most of all I became an excellent reader of body language. We also developed a kind of sign language to communicate about medicinal plants, ways how to use them and things I had to do. The following section explores these complexities further.

Language and culture

In addition to the problem of language itself and the meanings lost through translation, I struggled with interpreters. In the six months I spent in full time research I used ten different interpreters. While the ten interpreters I used were educated and experienced with other projects as interpreters, they also held part-time jobs or had families with young children to attend to. This made it difficult for them to commit to me and I was left sometimes scurrying after an interpreter.

I spent time to learn the language by watching shows like generations,[7] and bought an Isixhosa to English dictionary. I also tried to understand Isixhosa and I ponderously

[7] A local TV series with black South African actors. Most of the show is presented in Isixhosa with English subtitles.

formulated questions in Isixhosa. This was a slow, but also humorous process for the healers and me. I was nevertheless dependent on interpreters to enable me to really grasp the "deep Xhosa" most of the healers spoke.

At times I was deeply aware of my outsider status. I have a fair complexion, am "coloured" male and a Master student at the University of the Western Cape. Most of the healers are older Xhosa-speaking women. My language abilities were poor and I often realised that I am deeply unfamiliar with the roles and behaviour expected from a young man in the community.[8] This also brought about dynamics of power in my relations with healers. While they saw me as a young man and student researcher from a different racial group, they were authoritative in age and ancestral power. They also held high social status in the community and demanded respect from others in the community and from me.

I tried to come to an inter-subjective understanding (Schwandt, 2006) through the process of generating knowledge with healers. I constantly tried to be self-reflexive and to remain conscious of my own subjectivity, my own assumptions and biases and had to try carefully to gain an understanding which was in a sense negotiated between the healers and myself all the time. I could never take my own understanding for granted, but had to engage in a continuous process of 'translation,' of trying to make sense with others.

Furthermore, healers and I were also aware of the knowledge that was being transferred during my time with them. They were sometimes critical of me, especially when I inquired about plants and, collection permits and when I sat in on or participated in the mixing of remedies. They showed me some of their techniques, but sometimes requested that I leave the room when they added certain plants or refused to disclose all of the plants in a given remedy. The following section presents a cautionary note around intellectual property and indigenous plant knowledge.

[8] I was frequently corrected for behaving in a certain way, for example it was winter at the time of my fieldwork and I put my hands in my jacket pocket to avoid the cold and this was seen as a sign of disrespect to the ancestors. I was also told to sit up straight because this too was a sign of disrespect.

A note on indigenous knowledge and intellectual property

Debates around intellectual property and the polemics of bio-prospecting in South Africa are important for anthropological scrutiny, particularly from an inter-disciplinary perspective (Green, 2008; Rehling, 2008; Martin, 2004). Anthropologists working in the field of traditional medicine are faced with difficulties ranging in concerns about ethics, intellectual property and the awareness of traditional healers and others (Rastafarians, *Bossiesdokters*[9] and informal traders) of scientists and large scale pharmaceutical industries' interest in plant knowledge. Some healers have interacted with Universities and researchers in the past. They narrated cases of revealing their knowledge and their plants to researchers only to receive miniscule remuneration or nothing at all. Some were very sceptical of researchers and anyone who approaches and enquires about plants (Posey *et al*, 1999).

In a discussion with two traditional healers (mother and daughter) and their respective families, I probed whether they work with other healers or herbalists in a referral system and whether in fact they do so amongst each other. The elderly mother stated,

> We work with herbalists, because we need the plants from them, but we never work with other healers or anybody. You see we all have different ancestors. No two healers have the same ancestors who guide them and instruct them. So the plants we use will never be the same. You see you cannot trust anyone, even another healer, because they can steal my plants. You know what they call it? Bio…Bio something. Bio-prospecting! Yes, I heard of it at the university. (Field notes, June 2012)

I was increasingly made aware of my position in the field when it came to the plants. Yes, I was a friend and in some instances even regarded as a member of the family, but I was still a threat to healers' knowledge and livelihood. In the local context of knowledge and healers, I argue that traditional knowledge for healers is a dynamic enterprise of maintaining heritage, of providing for themselves, of caring for the community and of answering a calling (Rau, 1991; Leslie, 1980; Ashford, 2001). Furthermore, intellectual property and knowledge was at the forefront of my consciousness in the field. It influenced my position and made gaining certain information intricate. I had to be mindful of the kind of questions I asked and also reverential when healers retreated from revealing certain information. The following section

[9] Lit trans: Bush doctors.

will discuss further the ethical concerns I encountered in the field and how I went about dealing with them.

Ethical considerations

My research explored healer's knowledge of plants and healing as well as practices around healing. Therefore, in some instances, personal and confidential information, but also traditional knowledge was given to me, for example, physical conditions, intimate ancestral knowledge and synopsis of healing practices which I endeavoured to handle with the utmost level of sincerity, respect and confidentiality. This is especially important when I was dealing with issues of intellectual property (IP). The plants I received from healers as samples were destroyed after my fieldwork and furthermore the plants which healers use form part of their own knowledge and livelihood as it is stressed in the South African IKS policy. I therefore refrained from publishing local names of plants used by healers and also plants which had not appeared in literature yet. In this thesis I only refer to plants collected which are already to be found in medicine markets, *amayeza* stores, or the names of which are already published in the literature.

In order to protect healers and myself in this regard I sought prior informed consent from them. They were made fully aware of the study's aims and implications. A memorandum of understanding (MOU) as well as a material transfer agreement was drawn up with each traditional healer with whom I worked. I received oral and written prior informed consent from traditional healers which was translated by an interpreter. The healers with whom I worked in the Eastern Cape all had collection permits and belonged to a local traditional healers association. They were also made aware of their right to withhold any information which they felt were too intrusive or intellectually taxing and furthermore that they were allowed to withdraw from the research at any time. To avoid confusion and misunderstanding, healers were informed of this both in writing and verbally in Isixhosa with the help of an interpreter.

I conversed with the healers about anonymity which met with a mixed response. Some of the healers suggested that I reveal their names and even their addresses because this would inform people outside, especially universities and people in powe,r that there are healers trying to make a difference in their communities. They also felt that if people heard of them

there would be some kind of intervention for their communities, particularly in instances of HIV and TB education programmes, food schemes and help with their children's further education. Conversely, others felt that our conversations were private and should not be shared, also not with other healers. In the end the majority decided that it would be best to remain anonymous and that pseudonyms should be used.

During my fieldwork I eventually chose to spend intensive time with some key participants. This meant that I spent less time with other healers. This was not entirely intentional, but due to the time span of my research and the limitations of my funding. I decided to work more with those whom I felt to be particularly knowledgeable and helpful. This raised concerns among the other healer participants who were vexed and felt that I was favouring a select few. I then organised a focus group discussion where most of my participants were present and tried to explain that the research process is a complex one and that the key participants I chose to work with (mostly elder traditional healers and a few male herbalists) had been particularly helpful for me. They accepted this because the elderly healers were respected and they argued on my behalf as well.

Towards the end of my fieldwork in Asanda village I was once again placed in a difficult situation. Throughout my research I interviewed healers in their homes and we were surrounded by their immediate family, but also sometimes neighbours and others from the community who participated. On a few occasions, as I walked from my car to the entrance of one healer's house, I was met by her two daughters. They were often flirtatious and invited me to join them to socialise. As the visits progressed so too did their innuendos and teasing. Sometimes they grabbed my hand or hugged me as I entered or left. Most of the male interpreters found it amusing, but on one occasion a female interpreter reprimanded them. I began to worry that my rejection of their unsolicited flirting and sexual innuendo would influence my relationship with their mother.

During another visit came and I was once again confronted with inappropriate touching by and insinuations from the girls. I decided to confront them and told them that I was there in my professional capacity as a researcher. The following day I was astounded when their mother, my participant, confronted me and said that I was, "playing with my daughter! You come here, you are welcome in my house and you want to know about AIDS and now you try with my daughter?!" Embarrassed by the situation, but also livid at the girls, I was of a mind

to tell her what had really happened and that I was not in the least interested in her daughters. I refrained from doing so. I argued that the girls misunderstood me. Upon their subsequent invite, I declined again saying that I was exhausted and had a long journey home.

Conclusions

Such was my time in Strand; a constant negotiation and renegotiation of rapport building. A constant mulling over of my own ideas, beliefs and behaviour while, for a time, I tried to engage with the lives of my participants and to gain insight into, and an understanding of it (Henderson, 2004; 2005). Nonetheless, I tried to do the research as professionally, accurately and as truthfully representative of the healers as possible. I endeavoured in all situations to treat healers respectfully and professionally. I had obtained ethical clearance from the University of the Western Cape and I was informed by, and constantly aware of, the Anthropology Southern Africa's (ASA) code of ethics for anthropologists. I completed my field work in July 2012 after which time I started working through my transcripts. In the next chapter I theorise about my findings in Strand. The chapter will suggest a few possibilities of advantage for treating infectious disease from a traditional paradigm of healing and scrutinize the use of plant medicines to treat infectious disease. The preceding two chapters provide an overall clarification of the practice of traditional healing in Strand.

Chapter 4: Following the trial of plants through the laboratory

Introduction

This chapter is about the practices and processes surrounding plants which are, at first, undetectable or disorderly (Latour, 1987), but are made real and visible through practices. These practices and processes, which I, following Latour, 1987), refer to as assemblages[10], represent epistemologies, technology, ecology, botany, scientific and traditional knowledge and practices and relations which come together through disorganized progressions and are meaningful for those who interact with plants (Latour, 1999; Gibson, 2011; Gibson and Kilian, forthcoming). As an anthropologist working on the interface between the ways in which the actors in my study (researchers, scientists, traditional health practitioners and such) interact with plants as "actants" (Martin, 2007), required me to become an 'inside,' outside observer (Latour, 1987) in the different contexts of my research settings.

For this purpose, and as part of the training I received in the MUTHI project (Chapter 5), I intruded on the boundaries of several disciplines, such as pharmacy, botany, ecology and so on, to achieve a holistic 'gaze' of plant knowledge and practices related to plants (Martin, 2007). The training I received for ethnobotanical studies provided the insight necessary to make the link between the different locales of my research. As discussed in earlier chapters, I initially started with a single site, Strand, Western Cape, but as part of the objectives of the MUTHI project and the requirements of an ethnobotanical survey (Jain, 1989; Lipp, 1989; Posey and Overal, 1990; Cunningham and Mbenkum, 1993), I had to collect the plants most commonly used by traditional health practitioners for HIV and related opportunistic infections, such as tuberculosis.

In a way I was following the trail of the plants across three locales which inadvertently became my research sites. It also meant that I had to constantly negotiate my position as an anthropologist in the different settings. On the one hand, I was concerned with the practice of traditional healers; how they conceptualise disease, how their treatments are operationalized

[10] I draw on Latour (1987; 1999) and Law and Mol's (2008) idea of an assemblage as "bridging concepts" that connect various practices and processes to describe my observations in the laboratory at SAHSMI, with traditional healers and in the process of working with plants.

and how they interact with plants. On the other hand, I was an ethnographer in the laboratory at SAHSMI assisting in the process of understanding the way traditional healers conceptualise disease, how they use plants; collection, preparation techniques, dosages and such. I also wanted to comprehend how the scientists worked with and understood the plants they scrutinize in the laboratory.

As an anthropologist working on the interface, I observed the way scientists construct meaning from plants, more specifically compounds, which includes the use of complex machinery, technology, visual presentations and scientific language (Latour, 1987). My observation, as an anthropologist, as one who entered the field of ethnobotany, and also at times when it was needed, as an inside-outside observer (Latour, 1987), is that these assemblages come together in ways that often seem disordered. These assemblages, made up of human actors (such as scientists and traditional health practitioners) and actants (such as scientific tests, ethnobotanical survey equipment and medicinal plants), are constantly negotiated, are linked to the past and have a sense of continuity. In the process, people, through interactions with plants and nature, 'work' and create order through practices; for example identifying compounds in the laboratory at SAHSMI or collecting, preparing and administering plant remedies.

In the following sections I discuss my observations of the laboratory and of scientists at SAHSMI. I argue that scientists also have relationships with plants and make meaning around their working with plants as part of an assemblage (Latour, 1999). Plants acquire social, material and reciprocal meaning and value among those with whom I worked (Appadurai, 1986; Reynolds Whyte, *et al.*, 2002), yet these often remained "hidden" in their subsequent publications and scientific outputs.

An ethnographer in a laboratory

> 'The only way to understand the reality of science studies is to follow what science studies does best, that is, paying close attention to the details of scientific practice' (Latour, 1999: 24).

Latour's (1987; 1999) work in laboratories and with soil scientists in the Amazon served as inspiration for the way I negotiated and tried to make sense of work in the laboratory at SAHSMI and with scientists. An anthropology of herbal science module which I attended at

SAHSMI in 2011 as well as my participation in the MUTHI project (meetings as well as theoretical and practical presentations were held at SAHSMI) gave me an entry point into the scientific spaces. While the scientists in the institute (SAHSMI) were aware of my background as an anthropologist, my link with the MUTHI project and my previous visits to the laboratory with other student scientists enabled me to engage with them. What linked me, scientists and herbal science students, despite the apparent rigid boundaries between our respective disciplines, were medicinal plants.

I expected the scientists at SAHSMI to have a disconnected or non-existent relationship with the plants they worked with.[11]This was because my initial observations of work in the laboratory gave me the impression that for them, the focus was on compounds and not necessarily on plants as I know them 'outside' in the environment. Plants enter the laboratory in a wilted or even already dried form. I thought science students were thus 'estranged' from plants in nature and accordingly viewed plants quit differently from the way in which traditional healers understand them. Traditional healers arguably view the plants they work with as part of the environment, as having a connection to God or the ancestors, with a history and as filled with transformative healing power (Street *et al.*, 2008; Cohen, 2009). According to my understanding, scientists, and more specifically, science practices of searching for active compounds, often preclude the biographical and traditional context from which plants are taken (Cocks and Dold, 2000; Hsu, 2009).

Instead, and somewhat unexpectedly, I became aware that scientists at SAHSMI do have a relationship with plants. By working with scientists, attending seminars and colloquiums and engaging them inside and outside of the laboratory setting, I observed them being able to identify plants in and from the *veld*, they collect their own samples from the environment, they use pictures and sometimes fresh plant or plant specimens when they present their work. At SAHSMI plants appear in all kinds of ways: fresh, dried, ground or powdered form, and

[11] Science as a discipline and scientists have in the past been represented as something exclusive, separated from the rest of society (Latour, 1987: 13). Accordingly, I was aware of the positionality of science studies around plant practices and anticipated an analytical separation between scientists and medicinal plants (Latour, 1999; Street *et al.,* 2008) as I had come to know them in the environment and through practices of collection, preparation and treatment by traditional healers.

are used in liquid extracts, teas, ointments etc. Often fresh cuttings of plants are kept at the work desks of students and in the laboratory.

Many of the scientists with whom I worked reported that they grew up with medicinal plants in their gardens or had family who use and practice traditional medicine. Plants and scientists are often in close proximity. The scientists invariably know the local names of medicinal plants and can tell which *muti* markets or *amayeza* stores can be visited to obtain it. They are familiar with bioprospecting permits and going into the field to collect plants. If you ask for a plant, like *Inkomfe* (*Hypoxis hemerocallidea*) also known as African potato or *umkakase* (Prunus africana), at SAHSMI the chances are good that somebody will probably bring it to you shortly in some or other form. Yet, in their scientific practices and subsequent publications much of the above to all intents "disappear" as the medicinal plants are converted into "signs" through a process Latour (1999) refers to as "inscription."

Converting plants into science

> In the naturalist's collection things happen to the plants that have never occurred since the dawn of the world. The plants find themselves detached, separated, preserved, classified, and tagged. They are then reassembled, reunited, redistributed according to entirely new principles that depend on the researcher, on the discipline of botany, which has been standardized for century, and on the institution that shelters them, but they no longer grow as they did in the great forest (Latour, 1999:39)

For the purposes of the ethnobotanical study, I, like Latour's (1999) discussion above, also engaged in a process to separate and disconnect the medicinal plants from the environment, their everyday uses, the ways in which healers and even scientists engage with them outside the laboratory. I carefully preserved and labelled each specimen (see chapter 5). Then the plants were classified by a botanist for scientific purposes and "reassembled" at SAHSMI according to the principles of pharmacy and biochemistry: they are irradiated, ground up, put through water or alcohol based extraction processes, etcetera.

In subsequent scholarly papers and academic presentations the plants are turned into complicated figures that illustrate their molecular make-up and possible mechanisms for chemical reactions. To do so the scientists use, for instance, complex technology like high

resolution electron spray ionization mass spectroscopy or carbon nuclear magnetic resonance spectroscopy (ESI-MS). These are analytical methods that focus on macromolecular structural determination of plant proteins and plant metabolism. In the laboratory setting the plants and their extracts are material things, but also more. Scientists at SAHSMI seem open to other ideas and insights when working with plants, they seek it actively. For example a science student, Ms J reported

> …although I am looking for a plant with an active compound and do not find it. It does not mean that the plant does not work for people in Langa if they (referring to the scientists with whom she works) do not find anything. My surveys have shown that many people report to have lower blood pressure after taking the remedies they receive from healers or make themselves…So far my research shows that they use up to fifteen different plants to treat hypertension. (Field notes: July 2012)

SAHSMI scientists work with compounds or active ingredients of plants, nevertheless, their understanding of plants is also informed by growing up with family members who utilized medicinal plants to treat a variety of ailments (c.f Ferreira *et al.,* 1996) while some of the students use fresh medicinal plants to treat themselves as well. At the same time they understood and made sense of these plants through their scientific analysis of it. As I indicated above all the scientists with whom I worked had some interaction with traditional healers, visited *ameyeza* shops or muthi markets from time to time. Such interactions are encouraged by the Institute to gain a better understanding of the practice of traditional healers and the way they use plants, which parts, dosages and so on. They also spend much time and energy to ascertain scientifically whether plants are contaminated through pollution, have toxicity or have some effect on e.g. cells or rats etc., long before any search for an active compound in the laboratory occurs. I was accordingly interested in the process of 'scientific production' (Latour 1987), the complex procedures and technologies used.

My argument and concern lies with practices. Scientific production includes a web of plants, biochemists, student researchers, colloquia presentations, published articles, theses, experiments etcetera. Many connections – the scientists and students themselves, the visits to healers and markets, the experience of plant use in their families, the fresh plants cuttings on their desks, become imperceptible and to an extent "left out" through the scientific process, yet, as Latour (1987: 1999) argues the former is always there. It is only highlighted when

something in the end results such as an undesirable outcome resulting from a mistake in the assemblage that the 'scientific production' process (which includes human actors) becomes apparent (Latour, 1987; 1999). For example, at SAHSMI most students and staff meet weekly in a colloquium. I regularly attended these. A student or staff presentation typically starts with the topic of their project and then moves on to the methodology which includes an initial screening process, for example, the chemicals used such as Lutein, *zeaxanthin, canthaxanthin*, lycopene and β-carotene, an extraction of compounds from the plant samples, a high-performance liquid chromatography analysis (ESI-MS) as described earlier, the identification and quantification of samples, compounds and chemicals and then the results which are a statistical analysis presented in a table form, for example, a graph (**Figure 3**) or in a power point presentation (Latour, 1987:1999; Mashaba and Barros, 2011). Most of the presentations focus on the methodology and results, which, in the case of students, are closely scrutinized by the supervisor and other senior staff for possible mistakes.

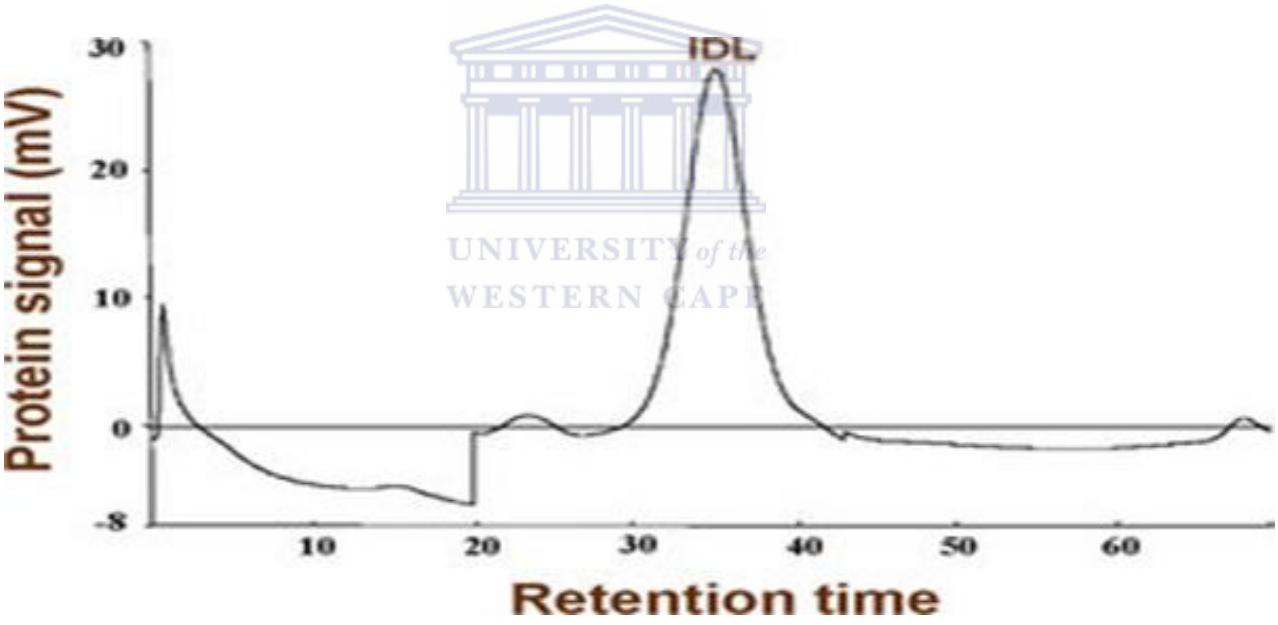

Figure 3: Example of graph indicating protein signal and retention time of common South African potato.

In the laboratory, students and staff are interested in, for example, the pharmacology of *H. hemerocallidea* (African potato) a popular medicinal plant used by a variety of traditional health practitioners, *bossiesdokters*, informal traders and such. Unlike the healers in Strand, who mostly use dried plant material, at SAHSMI students may utilise leaf or whole plant extracts to study e.g. its structure-activity, anti-viral, or immune boosting properties in vitro and in vivo, or in tissue cultures. At SAHSMI a student is interested in understanding how *H.*

hemerocallidea works by investigating the plants organic constituents. The student may also suggest in passing that a variety of compounds in the plant are probably acting together to produce an effect. Some compounds are extracted and isolated such as *beta-sitostero* or *cytochrome P450 enzymes,* which are found in *H. hemerocallidea*. Thus, according to the results of a study (Nyinawumuntu, 2009) which discusses the pharmacological effects of *H. hemerocallidea,*

> The results obtained in the present study support some of the folkloric claims about the therapeutic effects of "African potato". Experimental evidence obtained in the present laboratory animal study indicates that *Hypoxis hemerocallidea* corm aqueous extract (APE) possesses *uterolytic,* vas deferens and guinea-pig ileum smooth muscle relaxant, and bronchodilatory activities. These findings lend pharmacological support to the anecdotal, ethnomedical uses of 'African Potato' in some rural communities of South Africa. Generally, the exact mechanisms of action of the plant's extract on the smooth muscles studied were, however, not established. I would, therefore, recommend further investigations in this regard. Such an investigation should include determination of the effects observed in this study, in presence of other known agonists and antagonists under various experimental conditions both *in vivo* and *in vitro.*

As briefly intimated in the above quote from a paper, most traditional healers, herbalists, *Bossiesdokters,* and traders, use the African potato or *H. hemerocallidea* in a remedy as an immune booster, purgative agent and for general well-being. In the above publication the local or “traditional” use of the medicinal plant is thus “inserted” again into the assemblage, albeit briefly and generically. Mostly, the scientists are concerned with its “science” such as GIT spasmolytic, bronchospasmolytic, uterolytic and vasa deferentia relaxant effects of *H. hemerocallidea* corm aqueous extract (Nyinawumuntu, 2009). By examining the non-protein amino acids in *H. hemerocallidea,* the student researcher suggests that there are active compounds in a plant such as *H. hemerocallidea,* but the effectiveness of the plant probably lies in the interaction between these different compounds (Gibson and Kilian, forthcoming).

SAHSMI scientists are also interested in the flavonoids of plants which act as powerful antioxidants and immune boosters. Accordingly, a presentation at the colloquium will then, for example, include the results of High Performance Liquid Chromatography of *H. hemerocallidea* to establish the chemical profile of its flavonoid constituents. Such information is always presented in a visual form as seen below.

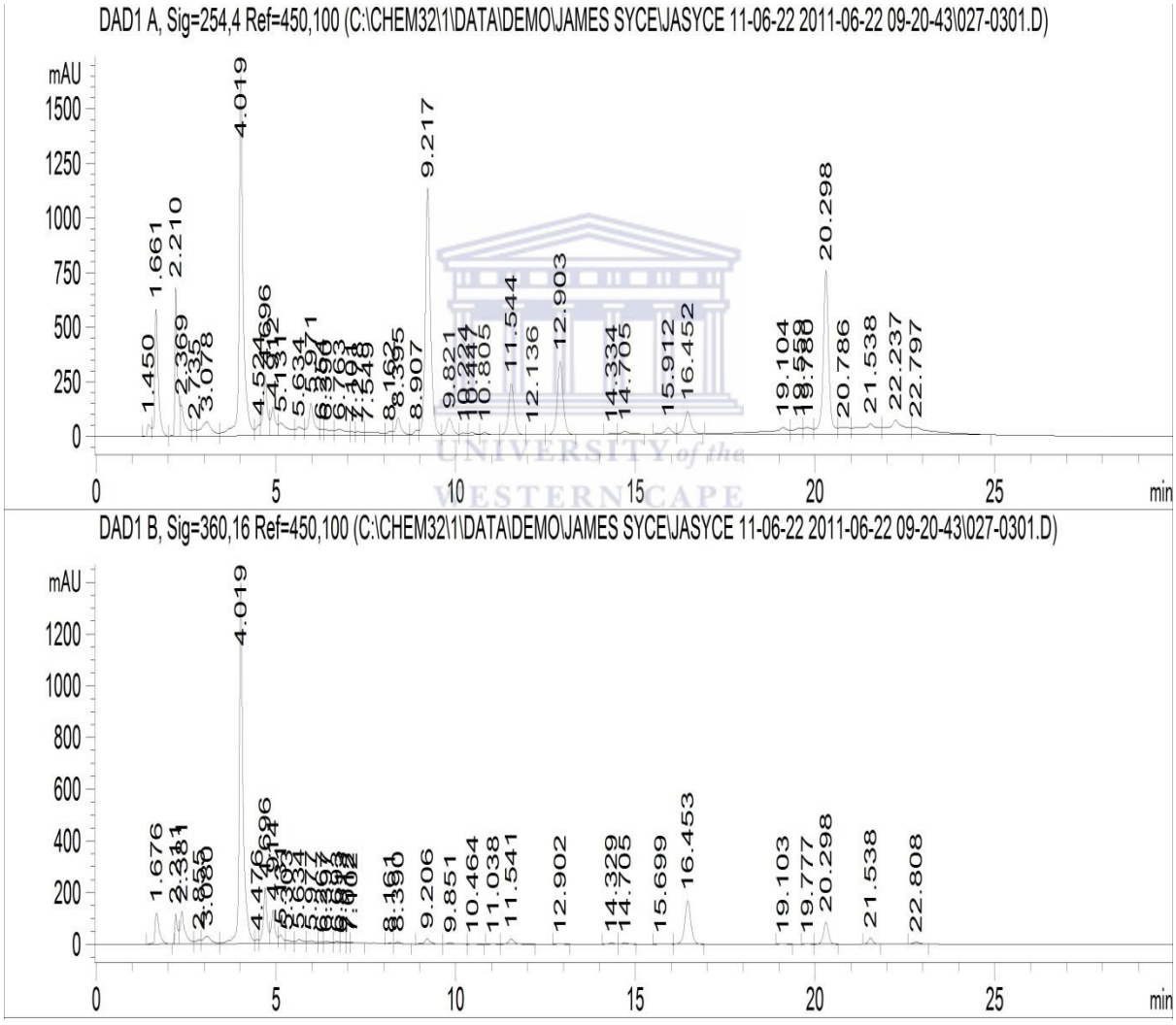

Figure 4. High Performance Liquid Chromatography (HPLC) chemical profile.

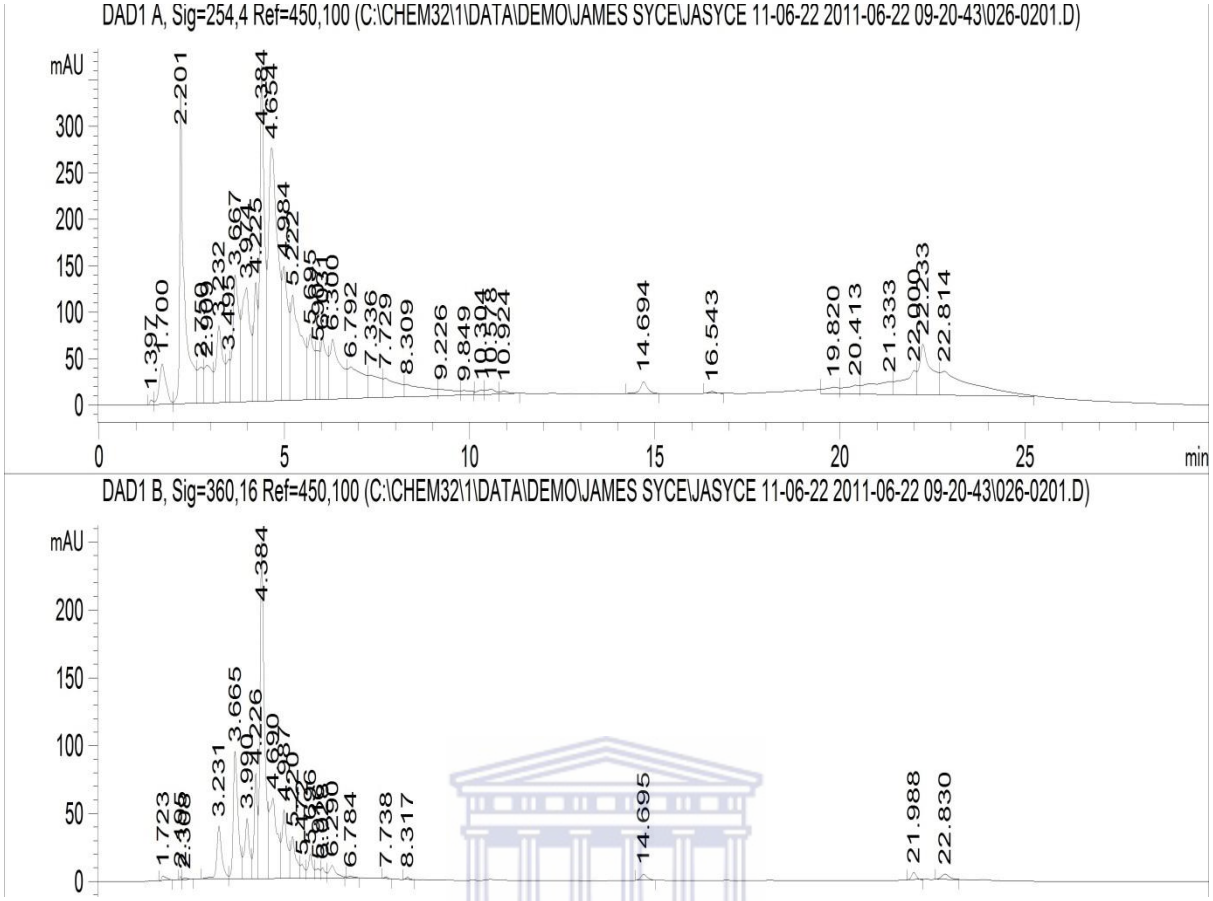

Figure 5. High Performance Liquid Chromatography (HPLC) chemical profile.

As illustrated above, it is then mentioned that none of the plant's chemical constituents have been conclusively linked to its therapeutic effect. It is rather suggested that the healing potential of *H. hemerocallidea* may result from a synergism between the compounds found in the plant.

Nonetheless, if or when, the laboratory results do not convince the supervisor, the assemblage is scrutinized (Latour, 1987). Then the actor, the student researcher, who had been to all intents "removed" in the process of scientific production such as, the screening of *H. hemerocallidea*, and in the presenting of results, become "visible" (Latour, 1987). He or she is then asked whether the poor, undesirable or incorrect results were the outcome of incorrect methods, the failure of some or other testing process or even the student's own mistakes. Nontheless, in the presentations and publications it seems as if the entire assemblage had no human influence on the results. Yet, when the results are undesirable, the student researcher

is also scrutinised: did he or she go about the process of partitioning a plant extraction in the initial process of screening incorrectly and was this what emerged in the results.

On one occasion Ms J, a SAHSMI student, spoke to me about the methodology of her research project. Her work was returned with a comment from her supervisor,

> There is no 'I' in scientific research. (Field notes, March 2012).

The researcher therefore becomes momentarily "invisible" in the textual representation of the messy practices of laboratory work. The focus is rather on inscription. For this purpose large and complex technologies or instruments like HPLC equipment is used to "transform a material substance into a figure or diagram" (Latour, 1987: 51).

What became apparent in the laboratory at SAHSMI were the assemblages and knowledges which become visible through practices (Latour, 1999). I spent much of my time working at SAHSMI. The staff at SAHSMI offered me a work desk with science students. It was also in close proximity to the laboratory.[12] I was regularly invited, or invited myself as an inquisitive anthropologist, to scientific colloquiums and other meetings. Through these interactions with scientists and by immersing myself in a "scientific culture" I followed the plants from the time it enters the facility at SAHSMI to the time a compound is identified or the plants are simply used for aesthetic or demonstrative purposes.

I found that plants are very close to this group of scientists. The institution is a multidisciplinary platform for plant research and for each, plants mean something different – sometimes also depending on the time and locale- for example, students sometimes make *fynbos* soap, hair conditioners and oil extracts in their spare time to use at home or sell as a form of remuneration. Plants for them also have meaning and value at the same time as it is a material entity which acts and is acted upon (Law and Mol, 2008).

In the Western Cape I worked with scientists and traditional healers- sometimes visiting both research sites on the same day as I attended meetings with scientists and with the traditional healers association of Strand. I sometimes felt suspended in the middle of an analytical "gap" between science and traditional medicines, which seemed far apart and, in practice, appeared

[12] See appendix 1 pg. 89

to have very little in common in terms of the way scientist and healers engage plants (Latour, 1999). I was in a sense, at times, the link between SAHSMI and Strand. Yet, the two sites and the many actors were linked in a common interest in plants. This attention on medicinal plants made the boundaries of both locales permeable for me.

Conclusions

The results of scientific research can be thought of as an assemblage that makes order for example (identifying an active compound) from the disorderly and sometimes invisible processes of scientific production (Latour, 1987; 1999). While at SAHSMI, I was in a sense able to gather this description, by employing an approach similar to that of Latour, that was, to immerse myself in the laboratory work. I followed the everyday and intimate processes of scientific work to unpack for myself an anthropological inquiry to studying "scientific culture" (Latour, 1987). As I put forward in the introduction to this chapter, my position in the different research settings required of me to become an immersed observer and my position and role as an apprentice in the different settings shifted again as I followed the plants to the Eastern Cape and then Strand.

Chapter 5: An ethnobotanist in the field

Introduction

As indicated before, healers and herbalists with whom I worked in Strand believe that plants from the Eastern Cape are more powerful and less "contaminated" than local plants. For example, Mr D, a herbalist, with whom I spent much time learning about plants and preparation techniques, argued that plants from the Eastern Cape are stronger because the environment in the Eastern Cape is "cleaner" and "less urbanised."

Mr D is knowledgeable about plant preparation techniques and in identifying various plants. He specialises in, what other herbalists in the area call *ukomeleza izityalo* (strong plants), that is, plants which were known to be especially powerful to treat specific diseases, for example, *Aloe ferox* and *Hypoxis hemerocallidea* (African potato) which are both used as part of a remedy to treat HIV and tuberculosis coinfection.

Mr D taught me about medicinal plants. We had planned to travel together to the Eastern Cape where he would show me the plants used to treat HIV and Tuberculosis. He, in essence, proposed that he would be my *emagobela* (plant teacher); a task which was usually reserved for men in the family, for example fathers, uncles and so on, to teach their young (male) children through an apprenticeship (Thornton, 2009). Inopportunely, Mr D was caught between his responsibilities at home with his family as well as with his large client base in Cape Town, and could not accompany me to the Eastern Cape, but referred me to a very knowledgeable colleague in the Eastern Cape, from where Mr D collects or orders many of the plants he uses, instead.

Subsequently, colleagues from SAHSMI and I visited the Eastern Cape to collect plant specimens. We followed rigid guidelines for collecting plants. We ascertained the geographical location, examined the condition of the soil, the local uses of the plants, economic importance of the plants and the distribution of the plants (Martin, 2007; Van Wyk et al., 2009). Because we had limited time in Mpoza, Mount Frère, we essentially did a rapid ethnobotanical appraisal (Hardon, *et al,* 2001; Martin, 2007). While the scope of my entire project spanned several months, the physical collection of the plants were done in a short period in the Eastern Cape.

Plants and data collection

> The sciences do not speak of the world, but rather, construct representations that seem always to push it away, but also to bring it closer... (Latour 1999:30)

Like the botanist referred to by Latour above, by doing an ethnobotanical survey, I could make a statement about a medicinal plant by obtaining "a sample that will serve as a silent witness" (Latour, 1999:34) for any subsequent claims made about it. To do so, I had to engage with "the world", and in time, "push it away" to make it possible to once again bring it "up close" , for example when I observed in the laboratory the most minute scientific scrutiny, such as assays and HPLC chemical profiles. As I intimated in chapters 3 and 4, I spoke to traditional healers about the medicinal plants they utilise to treat HIV and TB coinfection. The healers stressed that they have used these plants for a long time, dating back to the time of their ancestors. Then we had to actually find the plants in the environment (**figure 6**) and once we had found them it was important to make notes concerning its exact location, and to prepare a voucher specimen for ethnobotanical analysis.

Latour describes the process followed by a botanist in the Amazon, who collected plant samples:

> ... we recognise two features of reference: on the one hand an economy, an induction, a short cut ... in which she picks a blade of grass as the sole representative of a specimen that will later act as a guarantor when she is in doubt... or when... colleagues may doubt her claims... specimens will guarantee the text that results from her field expedition... she can be credited though the extraction of a representative .., neatly preserved and tagged, that can be transported, along with her notes to her collection at the university... We will be able to go from her written report to the names of the plants, from these names to the dried and classified specimens (1999: 34)

Similarly, Andre (a scientist) and I collected plants with special tools. For each plant collected I noted the longitude and latitude of the plants location, the topography and type of landscape. For example, I noted that Mpoza is a water scarce region. The area is composed of rocky grasslands. The soil is roseate (pinkish-red colour) and generally suffers from soil

erosion. It was also important, as part of the voucher specimen collection, to state the weather and season, because these variables influence the chemical composition of the plants.

Figure 6: Traditional healers taking us to the location where they collect their plants.

I was trying to understand the local use, knowledge, meaning, local names, classification and such of the plants which healers in Mpoza utilise. I collected the plants specimens to enable me to, first of all, prepare a voucher specimen for ethnobotanical analysis. Herbarium specimen collection concerns the compilation and preservation of plant parts to enable researchers to determine their scientific classification, name, species, genus and so on (Martin, 2007).

I mounted plants on special sheets of paper for this purpose and always attached an accompanying label.[13] The label was completed by referring to my field notes and, to be scientifically 'valid,' it needed to have a collection number (indicated next to the local and scientific names of the plants collected below). Additional information to be noted on the

[13] See appendix 1 pg. 90

label include the collectors name (i.e my own name), date of collection, the names of other collectors, the location (name, geographical co-ordinates, e.g. GPS), the local name of the location and the plants collected, and the University and project names (Martin, 2007).

This information assists with the scientific classification of the plant by a botanist. Other kinds of information that makes classification easier is also added, for example, the plant characteristics (size, colours, branching, smell, root system, description of the bark, or characteristics of the environment and such).[14] The plants were identified and scientifically classified at the university and not in the field (Latour, 1999). Yet, by including the GPS co-ordinates, one could arguably trace the plant back to its very roots "in the world". I describe the results in more detail below.

Plants collected

Seventeen plants belonging to seventeen different genera were collected in Mpoza, Eastern Cape. As indicated above, these plants were the ones most commonly used in Strand as well. The plants collected represent individual plants (which are categorized below), but are often used in a mixture to treat suspected HIV symptoms, TB coinfection, thrush and shingles. The three most commonly utilised medicinal plants for HIV are commonly called *uNwele* (*L. frutescens*, and *V. oligocephala*) and one called *Inkomfe* (H. hemerocallidea). In this regard it is important to note that traditional healers classify both *V. oligocephala* and L. frutescens as uNwele. Although the two species bear no relation, *V. oligocephala* does have small pointy leaves like *Lerssertia frutescens* also called *Sutherlandia* and produces a maroon flower which can resemble that of the latter plant. The term, uNwele, may refer to five possible plants which appear characteristically similar to *L. frutescens*, but belong to different families (Cocks and Dold, 1999). Thus traditional healers from Mpoza and Strand utilise two different plants, *V. oligocephala* and L. frutescens, both called uNwele to treat HIV symptoms. The three most commonly utilised medicinal plants for suspected Tuberculosis symptoms are *Imboziso* (Eng. Fennel: *Foeniculum Vulgare*), *Iqwili* (Eng. large tinsel flower: *Alepidea capensis*) and *Umtshekesane* (Eng. Natal guarri, Natal ebony or large-leaved guarri: *Euclea natalensis*).

[14] Illustrations of the voucher collection specimens can be found under the Appendix section.

The abovementioned plants are mixed in a remedy with several other plants listed later in this chapter. The plants which are combined to treat HIV and or TB, or a coinfection, and the mixtures can differ from one patient to the next. All of the plants are utilised to treat a variety of symptoms, but they are also utilised for HIV, TB, HIV-TB coinfection and for related opportunistic infections, especially for candidiasis and herpes zoster (Reichart, 2003). For HIV and TB, plants are mostly utilised orally as decoctions or infusions. For candidiasis and herpes zoster it is also used topically, as a 'wash' or as a kind of lotion or ointment.

I describe the medicinal uses of each plant by traditional healers. In some instances, the preparation techniques are described. In others healers refrained from disclosing this knowledge. Some healers, although willing to tell me about the plants they utilised, insisted that the ways in which they mix them must remain confidential, and I have strictly adhered to this request. The plants utilised for the treatment of HIV, TB and HIV-TB coinfection as well as for opportunistic infections such as candidiasis and herpes zoster, are, as indicated before, collected or ordered from the Eastern Cape. They are utilised in a mixture of up to ten different plants. The three most commonly utilised plant for HIV and TB are listed below.

Three most commonly used plants to treat HIV

1. *Inkomfe* (Eng. African patato: *Hypoxis hemerocallidea*) (TB/DD/5)

H. hemerocallidea is common along the coast of South Africa (Albrecht, 1995; Fagelman and Lowe, 2002; Mills et al., 2005). The plant is highly regarded among traditional healers and they refer to it as one of the "strongest" plants to treat HIV. The potato-like roots of *H. hemerocallidea* is dried and used in a remedy with other local medicinal herbs for the aforementioned purpose. Healers grate the dried root or mash it into a pulp and add it to a mixture which is said to have a fast action against HIV related symptoms. *H. hemerocallidea* also has diverse other medicinal uses. Healers reported that they utilise it to treat TB, as well as internal cancers, malaria, heart diseases and more.

H. hemerocallidea is frequently sold in informal street markets, through vendors and herbalists in dried form.

2. *uNwele* (Eng. Cancer bush: *Lessertia frutescens*) (TB/DD/6)

L. frutescens is regarded as a significant and medicinally-diverse plant. Traditional healers suggested that the plant boosts the *uhlelo lokuvikela umzimba* (immune system) of the HIV and or TB infected person's body and enables it to be more resistant or even to heal itself.

The dried leaves of *L. frutescens* are added to a remedy used to treat HIV individually as well as in the remedy for HIV-TB coinfection. The plant is also used to treat people with suspected cancer. Traditional healers described various uses of *L. frutescens* as blood-purifier, an all-purpose tonic, anti-depressant, for respiratory conditions associated with TB, asthma, bronchitis, influenza, wasting and bronchitis and for wasting. It is utilised singly or in mixtures to treat 'heartburn', diarrhoea, dysentery, and 'complaints of the liver' (Gericke, 2001; Johnson *et al.*, 2007).

3. *uNwele* (Eng. Vernonia: *Vernonia oligocephala*) (TB/DD/17)

Traditional healers reported that *uNwele* is another one of the "strongest" plants used for HIV. An infusion of the plants leaves is also utilised to treat abdominal pain and as a general tonic and immune booster (also as a cleansing agent to rid the body of "poison"). The plant is also applied to treat thrush and ulcers in the mouth associated with HIV. *V. oligocephala* is found throughout South Africa.

Three most commonly used plants to treat TB

4. *Imboziso* (Eng. Fennel: *Foeniculum vulgare*) (TB/DD/2)

The plant is widespread throughout Africa. Healers use it as a diuretic, anti-spasmodic and calmative herb. The plant is utilised internally and externally in decoctions (50g of *F. Vulgare* leaves to 500ml water) to treat genital thrush as well as thrush of the mouth in cases of HIV infection. The plant is also frequently used to treat TB. In the case of TB the plant is administered to the chest of a client as well as given as a warm brew with other herbs to treat coughs, chest pains and inflammation.

5. *Iqwili* (*Alepidea capensis*) (TB/DD/1)

A. capensis is also known as Campanulaceae and has large tinsel flowers. *A. capensis* is found throughout the coast of South Africa (Somova *et al.*, 2001; Afoyalan and Lewu, 2009). Healers and herbalists make a decoction of dried roots (a few dried roots boiled in 200ml of water) and use it as a "strong" treatment for abdominal and chest pain associated with HIV and especially for TB. The dry stems and roots are smoked, or powdered and taken as snuff. The smoke of *A. capensis* also assists in communication with the ancestors. Healers reported that inhaling the smoke from the roots of *A. capensis* results in hallucinogenic sensations and "bad" dreams. The plant is also sold in dried form in the Eastern Cape at informal markets for abdominal cramps (Somova et al., 2001; Afoyalan and Lewu, 2009).

6. *Umtshekesane* (Eng. Natal guarri, Natal ebony or large-leaved guarri: *Euclea natalensis*) (TB/DD/8)

The roots and bark are used as an ingredient in a variety of remedies. *E. natalensis* is used to treat chest complaints associated with TB, pain and fever, stomach 'complaints' and also worms. In the case of respiratory problems (such as TB) the roots are pulverized and boiled and used in mixtures.

Additional plants used in a mixture to treat HIV related symptoms

7. *Inguduza* (*Scilla natalensis*) (TB/DD/13)

S. natalensis is also known locally as Wild squill, Blue squill, Blue hyacinth, *Blouberglelie* (Blue mountain Lillie), and *Blouslangkop* (Blue snake head) (Jackson, 1990; Van Wyk *et al.*, 1997). The plant is considered highly toxic when raw and should be handled with extreme caution. The bulbs are used fresh or dried, warmed or even burnt and administered externally to treat shingles in clients with suspected or diagnosed HIV. In some instances, healers treat people on ARV's. The lobes of the bulbs of *S. natalensis* can also be used in a decoction (a few lobes added to 100ml of boiling water) to treat shingles. The plant is widely used and distributed throughout the east of southern Africa; the Eastern Cape, Lesotho, KwaZulu-Natal, Free State, Swaziland and into Mpumalanga.

8. *Intsenge* (*Cussonia spicata*) (TB/DD/14)

C. spicata is also known as wild cabbage tree (Germishuizen and Meyer, 2003). *C. spicata* is a small tree which is mostly grown in gardens for its aesthetic attributes. Healers and herbalists use the flowers, roots, fruit and stems to treat HIV symptoms. The plant is taken as a purgative and as a general tonic and immune booster. Healers use it to treat shingles by directly applying to the skin. The plant is also used medicinally to treat malaria, stomach complaints and venereal disease. Its flowers and fruit is ingested raw or in a decoction for this purpose.

9. *Rooiwater* (Eng. Red water: *Bulbine alooides*) (TB/DD/15)

B. alooides is common throughout South East Africa (Cocks and Dold, 2000). It is recognised by its pronounced yellow flowers and therefore it has high decorative value.

As a medicinal plant, the sap of *B. alooides* is utilised internally as a purgative and externally, applied directly to the skin, to treat shingles and other HIV related skin infections such as thrush.

10. *Umbabazane* (*Urtica dioica*) (TB/DD/3)

U. dioica is found throughout Africa and is common in the Eastern Cape (Cocks and Dold, 2000). Traditional healers use the plant to treat HIV and TB coinfection. The leaves and roots of the plant are boiled together with other plants which act as anti-inflammatories. *U. dioica* reported to act as a cleansing agent (it reportedly eradicates "poison" and other harmful substances in the body). As part of remedy to treat HIV and TB coinfection, healers use *U. dioica* as a calming agent and as a purgative to clean the "internal" body through excretion. *U. dioica* is reportedly used to treat people with attention difficulties and apathy.

11. *umkakase* (*Prunus africana*) (TB/DD/12)

P. Africana is also known locally as *Rooistinkhout* (Afr.), *Inyazangoma-elimnyama* (Zulu); *uMkakase* (Xhosa) meaning red stink wood. *P. Africana* is common in KwaZulu-Natal, Eastern Cape, Swaziland and Mpumalanga (Van Wyk et al. 1997). The bark of *P. Africana* is exploited for its medicinal value. In the Eastern Cape healers utilise its dried bark to treat

chest pains relating to TB. The bark is ground and used in a powered form in a mixture to treat HIV and TB coinfection. The tree is reportedly poisonous when raw and used in moderation.

12. *Umbhucu* (*Agathosma apiculata*) (TB/DD/7)

A. apiculata is known in the Western Cape as honey Buchu. *A. apiculata* is found along the South West and East coast of South Africa (Cocks and Dold, 2000). The plant is widely cultivated for its aesthetic attributes such as white flowers which occur in early summer. The plant is very fragrant and secretes pleasant smelling oil when crushed.

Healers reported that they use *A. apiculata* "externally" to treat shingles and other skin infections, such as sores around the mouth and genitals of a suspected HIV infected person. The leaves are crushed into a pulp and applied directly to the skin or it is mixed with Vaseline.

13. *Umsenge* (*Cussonia paniculata*) (TB/DD/4)

C. paniculata is described locally as mountain cabbage tree. *C. paniculata* is a medium sized tree which occurs through South and East Africa (Cocks and Dold, 2000). Healers reported that they use the leaves to combat indigestion and as a purgative. The leaves can be chewed straight from the tree or used in a decoction. The bark and leaves are utilised together on the skin to treat shingles or drunk as part of a remedy to treat HIV symptoms. It is also given as a general immune booster and tonic. Traditional healers also reported that they use the roots of the plant as a "strong" treatment for malaria.

14. *Uvevane* (*Lippia javanica*) (TB/DD/11)

L. javanica is widespread in South Africa, except in the Western Cape. Healers have to fetch or order it from the Eastern Cape or elsewhere. Shingles and other skin complaints are frequently treated with *L. javanica.* In such cases it is made as a strong tea, which is then cooled and then applied to the skin. It is sometimes mixed with Vaseline to make an ointment. The leaves, twigs and sometimes the roots are utilised in different ways to treat a variety of symptoms. Traditional healers and the general public drink *L. javanica* as a tea

(approximately 50g added to a cup of boiling water) and make a strong infusion for the treatment of coughs, colds and bronchial problems.

Healers reported that *L. javanica* is affective to treat pain, fever, malaria, influenza, measles, and for treatment for lung infections. In the later cases *L. javanica* is often mixed with other herbs such as *Artemisia afra* (Van Wyk et al., 1997). The leaves and stalks are burned and smoke from this mixture is reported to be very effective to treat asthma and coughs. The leaves and stalks are burned for this purpose and inhaled. It is reported that *L. javanica* is also used as an insect repellent and in cleansing ceremonies.

15. *Imboya* (*Chenopodium ambrosioides*) (TB/DD/9)

C. ambrosioides is distributed across the Eastern Cape and traditional healers report its usage in KwaZulu-Natal as well (Cocks and Dold, 1999). As a treatment for HIV, the plant is administered as part of a remedy to combat abdominal pains as a purgative. *C. ambrosioides* is valued for its oily leaves which are useful for abdominal complaints linked to HIV. The plant is used in moderation. This was because traditional healers reported that, in the past, some of their livestock died from consuming the plant.

Healers mash the leaves into a pulp to apply to the skin for shingles and other HIV related skin disorders (herpes simplex type 1 and type 2).

16. *Hlodlwana* (*Haemanthus coccineus L.)* (TB/DD/10)

H. coccineus grows in most of Southern Africa and it is valued as an aesthetic plant. Fresh leaves of H. coccineus are applied as a dressing to septic ulcers and sores associated with HIV. The bulb of H. coccineus is sliced and boiled with other herbs as a diuretic. This mixture is also considered a strong remedy for the treatment of chest complaints associated with TB. The entire plant is used to combat HIV and TB coinfection.

The red colour of the stem and flower of the plant are boiled with water (stems, flowers and fruits) and administered orally. A pulp of the same parts is also applied directly to the abdomen of a woman who is struggling to conceive. This later treatment almost always

includes prayers to the ancestors, as well as other rituals such as burning dried *mphepho* (Lourens *et al.*, 2008) over the abdomen of the woman.

17. Aloe ferox (ikhalana, ikhala, intelezi) (TB/DD/16)

Aloe is not one of the main plants used in the mixture for HIV, however traditional healers describe it as a useful plant with occasional applications in HIV and TB treatment (Kambizi *et al.*, 2004). The leaves of Aloe are cut into cubes or pieces and dried. They form black crystals which are consumed in cases of HIV and TB as a purgative and immune booster. The sap of Aloe is applied to skin for conditions associated with HIV such as shingles and thrush. Healers sometimes add Aloe to the remedy for HIV and TB coinfection as an immune booster.

Preparing an ethnobotanical reference collection

At SAHSMI in the laboratory, I started the process of preparing the voucher specimens for screening. The collected plants included samples from seventeen different genera which herbalists and traditional healers from Mpoza (and in Strand) had identified as the most commonly used plants to treat HIV, tuberculosis and related opportunistic infections. The next part of the process was to dry press the plants to preserve their shape and colour. The press, a flat wooden structure with numerous compartments inside of it, is used for plants to be layered and strapped down under pressure to preserve it for future reference (Martin, 2007). In between these layers are sheets of blotting paper which absorbs moisture from the plants. I changed this paper weekly to ensure that no discoloration of the plant material happened and to make certain that the plants were well preserved for screening and identification by a botanist.

There were also other methods of drying the plants, for example frost free refrigeration. This method is much quicker, but causes rapid discoloration of plant material and the likelihood of cross-contamination of species is more likely to occur as several different plant species can be kept in one refrigerator at a time. I thus elected not to dry the specimens in this way.

Once this process was complete, I researched other ethnobotanical surveys such as those done by Cocks and Dold (1999; 2000; 2002) in the Eastern Cape. This was to compare the local isiXhosa names of the plants given by the traditional healers and herbalists with the existing literature. The latter also gave extensive botanical descriptions, as well as the known medicinal uses, dosages and such of the medicinal plants. The scientific names and genus of the plants also appear in the literature. Nonetheless, for scientific purposes, the plants collected were then taken to the herbarium at the University of the Western Cape for further scrutiny and scientific classification (Latour, 1999; Gibson and Killian, 2011).

In addition to the collection of the plants and the process of classification I also interviewed healers and herbalists in Mpoza and Strand concerning the plants collection, medicinal uses, preparation, dosages and aetiologies. Through these interviews it became apparent that healers and herbalists, especially in Mpoza, link local medicinal plants, social relations, practices and also the transmission of the knowledge of plants to the environment. The environment, in a material sense, has meaning and value for healers and herbalists (Reynolds Whyte *et al.*, 2002; Appadurai, 1986; Kopytoff, 1986).

Healers, plants and environment

The way in which traditional healers conceptualise disease and operationalize their corresponding treatment is dealt with in the next chapter. What became obvious in Mpoza is that traditional healers there expressed a strong connection with their local environment. It is a place where plants are collected, where the ancestors instruct healers as to which plants to collect, where knowledge is transferred and transformed through teaching young children about plants and where social relations are mediated. The environment, as I perceived its smells, textures and general aesthetics, can here be understood through Ingold's (2009) notion of a 'dwelling perspective' where people live in and among the landscape and form part of it. This notion relates to the life history of some of the elderly traditional healers from the Eastern Cape with whom I worked.

For example, Mr Sivile, a 92 year old herbalist from Mpoza has been practicing herbalism for more than fifty years (See for example **Figure 7**). He was trained at an "African herbal college" and through an extensive apprenticeship with his father and uncles (Thornton, 2009). He shared with me the way he works with plants at home. In the garden surrounding his

house, he uses scrapped cars to dry herbs which he gathered. He also grows plants which he uses regularly, such as *uNwele* (*V. oligocephala*).

Figure 7

Mr Sivile often walks in the hills and mountainous area around his home to search for plants. He digs them up and brings them home in a bag where he starts the preparation process. According to him

> I used to spend eight maybe nine hours a day in the mountains looking for plants. I was strong. Now I have to send the children after they come from school into the mountains to gather the plants that I need. (Transcribed field notes: March 2012)

Mr Sivile stressed that plants remind him of his past, of what his family members taught him and of what plants mean to him. He insisted that we hike up a nearby mountain the following day in search of *uNwele* (*V. oligocephala*) and *inkomfe* (*H. hemerocallidea*). Despite his age, Mr Sivile and other elderly traditional healers and herbalists with whom I worked appeared surprisingly fit and healthy. They attribute their condition to living the way they do. They refrain from eating *khawulezayo ukudla* (Junk/fast/rubbish foods), they regularly walked in

the landscape, worked with plants and, for the most part, refrain from using too much allopathic medicine.

For Mr Sivile, like other healers and herbalists, the environment, in its materiality, symbolises remembrance and continuity. It links past instances of disease, ontologies and even plants with present social and physical conditions (Ingold, 2000). It enfolds knowledge around people who have played roles in its formation. It brings a nuance of continuity, but also aesthetics and promotes a sense of well-being, because it is associated with *Somandla* (God) (for herbalists), the ancestors (for healers), and of events that occurred in the past.

In my short time in Mpoza, I came to understand the landscape as a way to describe the local people's interaction with the environment (Martin, 2007). By doing so, I was able to interrogate the interface between people and plants. This interaction, which Hall (2007: 3) calls "plantscapes," also has an important analytical usefulness for the ethnobotanist. It allows me to examine the specialised skills and practices of those who live in the environment, who attach meaning to the collection, preparation and distribution of plants.

Traditional healers in Mpoza live in close proximity to other traditional healers and work together when treating clients. Healers also have extensive reciprocal relationships with each other and employ it when treating the sick (Dickonson, 2008). For example, Mrs B and Mrs V live next to each other. Mrs B specialises in tuberculosis treatment and Mrs V in children's ailments such as *imimoya* (winds), *isisu ubuhlungu* (stomach ailments) and *khohlela* (general coughs and colds) (cf. Peltzer, 1998; 2001; Peltzer *et al.,* 2006). Both Mrs B and V are single parents and help one another with clients. They also consult other traditional healers and herbalists, such as Mr Sivile, for advice. Through these interactions healers ascribe meaning and value to the plants with which they work (Appadurai, 1986, Koppytoff, 1986, Reynolds Whyte et al., 2002). For Mrs B and V, going into the environment to collect plants is about sharing their knowledge of plants, about helping one another collect plants and it is also about socialising and teaching their children who are always with them, about plants as part the transmission of knowledge (Thornton, 2009).

Conclusions

Ethnobotany is not just about list-making and plant catergorations, but it also addresses theoretical questions in applied research, such as the relationship between people and plants, how local people conceptualise disease and how their practice is adapted to their environment (Martin, 2007). This later component of ethnobotanical research lead me to the qualitative part of my ethnobotanical survey, that was, to collect information around disease aetiologies, treatments and practices from traditional healers and herbalists in Strand and Mpoza. I also took pictures of the plants my colleagues and I collected in Mpoza to cross-reference with traditional healers from Strand. The healers confirmed that they used the plants we collected in remedies to treat HIV and Tuberculosis.

Chapter 6: Negotiating *isifo* (disease) and understanding the utilisation of isitshalo (plants)

Introduction

The last component of the ethnobotanical project included intensive qualitative data collection. In Mpoza, Mount Frère, I held two focus groups and interviewed several other traditional healers and herbalists concerning the plants utilised for HIV-TB treatment, preparation techniques, dosages and such. I also spent more time with healers in Strand. Most of the plants utilised in Strand are dried. These plants are stored in plastic containers and glass bottles in the healer's shrines for their convenience when treating a client. I observed and participated in the daily activities of the healers such as boiling a mixture of plants, categorizing plants in their shrines, tending to the plants which they grow (discussed below) and the general events of negotiating a household. I did this to gain a sense of what life for a traditional healer entails.

The abovementioned participatory observation was also necessary to gain a deeper insight into the interface between healers and plants (Martin, 2007; Choudhary *et al.*, 2008). As I stressed earlier, there are two basic 'gaps' in ethnobotanical surveys and plant databases in South Africa (for example the South African National Biodiversity Institute's (SANBI) electronic database or documentation of plant names such as Van Wyk, 1997; Cocks and Dold, 1999). Firstly, such databases are often very generalised and also lack the meanings and context around the use of traditional medicinal plants; how they are used as elements in a more comprehensive healing approach, along with prayers, rituals and such. Secondly, treatments are often made up of highly complex plant based mixtures rather than the use of one specific plant utilised for a particular disease (Drews *et al.*, 2006).

I was accordingly trying to address these shortcomings through the utilisation of multiple research techniques in Strand, and also by addressing the underlying disease aetiologies of traditional healers concerning the use of medicinal plants. What became obvious in Mpoza and Strand was the conceptualisation of HIV symptoms by traditional healers and how this differs in herbal treatment in the case of tuberculosis coinfection or other opportunistic infections such as (shingles and thrush).

Traditional healers and herbalists suspect that a person has HIV when he or she has on-going symptoms such as diarrhoea, weight loss, persistent thrush and/or shingles and persistent coughing. When healers treat patients they usually administer medicinal plant mixtures orally and over a period of time. Plants which are thought to boost the immune system are frequently added to mixtures for treatment (cf. Olajuyigbe and Afolayan, 2012).

Strand has a large Xhosa-speaking population, especially in the surrounding townships and informal settlements and I focused on them. Most of the people in Strand are state patients and get medicine for a nominal fee. People may, however, be dissuaded by long waiting-times for service in clinics. People in Strand often use local medicinal plants as a form of healthcare. Studies in the Cape Town area show that many people use medicinal plants (Ferreira *et al.*, 1996; Mintsa, 2009; Davids, 2010). This is equally the case in Strand. People furthermore consult traditional healers who are reviewed as knowledgeable about plants, its collection and preparation, but also for their connection with the ancestors and their ability to offer a supportive and holistic form of treatment.

Plants for treatment

When a person visits a traditional healer with symptoms of HIV or TB, the healer, so they reported, has already been informed by the ancestors that such a person will be coming. The ancestors will enlighten the healer about the plants that is needed to treat the sick person, but can also withhold knowledge of the herbs needed to treat the diseases. In such a case the healer has to do additional rituals. Once a healer in Mpoza knows which plants to utilise (s)he goes into the veld to collect specific plants. In Strand a healer or herbalist will utilise the plants (s)he already has (fresh or dried) or will order specific plants from the Eastern Cape.

As I indicated earlier, in Strand, healers made reference to the condition of the soil in Cape Town and the Eastern Cape as being different. According to healers, the soil in the Eastern Cape is unadulterated, being, in composition, good for plant growth. In Cape Town the soil is "polluted" with people's waste, the saltiness of the sea and the general "pollution" of an industrial city (Abbu *et al.*, 2000; Binning and Baird, 2001; Okonko and Mothiba, 2005). This "pollution" influences the power and efficacy of the plants utilised for treatment. Healers therefore isolate the plants which they collect from the Eastern Cape from the

"pollution" of Cape Town by keeping them in buckets of soil which they collect from the Eastern Cape (Figure 8).

Figure 8 Medicinal plants from the Eastern Cape grown in containers with soil from the collected from the Eastern Cape (author photo)

There are certain 'standard' plants which are utilised to treat HIV and TB, as well as those deemed especially "powerful" to treat each disease individually. Cancer bush (*L. frutescens*), Wild garlic (*T. violacea*) and *Aloe ferox* (Van Wyk *et al.,* 1997) are common examples of these plants. Healers collect the plants which the ancestors guide them to. These plants may be specific for a disease such as HIV or for a particular person. No two persons are treated in the same way.

The plants are dug up with handmade tools such as sharpened scrap iron or wooden digging tools. The ground where the plant was dug up is covered to preserve whatever is left behind. For example, when the roots are not removed, they are covered as a sign of respect to the ancestors and to the land. It is also reportedly a way of ensuring the continued growth of the plant for future use. In their shrines, healers set about grinding or grating the plants, wholly or

in part, depending on the intended application, for example as a tea, syrup, a paste applied to the skin or a powder.

The plants, in which-ever form they are used, need to be 'activated' by the transformative power of the ancestors. Healers in the Eastern Cape and Strand often referred to plants as 'things' put in nature by *Somandla* (God) or the ancestors for the purpose of healing (cf. Cohen, 2009). Healers (herbalists) pray to *Somandla* to instruct them as to which plants to collect, when and where to collect them and also to activate healing power into the plants.

Somandla or the ancestors play an important part in the treatment process (Thornton, 2009). *Somandla*, the creator of the earth (environment and plants), is the highest being. He instructs the ancestors, who are placed lower than him, to communicate and instruct traditional healers. Traditional healers have a higher social status than the lay public. They are perceived as closer to the ancestors, because of their ability to communicate directly with them (Cheikhyoussef *et al,* 2011; Wreford, 2006, 2007). *Somandla* instruct the ancestors to grant healers the knowledge of the herbs (place of collection, specific plant to collect, plant to mix together and dosages) to treat HIV and TB more effectively (Thornton, 2009). Herbalists in my study group in Strand argued that plants to treat HIV are readily available in the Western Cape as well, but they cannot collect these because of restrictions on its harvesting in this province. In the Western Cape many plants are protected and harvesting without a permit can lead to prosecution. Such regulations are more strictly enforced than in the Eastern Cape.

Observation of disease aetiologies

There is currently a great deal of interest in and attention being given to the practice of traditional healing in South Africa, specifically the role of traditional healers and the utilisation of local medicinal plants to combat HIV (Dlamini, 1999; Cocks and Moller, 2002; Mills *et al.,* 2005; Reihling, 2008; Thornton, 2009; Otang *et al.,* 2012). These studies investigate the practice of traditional healing, including the use and preparation of herbal medicine, to promote mutual relations between traditional healing and biomedicine in HIV interventions (Wreford, 2005a, 2005b, 2007a, 2007b, 2008).

The conceptualisation of disease is important for healers and informs their treatment of disease. Green (1998:128) states

> ICT comprises at least three types of etiologic belief: (1) ‗naturalistic infection' (or indigenous germ theory); (2) ‗mystical contagion' or pollution; (3) environmental dangers (the belief that elements in the environment including the air one breathes can cause or spread illness).'

In the following section I discuss my observations concerning disease aetiologies of healers. These inform their conceptualisations of diseases, such as HIV and TB, and their corresponding treatments. I observed four conceptualisations in this regard.

Disease as a natural occurrence

This perspective argues that the principle causes of disease are "germs" in the form of bacteria, viruses, and parasites. Anthropological investigations concerning African contagion theories suggest that people understand disease, such as HIV and TB, as "poison" which is almost always related to social and economic contexts (Geissler, 1998; Green, 1998; Abney, 2011). Healers understand TB as *ityhefu* (poison) which enters through the mouth, nose or skin either as a result of "poisonous" food consumed or through contact with an infected person, for example, breathing in the air where a person infected with TB had coughed or spat out contaminated phlegm. Healers reported that this "poison" is picked up by another and then settles in the chest region. It results in heavy coughing, night sweats and chest pain. The person also suffers from heavy breathing and loss of appetite. This "poison" may spread to other parts of the body and cause adverse effects if untreated, for example, inflammation in the limbs, sores on the body and ultimately death.

HIV infection, on the other hand, is reported to occur through contamination with "dirty" or "poisonous" blood (contact with a needle, knife, broken bottle and such) (Green, 1998). A person may also become HIV positive through sexual intercourse with an infected person, as a result of having multiple sexual partners or, in special cases, by eating the food prepared by an infected person, drinking from the same bottle or bathing in the same water. HIV is perceived as something which travels in the blood throughout the body. It manifests itself in no particular region, but its symptoms are made visible on the exterior body such as sores in

and around the mouth, 'belt' (shingles) around the waist region and especially the genital regions of both males and females (Peltzer, 2003; Wreford, 2008).

As a consequence of pollution, social and economic conditions

"Pollution" and the general way of life in Cape Town, such as eating processed food, consuming excessive amounts of alcohol and the unhealthy environment is also viewed as negative influences on people's health and as contributing especially to tuberculosis. The idea of "pollution" also extends to the soil and plants.

Healers furthermore reported that the social and economic conditions in Broadlands and Asanda village are poor and contribute to the high rates of HIV-TB infection in the area. The houses, both formal and informal, are closely crammed together, water and sanitation is poor and rubbish is left outside. The rate of unemployment is high. Healers view these conditions as 'breeding grounds' for infectious diseases such as TB (Abney, 2011).

In the case of HIV, healers make a link to the general laxity in sexual relations. According to Mr D,

> They go to the shebeens (informal drinking places) on Friday and Saturday nights. You know the one with the green roof around the corner where you came in. Those places are bad because they drink and shoot pool and that is where they pick up the young girls. The children, they bunk school to go there. I keep my daughters away from there. They can rather be in the house.

Healers reported that young people are frustrated with their inability to further their education because of money shortages. They therefore seek other means of gratification, for example, in shebeens, through sexual intercourse and the use of drugs (Cf. Mfecane, 2011a; 2011b). Young woman and girls are seen as especially vulnerable. According to Mr D, they are reportedly easily seduced by businessmen who "come into the village with their fancy big cars and pick up the girls". Such men contribute further to the spread of infectious diseases (Peltzer, 1998; 2001; Peltzer *et al.*, 2006).

Healers suggested that this brought about a different way of life to that which their ancestors lived and envisaged for them. In the past their ancestors lived as farmers and they lived off the land. According to Mr S

> …they were healthy and fit. My parents were old when they died. There was no fatty food and cars to drive. We walked. These people came and brought the HIV. When my father taught me the herbs, I did not know about HIV. It came when the men left their wives and daughters to work in far places. They leave on trucks on that road and send money home. After a while, what happens? The money stops coming. They found other women. So what do we do here? The girls start selling themselves along that road. The mothers find other men. You have broken families.

In Mpoza healers furthermore linked the coming of HIV to modernization and urbanisation. An example they used is the N2 highway,[15] fast food restaurants, supermarkets, manufacturing industries and smaller traders who set up their business along the highway. They thus draw "foreigners", truckers and passers-through who bring their infections from the outside to the rural areas.

Figure 9 (Author photo: a snapshot of the flourishing industries along the N2 highway near Mpoza)

[15] In a study conducted by Tembo in 2012 among the Tumbuka people of Chief Magodi of the Lundazi District in the Eastern Province of rural Zambia, he found that among 118 participants (including a majority number of traditional healers) also regarded HIV as a 'modern disease.'

As chastisement from Somandla or the ancestors

Healers in Mpoza village, as well as in accounts from Strand, argued that Somandla or the ancestors would not punish an individual with HIV or TB. A person may nevertheless be deceived by treacherous others who wish to do them harm by eating HIV or TB 'infected' food or by using an infected needle, however healers are able to combat these cases with plant remedies and prayers to and rituals for the ancestors (Green, 1998; Ashford, 2001). The ancestors, however, may become displeased with the way of life described above. A young herbalist, Mr S, advocated that it is possible to reconcile with the ancestors by praying to Somandla. In most cases, traditional healers are women and herbalists are men. The men in the study also belong to the Zion church and they profess to be Christian. Mr S argued that if healers congregated and prayed to Somandla, they could take the symbolism of the father, son and holy spirit and pray it in between the H, the I and the V of the disease. Green (1998; 1999) argues that in contrast to popular belief, indigenous theories of contagious disease, generally do not link causation to supernatural or personalistic causes but stems instead from naturalistic or impersonal causes (1998, 1999). The aforementioned case probably stems from a lack of medical knowledge, but also a relationship with and a reliance on Somandla or the ancestors' role in treating infectious disease.

As a lack of medical knowledge

A study in KwaZulu-Natal done by the Human Sciences Research Council in 2006, found that most healers had correct knowledge of the main HIV forms of infection (multiple sexual partners, blood contact, reusing needles or razors), preventative measures (condom use), and that antiretroviral treatment has to be taken. However, their knowledge was poorer on other HIV preventative measures (breast feeding, oral sex and dry sex), and their overall knowledge of HIV and related opportunistic infections was also poor.

Similarly, in the Eastern Cape the healers reported that they have very little knowledge of HIV causation, especially from a medical point of view. Only one herbalist, Mr M, was known in the area for effectively treating HIV. He is an elderly man who has been practicing herbalism for more than forty years. In the Western Cape, healers had quite nuanced ideas about HIV and TB causation (Wreford, 2008). They generally were informed about HIV and TB (Kalichman and Simbayi, 2012). They had medically correct knowledge of the main

transmission routes as discussed above. They reported to treat both HIV and TB by managing its symptoms. Their treatment is based on what the ancestors reveal to them, what they can physically discern and from the symptoms the sick person describes. While healers generally accept medical diagnosis of HIV, TB and other related opportunistic infections, they also have their own aetiologies which inform their conceptualisation of disease.

Treatments

The way in which healers go about treating infectious disease such as HIV and TB is informed by their understanding of the disease, its symptoms and their relationship with Somandla or the ancestors. I observed two utilisations of plants for treatment. The first involves prayers to Somandla or the ancestors for help and guidance for the specific plants to use as well as for the activation of transformative healing power into the plants. The second relates to the use of and mixing of plants for treatment informed by the symptoms of the infected or diagnosis by allopathic medicine.

Healers also have extensive reciprocal relationships amongst each other which they employ when treating the sick (Dickonson, 2008). Herbalists supply traditional healers with plants, mostly dried or in powdered form. A herbalist also sells directly to the public. Traditional healers describe their role as healers akin to that of a medical doctor while herbalists are seen as pharmacists.

Herbalists supply mixtures to the sick and their carer's and to other traditional healers. They give advice related to symptomologies. Within the Traditional Healers Association of Strand, and especially between healers who live in close proximity to one another, there is a referral system which is noticeable. If an individual visits a healer with suspected HIV or TB symptoms and the healer is unable to treat him/her the healer may refer him or her to another healer who can treat the disease or is known to specialise in it. A healer will not ask another healer how to treat a person. For all healers, their knowledge about treatment, plants, preparation processes and dosages are secret and strongly related to their ancestors. Healers reported that they do not have the same ancestors, even a mother and daughter who are both healers do not have the same ancestors knowledge can only be disseminated done with the necessary rituals and with the goodwill of the ancestors. Healers, who have efficacious treatments, build up a strong reputation and have many clients.

While healers have their own conceptualisations about HIV and TB, they generally accept medical diagnoses. A few of the healers in Strand stated that they work with allopathic doctors in the area in a referral system to care for cases of HIV or TB (cf. Portfolio Committee on Health, 1998). Healers described to some of their own diagnostic processes concerning both diseases.

Some traditional healers 'throw bones,' or may see their ancestors in the water in a glass. In this transcendental moment, the healer is informed about an HIV or TB infected person's coming and the necessary treatment. Other traditional healers believed that they can see HIV in the eyes of the infected or in the person's posture. Herbalists generally rely on the symptoms of disease described or displayed to offer suggestions. The majority of healers, however, rely on medical diagnosis as confirmation before treating HIV or TB or both.

At no stage will a traditional healer encourage someone to stop the use of antiretroviral or tuberculosis medication in favour of a traditional plant remedy. Rather a person may visit a traditional healer for herbal treatment in conjunction with biomedicine. The range of choices that the sick make when they seek treatment for symptoms of HIV, TB or co-infections was examined by interviewing lay people (non-healers) who visited healers. These choices range from initially using the common herbs they cultivate at home or buying from *amayeza* stores, *muthi* markets or petty traders to consulting the services of a traditional healer (Cocks and Dold, 2000). The sick also seek treatment from the local clinic and may be referred to the local district hospital. My observations showed that the choice of treatment depends on what the sick perceive as causes of illness and the type and severity of the condition.

Cases of reported inefficacy of pharmaceuticals were common in my study. The sick chose to visit a traditional healer when they believed that there was no hope, when doctors or nurses told them that they could not help or when they believed that the pharmaceuticals were ineffective or too slow in action. Often they used traditional plant remedies provided by healers in conjunction with their allopathic medicine. Among the most common reasons for HIV infected people to consult traditional healers is when antiretrovirals' have side effects. Healers then provided a mixture of plants to be taken after the consumption of antiretrovirals to stop reported side effects such as throwing up, stomach cramps and headaches.

Only one striking narrative revealed a case of a traditional healer asking a suspected HIV infected person to stop treatment. In her shrine, Mrs H told about an illness episode of a woman she had treated about two years ago,

> It was very late at night. Maybe 11pm. I remember I was sleeping when I heard people knocking on the door. Two women and the woman's son carried her in. Her legs were swollen like an elephant. She couldn't speak. She was half unconscious. They told me the doctors said she had AIDS. They said she was at the doctor the day before. They said she doesn't have long to live. They also said she was throwing up the medicine the doctor gave her for a while already. I started to treat her that night. She slept in my shrine on the bed. The next day she was up and returned home. I told her to stop the Western medicine and only take the medicine in the dosages I gave her. She came for treatment a few times thereafter. The woman is still alive today. (Traditional healer: transcribed field notes: July 2012)

In the case of severe illness, healers recommend that a sick person stays in their shrine with the consent of the sick person's family. The healing process involves three stages of regenerative work. These stages implement various treatments to address the sick person 'holistically.'

The first part of this treatment is to cultivate strength and get the person back on his/her feet. A traditional healer (woman) or the wife of a herbalist will prepare nutritious food such as a soup or vegetables to "cleanse" the person from the "inside." The person is also given a weak infusion of a plant remedy (singly or as a mixture of plants). At this stage the person is not strong enough for a strong dose of a medication. Young children and infants are given half the dosage used for adults.

A large part of the treatment process revolves around restoring the infected person's strength so that his/her body can fight off infection. This process includes nutritious food and the person is encouraged to refrain from drinking too much liquor, to eat more vegetables and to engage in a generally healthy way of life (cf. Mfecane, 2011a, 2011b, 2012). The initial process also embraces purging. The plants used to treat the person are meant to make him/her sweat, throw up, urinate or excrete the "poison" from the body. At the same time opportunistic infections such as "belt" or thrush is treated with plant mixtures. The chest of a

person who has TB is rubbed out with an ointment or lotion to give relief. The first stage of treatment typically lasts a day or two.

In the second part of the treatment process the person is well-enough to leave the healers shrine. S(he) is given a remedy with instructions concerning the dosages. In the case of HIV and TB the medicine is usually taken three times a day: in the morning, in the afternoon and in the evening after meals. This stage also includes a stronger plant remedy. The second stage stretches over two weeks.

The third and final stage usually lasts four weeks or more. The strongest plant remedies are now administered. Throughout the process the sick person visits the traditional healer in follow-up sessions. Then the healer examines the progress of the client and also inquires as to other aspects of daily life. These include the relationship with the spouse or partner, other kin, the development of their children, financial issues and such. These are also viewed by healers as contributing to the cause or betterment of disease. Most healers suggested that the symptoms of HIV and TB dissipate after six weeks of successful treatment. A few healers however argued that the plants they use are "strong" and the symptoms may dissipate after a person had been treated for a week or two. Generally treatment lasts until the symptoms disappear.

Conclusions

In Strand and in Mpoza, many people utilize and believe in the power of medicinal plants and traditional healers. People obtain medical advice, remedies and care from these healers for a variety of ailments. The practice of traditional healing is something which I observed as either a holistic or symbolic form of restoring health which is deeply embedded in the aetiologies of the healers and of the sick. Healers have extensive reciprocal relations among each other and also when treating the sick (Dickenson, 2008). Healers have referral systems among one another and they also refer the sick to local medical centres for diagnosis.

In addition, there are contestations around the use of specific plants to treat disease, such as HIV, TB and related opportunistic infections. In Olajuyigbe and Afolayan's (2012) ethnobotanical survey of medicinal plants utilised to treat gastrointestinal disorders in the Eastern Cape, they found that in different communities, plants are given different names.

Many of these plants, ultimately, have more than one local name. In my ethnobotanical survey I found that this is also the case with *uNwele*. These plants are prepared and administered in different ways. In their preparations for therapeutic purposes, whole plants as well as various parts of each plant were either used singly or in combined forms. Parts used also depend on the plant under consideration and severity of ailments.

My argument is thus that healers utilise different plants to treat the same condition. This is also influenced by *Somandla* and or the ancestors who guide healers to specific plants for treatment. In this regard it can happen that the same disease, for example HIV, is treated with different medicinal plants. In this regard there is no standardisation to determine the exact plants utilised to treat, for example HIV or TB. No two persons are treated the same and no two healers utilise exactly the same plants, even though there may be overlaps.

Chapter seven: Conclusions

In this study, I followed the trail of plants across three research settings and two provinces to investigate the various transformations which plants undergo as material, relational and empirical 'things.' By doing so I examined the interface between people and plants. I argued that plants exist in particular relationships with people and furthermore that plants are, in the different settings of my research, material 'things' with 'social lives' (Appadurai, 1986; Reynolds Whyte *et al.,* 2002; Gibson, 2011). They are also valuable and meaningful representations of care and of hope in the practice of traditional healing and for the treatment of infectious disease such as HIV.

As Hsu (2012) argues, social practices surrounding the use of plants in healing have been under-examined, even though there has been widespread interest in medicinal plants. In the past, investigations into plant knowledge have been somewhat reductionist (Verran, 2010). Nonetheless, there is a large amount of work being done in South Africa around traditional healers, medicinal plants and their role in treating diseases such as HIV and TB (Otang *et al,*. 2012). Yet, very little has been done on the interface of ethnobotany, science and medical anthropology. My concern was thus to explore this interface . Like Hsu, I attempted to bridge the 'gap' between science (with its emphasis on material semiotics and synergism between compounds) and ethnobotany. I also wanted to understand the meanings surrounding plant use.

I started with, following Latour (1987; 1999), investigating a 'science culture' by working closely with SAHSMI scientists. I observed the process of scientific production by following the detailed processes of scientific production. I also followed the trail of plants from the time scientists collect it in nature to the transformation of plants into textual representations of data, such as slides, graphs and statistics. The process of scientific production, which includes complex machinery, technology, scientific language, colloquiums etc., is intensive and closely scrutinised for deviation from the 'scientific norm' at which time the research process is scrutinised. This process was observed to scrutinise how scientists construct meaning and to show how they apprehend plants differently than in the other settings of my research.

The abovementioned process, which includes actants (plants, machinery, technology etc.) and actors (scientist, plant vendors, traditional healers etc.), form part of, what I called – following Latour-, an 'assemblage.' Drawing on the work of Latour (1987; 1999) and Law and Mol (2008), I described the assemblage as, what for me seemed to be, a messy and disorderly process where the plants and the actors became momentarily invisible, but appear again when the research process is scrutinised (Latour, 2005). I argue that this process of making sense of the way plants "work" is very descriptive and differs remarkably from the way traditional healers utilise and make sense of plants.

An assemblage makes connections between 'things' such as plants, processes, relations, and visual representations etc. which are dependent on one another. As I stressed earlier, as an anthropologist working on the interface between people and plants, science and ethnobotany, the research process is complex and required a special analytical approach for it to "come together." In this regard, Latour (2005) argues that the assemblage requires constant negotiation and renegotiation for it to "work." On the other hand, Hsu (2012) interrogates the the widespread conjecture of an unambiguous dichotomy between natural science and ethnobotany. She argues for an interdisciplinary approach whereby medical anthropologists engage with the materiality of plants and natural scientists. Conversely, Green (2008: 147) notes in relation to another scientific endeavour, i.cartography:

> With regards to data-gathering techniques, few scientists have considered the socio-cultural assumptions embedded in even as straightforward a method as the mapping of knowledge: not only can an inventory of culture not be matched to a map of the country, but the very idea of cartography is not scientifically neutral, or value-free. On the contrary, it is a way of looking at the world that eliminates astronomy; the perspective from the self; a wide range of temporalities; and the ethics of environmental responsiveness. The dualisms with which western scholarship struggles, then – nature-culture; mind-body; person-environment – are heavily invested in scientific data gathering strategies. The result: many a scientific data-gathering strategy could collect the content of IK, but the collection will inevitably be partial, and may well be destructive of the structures and epistemologies that make the content meaningful.

Accordingly, I employed an interdisciplinary approach to scrutinise the interface between people and plants. I intruded on the boundary of ethnobotany and science to collect and document the utilisation of common medicinal plants to treat HIV and related opportunistic infections. I collected seventeen plants belonging to different genera. Among these are specific plants which are reportedly "powerful" plants for the treatment of HIV and related opportunistic infections. The method, in my view, was innovative in the South African context, and an appropriate approach to take given the interest in the comparison of the production of different medicinal materials.

There is a considerable diversity and abundance of plant species used in the treatment of HIV and related opportunistic infections in Mount Frere, Eastern Cape Province and in Strand, Western Cape. As I found in my ethnobotanical study, these plants are given different names in different regions. Many of these plants, ultimately, have more than one local name. This was the contestation concerning *uNwele*. Traditional healers with whom I worked do not use plants individually. Instead, the whole plant is used, or the parts which they believe are required to treat a specific disease in a remedy (Drewes *et al.,* 2006). Most of the healers in Strand, Western Cape and *Mpoza*, Eastern Cape believe that singular plants or singular parts of plants, as well as plants from particular regions have a weaker efficacy than a whole plant which is from the Eastern Cape (Rodriquez-Fragoso *et al.*, 2008). This makes the possibility to ascertain the safety of medicinal plants difficult (Street et al., 2008), and also complicates the replicability of results.

These plants are mostly utilised in a mixture. Such mixtures work in a variety of ways to treat the sick 'holistically.' My observations revealed that the treatment of HIV and opportunistic infections are informed by healer's aetiologies of disease, *Somandla* or the ancestors and what they can physically discern. Healers also rely on medical diagnosis before administering local medicinal plants. In this study I argue, based on observations from fieldwork, that the Western Cape has a layered, pluralistic system of health provision, in which the paradigms of African traditional healing, biomedicine, and alternative medicine operate in parallel with each other. People who suffer from infectious disease often utilize two or more of the available systems, sometimes simultaneously. In this process they move between different ways of interpreting and understanding illness and health, and access different ways to find relief and treatment.

While allopathic medicines and health care facilities are good in Mpoza, Eastern Cape and in Strand, Western Cape, the sick make a variety of choices regarding the treatment of infectious disease. They regularly buy medicinal plants and mixtures from *amayeza* stores and *muthi* markets and consult traditional healers to treat the symptoms of HIV and related opportunistic infections such as candiasis and herpes zoster (Street *et al.*, 2008). Although the plants collected in this study reveal the most commonly used plants for treating HIV, TB, HIV-TB coinfection, and related opportunistic infections, the remedies utilised consist of a diversity of plants to treat a variety of illness conditions. No two remedies are the same and no two clients are treated in the same way.

Traditional healers also have extensive reciprocal relations with one another when treating the sick. For the healers in my study, plants, which are part of the environment, are linked to the past in terms of the training they received from their ancestors and the knowledge derived from working with plants and of transmitting this knowledge to the next generation. It forms part of a diverse and detailed body of knowledge (Rau, 1991; Thornton, 2009). Through the cultivation, preparation, use and exchange of plants among healers and other actors (herbalists, Bossiesdokters, plant vendors and scientists) it acquires meaning and value as material 'things' (Appadurai, 1986; Reynolds Whyte et al., 2002).

Throughout my research, I observed and experienced that the actors in my study have a strong sense of connection with medicinal plants, despite its material form, for example, SAHSMI scientists keep plants on their work desks for aesthetics. They fervently spoke of the medicinal plants which they "grew up" with. Medicinal plants reminded some of them of family members who grew medicinal plants in their gardens to treat a variety of ailments or reportedly had nice gardens. Similarly, I experienced the aesthetic, social and material meaning and value of medicinal plants. I regularly bought medicinal plants from healers in Strand. I also received plants from SAHSMI scientists as samples. I made a medicinal garden which I maintain for myself. Through these interactions I gained a perspective on what plants mean to people.

How then do I begin to theorise about and make sense of the 'meaning effect' of medicinal plants; as material, empirical or social 'things'? As 'things' that have been transformed into cultural artefacts (Appadurai, 1986)? As having a symbolic or holistic value and meaning? As an alternative modality to combat infectious disease? As having particular physiological effects on the body? As synergy?

There are many ways to consider medicinal plants, their utilisations and associated practices. There is currently also a widespread interest in medicinal plants and, as I have shown in the present thesis, a consortium of disciplines and approaches to investigate them. This thesis represents only a small contribution to that body of multidisciplinary investigations into medicinal plant research. Oppositely, the study is limited by exactly that which it is trying to present. Multidisciplinary studies which investigate plant knowledge are relatively new shifts for anthropology, epidemiology, pharmacy, botany, ecology and other science studies. Such work embodies a profoundly consequential debate around traditional medicine, efficacy, and the epidemiology of knowledge production. It lays bare the possibilities and limitations of biomedicine and proposes a new direction for bioethical multidisciplinary work. Like many of the scholars whose work I have I drawn on I am simply proposing new and alternative ways of investigating medicinal plants of the Western Cape. Yet, many of the theoretical questions concerning safety and efficacy, as well as the complexity of knowledge underlying medicinal plants remain, for me, unreciprocated and a subject for further scrutiny.

Appendix: Illustrations from fieldwork

The South African Herbal science and medicines institute laboratory:

Figure 1 Laboratory work desks

Figure 2 illustration of the laboratory work space

Figure 3 Dried S. frutesens stored in a dry room at SAHSMI

Figure 4 Dried S. frutesens and A. africa

Figure 5 Work desks at SAHSMI

Figure 6 Work desks at SAHSMI

Ethnobotanical voucher specimens in a press:

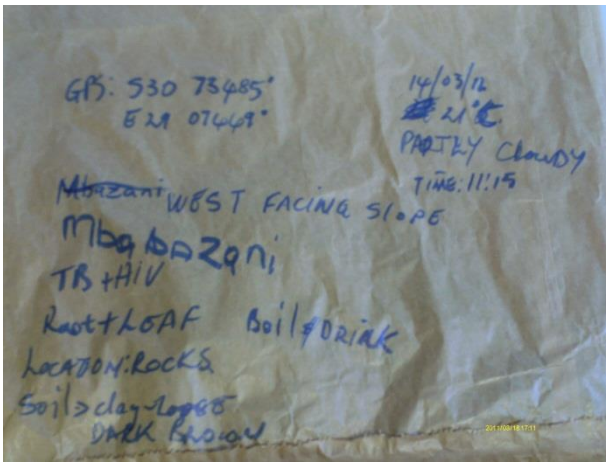

Figure 7 Collection bag with fieldwork notes

Figure 8 Iqweli in dry press

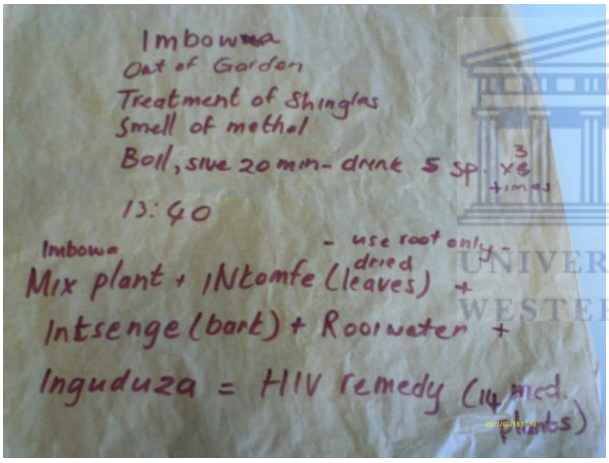

Figure 9 Collection bag with fieldwork notes

Figure 10 A science student adjusting the plant press.

Figure 11 *Imboya* in dry press

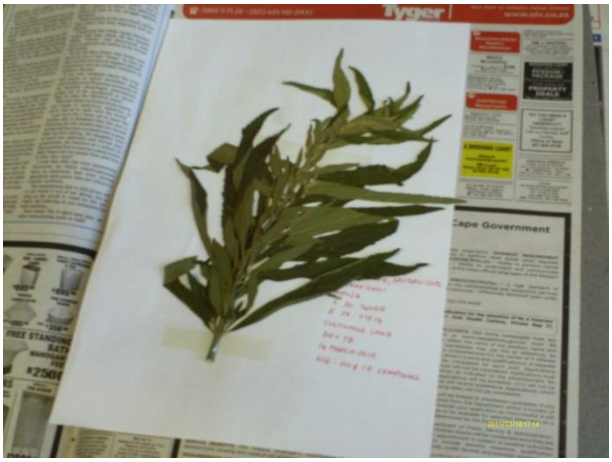

Figure 12 *Hlodlwana* in dry press

The Landscape of Mpoza, Mount Frere.

Traditional healers from Mpoza, Mount Frere

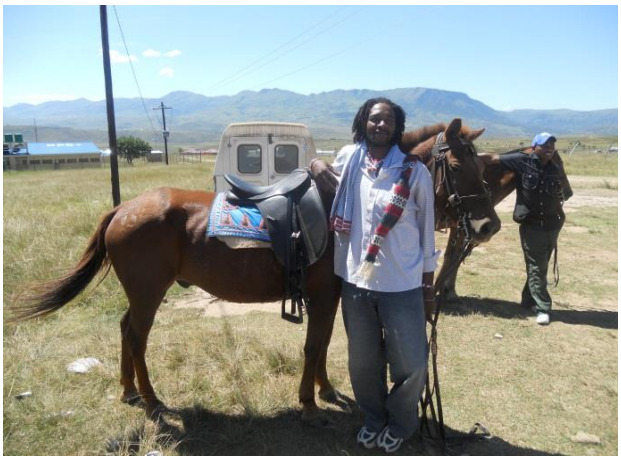

Figure 13 A herbalist arriving at our focus group discussion.

Figure 14 A tranditional healer perfomring a ritual to her ancestors

Figure 15 Traditional healers attending focus group discussion

Figure 16 Traditional healers attending focus group discussion

Figure 17 From the left: Interpreter Mr Dabula. The visiting American social work scholar. Traditional healers and myself after an interview.

Figure 18 A traditional healer collecting plants in the *veld*

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