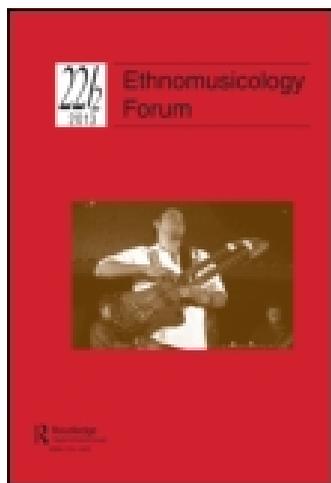


This article was downloaded by: [University Of Pittsburgh]

On: 25 March 2015, At: 11:59

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Ethnomusicology Forum

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/remf20>

Sound and Circulation: Immobility and Obduracy in South African Electronic Music

Gavin Steingo

Published online: 23 Mar 2015.



CrossMark

[Click for updates](#)

To cite this article: Gavin Steingo (2015) Sound and Circulation: Immobility and Obduracy in South African Electronic Music, *Ethnomusicology Forum*, 24:1, 102-123, DOI: [10.1080/17411912.2015.1020823](https://doi.org/10.1080/17411912.2015.1020823)

To link to this article: <http://dx.doi.org/10.1080/17411912.2015.1020823>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms &

Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Sound and Circulation: Immobility and Obduracy in South African Electronic Music

Gavin Steingo

This paper responds to the common assumption in much recent ethnomusicology that today music is more accessible, ubiquitous and mobile than ever before. In particular, I argue that this assumption runs aground when confronted with sonic practices in South Africa. Based on fieldwork with electronic musicians in Johannesburg and its surrounding areas, I ask how music is practiced and experienced in a context where musical equipment and storage devices constantly break down and where people are largely immobile. I focus on four factors: the physical layout of urban spaces; the immanence of crime and theft; the breakdown of musical equipment; and the interruption of information storage and transfer. By examining these factors, I elucidate the ways in which breakdown, obduracy and failure have generative as well as negative effects on music production and experience.

Keywords: Circulation; Failure; Obduracy; Soweto; Electronic Music

Introduction

The relationship between music and mobility has been a central concern in ethnomusicology for at least three decades. From studies of migration and diaspora (Bohman 1998; Ramnarine 1996; Slobin 1994) to examinations of circulating instruments (Turino 1993) and recordings (Manuel 1993), ethnomusicologists have

Gavin Steingo is an Assistant Professor of Music at the University of Pittsburgh. He completed his PhD in the Anthropology of Music at the University of Pennsylvania in 2010 and from 2010 to 2012 was a Mellon Postdoctoral Fellow at Columbia University. His research interests include African music (particularly southern Africa), music and politics in post-revolutionary societies, labour and performance, and the anthropology of sound and listening. Dr Steingo has published papers in numerous journals and edited collections. His book *Kwaito's Promise: Freedom and Aesthetic Experience in South African Music* is forthcoming from University of Chicago Press. Correspondence to: Gavin Steingo, 110 Music Building, Department of Music, University of Pittsburgh, Pittsburgh, PA 15260, USA. Email: steingo@pitt.edu

long illustrated the profound ways in which music moves between and across spaces and cultures.¹

Recent studies in auditory culture have engaged innovations in music technology, from car sound systems and mobile listening devices (Bull 2000, 2001) to P2P file sharing (Sterne 2012) and streaming platforms (Manabe 2014). These studies tend to emphasise music's increasing ubiquity, availability and fluidity (see also Gopinath and Stanyek 2014; Kassabian 2013). Music, it seems, is more accessible than ever, moving at an ever-faster pace in an unimpeded flow.

In this paper, I argue that while the aforementioned recent studies have contributed useful insights, several key assumptions about music and mobility run aground when confronted with sonic practices in South Africa. Based on fieldwork with electronic musicians in Johannesburg and its surrounding areas, I ask how music is practiced and experienced in a context where musical equipment and storage devices constantly break down and where people are largely immobile. The context that I will describe cautions us against overly optimistic, technophilic approaches to music and mobility; at the same time, it raises a number of important theoretical concerns. For one thing, it is important to recognise that technology does not advance in a linear or teleological fashion. By this I mean that while technological innovation may overcome limitations or imperfections, innovations also often produce new failures and accidents. For example, as Paul Virilio (1999, 2006) famously pointed out, the invention of the train was simultaneously the invention of the railway accident; the invention of the automobile, the invention of the car crash (see also Morris 2010).

A second important concern is the theoretical status of failure. As Brian Larkin (2008: 219) observes, social scientists have tended to focus on cases in which technology works at an optimum. Ethnomusicology, for example, often emphasises the establishment of communities (Turino 2008) and scenes (Gerstin 1998; after Straw 1991), the creation and maintenance of technologically mediated national or transnational communities (Erlmann 2004), and the affirmation and reshaping of individual and collective identities through audio technologies (e.g., contributions in Wittkower 2008). In most cases, music is presented as a labile and fluid medium that swiftly mediates the production of new subjectivities, and technological innovation is viewed as enhancing the reach and scope of music's affective powers. But what happens when music does not facilitate as much as it disables? What happens when music does not move as much as it gets stuck? I examine a musical context where obduracy is far more common than mobility;² where people and musical information

¹This preoccupation with mobility is not new, of course, and can be traced all the way back to the comparative musicologists, who presented detailed accounts of musical diffusion (Schneider 1934) and the migration of musical instruments (Sachs 1940). Another important precedent is the acculturation theory of the 1950s (e.g., Waterman 1952). It is worthwhile pointing out that, generally speaking, ethnomusicologists became less interested in movement and circulation between the 1960s and 1980s. Adopting a functionalist 'music and culture' paradigm, most texts produced during those decades focused on how people use music in individual cultures.

²The word 'obduracy' best captures the dynamic that I am describing. Implying a kind of unyielding inflexibility, the word 'obduracy' is derived from the Latin *ob* (against) and *durare* (harden). As a verb, then, 'obdurate' means 'to harden against'.

are constantly bulwarked, jammed, blocked. Beyond simply noticing the empirical ubiquity of failures and blockages in urban South Africa, I also argue that breakdowns, obdurances and accidents have generative as well as negative effects.³ For, as Larkin (2008: 219) reminds us, 'technology influences through its failure as much as through its successes'. I therefore pay close attention to the aesthetic and sensorial consequences of technological failure, and I illustrate that constraints on musical circulation have definite social and aesthetic effects. In doing so, I join a growing number of scholars who eschew grandiose generalisations about the fluidity of music and sound, and who instead listen carefully for failures (Larkin 2004, 2008), frictions (Tsing 2004), echoes (Muller and Benjamin 2011), feedbacks and bottlenecks (Novak 2008, 2013), and crises at the juncture of infrastructure and political subjectivity (Skinner 2012).

Drawing on my fieldwork in South Africa, this article focuses on four factors: the physical layout of urban spaces; the issues of crime and theft; the breakdown of musical equipment; and the interruption of information storage and transfer. By examining these factors, I illustrate the ways in which breakdown, obduracy and failure have generative as well as negative effects on music production and experience.

Background to the Study

This paper is one part of a larger project that examines the position of music, audio technologies and aesthetic experience in post-apartheid South Africa. I have written elsewhere about the formal music industry in Johannesburg (Steingo 2008). Here, I focus on my interactions with non-professional musicians in Soweto, South Africa's largest urban ghetto located about 20 miles from the metropolis of Johannesburg.⁴ During apartheid, which ended officially in 1994, Soweto was a key site of political activism and came to represent South African struggles for freedom and emancipation on a global level. Although I grew up in Johannesburg in the 1980s and 1990s, I had only visited Soweto once before I began conducting serious research there in 2008. Because of South Africa's long history of racial segregation, Soweto continues to be inhabited almost exclusively by black South Africans, with whites mostly residing in neighbourhoods north or east of the city centre. When I lived in Soweto for a year between 2008 and 2009, I was one of approximately three white people in an area with a population of 1.3 million.

Soweto was originally created by the ruling white minority of South Africa as a collection of contiguous areas to the southwest of Johannesburg with the purpose of housing black workers. Areas housing non-whites came to be known as locations or

³I omit studies of music censorship in this article primarily because they tend to present censorship as purely negative and not at all generative. Note that while several contributions to the edited collection *Popular Music Censorship in Africa* (Drewett and Cloonan 2006) do actually provide examples where censorship has generated new musical forms, this is never stated explicitly.

⁴Future publications will examine the relationship between the commercial music industry and non-professional township musicians. See also Steingo (2010).

townships. Note that although Soweto is often described as a township, it is actually a collection of several contiguous townships.⁵

Residential segregation along racial lines began already in 1908, when municipal authorities ruled that only black people working as domestic servants could live in white areas.⁶ The anxiety surrounding black bodies is clearly illustrated by the fact that in Johannesburg's early years residential planning was the responsibility of health authorities, while non-residential aspects of native life were administered by the same committee responsible for the zoological gardens (Maud 1938 as cited in Mbembe and Nuttall 2008: 20). Although blacks were legally forbidden to live in white areas after 1908, the law was seldom implemented because mixed neighbourhoods were convenient for workers and profitable for property owners. The first black township (Klipspruit) was established in 1905, but the population in this area remained small for decades, while slum yards in or adjacent to white areas continued to mushroom. Although initially unsuccessful, the first township nonetheless signalled the onset of a process that would accelerate in the next several decades. Built about 12 miles from the city and adjacent to a municipal sewage farm, Klipspruit was re-named Western Native Township in 1918. In the 1930s, two additional townships were built to the southwest of Johannesburg: Pimville in 1934 and Orlando in 1935. This was the beginning of the southwest townships, later named Soweto.

With the advent of urban apartheid in 1948, the state was no longer willing to tolerate multi-racial residential areas. The government began brutally implementing laws prohibiting mixed areas, most notably with a series of forced removals of blacks from white areas. Several new locations to the southwest of Johannesburg were created, including Zondi, Chiawelo and Senaoane.⁷ Apartheid, however, was not satisfied with merely dividing people along racial lines. Using a classic divide-and-rule strategy, the state categorised black people into ten subdivisions or 'national units' based on linguistic families.⁸ These divisions were not entirely arbitrary, and conformed—at least in some basic sense—to cultural patterns and geographical origins. Nonetheless, apartheid sought to purify and rigidify the distinctions, ultimately advocating the development of each ethnicity separately and along its own course. In 1956, new townships built in Soweto were sorted by ethnicity: Naledi, Mapetla, Tladi, Moletsane and Phiri were built to house those falling under the Sotho language group, while Dhlamini, Senaoane, Zola, Zondi, Jabulani, Emdeni and White

⁵During apartheid, Soweto was a separate municipality, but today it is part of the City of Johannesburg Metropolitan Municipality. The inclusion of Soweto within the Johannesburg municipality was largely a response to anti-apartheid protesters in the 1980s who opposed unequal service in the white city and black townships. These protesters demanded 'one city, one tax base' (see Wafer 2008: 100).

⁶The history of Soweto that follows is based in large part on the work of Bonner and Segal (1998).

⁷In addition to these locations, migrant workers evicted from the city were housed in a hostel in Dube.

⁸Sotho was divided into North Sotho (also known as Pedi), South Sotho (also known as Basotho) and West Sotho (also known as Tswana). The Nguni family group was divided into Xhosa, Zulu, Swazi, Shangaan, North Ndebeli and South Ndebeli. Vendas formed the only group consisting of a single language.

City were built for speakers of Nguni languages (i.e., Zulu, Xhosa, Ndebele). Venda speakers were assigned to Chiawelo.⁹

Soweto was built in a tightly structured manner, with each township comprising rows of identical, so-called matchbox houses on a plot of about 260 square metres (Beall, Crankshaw and Parnell 2003: 200). Although houses were built in a highly structured way, their layout was intentionally ‘extraordinarily inefficient’ (Tomlinson et al. 2003: 6). For the security of the regime, roads were constructed to make internal circulation difficult. All major roads lead directly to centres of employment or retail, while within the townships roads circle around, stop in dead ends and make travel generally quite frustrating. Circulation within a single township is not always particularly difficult, but to move from one township to the next—even when the two townships are directly adjacent to one another—is often extremely cumbersome and frustrating. A. J. Christopher summarises this spatial logic in his *Atlas of Apartheid*:

The [urban planning] guidelines proposed that group areas be drawn on a sectoral pattern with compact blocks of land for each group, capable of extension onwards as the city grew. Group areas were separated by buffer strips of open land at least 30 meters wide, which were to act as barriers to movement and therefore restrict local contact. Accordingly, rivers, ridges, industrial areas, etc., were incorporated into the town plan. Links between different group areas were to be limited, preferably with no direct roads between the different group areas, but access only to commonly used parts of the city, for example, the industrial or central business district. (1994: 105–6)

The original apartheid layout of Soweto can still be clearly felt, where a distance of one mile as the crow flies often requires that one traverse several miles. Consider, for example, the journey from Levubu Street in Naledi Extension 1 to Halolo Street in Mapetla. The journey is 3.6 miles, although the distance between the streets is only 0.6 miles (see Figure 1).

Soweto has, of course, experienced dramatic changes since the demise of apartheid. The nature of these changes is best articulated through Manuel DeLanda’s (1997) observation that there are two main ways in which urban areas are constructed: either as pre-planned assemblages organised from the top down or as self-organising systems with no central decision-maker. Clearly, Soweto’s early development was determined by the former method. That is to say, the apartheid state designed Soweto very rigidly, incorporating modernist planning principles, including a unique interpretation of the work of Le Corbusier—an interpretation that took quite literally his emphasis on the relationship between formal planning principles and social behaviour (Haarhoff 2010). However, although Soweto was originally planned and built in a very top-down manner, it soon yielded to processes of immanent self-organising. As early as the 1970s, housing shortages led to overcrowding and the construction of shacks in backyards. At this time, however, Soweto was still closely

⁹Older townships like Orlando and Pimville remained ethnically mixed, although this was simply considered an imperfection that would ostensibly be sorted out at a later date.

Creativity and Music Production in Contemporary Soweto

The post-apartheid processes of self-organisation, embedded in the original rigid construction of Soweto, have led to a complex space that is highly conducive to particular forms of creative practice. Although Soweto has developed fairly 'chaotically' in the post-apartheid period, these immanent processes are hinged to the basic original structure of restricted access and limited mobility. Each township is home to dozens of musicians and other creative people, but these people are still—to a certain extent—trapped, noosed and bulwarked in their respective areas. Of course, not all people are equally trapped, which is to say that immobility is not equally distributed amongst men and women, adults and children, the able-bodied and the disabled. What follows is a partial account of musical life in one Soweto neighbourhood; certainly, a more comprehensive analysis would require greater attention to a wider array of intersectional dynamics.

Because most people in Soweto are not formally employed, they generally spend most of their day wandering around the neighbourhood and visiting friends. In such a context, individual houses become nodes of communal creativity and in this paper I will focus on one such node: the home of Sizwe, my friend and primary interlocutor. Each day of the week, at least ten musicians visit Sizwe's house. People from the neighbourhood come by to borrow equipment, play a bass line over something Sizwe is working on, write some lyrics or exchange music, movies and ideas. On some days, people will stay for six or seven hours at a time; on other days, they drop by for only a few minutes.

Sizwe lives in a formally constructed room, adjacent to a main house, on a typical plot of 260 square metres owned by his mother. His mother, sister and two nieces live in the main house. The main house and Sizwe's room share a gate leading to the street, which is locked only at night. It is generally considered discourteous to lock one's gate during the day, as friends and neighbours may want to stop by. In most cases, at least when residents are home, house doors remain unlocked or even standing open. Sizwe's house is therefore not, properly speaking, a private space. In many ways, it is an important node in the musical and informational network of the township.¹¹

For reasons I will more fully explain later, Sizwe often does not leave his room for weeks at a time. And largely because of the physical construction of Soweto, when Sizwe does leave he does not go far. Generally, he only walks to a local grocery store or to a nearby friend's house. When people are walking outside and are asked 'Wenzani?' ['What are you up to?'], they almost invariably respond 'Ngishaya e-round' ['I am walking around'] or 'Ngiya lapha no lapha' ['I am going here and here']. Notice that the

¹¹When I lived in Soweto, I was advised not to lock the front door if home during the day. In the mornings, I would often look up from a bowl of cereal or a book, only to find a middle-aged man named Jan peering down at me. Having let himself in, Jan would then ask: 'Where's the bread?' On one occasion, I came home to find that I had been burgled—my computer, hard drive and some money had been stolen—and that the thief had broken out of the house from inside. My friends reasoned that the burglar had snuck inside while I was still home (with an unlocked door) and that when I went out and locked the door behind me, he or she was forced to break the lock to exit the house with my belongings.

latter expression is not 'lapha no lapho' ['here and *there*'] but 'lapha no lapha' ['here and *here*']. To move 'here and here': this is a perfect articulation of township space.

Like most Sowetans, Sizwe generally makes music with whoever lives nearby. Because of the conditions of immobility and sedentariness, each township is a musical topology, a space of musical possibilities.¹² In other words, we are speaking of immobility and obduracy but also of what I will call an *aesthetics of propinquity*, in which musical praxis is largely determined by who and what is physically near. The topology of each township is circumscribed and narrow; one might say that it is aggressively partitioned. At the same time, immobility has definite generative effects on musical creativity. It is therefore a mistake, as I have been commenting, to think about immobility only in terms of lack—that is, as *not* being mobile. Instead, immobility makes as many things possible as impossible. What I am calling the aesthetics of propinquity would not be possible without a very particular arrangement of township space in which a finite group of musicians perform together in different permutations for extended periods of time.

To more clearly elucidate (and nuance) the scenario I am describing, I offer an ethnographic vignette. On a Tuesday in March 2009, I was at Sizwe's house playing guitar over an electronic MIDI 'track' that he had recently produced. It was a typical track, comprised of a basic four-on-the-floor synthesised drum rhythm, an ostinato bass riff and two higher-register synthesised layers filling out the I–IV–V–I harmonic progression suggested (or at least afforded) by the bass line. At around noon there was a knock on the (already slightly open) door and I called out 'Ngena' ['Come in']. Four young men entered and we exchanged greetings. They had brought a few quarts of beer and Sizwe went across to the main house to fetch glasses. Together, the six of us drank beer and smoked cigarettes. A few people smoked marijuana. When the men entered, Sizwe had hit the 'loop' icon on the digital audio editing program and the track reverberated repeatedly. The track itself lasted about 20 seconds, but while we talked, drank and smoked it continued to play, incessantly turning back on itself and beginning again. Finally, after about 30 minutes, or roughly 90 repeats of the track, someone began to sing. Soon, someone else joined in. Over the duet, another young man began 'chanting' in Zulu. Sizwe was seated in front of the computer, and he began playing with the digital equaliser, cutting various layers out of the mix and then adding others. I picked up my guitar and began to improvise a few licks.

Before long, I had come up with a riff that I liked. I repeated it over and over again, transforming it subtly, experimenting with the timbre and inflexions. Sizwe was mixing the track, listening carefully and feeling where we all wanted the music to go. After about 20 minutes, the six of us were singing together:

Life is easy if you take it day by day
There's no need to complicate your life, ok

¹²I use the term 'topology' in a rather metaphorical sense. Nonetheless, my use of the term corresponds roughly to DeLanda's characterisation: '[A] space is not just a set of points, but a set together with a way of binding these points together into a *neighbourhood* through well-defined relations of *proximity or contiguity*' (2002: 22; original emphasis).

Life is easy if you take it day by day
 There's no need to complicate your life, no way!

Neither these simple words, nor the melody that accompanied them, were the creation of any single individual in the room. Instead, they emerged from a concatenation of creative input from six individuals sharing sonic and physical space. But even though the words, in a sense, 'belonged' to all of us, and even though we mainly sang these words together in unison, each individual voice exceeded the words and melody. After all, each human voice belongs to a singular body, which is unique in its fleshy materiality. And as Adriana Cavarero (2005) has observed, it is primarily through the material body and the fleshiness of the voice that uniqueness is disclosed (see also Dohoney 2011).

We sang those simple words for nearly an hour, taking short breaks here and there to drink, smoke and chat. The four visitors were all unemployed and were in no hurry to leave. Like many people who roam Soweto's streets on weekdays, Sizwe's guests had nowhere that they needed to be. Minutes, hours and days blur into each another. In Sizwe's room, we sang those simple words over and over. People were laughing, experimenting with their voices, stopping to take a swig of beer or inserting various kinds of 'chanted' vocalisations. Indeed, a substantial amount of time passed before we all started to feel lethargic, and before the beer bottles ran dry. Sizwe turned the instrumental track down and we resumed talking. Slowly, the crew that arrived at noon began to leave.

On other days, Sizwe's sister and a few of her friends would join us. Together, we watched movies, listened to music and again performed for extended periods of time over constantly repeating electronic tracks, taking short or long breaks to drink, eat or smoke. I also had the opportunity to make music with guitarists, bass players and keyboard players. Because of the construction of township space and the limitations on mobility that I have outlined, I mostly encountered the same 40 or so people repeatedly, although never all together at one time. Instead, different permutations of these 40 people—in groups from two to eight individuals—visited Sizwe in his room. Although the motivation for these visits differed, there was almost always an element of musical performance.

The basis for every performance was an electronic track, looped without pause for as long as five hours. In many cases, Sizwe produces his own tracks late at night when he is alone, but it is not uncommon for him to produce tracks collaboratively with friends. Furthermore, Sizwe's room is a key location for the exchange of electronically produced tracks—a practice that I describe in greater detail below. The existence of such tracks is perhaps the most fundamental condition of possibility for any musical performance. And importantly for this account, the maintenance of these tracks is dependent upon a functioning storage device (a hard drive, for example) and the requisite computer processor to transform stored information into sound.¹³ In what

¹³By using MIDI, musicians in Soweto are not so much 'recording' sound as they are storing digital signals. As a so-called 'control format', MIDI stores performance instructions for the computer and not a digital version of 'recorded' sound. On the other hand, it is worthwhile pointing out that musicians in Soweto also use formats such as MP3, WAV and AIFF. On the MP3 as a format, see Jonathan Sterne's (2012) already classic study *MP3: The Meaning of a Format*.

follows, I explain why and how this dependence on technology both constrains and affords musical praxis.

On Immobility and Theft

Theft is a major contributor to immobility in Soweto. On a general level, crime is one of the most crucial structuring elements of South African sociality (see Comaroff and Comaroff 2006; Steinberg 2001)—indeed, horror stories of murder and rape in South Africa's major cities are prevalent in the international news. I bracket more violent forms of crime in order to focus on the less aggressive and more banal practice of household theft. Consider Sizwe again. As I learned, he seldom leaves his home because he needs to protect his musical equipment. Sizwe has often expressed his frustration to me, usually in the form of complete resignation, by saying: 'I am always here. I am always at home'. Nonetheless, a couple of years ago a conspiracy was carefully orchestrated to force Sizwe out of his house. Someone planted drugs in his room one morning and an hour later a police raid occurred. Sizwe was left with two options: go to jail and have his things stolen; or give the police responsible for the case R500 (approximately US\$50). With my financial support, Sizwe was able to pay the R500 and the matter was quickly resolved. The plot against Sizwe was essentially an elaborate bribe.

Sizwe only hesitantly and briefly leaves his house because he is concerned about the theft of his belongings, and most importantly his computer—a device that not only makes, produces and generates music and musical experience, but that also stores vital information. What does Sizwe's extreme sedentariness say about a person's relationship to things, about private property, about *techne* (or 'craft')? For one thing, it implies that in Soweto a musician's computer is almost a kind of prosthesis—it exists as a veritable extension of his or her body. In the absence of rigorous state protection in the form of police, and with the 'deregulation of monopolies over the means of legitimate force, of moral orders, of the protection of persons and properties' (Comaroff and Comaroff 2008: 2), people tend to relate to their property directly. In other words, private property is seldom mediated by the force of law. Instead, there is an unmediated relationship between a person and a thing, where the thing is owned through physical use. Thus, Sizwe can only be certain that his computer is in his possession for the duration that he is actively engaging with it. The moment he leaves his room or even falls asleep, his relationship to property disintegrates.

Of course, the situation is even more extreme since property is often pried from individuals through robbery and mugging. In these situations, too, things have a prosthetic quality: since a thing belongs to an individual only when it is somehow attached to the human body—for example, when it is in a pocket or grasped tightly in the palm of a hand—that thing is configured as an extension of the body. Things, then, do not belong to citizens in the form of private property as much as they belong to human bodies that grip onto things or else protect them with physical force.

Surprisingly, although people in Soweto go to extreme measures to safeguard their belongings, they often lend things out easily, without a second thought. In fact, people not only lend things out easily, they often freely give them away. The reason for this apparent contradiction is actually quite simple: lending is a social obligation. Ashforth (2005: 32) notes that in Soweto ‘people survive because others feel obliged to share and support them as members of their families, as neighbors, and as friends’. There is an almost ubiquitous assumption, in fact, that resources will be distributed ‘equitably and according to need’ (2005: 32). This does not mean that people lend things or give them away happily or ungrudgingly. But it is uncommon to refuse a genuine request if one can reasonably meet it.

On the one hand, then, property is treated as a kind of bodily prosthesis, but on the other a person’s relationship to his or her property is understood as fragile, provisional or temporary. A Sowetan might guard a telephone, a hard drive or a wad of cash with her life but then only a moment later give all of these things away without a second thought when a friend knocks on the door and makes a simple request. The giver may part with her belongings begrudgingly, but she will usually part with them nonetheless because she knows—or at the very least trusts—that she will receive the same treatment at a later date. To use Maussian (Mauss [1950] 1990) terms, we could say that in Soweto any gift impels a counter-gift.

Thus, if Bernard Stiegler (1998) is correct that humans are always and already constituted through their relationship with things (and tools), then the case of electronic music in Soweto elucidates the multiple ways that they may be so constituted. In other words, it is not simply the case that people first exist and only then come into relationship with technical objects. Rather, to be human in a sense presupposes an entanglement with non-human actors, a general scenario that Stiegler terms ‘technicity’ (see also Gallope 2011). To say that humans cannot but engage the tools, objects and technologies that make up their environments does not imply the homogeneity of these environments. As my account shows, ‘culture’ is constituted through heterogeneous environments where people form shifting alliances and attachments with the things that surround them.

The way that people in Soweto relate to property also has profound implications for the storage of information. As I have been emphasising, there is always the threat that computers will be stolen. This happened to me during fieldwork—both my laptop and my external hard drive were stolen, along with hundreds of photographs and recordings. In fact, during the first three months of fieldwork I had four cell phones and three cameras stolen. If I went out to a concert, usually my belongings did not last longer than 30 minutes. So after a while I stopped bringing them, stopped taking photographs, stopped making field recordings nearly altogether.

But I have also observed that there is another side to this story. Musicians are obligated to lend storage technologies such as external hard drives and memory sticks to friends. But external hard drives are not plentiful in Soweto. It is more common, in fact, for people to lend hard drives from their own computers or even to lend the computer itself. For example, Sizwe removed the chassis of his desktop computer



Figure 2 Sizwe's computer.

years ago. When a friend wants to copy information from Sizwe's computer, or when Sizwe wants to transport information, he removes the hard drive from his computer (see Figures 2 and 3). There were many days when I arrived at Sizwe's house to make music only to find that a friend had borrowed his hard drive for an undetermined period of time.

When storage technologies are lent to friends, and then to friends of friends, they often get lost along the way. Furthermore, hard drives are more susceptible to theft when they are being carried about than when they are at the home of their owner and under his or her watchful eye. Finally, hard drives that circulate among an always-expanding network of people are liable to break or get viruses. Thus, recording—and not only performance—is transient. The archival impulse is replaced by the inevitability of continual loss. 'To live in South Africa', write Sarah Nuttall and Liz McGregor (2007: 12), 'is to be subliminally primed for major loss'. In a place where 'the accident has become normal' (Marks and Andersson 1990: 44), music production is a form of pure mediality, a process of means without end.¹⁴

¹⁴I borrow the formulation 'pure mediality' loosely from Agamben (2000), although his meaning is quite different from what I have in mind here. For Agamben (2000: 117), pure mediality is a politics that is 'neither an end in itself nor of means subordinated to an end; rather, it is a sphere of pure mediality without end intended as the field of human action and thought'. I use the term in a more overtly materialist sense.



Figure 3 Sizwe's set-up. Note the hard drive on the floor.

On Information and Technological Failure

Here it is necessary to recall Larkin's observation that technology influences through its failure as much as its success. As he suggests, 'The inability of technologies to perform the functions they were assigned must be subject to the same critical scrutiny as their achievements' (Larkin 2008: 219). Hence, although I have been describing technology use in Soweto in terms of difficulties and problems, the township context also enables alternative aesthetic forms. For example, it is not uncommon to lend a hard drive to a friend and have it returned weeks later with a wealth of new movies, intimate photographs and instrumental tracks. These photographs may be of unfamiliar faces and the tracks of unknown origin. But the person in possession of the hard drive often adds new layers to the tracks and then lends the hard drive out again, setting in motion the process of digital accumulation once again. In this way, the failure of smooth information transmission generates a particular cumulative creative process that might otherwise not exist.

On one occasion that I witnessed, a neighbour visited Sizwe's room to download movies from Sizwe's PC directly onto a laptop. When Sizwe requested something in return, the neighbour dug around on his computer until he found a few electronic tracks. This neighbour could not recall where he received these tracks from or who created them, but Sizwe happily accepted them in exchange for a few movies and

spent most of the afternoon playing with them, tweaking the various instrumental layers and adding a few of his own.

This process happens with hard drives but also with other devices such as cameras. For example, when I lent my camera to a friend a couple of years ago he returned it a week later with dozens of photographs saved on the memory card. It would be unethical to reproduce such pictures here, but I will simply say that my camera picked up some very intimate moments on its brief excursion.

In his discussion of Nigerian film, Larkin focuses on the aesthetic forms generated by reduplication. The films that Larkin analyses are copied from tape to tape and, as is the case with any analogue format, the content degrades with each copy. 'Constant copying erodes data storage', he writes, 'degrading image and sound, overwhelming the signal of media content with the noise produced by the means of reproduction' (Larkin 2008: 218). In this way, Nigeria's informal networks of copying and distribution produce 'a set of formal qualities that generate a particular sensorial experience' (2008: 218). It is often said that with the advent of digital information the problem of content degradation had been solved, and indeed theoretically this should be the case. After all, the successful duplication of digital information requires nothing more than the faithful transmission of a string of binary digits. Nonetheless, digital storage does not necessarily prevent corruption of files—in fact, I have many MP3s from friends in Soweto that contain glitches, pops, abrupt silences and crackling sounds. According to Microsoft's official website, 'It's very rare for a file to become corrupted' (Microsoft 2014). Nonetheless, Microsoft (2014) tells us, there are several ways that file corruption can happen: 'The most common way it happens is when something goes wrong while a file is being saved. For example, the program saving the file might crash, or your computer might lose power just as the file is being saved'. These 'very rare' situations are actually very common in Soweto. Computers—which are often many years old and have gone through several rounds of repairs—crash frequently and hard. Additionally, since about 2008 South African citizens have become all too familiar with rolling blackouts and power failures. Power loss is a regular occurrence in South Africa, and Sowetans, in particular, do not find this a 'very rare' occurrence. In brief, statements about technology in Europe and North America cannot be easily translated to the Global South.¹⁵

In contrast to analogue malfunction, in which degradation takes place incrementally with each copy, digital malfunction tends to be unanticipated and rather dramatic. As Jonathan Sterne (2009: 64) observes, 'digital files do not age with any grace'. But graceful or not, digital malfunction also has very particular sonic characteristics. Analogue degradation tends to muffle sound by smoothing the divisions between sonic events. Digital malfunctioning, by contrast, generally results in glitches, crackles and pops that disrupt or spike the sonic texture (see Prior 2008). There is therefore a particular aesthetics of digital failure, which differs markedly from analogue formats. Digital aesthetics, it seems to me, are redolent of what Virilio

¹⁵This is perhaps Larkin's most important insight. See Larkin (2004, 2008); see also Larkin in Edwards *et al.* (2011).

(2009) calls *picnolepsy*: a general ‘epileptic’ state of consciousness produced by gaps, glitches and ‘speed bumps’. These miniature accidents are congenital to modernity but are perhaps only fully realised with the onslaught of the digital.

Throughout this paper, I have shifted the *emphasis* from the content of music (e.g., pitches, harmonic structures, rhythms) to the *infrastructures* of musical performance and the ways in which people and musical information either move or do not move. Of course, this does not mean that content is irrelevant: as I have shown, photographs, electronic tracks and other pieces of digital content move about Soweto in multiple ways—as gifts, accidental transmissions or perhaps even as ‘accidental’ gifts. Nonetheless, it is worth emphasising that infrastructures and modes of circulation in Soweto are not simply conditions of possibility for music; rather, they have profound consequences on the way that music sounds. My aim, in other words, is not simply to show how people use instruments and technology to make music or to explain how music moves through infrastructures. Instead, my argument is that instruments, technologies and infrastructures have sensorial and aesthetic effects—precisely at moments of failure, breakdown and obduracy.

Consider, for example, a simple two-bar electronic track that Sizwe produced. An orthodox transcription would present this track graphically as shown in [Figure 4](#).

It is quite possible, based on this small transcription, to make a number of speculative analytical observations. For one thing, the synthesised guitar part on the first staff produces what a rock musician would call ‘power chords’—that is, a root and fifth without a third (see Walser 1993). The use of power chords immediately raises a number of questions, since in contemporary South Africa rock music is associated primarily with whites.¹⁶ One may therefore ask whether this electronic track is an appropriation, or even subversion, of white styles? A different analyst may zoom in on the second chord (a D power chord) and point out that the low D is below the range of a guitar in standard tuning. This observation might bring up issues of the relationship between synthesised guitar sounds and the guitar itself as an instrument. For example, would it matter to an electronic musician if she was using guitar sounds below the range of a standard tuned guitar? Does digital technology ‘free’ the user from such concerns and, if so, does this mean that technology is potentially liberatory? Finally, it would of course be possible to analyse the rhythm. Do the bass drum accents on beats two and four imply an association with Brazilian samba music, perhaps? And might this association, in turn, have something to do with samba’s African ‘origins’?

All of the above questions are potentially both meaningful and interesting. But if one actually listens to the electronic track—or at least to the MP3 that I copied from Sizwe’s computer—it is evident that some extremely significant sonic events take place that are not susceptible to orthodox analytic procedures. What one hears first and foremost on this massively corrupted file is a series of breaks and ruptures that tear through the sonic fabric. [Figure 5](#) presents a spectrogram of a 14-second excerpt

¹⁶In fact, one of my interlocutors told me that in the 1980s any music associated with whites was referred to as ‘rock’. Of course, this association is based only on contemporary musical preferences since, after all, rock music was developed largely by African-American musicians.

The figure shows a musical score for a two-bar electronic track. It consists of five staves: Guitar, Bass Guitar, Snare Drum, Hi-hat, and Bass Drum. The time signature is 4/4. The Guitar staff is in treble clef and shows a melodic line with a long sustain. The Bass Guitar staff is in bass clef and shows a rhythmic pattern of eighth notes. The Snare Drum staff shows a steady pattern of quarter notes. The Hi-hat staff shows a pattern of eighth notes with 'x' marks indicating closed hi-hat sounds. The Bass Drum staff shows a pattern of quarter notes.

Figure 4 Orthodox transcription of a simple two-bar electronic track created by Sizwe.

from the MP3. The rectangles in the figure signal points at which there is a total gap in the sound. These glitches were not produced intentionally by musicians in Soweto, but instead resulted from a failure in the transmission or storage process. Thus, what one hears above all else in these moments is the obduracy of ‘failing’ technological infrastructure.¹⁷

I do not know of any cases in which the glitches, crackles and gaps audible in corrupted files have been used intentionally for aesthetic purposes. But lack of intentionality does not mean that these noises are without generative, aesthetic effect. Many aspects of the musical process in Soweto are not the result of individual agency or intention, but instead emerge through complex human and technological networks.¹⁸

The constant disassembling of hardware and the subsequent circulation of its various parts also implies a particular relationship to the technological apparatus. The nature of this relationship is most forcefully brought to light when compared with other music contexts in South Africa. Consider, for example, Louise Meintjes’ seminal ethnography of a professional recording studio in Johannesburg. Meintjes (2003: 73–4) argues that ‘the quality of the space can come to be constructed and experienced as magical and as a fetish by music-makers who work within it’. By ‘fetish’, she means a

¹⁷In a sense, the spectrogram invites us to listen beyond structure (see the contributions to Dell’Antonio 2004). At the same time, I am less interested in the ‘postmodern’ preoccupation with listening beyond structure than developing an expanded approach to structuration that takes into account the generative effects of failure and the agency of non-human actors.

¹⁸Although I cannot develop this idea fully here, I point out as an aside that the musicians with whom I worked cannot be equated with musicians who intentionally produce failures. The issue of ‘intentionality’ is very complex, however, since in certain genres practitioners often deliberately develop technological set-ups that they cannot control (see Novak 2013; Prior 2008).

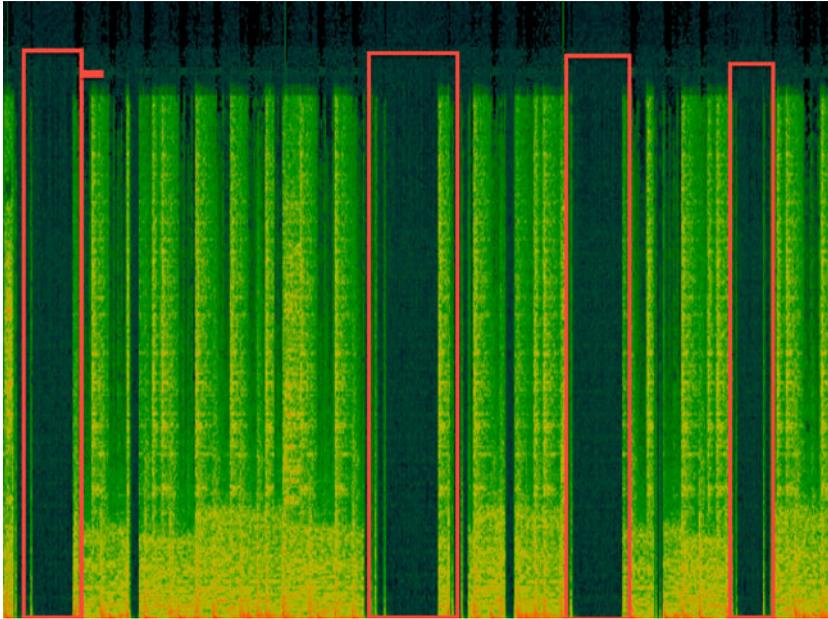


Figure 5 Spectrogram of an MP3 excerpt.

‘reif[ied] ... object that can procure for those who have earned access to it the services of that force, or “spirit”, lodged within it’. In addition to seeing the entire studio space as a kind of fetish, Meintjes points out that certain technological devices take on magical qualities through the invisibility and relative unavailability of their processes. Thus, when the voice of a black female vocalist named Joana is encapsulated by a recording console, Joana loses control over her voice and requires a male studio engineer to access it (2003: 100). The relative inaccessibility of the voice inside the machine, coupled with the more general mysteriousness of shiny interfaces concealing intricate circuitry that can only be manipulated from outside, results in feelings of alienation and awe. These feelings are exacerbated for those without technical or scientific knowledge.

For many musicians in Soweto, prying open computers and other electronic devices is a way of exploring technology. When I visited Sizwe in early 2012, his room was scattered with literally hundreds of motherboards, hard drives, power supply units and sound cards. Many of these component devices had been broken into even smaller parts. The computers looked like so many carcasses, disembowelled and gutted, and then strewn across floors, chairs and beds. ‘I’m even opening things that aren’t meant to be opened’, Sizwe proudly proclaimed. Indeed, manufacturers often seal small devices such as chargers so that consumers are forced to purchase them anew after breakage. But Sizwe was melting down plastic, sawing things open and breaking down parts repeatedly. He insisted that nothing is invisible or concealed if you crack it open and peer inside.

Sizwe's experimentations with and on various technological devices are empowering. By carefully studying motherboards, hard drives and other component parts, he rejects the role of passive consumer. In fact, he is busy building his own computer system that is more amenable to township use. Called the Ramputer (a portmanteau of his English name, 'Ralph', and 'computer'), this device will not be constructed as a self-sufficient or organic unit like a laptop. Instead, the Ramputer will be comprised of easily detachable component parts: keyboard, screen, motherboard, power supply, multiple hard disks and solid-state drives. Because the Internet is a rare luxury in Soweto, Ramputers will exchange information by swapping detachable drives and through Bluetooth technology. But in spite of its great potential, even the Ramputer would not ensure the secure storage of information, musical or otherwise. It too would exist in the circumscribed and precarious environment of Soweto where saving or preserving anything is extremely difficult, perhaps even impossible.

Concluding Remarks

I have presented several reasons why we should be suspicious of technophilic notions of musical circulation as an unimpeded flow. As my ethnography of Soweto suggests, there are various reasons why music in the twenty-first century does not flow unproblematically. In the context I have written about here, these include the physical layout of urban spaces, the issues of crime and theft, the breakdown of musical equipment, and the interruption of information transfer and storage.

There are three main reasons why ethnomusicologists often emphasise flow and circulation over blockage and obduracy. The first, as I have suggested, is an implicit and unthoughtful technophilia—that is, an assumption that technology is advancing towards greater perfection. As it turns out, this assumption is wildly exaggerated and relies on faulty theoretical assumptions. Second, most studies of musical circulation are based on examples from Europe and the United States. Consider, for example, the recent two-volume *Oxford Handbook of Mobile Music Studies* (Gopinath and Stanyek 2014). With 42 chapters and over 1000 pages, this massive compendium does not contain a single chapter on Africa. A third and final reason why scholars have celebrated flow over obduracy is that music itself is often considered fluid and labile, as something that moves easily and swiftly across borders and between spaces. But as a musical ontology, this picture is limited at best. As this article has shown, music does not always move with ease.

In South Africa, circulation is better apprehended in terms of obduracy than in terms of flow. This is not difficult to illustrate. But my study also makes the more important point that obduracy is not simply the lack of circulation. Instead, the various kinds of blockage and non-circulation that I have documented lead to novel forms of creative praxis. There is a fully fledged, albeit heterogeneous, aesthetics of obduracy that is enacted daily in Soweto by people like Sizwe and his friends. More specifically, I have examined several effects that are generated by and through obduracy or failure: the aesthetics of propinquity (i.e., musicking of a finite cohort

within a circumscribed area), the ownership of musical equipment as a kind of bodily prosthesis, the exchange of intimate images and sounds via hard drives, and the glitches and gaps in corrupted files. While these examples are seemingly negations of smooth and fluid systems, each example is simultaneously a productive singularity with its own contours and affective dimensions.¹⁹

Furthermore, it should be clear from my ethnography that ‘circulation’ does not merely describe a movement between people, objects and places. As David Novak (2013) has convincingly argued, the process of circulation actually constitutes the very sites through which that circulation traverses. The same, of course, could be said of obduracy. When a person, technological device or unit of sonic information ‘fails’ to move from one point to another, that failure often effects the points between which it does not or cannot move. It is possible to state all of this more strongly: time and space are not empty *a priori* categories (*à la* Kant) that are then filled up with matter and movement. Instead, the movement of material bodies constitutes—at least partially—the architecture of spatio-temporality.²⁰

Instead of simply celebrating music’s ubiquity, availability and unimpeded movement, my study presents a more complex and empirically-grounded picture that includes a number of human and non-human actors such as township musicians, urban infrastructure and computer hard drives. This emphasis does not detract from the importance of music in people’s lives. Indeed, I continue to recognise music as a powerful social, cultural and political force—but not, I reiterate, because it magically swirls all over the place. Instead, the case of Soweto shows that music (or, more precisely, musicking) is a material practice that is subject to the same obstacles and partitions as everything else.

My ethnography thus serves as a useful caution for any consideration of music and politics. As Jacques Rancière writes more generally about ‘the arts’:

The arts only ever lend to projects of domination or emancipation what they are able to lend to them, that is to say, quite simply, what they have in common with them: bodily positions and movements, functions of speech, the parceling out of the visible and the invisible. (2004: 19)

I contend that it is precisely because music does not, and cannot, break free from material constraints that it remains a vitally important mechanism for negotiating the complexities of contemporary urban African life.

Of what, finally, do these complexities consist? Soweto is a place of ubiquitous musical praxis and flourishing creativity, where individuals constantly perform for and with one another. But storing information is precarious and music circulates

¹⁹By ‘affect’ I mean simply the production of some effect or change. Although I understand this term generally in the Spinozist sense proposed by Gilles Deleuze and Félix Guattari (1987), I employ it here rather loosely and without necessarily taking into account the various recent critiques and modifications.

²⁰An extended account would recognise the multiple ways in which space and time are ‘produced’. See, for example, David Harvey’s (2009) Lefebvre-inspired conceptualisation of absolute, relative and relational space (where the third type, ‘relational’, most closely matches the position I am developing in this paper). For an excellent historicisation of the relationship between matter, space and time in the context of western music theory, see Grant (2014).

without ever congealing; that is to say, without ever becoming a commodity that might be distributed to people in other places, whether nationally or internationally. For most people, making music is something that one simply does without any particular goal. I have called this fluid state 'pure mediality' to emphasise its resolutely materialist grounding. In Soweto, music is both an expression and consequence of this grounding, of this obduracy that reveals itself finally as a generative failure at the very centre of post-apartheid society.

Acknowledgements

I would like to thank Ian MacMillen, Carol Muller, Ana María Ochoa Gautier and Andrew Weintraub for comments on earlier drafts of this paper. I also thank Oberlin College for an invitation to present this work in oral form.

References

- Agamben, Giorgio. 2000. *Means Without Ends: Notes on Politics*. Translated from Italian by Vincenzo Binetti and Cesare Casarino. Minneapolis: University of Minnesota Press.
- Ashforth, Adam. 2005. *Witchcraft, Violence, and Democracy in South Africa*. Chicago: University of Chicago Press.
- Beall, Jo, Owen Crankshaw and Susan Parnell. 2003. 'Social Differentiation and Urban Governance in Greater Soweto: A Case Study of Postapartheid Meadowlands'. In *Emerging Johannesburg: Perspectives of the Postapartheid City*, edited by Richard Tomlinson et al., 197–214. New York: Routledge.
- Bohlman, Philip. 1998. 'Immigrant, Folk, and Regional Musics in the Twentieth Century'. In *The Cambridge History of American Music*, edited by David Nicholls, 276–308. Cambridge: Cambridge University Press.
- Bonner, Philip and Lauren Segal. 1998. *Soweto: A History*. Cape Town: Maskew Miller Longman.
- Bull, Michael. 2000. *Sounding Out the City: Personal Stereos and the Management of Everyday Life*. Oxford: Berg.
- . 2001. 'Soundscapes of the Car: A Critical Study of Automobile Habitation'. In *Car Cultures*, edited by Daniel Miller, 185–202. New York: Berg.
- Cavarero, Adriana. 2005. *For More Than One Voice: Toward a Philosophy of Vocal Expression*. Translated from Italian by Paul A. Kottman. Stanford, Calif.: Stanford University Press.
- Christopher, A.J. 1994. *The Atlas of Apartheid*. New York: Routledge.
- Comaroff, John L. and Jean Comaroff. 2006. 'Figuring Crime: Quantifacts and the Production of the Un/Real'. *Public Culture* 18(1): 209–46.
- . 2008. 'Law and Disorder in the Postcolony: An Introduction'. In *Law and Disorder in the Postcolony*, edited by Jean Comaroff and John L. Comaroff, 1–56. Chicago: University of Chicago Press.
- DeLanda, Manuel. 1997. *Thousand Years of Non-linear History*. New York: Zone.
- . 2002. *Intensive Science and Virtual Philosophy*. London: Continuum.
- Deleuze, Gilles and Félix Guattari. 1987. *A Thousand Plateaus*. Translated from French by Brian Massumi. Minneapolis: University of Minnesota Press.
- Dell'Antonio, Andrew, ed. 2004. *Beyond Structural Listening? Postmodern Modes of Hearing*. Berkeley: University of California Press.
- Dohoney, Ryan. 2011. 'An Antidote to Metaphysics: Adriana Cavarero's Vocal Philosophy'. *Women and Music* 15: 70–85.

- Drewett, Michael and Martin Cloonan, eds. 2006. *Popular Music Censorship in Africa*. Aldershot: Ashgate.
- Edwards, Paul N., Lisa Gitelman, Gabrielle Hecht, Adrian Johns, Brian Larkin and Neil Safier. 2011. 'AHR Conversation: Historical Perspectives on the Circulation of Information'. *American Historical Review* 116(5): 1393–435.
- Erlmann, Veit. 2004. 'Communities of Style: Musical Figures of Black Diasporic Identity'. In *Identity and the Arts in Diaspora Communities*, edited by Thomas Turino and James Lea, 81–92. Warren, Mich.: Harmonie Park.
- Gallope, Michael. 2011. 'Technicity, Consciousness, and Musical Objects'. In *Music and Consciousness: Philosophical, Psychological, and Cultural Perspectives*, edited by David Clarke and Eric Clarke, 47–64. Oxford: Oxford University Press.
- Gerstin, Julian. 1998. 'Reputation in a Musical Scene: The Everyday Context of Connections between Music, Identity, and Politics'. *Ethnomusicology* 42(3): 385–414.
- Gopinath, Sumanth and Jason Stanyek, eds. 2014. *Oxford Handbook of Mobile Music Studies*. 2 volumes. Oxford: Oxford University Press.
- Grant, Roger M. 2014. *Beating Time and Measuring Music in the Early Modern Era*. Oxford: Oxford University Press.
- Haarhoff, Errol. 2010. 'Appropriating Modernism: Apartheid and the South African Township'. Paper presented at the Urban Transformation conference. Istanbul, Turkey. 12–15 July.
- Harvey, David. 2009. *Cosmopolitanism and the Geographies of Freedom*. New York: Columbia University Press.
- Kassabian, Anahid. 2013. *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity*. Berkeley: University of California Press.
- Larkin, Brian. 2004. 'Degraded Images, Distorted Sounds: Nigerian Video and the Infrastructure of Piracy'. *Public Culture* 16(2): 289–314.
- . 2008. *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria*. Durham, NC: Duke University Press.
- Manabe, Noriko. 2014. 'A Tale of Two Countries: Online Radio in the United States and Japan'. In *The Oxford Handbook of Mobile Music Studies*, Volume 1, edited by Sumanth Gopinath and Jason Stanyek, 456–95. Oxford: Oxford University Press.
- Manuel, Peter. 1993. *Cassette Culture: Popular Music and Technology in North India*. Chicago: University of Chicago Press.
- Marks, Shula, and Neil Andersson. 1990. 'The Epidemiology and Culture of Violence'. In *Political Violence and the Struggle in South Africa*, edited by N. Chabani Manganyi and André du Toit, 29–69. New York: St. Martin's.
- Mauss, Marcel. [1950] 1990. *The Gift. The Form and Reason for Exchange in Archaic Societies*. Translated from French by W. D. Halls. London: Routledge.
- Mbembe, Achille and Sarah Nuttall. 2008. 'Introduction: Afropolis'. In *Johannesburg: The Elusive Metropolis*, edited by Sarah Nuttall and Achille Mbembe, 1–33.
- Meintjes, Louise. 2003. *Sound of Africa! Making Music Zulu in a South African Studio*. Durham, NC: Duke University Press.
- Microsoft. 2014. 'Corrupted Files: Frequently Asked Questions'. <http://windows.microsoft.com/en-CA/windows-vista/Corrupted-files-frequently-asked-questions> (accessed 20 April 2014).
- Morris, Rosalind. 2010. 'Accident Histories, Post-historical Practice? Re-reading *Body of Power, Spirit of Resistance* in the Actuarial Age'. *Anthropological Quarterly* 83(3): 581–642.
- Muller, Carol and Sathima Benjamin. 2011. *Musical Echoes: South African Women Thinking in Jazz*. Durham, NC: Duke University Press.
- Novak, David. 2008. '2.5 × 6 Meters of Space: Japanese Music Coffeehouses and Experimental Practices of Listening'. *Popular Music* 27(1): 15–34.
- . 2013. *Japanoise: Music at the Edge of Circulation*. Durham, NC: Duke University Press.

- Nuttall, Sarah and Liz McGregor, eds. 2007. Forward to *At Risk: Writing on and Over the Edge in South Africa*, 9–13. Jeppestown: Jonathan Ball.
- Prior, Nick. 2008. 'Putting a Glitch in the Field: Bourdieu, Actor Network Theory and Contemporary Music'. *Cultural Sociology* 2: 301–19.
- Rancière, Jacques. 2004. *The Politics of Aesthetics: The Distribution of the Sensible*. Translated from French by Gabriel Rockhill. New York: Continuum.
- Ramnarine, Tina K. 1996. "'Indian" Music in the Diaspora: Cases of "Chutney" in Trinidad and in London'. *British Journal of Ethnomusicology* 5(1): 133–53.
- Sachs, Curt. 1940. *The History of Musical Instruments*. New York: W. W. Norton.
- Schneider, Marius. 1934. *Geschichte der Mehrstimmigkeit, historische und phänomenologische Studien*. Tutzing: H. Schneider.
- Skinner, Ryan. 2012. 'Artists, Music Piracy, and the Crisis of Political Subjectivity in Contemporary Mali'. *Anthropological Quarterly* 85(3): 723–54.
- Slobin, Mark. 1994. 'Music in Diaspora: A View from Euro-America'. *Diaspora: A Journal of Transnational Studies* 3(3): 243–51.
- Steinberg, Johnny. 2001. *Crimewave: The South African Underworld and its Foes*. Johannesburg: Witwatersrand University Press.
- Steingo, Gavin. 2008. 'Historicizing Kwaito'. *African Music* 8(2): 26–55.
- . 2010. 'After Apartheid: Kwaito Music and the Aesthetics of Freedom'. PhD diss., University of Pennsylvania.
- Sterne, Jonathan. 2009. 'The Preservation Paradox in Digital Audio'. In *Sound Souvenirs*, edited by Karin Bijsterveld and José van Dijck, 55–65. Amsterdam: Amsterdam University Press.
- . 2012. *MP3: The Meaning of a Format*. Durham, NC: Duke University Press.
- Stiegler, Bernard. 1998. *Technics and Time, I: The Fault of Epimetheus*. Translated from French by Richard Beardsworth and George Collins. Stanford, Calif.: Stanford University Press.
- Straw, Will. 1991. 'Systems of Articulation, Logics of Change: Communities and Scenes in Popular Music'. *Cultural Studies* 5(3): 368–88.
- Tomlinson, Richard, Robert A. Beauregard, Lindsay Bremner and Xolela Mangcu, eds. 2003. 'The Postapartheid Struggle for an Integrated Johannesburg'. In *Emerging Johannesburg: Perspectives of the Postapartheid City*, 3–20. New York: Routledge.
- Tsing, Anna. 2004. *Friction: An Ethnography of Global Connection*. Princeton, N.J.: Princeton University Press.
- Turino, Thomas. 1993. *Moving Away From Silence: Music of the Peruvian Altiplano and the Experience of Urban Migration*. Chicago: University of Chicago Press.
- . 2008. *Music as Social Life: The Politics of Participation*. Chicago: University of Chicago Press.
- Virilio, Paul. 1999. *Politics of the Very Worst*. Translated from French by Michael Cavaliere. New York: Semiotext(e).
- . 2006. *The Original Accident*. Translated by Julie Rose. Cambridge: Polity.
- . 2009. *The Aesthetics of Disappearance*. Translated from French by Phil Beitchman. Cambridge, Mass.: MIT Press.
- Wafer, Alex. 2008. 'Scale and Identity in Post-Apartheid Soweto'. *Transformation* 66–7: 98–115.
- Walser, Robert. 1993. *Running with the Devil: Power, Gender, and Madness in Heavy Metal Music*. Middletown, Conn.: Wesleyan University Press.
- Waterman, Richard A. 1952. 'African Influence on the Music of the Americas'. In *Acculturation in the Americas*, edited by Sol Tax, 207–18. Chicago: University of Chicago Press.
- Wittkower, D. E., ed. 2008. *iPod and Philosophy: iCon of an ePoch*. Chicago: Open Court.