Exploring the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship: A case study of Reforest Fest

by

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Declaration

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Abstract

In the Anthropocene, the inextricable connections between humans and nature are undeniable. The social-ecological systems perspective acknowledges these connections between humans and nature, and the notion of resilience is an emergent property of these systems. Resilience is understood to be a system's ability to persist, adapt, or transform in the face of change, especially unexpected change, with a goal of improving human wellbeing. The capacity for transformation is increasingly acknowledged as a key aspect of resilience. The resilience concept also acknowledges interactions between smaller and larger scales within a system. An application of these concepts can be found in small-scale, experimental transformative spaces that may encourage large-scale transformations in the wider system. Recent studies suggest that the arts have contributed to fostering transformation in these spaces, but there has been little research on the role of music (as a form of art) in fostering resilience in transformative spaces. Reforest Fest, a reforestation music festival in the Western Cape Province of South Africa, is a transformative space with music at its core. The festival's goal is to improve ecosystem stewardship, which is an approach to managing social-ecological systems in the face of change to enhance human wellbeing. This thesis uses Reforest Fest as a case study, gathering data through immersive participation, participant observation, and interviews, and analysing the results using Katrina Brown's framework of "resistance", "rootedness", and "resourcefulness" to explore the role of music in fostering resilience. The key finding is that music played a crucial role in fostering rootedness at the festival and, in turn, facilitated resistance and resourcefulness in the space. Through rootedness, music also played a role in fostering the transformative space itself. This has implications for the further use of musical elements in transformative spaces, contributing to the literature on transformative spaces that aim to support sustainability transformations and ecosystem stewardship at multiple interlinked scales.

Opsomming

In die Antroposeen is die onlosmaaklike bande tussen mense en die natuur onbetwisbaar. Die sosio-ekologiese stelselperspektief gee erkenning aan hierdie bande tussen mense en die natuur. Veerkragtigheid is 'n ontluikende eienskap van hierdie stelsels. Veerkragtigheid word beskou as 'n stelsel se vermoë om aan te hou, aan te pas, of te transformeer tydens veranderinge, veral onverwagte veranderinge, met die doel om menslike welsyn te verbeter. Die kapasiteit vir transformasie word toenemend erken as 'n belangrike aspek van veerkragtigheid. Die veerkragtigheidskonsep erken ook interaksies tussen kleiner en groter skale in 'n stelsel. 'n Toepassing van hierdie konsepte kan gevind word in kleinskaalse eksperimentele transformatiewe ruimtes wat grootskaalse transformasies in die breër stelsel kan aanmoedig. Onlangse studies dui daarop dat die kunste bygedra het tot transformasie in hierdie ruimtes, maar min navorsing is gedoen oor die vermoë van musiek (as 'n kunsvorm) om veerkragtigheid in hierdie samewerkende ruimtes te bevorder. Reforest Fest, 'n herbebossing-fees in die Wes-Kaap-provinsie van Suid-Afrika, is 'n transvormatiewe ruimte met musiek aan die kern. Die doel van die fees is om rentmeesterskap van die ekosisteem te verbeter, 'n benadering tot die bestuur van sosiaal-ekologiese stelsels tydens veranderinge om menslike welsyn te verbeter. In hierdie studie is Reforest Fest as 'n gevallestudie gebruik, en data is ingesamel deur verdiepte deelname, deelnemerwaarneming en onderhoude. Die resultate is aan die hand van Katrina Brown se raamwerk van 'veerkragtigheid', 'geworteldheid' en 'vindingrykheid' ontleed om die vermoë van musiek om veerkragtigheid te bevorder, te ondersoek. Die hoofbevinding was dat musiek 'n belangrike rol speel in die bevordering van geworteldheid by die fees en weerstand en vindingrykheid in die ruimte in die hand werk. Deur middel van geworteldheid het musiek ook 'n rol gespeel om die transformatiewe ruimte self te bevorder. Dit hou implikasies vir die verdere gebruik van musiekelemente in transformatiewe ruimtes, wat bydra tot die literatuur oor transformatiewe ruimtes.

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Chapter 1 - Introduction

1.1   Introduction

This thesis aims to explore the role of music in fostering resilience, or the capacity to deal with change, in spaces that foster ideas and collaborations for transformations toward a more sustainable future. I investigate this through a case study of Reforest Fest, a reforestation music festival in Platbos Forest in the Western Cape Province of South Africa (see Figure 1).

Reforest Fest takes place annually over two weekends in March, as a collaboration between the Platbos Conservation Trust and Greenpop, both of which are non-profit organisations in the Western Cape (https://greenpop.org/; https://www.platbos.co.za/; http://reforestfest.com/). The goals of the festival are reforestation and to introduce sustainable living to the attendees in a temporary community. These goals have the potential to enable larger scale sustainability transformations through the awareness they raise, and the new ideas and collaborations fostered in the space.

The reforestation initiative aims to return the forest to its original state since Platbos Forest, with its unique biodiversity and history (discussed in Chapter 4), is overrun with alien vegetation that, amongst other concerns, poses an increased fire risk to the area. The aim of forming a temporary sustainable community is to provide attendees with a lived experience of sustainability (including aspects related to minimising resource consumption in the form of food, energy, and water) while being connected to nature, in addition to the educational and recreational activities that form part of the space. The experience builds awareness and support for alternative ways of living and being, which could contribute to more sustainable societies.

Figure 1 - Map of South Africa showing the location of Platbos Forest
Source: SA-Venues (2018)

This chapter will introduce the challenges of the Anthropocene as a background for my research. I then describe my research in more detail, covering how and why I chose to research this topic. I end with an outline of the remaining chapters in the thesis.

1.2   Background

In the current geological epoch, the Anthropocene, humans' negative effect on the global environment is greater than ever before (Crutzen 2002; Folke et al. 2011; Lewis & Maslin 2015; Monastersky 2015). These effects are some of the unintended consequences of economic growth and social development (Steffen et al. 2015). They are difficult to predict and respond to because they manifest in complex systems containing inhomogeneous agents (in the form of humans and natural elements) that are constantly adapting, are highly connected, interact nonlinearly, and feature in multiple systems with varying roles in each system (Chu, Strand & Fjelland 2003). This is motivation for researchers to change the way they think about global challenges to include a recognition of systemic effects, interconnectedness, and the unintended consequences of economic growth (Folke et al. 2010; Steffen et al. 2011; Wells 2013; Folke et al. 2011; Steffen et al. 2015). Acknowledging the

complexity of such systems may assist in uncovering solutions that improve our chances of surviving in the Anthropocene (Wells 2013).

This complexity is also evident in interactions between human beings and the environment (Holling 1998; Berkes, Colding & Folke 2003; Glaser et al. 2008; Folke & Gunderson 2010; Folke et al. 2010). Social-ecological systems research is a well-established and rapidly-expanding field of study that views human interactions with nature as complex adaptive systems (Biggs et al. 2012; Folke 2016). Therefore, framing the challenges of future sustainability pathways through the lens of social-ecological systems scholarship is an appropriate approach to navigating resilient Anthropocene futures.

A prominent focus of social-ecological systems research is the notion of resilience and resilience thinking (Folke 2016; Folke et al. 2010). This has become increasingly popular because of the acknowledgment of complexity and the need for systems thinking in the Anthropocene. Static goals are no longer appropriate (Brown 2016; Kagan & Kirchberg 2016). We should rather consider the ability of a system to persist, adapt, or transform in the face of change. These aspects are succinctly captured in the notion of resilience (Folke 2016; Folke et al. 2010). Recent definitions of resilience discuss the ability of a social-ecological system to adapt or transform in the face of change to sustain human wellbeing (Biggs, Schlüter & Schoon 2015; Folke et al. 2016). These definitions also relate to the concept of ecosystem stewardship, which is a strategy to shape social-ecological systems in the face of change to sustain and support human wellbeing (Chapin et al. 2010).

An important concept in resilience research is the Panarchy model of nested adaptive cycles (Gunderson & Holling 2002), which is discussed in more detail in Section 2.4. Adaptive cycles describe cycles of growth and creative destruction in complex adaptive systems like social-ecological systems. The Panarchy model nests these adaptive cycles, noting interactions between slow-changing higher levels, and faster-changing low levels. These lower levels are generally smaller both in temporal and spatial scales.

1.3   Rationale for the study

An application of the Panarchy model can be found in small experimental "transformative spaces" (Drimie et al. 2018; Pereira et al. 2018) that have the potential to create transformative change at higher levels. Transformative spaces encourage diverse stakeholders to collaborate to develop innovative root-cause solutions in a space that encourages experimentation (Drimie et al. 2018). Pereira et al. (2018) found that the arts play an important role in fostering transformation in these spaces and the capacity for transformation is a key aspect of resilience. This then leads to questions around the role of music, as a form of art, in fostering resilience in transformative spaces.

While there are scholars, in the fields of ecomusicology and ethnomusicology, that investigate the role of music in social interventions, including those that bring about ecological change, their understanding of concepts like sustainability and resilience (Titon 2015a) differ from those in this thesis (discussed further in Section 2.5.2). Despite these differences, ecomusicology and ethnomusicology are still able to provide insights into the role of music in a transformative space.

In order to study this role of music in fostering resilience in transformative spaces toward improving ecosystem stewardship, an appropriate framework must be selected. Music influences the social aspects of social-ecological systems, and Folke et al. (2010) have noted that social dimensions of resilience in social-ecological systems (for example, identity, worldviews, and values) can influence ecosystem stewardship. It therefore seems important to study aspects of social interaction in social-ecological systems.

While there are a number of resilience framework options (for example Carpenter et al. 2012; Biggs, Schlüter & Schoon 2015), an appropriate framework with which to investigate the capacity of music to foster resilience in transformative spaces is the "3Rs framework" proposed by Katrina Brown (2016). This framework divides resilience into the concepts of "resistance", which deals with power dynamics and activism; "rootedness", which relates to a sense of place; and "resourcefulness", which includes knowledge, innovation, and creativity. The 3Rs add detail to the social aspects of resilience in social-ecological systems, and address the community-level dynamics that can contribute to resilience at different scales.

1.4   Problem statement

Small-scale experimental transformative spaces have the potential to create significant change at higher scales. Pereira et al. (2018) found that the arts can foster transformations, and the capacity for transformation is a key aspect of resilience (Biggs, Schlüter & Schoon 2015; Folke et al. 2016). Since music is a form of art, it may also have the capacity to foster resilience in transformative spaces. However, this role for music has been underexplored. The case of Reforest Fest seemed applicable since music is used in a space that seeks to bring about transformation. An appropriate framework with which to investigate this relationship involves resistance, rootedness, and resourcefulness as components of resilience. This framework addresses the social aspects of resilience and the community-level dynamics that could contribute to resilience at different scales.

1.5   Research aim and objectives

The objective of this research is to explore the capacity for music to foster resilience in transformative spaces for sustainability. The particular focus of this thesis is the case of the Reforest Fest reforestation music festival at Platbos Forest, which seeks to improve ecosystem stewardship in its attendees.

The research question I will be answering is, **what is the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship?**

1.6   Scope and limitations of the study

My goal is not to establish a causal link between music and social resilience, but rather to explore how music, as a form of art, fosters "resistance", "rootedness", or "resourcefulness" within a transformative space.

By focusing on the music of Reforest Fest, which is largely in the indie-folk genre, I am excluding other genres of music that may be more or less suited to fostering resilience in transformative spaces. The specific context of Reforest Fest will be different to other transformative spaces, so the findings of this study will not be generalisable in their exact form; however, there may be aspects of this study that apply to other cases, mostly through the theoretical framework of the 3Rs.

This thesis will not attempt to compare Reforest Fest with other, less eco-conscious, music festivals. I will only address the eco-friendly measures adopted by Greenpop and the Reforest Fest team where they support or contextualise my research. The

general benefits of eco-conscious festivals are addressed elsewhere, for example the benefits of vegetarian food in minimising a festival's ecological footprint is described in Andersson, Jutbring, and Lundberg (2013), and a discussion on music festivals communicating environmental awareness is presented in Ricaurte (2015).

In addition, while I acknowledge that music is not a purely positive tool (Turino 2008a), this is not the focus of my study. I will instead cover the strengths and shortcomings of using music in fostering resilience.

Although I use the literature on ecomusicology and ethnomusicology to provide a theoretical explanation for the music-related opinions in my data, I do not seek to position this thesis in the fields of ecomusicology or ethnomusicology. As a result, there may be large discourses or bodies of literature that are excluded from this thesis, and any terms that may trigger these broader discussions should be understood with a non-academic connotation. Instead, I position this research in the field of resilience studies with respect to social-ecological transformations toward improved ecosystem stewardship.

There is some degree of bias in this study, since I have an interest in music and have been playing music as a hobby for 28 years. There is also a bias in my case study, since the people I observed and interviewed took the time to attend an environmentalist music festival, which implies they also had a keen interest in ecosystem stewardship and music. Since I am not trying to generalise to the wider population, this is not a significant concern; however, it is still worth considering when reading this thesis.

1.7   Research design, methodology, and methods

I used the framework of Brown's 3Rs to explore the capacity of music – creating, performing, and listening – to foster resilience in the transformative space of Reforest Fest. The festival took place on 16-18 March and 23-25 March 2018. The case study was appropriate because it is a transformative space with music at its core, with the aim of improving ecosystem stewardship. It could also be considered as an approach toward collaborative grassroots governance between non-profit organisations and the community.

I was there as a participant and immersed myself in the experience while interacting with other attendees. I also conducted participant observation and used the time to identify interviewees for in-depth interviews after the festival. I attended both

weekends of Reforest Fest (Family Fest and Friends Fest), each of which yielded slightly different experiences. I interviewed five attendees, four performers, and one organiser of Reforest Fest after the festival. Further details on my research methods are detailed in Chapter 3.

My research approach to this inductive study was qualitative, which enabled me to describe the context of my research and focus on the opinions of the research participants. The qualitative approach was also conducive to the exploratory nature of this research, having little idea of what to expect in the field.

My research design was a case study. This allowed me to focus on one example with the purpose of drawing insights into phenomena that are exhibited by the case (Yin 2009). In case studies, opportunities often arise for unexpected discoveries and differing viewpoints (Flyvbjerg 2006), and while case studies are not suited to statistical generalisation, they may be suited to analytical generalisation where theoretical propositions are the target of generalisation (Miles, Hubeman & Saldana 2014).

The data collection methods I employed, apart from my own immersive experience, were participant observation and interviews. As a Reforest Fest attendee and having delivered a talk and performance, I was able to gain an understanding of the festival from different perspectives. This was useful during interviews with both attendees and performers after the event (since the festival itself was not suited to interviews). I intentionally set out to conduct interviews with both performers and listeners, to gauge whether their responses would contradict each other. While listening to performers on the main stage, I wrote down lyrics with a social or ecological theme and used this as a selection criterion for interviewees and a point of discussion in my interviews with performers. I also noted observations about how the audience responded and asked the listeners questions during their interviews that yielded more information about their reactions to the music.

Data was initially analysed by transcribing interviews and then coding them using Atlas.ti qualitative data analysis software. This helped with the initial fracturing of the data and preliminary synthesis of common trends in an inductive fashion. Thereafter, the summarised data was exported from Atlas.ti and arranged into the 3Rs framework, adopting a more deductive approach.

In terms of validity, I adopted the criteria of "trustworthiness" (Bryman et al. 2011). This requires having multiple data sources, providing rich descriptions of the context, maintaining data records, and being aware of my own perspectives and values so as to limit my influence on the research.

1.8   Chapter outline

Having provided a brief introduction to my research in Chapter 1, including the background and rationale for the study, the problem statement, and the research design, I will proceed to outline the remainder of this thesis.

Chapter 2 is the literature review, which begins by describing the concept of social-ecological system scholarship. I describe how social-ecological systems can be viewed as complex adaptive systems, before moving on to resilience as a property of complex adaptive systems. Thereafter, I discuss the notion of resilience, transformation, and the Panarchy model. I then discuss transformative spaces, and the potential role for art and music in these spaces. I end with a description of the 3Rs framework as a bridge into the next chapter on methodology.

Chapter 3 describes my research methodology in more detail. It will describe the development of my research process and my qualitative inductive approach, before discussing decisions I made in my exploratory case study research design and a brief description of Reforest Fest (with more description in Chapter 4). I then describe the interview process including the design of the interview guide, participant observation, interviewee selection, the interviews themselves, and data analysis. I end with a discussion on data validity and reliability.

Chapter 4 contains the results of my research. This includes a description of the context in which my research took place, starting with the history of Platbos Forest and Greenpop, and their involvement in Reforest Fest. There is a description of Reforest Fest along with photographs to provide a clearer idea of the setting. I describe the music at the festival, including a table containing the themes I noted in the lyrics of the songs performed. The interview trends follow, and they are divided into the role of music in a "narrow" understanding of resilience at Reforest Fest, and then a broader system-related view of how music was used in the space. In the "narrow" view, the 3Rs could be addressed separately; however, in the broader view, this was not possible due to the interactions between the 3Rs. My own reflections are also included in this chapter.

Chapter 5 contains a discussion of the results. It is divided in a similar manner to Chapter 4, with a "narrow" view divided into the 3Rs, followed by a broader view. In this chapter, I introduce some literature from the fields of ecomusicology and ethnomusicology to explain the music-related findings in the study. I propose recommendations for further scholarship before concluding the study.

Chapter 2 - Theory and literature analysis

2.1 Introduction

The goal of my literature review is to provide a critical overview of the literature that highlights why music may play a role in fostering resilience in transformative spaces toward improved ecosystem stewardship.

I begin with a brief history on the development of social-ecological systems scholarship to establish key concepts in this field. I then discuss the widely accepted notion that social-ecological systems are complex adaptive systems, in order to address the concept of resilience in social-ecological systems and the Panarchy model of resilience. I discuss the capacity for transformation as a key aspect of resilience, including an application of the Panarchy model in the concept of transformative spaces. I then investigate what role the arts and music could play in fostering resilience in transformative spaces. I also introduce the fields of ethnomusicology and ecomusicology, which will be used in Chapter 5 of this thesis. I discuss frameworks for a resilience-based approach to improving ecosystem stewardship, and I discuss the role of social aspects of resilience in reaching this aim. I end with a description of the 3Rs framework, which considers the community-level dynamics that can contribute to resilience at different scales. This framework also explores the social aspects of resilience in detail, making it a useful way to link music-related insights to resilience in transformative spaces.

2.2 Social-ecological systems

2.2.1 The development of social-ecological systems research

In the 1990s, a series of events led to conceptual integration of and convergence of ideas and frameworks in the fields of political economics, ecology, and complexity science (Schoon & van der Leeuw 2015). Researchers in these fields were growing frustrated with traditional equilibrium-based approaches that separated human and natural systems (Schoon & van der Leeuw 2015). This encouraged scholars in each of these fields to adopt multidisciplinary approaches to address research questions that went beyond the training within a traditional discipline (Schoon & van der Leeuw 2015). In addition, within each field the move away from equilibrium-based models was assisted by the approach of complexity science (Schoon & van der Leeuw 2015). These shifts away from the prevalent scientific studies before the 1990s were

expressed in a body of literature called social-ecological systems, also known as coupled human-natural systems, socio-environmental systems, or coupled natural-human systems (Schoon & van der Leeuw 2015).

There are three characteristics that distinguish the social-ecological systems perspective from prior scientific investigations (Schoon & van der Leeuw 2015). First, a strong form of this perspective involves "analysing and studying humans as an integral part of the biophysical world" (Schoon & van der Leeuw 2015:167), insisting that nature is no longer just a context in which social interactions occur (Schoon & van der Leeuw 2015). Berkes, Colding, and Folke (2003:3) agree with this characteristic of the social-ecological systems perspective, and "hold the view that social and ecological systems are in fact linked, and that the delineation between social and natural systems is artificial and arbitrary". Other authors making similar statements are for example Glaser et al. (2008), Biggs et al. (2015), and Folke (2016).

Both strong and weak versions of this perspective focus on the interactions and feedbacks between the social and the ecological aspects of systems, going beyond simply discussing these aspects as equal but separate systems (Schoon & van der Leeuw 2015). Kotchen and Young (2007) discuss using "partial equilibrium analysis" as a necessary first step in understanding coupled human-biophysical systems. In this analysis, drivers originating from across the human-nature divide are considered while treating each side as a separate system. This analysis bears some resemblance to the field of sustainability science, which was inspired by the realisation that human development must occur within the planet's environmental limits (Clark & Dickson 2003). However, Kotchen and Young (2007) also note that "partial equilibrium analysis" will inadequately account for the interactive dynamics between the social and ecological components of social-ecological systems.

Second, there is an increasing focus in the social-ecological systems field on interdisciplinary approaches and methodologies (Schoon & van der Leeuw 2015). This involves moving beyond bringing experts together from different disciplines, toward more transdisciplinary methodologies (Schoon & van der Leeuw 2015). "Such approaches have also changed scientific perspectives from narrow, reductionist views to a more holistic type of questioning and problem-solving" (Schoon & van der Leeuw 2015:167). Brown (2016) states that social-ecological systems literature has interdisciplinary origins, Glaser et al. (2008) note that transdisciplinarity has been

present in a number of studies within the social-ecological systems research field, and Collins et al. (2011) find that the interdisciplinary linkages are evolving as the social-ecological systems perspective increases in popularity.

And third, the social-ecological systems approach moves toward a more dynamic and fluid analysis as opposed to traditional equilibrium-based models found in disciplines like economics and ecology (Schoon & van der Leeuw 2015). Berkes, Colding, and Folke (2003:7) argue that "nature is not equilibrium centered" and, by extension, neither are social-ecological systems. Glaser et al. (2008) identify five important tendencies, or areas of research, in studies of social-ecological systems in the 1990s. Of those five tendencies, three involve a focus on dynamic interactions within the systems they study. Collins et al. (2011) criticise some early frameworks in social-ecological systems research because they do not adequately account for the temporal dynamics within the systems they describe.

2.2.2 Systems and complexity

Having established what social-ecological systems scholarship is, I will now clarify two terms that are commonly used in the social-ecological systems literature. The first term of importance in social-ecological systems scholarship is "system". The word "system" in this context refers to several interacting elements forming an integrated whole, often with a shared purpose (Kim 1999; Schoon & van der Leeuw 2015). Systems generally have a dynamic structure, which is defined by the elements and their compositions; behaviour that processes inputs and generates outputs; as well as interconnectivity between their parts in terms of structure and function (Schoon & van der Leeuw 2015). The behaviour of systems can be unpredictable due to feedbacks and delays, and the underlying structure of a system is creative in the sense that it creates the patterns and events that are observed to be the behaviour of the system (Kim 1999). There may also be systems nested within systems, or linked to other systems on the same hierarchical level (Berkes, Colding & Folke 2003; Schoon & van der Leeuw 2015).

It is difficult to discuss social-ecological systems scholarship without referring to "complexity". "Complexity generally refers to the study of how large-scale complex, organized, and adaptive behavior can emerge from (relatively) simple interactions among myriad individuals" (Schoon & van der Leeuw 2015:167). When applied to systems as defined above, the interactions between elements in "systems of organised complexity" can lead to outcomes that are qualitatively different to the sum

of their individual actions (Schoon & van der Leeuw 2015). This concept has been referred to as "emergence" in classical texts (Schoon & van der Leeuw 2015). In their explanation of emergent properties, Heylighen, Cilliers, and Gershenson (2007:120) use an example of musical composition, stating that "a musical piece has the properties of rhythm, melody and harmony, which are absent in the individual notes that constitute the piece". Glaser et al. (2008) also provide a succinct definition of emergence similar to that of Schoon and van der Leeuw (2015).

2.3   Social-ecological systems as complex adaptive systems

A specific form of complex system, a complex adaptive system, has been defined by scientists as comprising multiple elements dynamically and independently interacting in a heterogeneous and diverse network (Folke 2006; Schoon & van der Leeuw 2015). The agents in complex adaptive systems are well-connected and actions often result in non-linear and disproportionate outputs that can be difficult to predict (Chu, Strand & Fjelland 2003; Heylighen, Cilliers & Gershenson 2007). Examples of this type of system behaviour can be found in predator-prey relationships and arms race scenarios (Folke 2006; Heylighen, Cilliers & Gershenson 2007). Through this network of connections, the system exhibits emergent behaviour by creating itself while learning and adapting over time (Schoon & van der Leeuw 2015). "The study of complex adaptive systems attempts to explain how complex structures and patterns of interaction can arise from disorder through simple but powerful rules that guide change" (Folke 2006:257).

It is becoming increasingly common for scholars to understand social-ecological systems as complex adaptive systems (Levin et al. 2013). Many authors have already accepted this view, including Walker et al. (2004), Folke et al. (2010), Biggs et al. (2015), Brown (2016), and Folke (2016). As an example of this connection, there are properties of social-ecological systems that arise due to the complex adaptive nature of these systems, including "possibilities of non-marginal changes, unobserved slow structural changes, spatial variation and strategic behavior" (Levin et al. 2013:113). In complex adaptive systems, macroscopic properties emerge from lower-level interactions (Levin et al. 2013) which then feed back on the system to influence the agents interacting at lower levels (Folke 2016). Similarly, in social-ecological systems, local actions spread to higher scales due to the collective behaviour of agents, and these macroscopic properties feed back (diffusely and after some time delay) to influence agents' behaviour (Levin et al. 2013). In addition,

complex adaptive systems exhibit nonlinearity that can lead to unexpected surprises if not considered when trying to understand these systems (Levin et al. 2013). Social-ecological systems also exhibit nonlinearity, which implies that system dynamics and initial conditions are important considerations when attempting to intervene in these systems (Levin et al. 2013).

I have described social-ecological systems literature and discussed important terms in the field, like systems, complexity, and emergence. I have also established that social-ecological systems can be understood as complex adaptive systems. The next section will discuss the concept of resilience in complex adaptive systems like social-ecological systems.

2.4   Resilience as a property of complex adaptive systems

The concept of resilience can be seen as an emergent property of complex adaptive systems (Berkes, Colding & Folke 2003; Levin et al. 2013; Quinlan et al. 2016) as well as an approach for understanding complex adaptive systems (Folke 2016) or an approach for managing complex adaptive systems like social-ecological systems (Duit et al. 2010; Boyd & Folke 2011; van der Merwe, Biggs & Preiser 2018). In this sense, resilience thinking may be seen as an application of complex adaptive systems thinking (van der Merwe, Biggs & Preiser 2018).

Marchese et al. (2018) define, through a literature review, three frameworks for the relationship between resilience and sustainability. The understanding that will be presented in this thesis is resilience as a component of the broader concept of sustainability, where an increase in resilience makes a system more sustainable, but an increase in sustainability does not necessarily increase resilience. In this understanding, sustainability – focusing broadly on "increasing the quality of life with respect to environmental, social and economic considerations, both in the present and for future generations" (Marchese et al. 2018:1275) – is the overall goal. Resilience concepts can be used to meet broader sustainability objectives, and resilience is understood to stabilise sustainable system states when they are achieved (Marchese et al. 2018). The other two frameworks, that are not included in this thesis, are sustainability as a component of resilience, and resilience and sustainability as separate objectives (see Marchese et al. 2018 for more detail).

Folke (2006) presents a thorough history of resilience thinking, but I will only touch on some aspects of his article here. Holling (1973) introduced the concept of "resilience" in an ecological setting, to describe relationships between predators and prey, as well as competing species in an environment (Berkes, Colding & Folke 2003; Folke 2006). Holling's (1973) main focus was to set up a distinction between resilience and stability, where a relatively unstable (ever-changing and far from equilibrium) system could exhibit more resilience than a stable one, because the instability allows for persistence of all the species involved. The concept of resilience then began to spread to anthropology, ecological economics, environmental psychology, cultural theory, and sustainability science (Folke 2006), with each field interpreting its meaning differently (Brand & Jax 2007). The dynamics of complex adaptive systems seemed to fit Holling's original observations and catalysed research into the resilience perspective of social-ecological systems (Folke 2006).

Resilience was initially defined as a system's ability to absorb shocks without changing its function (Pimm 1984; Folke 2006). This system property has become known as "engineering resilience" and implies a return to a state of equilibrium after a perturbation (Folke et al. 2010). A further development by Holling (1996) introduced the notion of ecological resilience as an emergent property of systems. In this definition of resilience, and approach to understanding systems, systems exhibit multiple stable states and are able to shift between them if an appropriate type, direction, and magnitude of stimulus is applied. Ecological resilience fostered thinking around thresholds, tipping points, and regime shifts in systems, where transformations could occur between stable states (Holling 1996; Folke et al. 2010).

One of the main limitations of this conceptualisation of ecological resilience was the difficulty in accounting for systems whose nature is constantly changing (Folke et al. 2010). This made the notion of ecological resilience inadequate to address the ever-changing dynamics of social-ecological systems. By expanding the notion of ecological resilience to social-ecological resilience, the definition has been broadened to contain three main aspects: persistence (the ability to maintain function and structure), adaptability (being able to learn and adjust), and transformability (the ability of the system to change entirely) (Folke et al. 2010). The social-ecological definition of resilience conceptualises that a social-ecological system remains open to the opportunities that arise from a disturbance related to deep uncertainty and surprise (Folke 2006). This makes it suitable for use as an approach to governance and management of social-ecological systems. More recent definitions of social-

ecological resilience have been proposed by Biggs, Schlüter, and Schoon (2015:22), defining it as "the capacity of [a social-ecological system] to sustain human wellbeing in the face of disturbance and change, both by buffering shocks and by adapting or transforming in response to change"; and by Folke et al. (2016), defining it as "the capacity to adapt or transform in the face of change in social-ecological systems, particularly unexpected change, in ways that continue to support human well- being". There have been some criticisms of the vagueness introduced by these extended definitions (Olsson et al. 2015); however, this vagueness enhances the applicability of the concept to varied fields and different contexts (Brand & Jax 2007).

The notion of resilience in social-ecological systems can be further distinguished in terms of general and specified resilience (Folke et al. 2010; Carpenter et al. 2012; Brown 2016; Folke 2016; van der Merwe, Biggs & Preiser 2018). Specified resilience refers to resilience of a particular part of a social-ecological system to a particular type of disturbance (Carpenter et al. 2012; van der Merwe, Biggs & Preiser 2018). Examples of specified resilience mentioned by Carpenter et al. (2012) include Australian catchments' resilience to salinity by controlling water-table levels, as well as resilience of various areas to large storms, floods, fires, and earthquakes. Conversely, general resilience relates to the adaptability and transformability of a social-ecological system in response to unfamiliar and unknown disturbances (Carpenter et al. 2012; van der Merwe, Biggs & Preiser 2018). In order to promote general resilience, people in a social-ecological system must learn to adapt to change and self-organise, while being able to cope with the dynamics of complex adaptive systems under pressure (van der Merwe, Biggs & Preiser 2018). General resilience would be an asset for social-ecological systems in the uncertainty of the Anthropocene (Brown 2016; Folke 2016).

Another important concept in the field of resilience is the Panarchy model of resilience. While a detailed discussion of the Panarchy model of nested adaptive cycles (Gunderson & Holling 2002) will be excluded from this thesis, the basic concepts will be discussed here. An adaptive cycle describes the dynamics of growth (called exploitation), peak accumulation (called conservation), creative destruction (called release), and renewal (called reorganisation) in complex adaptive systems (Gunderson & Holling 2002). The phases of growth and accumulation (the forward loop) can be fairly predictable and slow, while the creative destruction and renewal phases (the back loop) can be unpredictable and fast (Holling 2004). Novel and innovative elements can lie dormant during the forward loop, hidden by the more

dominant paradigm, while in the back loop these elements become a starting point for new combinations that then start the next cycle (Holling 2004).

The Panarchy model nests these adaptive renewal cycles at different temporal and spatial scales (Holling 2004). Higher scale cycles are generally larger and slower, while lower scale cycles are smaller and quicker (Holling 2004). There is both top-down and bottom-up interaction between these nested adaptive cycles (Holling 2004). This implies that change can propagate from a lower scale level to a higher one, but may remain bounded under the influence of an even higher scale (Holling 2004). The dynamic interactions between these scales sustain the repetition of adaptive cycles (Holling 2004).

One application of the Panarchy concept can be found in calls for new approaches to governance (for example Duit & Galaz 2008; Duit et al. 2010; Galaz et al. 2012) that involve grassroots experimentation and collaboration for imagining new futures. Linked to issues of scale, and similar to a call for polycentric governance (Biggs et al. 2012; Biggs, Schlüter & Schoon 2015), Dieleman (2013) and Duit and Galaz (2008) find that multi-level governance is crucial in realising resilience in complex adaptive systems. In order to enhance social resilience, Maclean, Cuthill, and Ross (2014) recommend management policies that promote the actions of ecological stewardship groups, especially "in areas needing stronger people-place connections and/or social capital. This suggests developing new, more engaged, governance forms such as co-management with diverse stakeholders" (Maclean, Cuthill & Ross 2014:153). These new approaches to governance (also discussed by Walker et al. 2002; Duit & Galaz 2008; Duit et al. 2010; Galaz et al. 2012) may assist in overcoming what Gunderson (2003) describes as institutional inertia in formalised management and an inability for management institutions to generate novel solutions (an opinion shared by Duit & Galaz 2008). Brown (2016) describes cases of "policy misfit" where well-meaning top-down governance interventions have unintended negative consequences for some (often less powerful) members of the population. Some researchers also find that the capacity for adaptation resides in the informal and cultural aspects of organisations rather than the formal elements (for example Berkhout et al. 2004 in Dieleman 2013).

2.5   Resilience and transformation in transformative spaces

Another application of the Panarchy concept can be found in small-scale
transformative spaces that have the potential to create change at higher scales. This
application is central to my thesis. In this section, I will move from a discussion on
transformation to the concept of transformative spaces.

The capacity for transformation is a key aspect of resilience, as is evident in recent
definitions of resilience (Biggs, Schlüter & Schoon 2015). Transformation can be
deliberately initiated by the people in a social-ecological system, or it may be forced
on people by changes in the ecological or socioeconomic conditions around them
(Folke et al. 2010). Brown (2014) also notes that some communities are designing
and shaping alternative futures by using resilience as an organising principle. Crises
can often be treated as opportunities for transformation when subsystems are able to
utilise the resilience in other parts of the system to support the transformation (Folke
et al. 2010).

Brown (2014) states that transformation requires a commitment to novelty and
innovation, to imagine alternatives and new possible future pathways. Kagan and
Kirchberg (2016) motivate for something they call "creative resilience". They
encourage us to be creative in re-inventing our futures while dealing with complexity,
as opposed to adopting a predetermined and fixed set of values and behaviours for
sustainability. Ecosystem crises often spawn creativity, novelty, and innovation in
society, and this has the potential to transform our governance responses towards
more sustainable futures (Gunderson 2003). Folke et al. (2010) agree that
transformation involves innovation and novelty, aided by recombining sources of
knowledge and experience. The importance of imagination in transformative thinking
is also mentioned by Pereira et al. (2018) and Vervoort and Gupta (2018).
Imagination is a driver of human creativity, as is evident in technological
advancements, cultural change, and governance adaptation, all of which drive social
evolution (Davidson 2010).

Kagan and Kirchberg (2016:1490) hold the view that moving towards resilience in
sustainability "require[s] the flourishing of spaces where imagination, experimentation
and challenging experiences open up futures-oriented questions and perspectives".
In addition, Folke et al. (2010) note that transformation involves dynamic interactions
between various scales in a system. Other authors who acknowledge this inter-scale
interaction are Manzini and M'Rithaa (2016), who find that social innovations that are

small and localised, yet connected and open to external cultural influence, may result in resilient systems; Biggs, Westley, and Carpenter (2010), who state that radical local-scale innovations can cascade up to large-scale transformations; and Folke et al. (2010), who state that the resilience that may be present at large scales could facilitate transformations at smaller scales, and transformative experiments that are performed at small scales could allow for learning and new initiatives to emerge at large scales. These attributes can be found in transformative spaces.

The first step of the experimental process is encouraging arenas for safe experimentation (Folke et al. 2010; Dieleman 2013), such as transformative spaces. These protected niches of experimentation, when combined with self-organisation around new ideas and networks of support, can generate positive visions of the future (Pereira et al. 2018). Drimie et al. (2018) list three aspects of transformative spaces. The first is that they should be collaborative and bring diverse actors together to work towards a common goal. The second is that they should be experimental and iterative in building resilience. And the third is that they should not only address symptoms, but also focus on systemic root causes of problems.

Imagination and anticipation (perceiving the potential future consequences of current actions) can be enhanced through collective action or collective agency (Davidson 2010). "Cocreating novel futures together in a world defined by complexity, diversity, and uncertainty calls for creative, collaborative, and experimental tools and methods that create spaces for transformative understanding and action" (Pereira et al. 2018:29). In their case study, Pereira et al. (2018) found that the arts played an important role in enhancing collaboration in transformative spaces.

2.5.1 The arts in general as a catalyst in transformative spaces

A key theme that emerged in the case study conducted by Pereira et al. (2018) was the role of the arts in "fostering and triggering transformations in social-ecological systems" (Pereira et al. 2018:19). Art played a pivotal role in their process of imagining new futures and in collaborative communication between participants (Pereira et al. 2018). Including artists as participants in the transformative space also provided a way of connecting participants to their creativity (Pereira et al. 2018).

Among the influencers and indicators of social and cultural change, art has been considered particularly inspirational (Haley 2008; The United Nations Educational Scientific and Cultural Organization 2012; Soini & Birkeland 2014; Portron 2017). Some suggest that art is critical to human survival due to its role in fostering social

cohesion, identity formation, and connecting the self to the world (Turino 2008b; Arnoldi 2018). The arts have a significant role to play in communicating and fostering an understanding of multi-faceted topics, such as sustainability and resilience (Connelly et al. 2016). Furthermore, art has the ability to either build, or challenge and criticise social norms (Dieleman 2008; Connelly et al. 2016; Scheffer, Baas & Bjordam 2017).

Dieleman (2008) claims that traditional approaches to sustainability, such as politics and science, may struggle to stimulate sustainable behaviour due to their focus on analytical methods and because they are constrained by existing boundaries. He suggests that they do not adequately address emotion and intuition, while "[t]he arts can touch upon 'feelings' and 'emotions' and because of that, can influence behaviour, worldviews and lifestyles in a more direct way than politicians or activists…" (Dieleman 2008:14). Indeed, some members of the policy and strategy community believe that "arts and resilience are intrinsically linked" (Portron 2017:10). The arts, including music, are seen to be essential for creative and experimental spaces to flourish (Turino 2008b; Kagan & Kirchberg 2016). This is especially true where participants are encouraged to take artistic risks in an environment where failure is acceptable (Bilby, Caulfield & Ridley 2013).

2.5.2 Music as a catalyst in transformative spaces

There are two bodies of literature that provide insights into the potential role for music in fostering resilience in transformative spaces. These are ethnomusicology and ecomusicology (which includes aspects of ethnomusicology). While I do not intend to position this thesis within the fields of ethnomusicology or ecomusicology, I would like to acknowledge that scholars in these fields of study examine the role of musical activities in society. In this section, I will provide a broad overview of the ideas in these fields that may relate to the concepts of resilience or transformation; but note that the goals of these fields differ from the intention of this thesis.

Within the literature on ethnomusicology is the field of applied ethnomusicology. "Applied ethnomusicology is best regarded [as] a music-centered intervention in a particular community, whose purpose is to benefit that community—for example, a social improvement, a musical benefit, a cultural good, an economic advantage, or a combination of these and other benefits" (Titon 2015b:4). Given this understanding of applied ethnomusicology, the field might have insights into the role of music-centred initiatives that foster resilience in transformative spaces. However, the sustainability-

related goals of applied ethnomusicology are less concerned with social-ecological systems, and instead focus on practices that preserve musical cultures: "In applied ethnomusicology, sustainability does not directly reference green energy or developmental economics, although it may involve them. Rather, it refers to a music culture's capacity to maintain and develop its music now and in the foreseeable future" (Titon 2015a:157). Similarly, resilience concepts in this field are used as a strategy towards sustaining music-culture systems (Titon 2015a) as opposed to social-ecological systems.

Ecomusicology is the study of the intersection of music, culture, and nature. This field includes "the study of musical and sonic issues, both textual and performative, as they relate to ecology and the environment" (Allen 2011:392). Like the field of social-ecological systems, this body of literature acknowledges interdisciplinarity and the notion that humans and nature are inextricably connected (Allen & Dawe 2016). Resilience is also used in this field, along with the concept of social-ecological systems (see for example Ryan 2016). However, much of the resilience and sustainability literature in this field pertains to resource usage in processes of manufacturing musical instruments and cultures affected by the industry (for example Allen 2011; Dawe 2016; Ryan 2016).

These two fields, while not explicitly motivated by a need to foster resilience in transformative spaces towards improved ecosystem stewardship, may provide a theoretical background to music-related insights in transformative spaces. In Chapter 5, I will highlight how insights from the fields of ethnomusicology and ecomusicology may support and provide context for music-related statements made by interviewees in my case study.

The case study seeks to explore the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship and requires a framework through which to do this. A brief overview of resilience frameworks will be presented next, ending with the selected framework for this thesis, which was conceptualised by Katrina Brown (2016), involving "resistance", "rootedness", and "resourcefulness".

2.6   Resilience and ecosystem stewardship

2.6.1 Frameworks for enhancing resilience toward ecosystem stewardship

Some frameworks that utilise the notion of resilience in social-ecological systems attempt to encourage ecosystem stewardship (for example Biggs et al. 2012). Chapin et al. (2010:241) define ecosystem stewardship as "a strategy to respond to and shape social–ecological systems under conditions of uncertainty and change to sustain the supply and opportunities for use of ecosystem services to support human well-being". They also provide a definition of ecosystem services as "the benefits that society derives from ecosystems" (Chapin et al. 2010:241).

Ecosystem stewardship differs from ecosystem management by acknowledging the uncertainty and change (Chapin et al. 2010) that is characteristic of complex adaptive systems like social-ecological systems (Levin et al. 2013). While ecosystem management also focuses on preserving ecosystem services, this approach often uses a static reference point, based on historical conditions that may not be achievable due to change and uncertainty (Chapin et al. 2010). Chapin et al. (2010) list three approaches to ecosystem stewardship: reduce vulnerability to expected changes (similar to specified resilience, and the persistence dimension of resilience), sustain desirable conditions in the face of unexpected changes (similar to general resilience, and the adaptability dimension of resilience), and transform undesirable conditions when opportunities arise to do so (similar to the transformability dimension of resilience).

To enhance the resilience of ecosystem services, Biggs et al. (2012) and Biggs, Schlüter, and Schoon (2015) propose seven principles for enhancing resilience: foster diversity and redundancy, manage connectivity, maintain awareness of feedbacks and slow variables, improve the understanding of social-ecological systems as complex adaptive systems, encourage learning and experimentation, encourage participation, and promote polycentric governance strategies. Other similar principles exist, for example Carpenter et al. (2012) propose the following nine conditions that could support general resilience in social-ecological systems: diversity, modularity, reserves/redundancy, openness, feedbacks, nestedness, monitoring, trust, and leadership. Since this thesis aims to address the role of music in fostering resilience in transformative spaces, it would be appropriate to select a framework that enables additional understanding on the social aspects of resilience in small communities like transformative spaces. While the two frameworks

mentioned here can be applied to the social aspects of resilience (discussed below) they are less focused on community-level dynamics.

2.6.2 Social aspects of resilience

Since the concept of social-ecological resilience was originally favoured by systems ecologists, it exhibited a bias towards more ecological details, with less detail and insight on the social aspects of social-ecological resilience (Brown 2014; Maclean, Cuthill & Ross 2014; Olsson et al. 2015). Olsson et al. (2015) find that the resilience concept is used more widely in ecology and environmental studies than in relevant social science disciplines, and Maclean, Cuthill, and Ross (2014) state that there is a knowledge gap regarding the social aspects of resilience. Brown (2014) acknowledges this knowledge gap, but also notes that there are an increasing number of socially-oriented research papers in the resilience field. Davidson (2010), Brown (2014), and Olsson et al. (2015) also comment on the lack of consideration for power asymmetries, political forces, institutional change, social contracts, and agency in resilience literature. Brown (2016:103) notes that resilience research underestimates the extent to which "transformations in social ecological systems and governance actually require transformations of power and concerted political struggle".

Based on the Panarchy model of resilience previously discussed, the concept of resilience can be a way to understand the dynamics between slow changes and unexpected abrupt changes in social-ecological systems (Holling 2004; Folke et al. 2011). Many slow variables are reflected in the social aspects of resilience. Folke et al. (2010) list some potential slow variables in social systems, such as identity, worldviews, and core values. Biggs et al. (2012) add legal systems and traditions to the list. Transformability of social-ecological systems is often accompanied by shifts in perception, social network structure, and interaction patterns among people (Folke et al. 2010; Soini & Birkeland 2014; Connelly et al. 2016). Brown (2014) states that social issues like agency, collective action, and social power asymmetries affect the delivery of ecosystem services. This is why social and cultural change have a crucial role to play in shaping the resilience of social-ecological systems (Folke et al. 2010; Steffen et al. 2011; Soini & Birkeland 2014; Palmer, Biggs & Cumming 2015; Portron 2017). Folke et al. (2010) consider the extension of resilience to social-ecological systems to be "an exciting area of explorative work broadening the scope from

adaptive management of ecosystem feedbacks to understanding and accounting for the social dimension that creates barriers or bridges for ecosystem stewardship".

Adger (2000:361) defines social resilience as "the ability of communities to withstand external shocks to their social infrastructure", while complex adaptive systems researchers define social resilience as "the adaptive and learning capacity of individuals, groups and institutions to self-organise in a way that maintains system function in the face of change or in response to a disturbance" (Maclean, Cuthill & Ross 2014:145). Cuthill et al. (2008) seem to combine these two definitions in stating that social resilience is "the way in which individuals, communities and societies adapt, transform, and potentially become stronger when faced with environmental, social, economic or political challenges" (Cuthill et al. in Maclean, Cuthill & Ross 2014:146). While social and ecological resilience have been discussed separately in the past, Adger (2000) argues that they are connected, especially where communities depend on ecosystems for their livelihoods. This is supported by the concept of social-ecological systems as discussed previously.

Gunderson (2003) finds that connectivity and linkages between people in communities, and people and their environment, can strengthen social resilience by providing assistance in navigating transitions during times of uncertainty. Maclean, Cuthill, and Ross (2014) identify six attributes of social resilience through case studies, in order to provide evidence to support assumptions around social resilience. These attributes are knowledge, skills and learning (including knowledge partnerships); community networks (providing social support for hope and optimism in times of change); people-place connections (to enhance a desire for ecosystem stewardship); community infrastructure (to support the medical and cultural needs of the community); diverse and innovative economy (to enable adaptation to national and global trends and maintain employment); and engaged governance (requiring the involvement of multiple stakeholders using collaborative approaches to decision making).

2.7   Resistance, Rootedness, Resourcefulness

A framework that contributes to understanding the social aspects of resilience is Brown's (2016) framework of resistance, rootedness, and resourcefulness. It considers the community-level dynamics that can contribute to resilience at different scales, and I therefore considered this an appropriate framework for exploring my research.

Katrina Brown proposes an agency-centred approach to resilience that builds on "the everyday lived experience of resilience" (Brown 2016:7). These "everyday forms of resilience" are presented through a series of vignettes that describe the lived experience of resilience, in order to expose the "social and political dynamics of experiential resilience" (Brown 2016:100). The five vignettes summarise longitudinal case studies of social-ecological systems, mainly in the Global South, and emphasise the socially differentiated challenges, solutions, and trade-offs that occur when socio-economic and environmental changes affect individuals and households. The cases are analysed by contrasting vulnerability and resilience during times of change and developing themes in which to group the insights.

Themes that materialised from Brown's (2016) analysis are "power asymmetries and resistance", "cross-scale interactions and interventions", "social dynamics of resilience", "contested knowledges and values", and "situated resilience and sense of place". The conceptual framework that emerged from these themes is the 3Rs: resistance, rootedness, and resourcefulness (Brown 2016). This framework seeks to address the criticisms of previous social-ecological system resilience models, which include over-emphasising structural and external forces, and underemphasising the power (and social power dynamics) of individuals and households (Brown 2014; Olsson et al. 2015; Brown 2016). The 3Rs are defined as follows:

Resistance "puts concerns for politics and power at [the] heart of resilience. It concerns how new spaces for change can be opened up and how positive transformation might be shaped and mobilised" (Brown 2016:3). It is a way for individuals to influence their futures by replacing existing social structures, processes, and values with those that represent their own strategies, as well as the "exercise of subordinate power", which is the common interpretation of resistance in the social sciences (Brown 2016). Alternatively, it could also mean resisting change from external influences, which is the common interpretation of resistance in the ecological sciences (Brown 2016). Either way, "power relations and ecological conditions structure social ecological systems and produce unequal outcomes that are often highly contested" (Brown 2016:195).

Rootedness "acknowledges the situated nature of resilience, and the importance of culture and place – not only as physical environment and context, but also as identity and attachment" (Brown 2016:3). Place can be divided into physical place (natural and built environment), place character (culture and heritage), and place attachment

(place-rooted identity), with all three dimensions playing an important role in influencing resilience (Brown 2016). An alternative framework for rootedness divides it into its economic (thriving local economies and local production), environmental (communities' roles in managing natural resources), and social (health and equity for a sense of community) constituents (Brown 2016). Rootedness acknowledges the strength associated with a sense of belonging, but also recognises the multi-faceted and ever-changing connections and identity of agents (Brown 2016). It could result in bringing people together, but also has the potential to divide communities from each other (Brown 2016).

Resourcefulness "considers the resources available, how they can be accessed and used in response to change. It concerns capacities, knowledges, innovation and learning" (Brown 2016:3). It deals with creativity, ideas, entrepreneurship, and the leveraging of local knowledge, social networks, and improvisational abilities to bring about change or restoration at the community level (Brown 2016). Resourcefulness also links a community's abilities with assistance from the external world, ensuring that resources and information from the outside are used effectively in the internal context (Brown 2016).

The 3Rs attempt to re-vision resilience by concentrating more on the social aspects of resilience in social-ecological systems. Since the 3Rs are not directly mapped to the 3 elements of social-ecological resilience, there are aspects of persistence, adaptability, and transformability in each of the 3Rs. The 3Rs framework addresses the issue that "conventional resilience analysis does not engage with the material, social and symbolic landscape that constitutes the lived experience of the communities whose resilience is being sought" (Brown 2016:201), and seems to support a view of participation and collaboration. Brown (2016) also acknowledges the need to integrate more ecological aspects into the 3Rs, both as sites for change and as active agents in change (with the help of actor network theory), but sees this as an area for future study.

The 3Rs provide a useful framework for exploring the role of music in fostering resilience in transformative spaces. Resistance can link to protest music and the use of music to create spaces that encourage transformative change. Rootedness links to the use of music to create a sense of place in its performers and listeners. And resourcefulness could link to the creative use of music, and its use in knowledge transfer and imagining new futures.

In Chapter 4 and Chapter 5, I present and discuss my case study results in the framework of the 3Rs in order to investigate the role of music in fostering resilience in transformative spaces.

2.8   Summary

The field of social-ecological systems views humans and nature as inextricably connected. The complexity of these connections within and between the social and ecological aspects of these systems warrants understanding them as complex adaptive systems. Resilience is an emergent property of complex adaptive systems, and an important aspect of a resilient system is its ability to transform in the face of change. Small-scale, experimental "transformative spaces" are able to foster the conditions that could lead to resilient transformations at a larger scale, as per the Panarchy model in resilience literature. The role of the arts has been acknowledged in catalysing collaboration in transformative spaces, and there is an indication that music (as a more specific form of art) shares these attributes. Bodies of literature on ethnomusicology and ecomusicology could provide some insight on the role of music in fostering resilience in transformative spaces; however, this thesis is positioned in the field of resilience studies rather than musicology. A number of frameworks have been proposed, utilising the concept of resilience toward improving ecosystem stewardship. The 3Rs framework of resilience is appropriate for investigating the role of music in fostering resilience in transformative spaces since it provides additional understanding regarding the social aspects of resilience.

My case study will study the role of music in fostering resilience in the Reforest Fest transformative space towards improving ecosystem stewardship in its attendees. I will do this by connecting music-related insights to resistance, rootedness, and resourcefulness in the transformative space. In addition, I will use eco- and ethno-musicology literature in Chapter 5 to better understand the musical insights drawn from the case study.

Chapter 3 - Methodology

3.1 Introduction

In this chapter, I briefly describe my case study, Reforest Fest, which is held at Platbos Forest in the Western Cape Province of South Africa. The festival is held annually over two weekends in March and involves reforesting Platbos Forest as part of a music festival that promotes environmentalism, sustainability, and ecosystem stewardship. It may be considered unusual for music to play such a significant role in a transformative space, such as Reforest Fest, and this made it an ideal setting to study the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship.

The exploratory nature of this research meant that a qualitative inductive approach was required. I fully participated in the festival on both weekends, both of which yielded slightly different experiences. I interacted with other attendees and engaged in participant observation while attending the festival. I also used the time to identify candidates for in-depth follow-up interviews, which were conducted shortly after the festival.

This chapter begins with a description of the evolution of my research (in Section 3.2) that emphasises the exploratory and inductive nature of the study. I then discuss my case study in Section 3.3, both justifying my choices, and providing a brief description of the case. Thereafter, Section 3.4 describes my methods, including the design of an interview guide, participant observation, interviewee selection, the interviews themselves, and data analysis. Section 3.4 ends with a discussion on the validity and reliability of my data.

3.2 The evolution of this exploratory research

This section of the methodology chapter describes the journey I took in choosing the case study design on which this thesis is based. I have chosen to describe this to avoid giving the impression that a case study design was selected through a process of elimination based on pros and cons of various designs. The exploratory nature of this study meant that my research methodology was only truly apparent in hindsight, with some deviations arising during the research process. At the beginning of this research, I hoped to explore a harmonic analysis of songs with messages of environmentalism in popular music charts since the 1960s, link this back to society's

attitude towards environmental issues, and determine how this may influence the notion of resilience in social-ecological systems.

While discussing this research with a friend, Warwick Hayes, I was reminded about Greenpop, a non-profit organisation in Cape Town, South Africa. I had heard about Greenpop previously because Warwick had participated in a number of their reforestation initiatives in the past; however, I was unaware of their use of music in the reforestation process. After Warwick described the prominence of music in Greenpop's work, he suggested I speak to their "Tree-E-O", Misha "O' Dale" Teasdale, about how their work might support my research. Warwick introduced me to Misha via email, and we arranged a discussion via telephone, since I live in Johannesburg.

During this conversation, I explained my then broad research theme: exploring the link between music and the notion of resilience in social-ecological systems. After I described possible links as suggested by a preliminary review of the literature, Misha strongly suggested that I attend Greenpop's Reforest Fest music and reforestation festival. He thought it would be an effective way to immerse myself in a space that used music as a focal point for environmentalist action. This invitation inspired me to include insights from the festival in my research findings to add a South African perspective to the harmonic analysis of popular music charts on the global scale.

My initial focus would have been the most widely recognised popular music chart of which I was aware, namely the Billboard chart, which ranks American popular music. After discussing my research with a number of South African music lecturers, it became clear that a harmonic analysis of the Billboard chart was not aligned with my research objectives. This was due to the difficulty in drawing generalised conclusions about societal attitudes from a song's harmonic structure, and the detachment of American popular music from the South African context of Reforest Fest. They suggested that I omit the chart analysis and focus on the Reforest Fest case study. Initially, I was not convinced; however, I did concede that the harmonic analysis would not add as much value as a textual analysis of the lyrics in these songs. Therefore, the harmonic analysis was lost in the "back loop" of this research's adaptive cycle.

Eventually, after doing more research, I replaced the Billboard charts with South African popular music charts, in an attempt to improve the connection between the context of the chart analysis and the context of Reforest Fest. Although scepticism remained regarding the link between the textual chart analysis and Reforest Fest, I continued to gather information about the South African music charts, since it provided a larger-scale view of the links I was investigating at Reforest Fest.

I searched for South African music charts and had discussions with marketing managers in the South African music industry and a music compiler at a radio station. Unfortunately, it became clear that South Africa does not have music charts of a similar standard to that of Billboard. I also discovered that RadioMonitor, a South African company that monitors radio airplay and compiles data of song popularity for the music industry, only has this data from 2015 to 2018. This weakened the chart analysis to a point where it would have been a mere distraction from the case study. The chart analysis was therefore lost to the "back loop" of this research completely. The research therefore ended up focusing entirely on the Reforest Fest case study.

The remainder of my research process will be discussed in the following sections; however, it is important to remember that the process was exploratory and inductive based on the results gained at Reforest Fest. During this process, the general research direction of exploring the link between music and resilience became focused on a specific research question: what is the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship?

This exploratory study lent itself to a qualitative research approach. Qualitative research supports "a way of looking at research that honours an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation" (Creswell 2014:4). Having only some idea of what to expect in the field, inductive research seemed to be an appropriate approach to follow. Kagan and Kirchberg (2016) found, through their literature review of studies in music and sustainability, that a qualitative inductive approach has been used frequently in research related to music.

3.3   Research design: the case study

3.3.1 Decisions and theory around the case study

The Reforest Fest case study proved useful for this exploratory research for three reasons. First, case studies can produce in-depth, context-dependent knowledge, and a nuanced view of reality - which is required to understand human affairs (Flyvbjerg 2006; Yin 2011; Bryman et al. 2011). Second, case studies are a learning tool for a researcher to develop skills for good research practice (Flyvbjerg 2006). Flyvbjerg also suggests that "the most advanced form of understanding is achieved when researchers place themselves within the context being studied" (Flyvbjerg 2006:236). Third, intense observation of the case would allow me the opportunity to uncover unexpected results and discoveries (Flyvbjerg 2006).

A number of studies in the field of resilience scholarship have employed case study research designs. The following are examples of research that uses case studies to draw conclusions or demonstrate an argument. Pereira et al. (2018) use a workshop to study transformative spaces and Maclean, Cuthill, and Ross (2014) partner with non-governmental agencies in Australia to study cases of social resilience. Gunderson (2003) uses multiple social-ecological system cases to investigate the relationship between social resilience and ecological crises, while Palmer, Biggs, and Cumming (2015) introduce a special feature of *Ecology and Society* that draws on South African case studies to understand the use of complexity thinking to enhance human wellbeing and ecosystem stewardship. And, as discussed in Chapter 2, Brown (2016) used case studies to develop her 3Rs framework and to demonstrate the importance of the framework thereafter.

The goal of my single case study design is not to generalise to a population. This is analogous to generalising from a single experiment as opposed to multiple experiments, which would be unreliable (Yin 2009). A multiple case study design would suit this type of statistical generalisation that enumerates frequencies in a quantitative way (Yin 2009); however, this is not the aim of my research. Instead, analytical generalisation will be more appropriate, allowing me to generalise to theoretical propositions (Yin 2009; Miles, Hubeman & Saldana 2014), such as the 3Rs framework for resilience (Brown 2016).

There are typically three uses for case studies, namely descriptive, explanatory, and exploratory case studies (Lee, Collier & Cullen 2007; Yin 2009). Descriptive case studies expand on research that has already been completed, while explanatory cases are suited to deriving a detailed understanding of a particular phenomenon (Yin 2009; Bryman et al. 2011). Exploratory case studies are a form of preliminary research to identify themes on which future research can build (Yin 2009; Bryman et al. 2011). Since there has been little research on my study themes, and there was uncertainty about the phenomena that would be found in my case study of Reforest Fest, mine would be an exploratory case study.

An intrinsic case study is defined by Yin (2011:310) as a "case study of a particular situation selected because of its uniqueness and inherent interest, importance, or likely insights, without regard to its applicability to other situations". Intrinsic case studies are unique cases that deserve to be studied due to their potential to generate unusual insights (Yin 2011), and Reforest Fest promised to deliver as an intrinsic case study.

3.3.2 A brief description of the case

Greenpop's Reforest Fest was held at the end of March 2018, and music featured prominently at the event. Music is a feature of the festival before, during, and after planting trees to reforest Platbos Forest. It allowed me to gather data through immersive participation in the musical and environmentalist space. I supplemented my own experience with participant observation, and interviews with artists and audience members. This case study could also be considered a critical case (Flyvbjerg 2006; Miles, Hubeman & Saldana 2014), since it was "most likely" that I would discover connections between music and resilience at Reforest Fest.

The festival took place over two weekends, with Family Fest (catering to children and their parents) held on 16 to 18 March 2018 and Friends Fest (catering to adults) held on 23 to 25 March 2018. My wife and I were registered participants at both of these festivals, having purchased tickets to Friends Fest and having earned free tickets to Family Fest when I agreed to deliver a talk on ecomusicology. I therefore experienced being an audience member and a performer while at the festival.

I participated fully as a Reforest Fest attendee. During the first weekend, we camped in the forest with most of the other attendees; however, our lodging for the second weekend was a short walk from the festival in accommodation recommended by the Reforest Fest organisers. The change came about due to our tent repeatedly

collapsing in the Cape wind during the first weekend, which was inconvenient, and having to rebuild constantly would have reduced the amount of time spent engaging in festival activities. Our modified sleeping arrangements allowed me to be present at Reforest Fest for the entire duration of the activities. I did not miss much activity due to this arrangement since I arrived at the forest early in the morning and left late in the evening. I participated in all tree-planting activities, listened to the music, participated in 'campfire jam sessions', ate the food (all of which was vegetarian or vegan), and listened to informative talks alongside other attendees.

I also enjoyed a brief experience as a performer at Reforest Fest. I was invited to deliver a talk on ecomusicology after the organisers heard about my research. During the talk, I discussed ecomusicology, resilience, and the role of Reforest Fest in these bodies of literature. Since I had taken my acoustic guitar to the festival, I performed a song to end the talk. The song was "Scare Away the Dark" by Passenger, and I selected it for two reasons: because it seemed to suit the genre and theme of the festival, and because the lyrics exhibited some of the elements of resistance that I was expecting to hear in the music at the festival. A transcript of my talk and the song lyrics can be viewed in Appendix A. Some authors consider performing music within the community being researched "truly participatory participant-observation in the field" (Shelemay 2008:143). After the talk and performance, I invited questions and discussion from the audience, and made notes about the most interesting insights they expressed. Three of my interviewees attended my talk, which I will discuss further in Section 3.4.4.

3.4   Research methods

In this section I will discuss two research methods I used for the study apart from the immersive experience of being a participant at the festival (mentioned above and continued in Chapter 4). These are semi-structured interviews and participant observation.

This section follows the exploratory journey of my research, starting with the initial focus of my research, which was divided between the lyrics in the songs performed at the festival and the attendees' overall experience of music in the festival setting. The idea was to find messages with a social or ecological theme in the music to foster activism as a form of resistance, and to use this to select interviewees for more in-depth discussions. No recordings were made at the festival, since my focus was on note-taking, especially as it pertained to lyrical content. I will try to explain my

methods in chronological order beginning with the design of the interview guide, which occurred prior to attending Reforest Fest. I will then discuss my observations while at Reforest Fest, and the selection of interviewees. After interviewee selection, I will describe the interviews themselves and end this section with information on the data analysis process. While this is the broad chronological order in which events occurred, there was iteration between these steps as can be expected in inductive research.

3.4.1 Design of the interview guide

Generally, interview guides act as a prompt for the interview discussion (Weiss 1994). They need not be used if the interviewer is comfortable with the required content of the interview, but it is commonly consulted at the end of an interview to ensure complete coverage of the topics (Weiss 1994). After completing a preliminary literature review as part of the research proposal, I had some understanding of potential links between music and the 3Rs of resilience. This made it easier to focus my interview questions around the intersection of music and resilience (focusing on the participants' experience of the music at Reforest Fest, what aspects of the music they connected with, and what they perceived to be the role of music at the festival). I avoided being prescriptive in my questions and opted for broad and probing questions to allow the interviewees' insights to dominate the data I gathered. I developed an interview guide, with slightly different questions for attendees/listeners and performers/songwriters. The questions were designed around the music at Reforest Fest and what is referred to in the remaining chapters of this thesis as a "narrow" understanding of the 3Rs of resilience. However, interviewees were free to express any related thoughts and feelings around aspects of the music at Reforest Fest and their experience of Reforest Fest. None of the questions referred explicitly to resilience, which can be a difficult concept to grasp for somebody without a sustainability background. A sample copy of the interview guide is available in Appendix B.

As is the nature of semi-structured interviews, the discussion with each interviewee was slightly different, while remaining within the broad outline of the interview guide. This is part of the inductive process and allows the interviewees to express their knowledge on the research topic as opposed to imposing opinions on them. Allowing respondents to follow their own train of thought, as long as it is close to the topic of

research, always yields better results than constraining the interviewee to adhere to the structure of the interview guide (Weiss 1994).

I also realised that separating questions for listeners and songwriters was not as essential as I first thought, since many of the listeners I interviewed also performed music or dance, and all the performers I interviewed also listened to the music performed by others at Reforest Fest. The questions I asked the songwriters/performers varied slightly based on the lyrical content of the songs I heard them perform at the festival. This is known as a tailored interview guide (Weiss 1994). The type of lyrical content used to tailor the questions will be discussed further in Section 3.4.2.

3.4.2 Participant observation

While I did not have a fixed observation schedule, I did have a notebook and pen with me throughout my Reforest Fest experience. I kept a journal using this notebook or my cellular telephone. Notes were taken in the evenings after the festival, in the morning before the festival, after my talk (as mentioned above), during musical performances, and after any informal discussions I had with other attendees. I often found it difficult to take notes in the field due to the lack of privacy and the constant activity (wielding a spade as part of the tree-planting activities or moving between areas of interest, such as the main stage, planting site, tents, and food stalls). The act of note-taking in the field often separated me from other attendees and felt distancing in the Reforest Fest setting.

While Barz (2008) extols the value of fieldnotes, he states that "[i]t is also possible, however, to make the argument that writing fieldnotes while 'in the field' can be a way of distancing oneself from experience rather than approaching it" (Barz 2008:217). Pedelty (2011) also noted a trade-off between participating and observing during his ethnographic study of making environmentalist music. Carol Ann Muller (1999), in her study of the Nazarite community in KwaZulu Natal, South Africa, found that writing in the field separated her from the rest of the community. She felt that writing was an alienating medium due to its non-participatory nature.

While taking notes during performances, I received some curious looks from attendees, and had an artist approach me after coming off stage to ask what I was writing. I explained to the artist (who had become an audience member for the remainder of the performances) that I was noting lyrics that may exhibit an ecological or social theme. She found this interesting and asked me what I had written about

her band. I then showed her some of my notes on their lyrics, and she simply said "cool" before returning to her friends in the audience. The questions appeared to be out of curiosity rather than in protest of my actions.

Nicole Beaudry (2008) experienced similar scenarios when taking notes at drum dances in the Arctic to supplement her recordings. She often received questions from those around her when taking notes, with some people asking to see them. Beaudry concludes that by "just recording" using camcorders or voice recorders, she appears friendly and pleasant and can engage with the people around her, while with a notepad she is perceived to be an observation tool that is unfriendly and unpleasant. According to both Muller (1999) and Beaudry (2008), a solution could be to use recording equipment without taking notes; however, Beaudry (2008) also explains that the recording equipment can make people notice her observation and even feel resentment towards it.

The focus of my notes was the activities around the main stage during musical performances. I noted audience responses to the performances and focused on the song lyrics to gain a sense of how social and ecological themes were conveyed through the music itself. The lyrical information would be used to select interviewees for more in-depth discussions. I listened carefully during the performances and took notes immediately so as not to forget the lyrics.

I observed almost every act at Reforest Fest over the two weekends, missing only the DJs and acts that performed during my own talk. It was convenient that musical acts were hosted on the main stage; however, I missed activities that were not occurring at the main stage, for example some talks, forest walks, and meditation sessions, a lot of which coincided with musical performances.

I used my lyrical observations to select interviewees, and as a talking point for the interviews. I clarified the lyrics directly with the artists during interviews while asking them to explain how the songs were written. By choosing not to record the performances, I might have missed some lyrics; however, other audience members would have missed lyrics as well (probably more than I did, since I was concentrating on lyrics specifically) and I considered it to be part of the festival experience. In addition, there were no charging facilities for electronic devices at the festival, which limited my ability to record anything. And since I was mainly focused on identifying themes in the lyrics and possible interviewees, recording did not seem necessary at the time.

I remained aware of the audience reactions to the music as well as any activities happening in the vicinity of the main stage. I took note of any lyrics I judged to pertain to the social and ecological themes, which included descriptions of nature, activist messages, or unconventional, novel ideas. The lyrics were later used in my interviews with selected performers.

3.4.3 Interviewee selection

Most quantitative research is based on a random probability-based sampling method, and anything different is treated as 'convenience sampling', which is discouraged (Maxwell 2008). Qualitative research generally employs a third category: purposeful sampling (Maxwell 2008; Miles, Hubeman & Saldana 2014). My sampling method was purposeful in that I specifically targeted a balance of performers and general attendees at Reforest Fest for comparison purposes. This type of sampling can serve four possible uses according to Maxwell (2008). First, it can increase representativeness of the sample when the variation of the population is understood. Second, it can capture the heterogeneity of a population. Third, it can allow for the selection of critical cases or interviewees that pertain to the theory being studied. And fourth, it can allow for comparisons between individuals or individual groupings. Miles, Hubeman, and Saldana (2014) also refer to this as 'quota selection'. I made this decision to test if these two groups of individuals, performers and attendees, held different views on the connections between music and resilience. I adopted different approaches to listener and songwriter interviewee selection. These will be discussed in the following paragraphs.

Before I discuss the selection process, it is important to note that I did not carry out interviews during the festival itself. There are four reasons for this. First, the environment of Reforest Fest was loud with very little privacy in which to conduct an interview. This would have produced inferior quality recordings of the interviews and may have hindered interviewee candour. Second, there was never a break in activities at the festival, meaning that participants would have to be distracted from their activities to be interviewed. This may have reduced the participation rate as people were often engaged in activities they would consider more entertaining or important than an interview. Third, interviewing at Reforest Fest would have required me to cease my immersive participation and withdraw from the experience. This would have affected my perspective as an attendee of the festival. I had already missed activities that were not occurring on the main stage like forest walks,

meditation, and some talks, and I did not want to further influence my Reforest Fest experience. Fourth, there were no charging points available in the forest for recording devices. The electricity supply was reserved for stage sound and lighting, as well as lights around the festival. Therefore, I did not have enough battery power on my cellular phone to record interviews. Instead, I conserved my battery power for photographs, phone calls, journaling, and messages.

Songwriters were selected purposefully (Maxwell 2008) based on the lyrics that I heard during their performances. If an artist or band appeared to have many songs with an environmental or social activist theme, or a section of lyrics that described nature, I approached them as they came off stage. I introduced myself, told them I was doing research for a degree at Stellenbosch University, and gave them a brief introduction to my research topic. All the artists I approached seemed happy to assist and some had a longer conversation with me about my topic. I managed to obtain email addresses for all the artists I approached with the goal of setting up an interview after the festival. I was not able to interview all the performers with whom I spoke at Reforest Fest, as some did not respond to my follow-up email queries; however, I was able to interview four performers/songwriters, as listed in Table 1.

Table 1 - Contacted and interviewed participants

Interviewee type	Contacted	No response	Interviewed	Participation rate
Songwriters	5	1	4	80%
Listeners	7	2	5	71%
Organisers	1	0	1	100%

When selecting listeners at Reforest Fest, I adopted a less structured approach, selecting individuals who showed an interest in the music at Reforest Fest. After my informal discussions with attendees, I simply asked if they would be willing to share their thoughts in a more formal interview. When they agreed, they provided me with their email addresses to set up the interview. Table 1 shows that two listeners did not respond to my requests for an interview despite having agreed in person, but I was able to interview five other listeners.

Responses during the formal interviews led me to formulate questions about the festival itself and only somebody who knew about the intent of Reforest Fest could answer them. To address these new questions (also shown in Appendix B), I contacted one of the organisers of Reforest Fest for an interview. As shown in Table 1, the organiser agreed to an interview to clarify these points.

3.4.4 Interviews

Table 2 below provides information about the interviewees. It shows where the interviews took place and the duration of each interview. Some background is also included that may assist in placing their insights in Chapter 4 in context.

Table 2 - Interview details

Interviewee	Location	Duration	Contextual background
Songwriter 1	In person (Cape Town)	30 min	This is a songwriting collaboration. Two band members interviewed simultaneously. Involved with Reforest Fest for many years.
Songwriter 2	Skype (Cape Town / Johannesburg)	40 min	Singer-songwriter who usually works alone but collaborates with other artists. Relatively new to Reforest Fest but has performed with Greenpop in the past.
Songwriter 3	Skype (Cape Town / Johannesburg)	40 min	Singer-songwriter who performs as part of a band. Some songs are written in collaboration with the band. Involved with Reforest Fest for many years.
Songwriter 4	Telephone (Cape Town / Johannesburg)	30 min	Singer-songwriter who performs as part of a band mostly. Relatively new to Reforest Fest.

Interviewee	Location	Duration	Contextual background
Listener 1	Skype (Cape Town / Johannesburg)	40 min	First time at Reforest Fest. Student of sustainable development. Hobbyist dancer.
Listener 2	Skype (Cape Town / Johannesburg)	30 min	First time at Reforest Fest. Hobbyist musician (guitar and drums).
Listener 3	Google Video (Cape Town / Johannesburg)	45 min	Second time at Reforest Fest. Hobbyist musician (hip-hop artist).
Listener 4	In person (Johannesburg)	30 min	First time at Reforest Fest. Student of sustainable development. Hobbyist writer.
Listener 5	Skype (Cape Town / Johannesburg)	40 min	Second time at Reforest Fest. First experience was as part of the organising team. Hobbyist musician (guitar and drums)
Organiser 1	Telephone (Cape Town / Johannesburg)	15 min	Involved with Reforest Fest from the start. Aware of the history and original intent behind the use of music in the reforestation initiative.

The first interview I conducted was with Songwriter 1. This was the only interview that happened while I was in the Western Cape. After contacting the interviewee, I was invited to attend another performance after Reforest Fest, where they were planning to tell more stories about themselves, their history, and their songs. The performance was held at a restaurant and was a rather intimate gig, which was more conducive to interviewing than Reforest Fest was. The interview data collected from Songwriter 1 included snippets of the stories that were told between songs, as well as the longer interview that I conducted after the performance.

Most interviews were conducted remotely after I had returned to Johannesburg. The lack of personal contact could be perceived to diminish the quality of the interviews; however, where possible, video calling was used to mitigate this. It was also helpful that I had spoken to all the interviewees in person prior to the interviews, which lessened any awkwardness that may have existed at a first-time meeting. This also reduced the power dynamic that may exist between a researcher and a participant. The listeners I interviewed had spoken to me in an informal setting where we were equals as attendees of the festival. The songwriters met me immediately after their performances, where the stage provided them with power, possibly more power than I had as a researcher.

After requesting permission to record the interview, all interviews began with the same question, asking interviewees to describe how they heard about Reforest Fest and why they decided to attend it. Their response to that initial question guided the rest of the interview. Subsequent questions were guided by their answers while still trying to address all the areas in the interview guide. I spoke very little in the interviews, which allowed the interviewees to voice their opinions freely. I also tried to maintain a neutral face while listening, especially when I disagreed with the interviewee, to allow interviewees to feel unjudged. Songwriter 4 and Listeners 3 and 4 attended my talk at the festival. These interviewees had a better idea than other interviewees of what my research was about, but their responses to my questions (which were not mentioned explicitly in my talk) were still unrehearsed and natural. Their responses still required pauses for thought and did not differ greatly from other interviewees' responses.

At the beginning of the interviews, people were quite measured in what they said. Some people were familiar with the research process and tried to be brief to minimise my transcribing time. However, as the interviewees settled into the interview and became more comfortable, they began to focus more on the conversation as opposed to how they were speaking. This yielded interesting insights and was worth the increased transcribing time.

3.4.5 Data analysis

All the recorded interviews were transcribed. The transcriptions contained all errors, false starts, and idiosyncrasies in order to capture the personality of the interviewee as fully as possible. This also helped during the next stage of data analysis, the coding, as I was able to relive the interviews vividly while reading the transcripts.

Coding is a way to condense data by selecting, grouping, and abstracting the full interview transcripts (Bryman et al. 2011). The coding process is not prescriptive, except in the case of a grounded theory methodology that I did not employ, but Bryman et al. (2011) do provide guiding steps:

- Code as early as possible to gain understanding quickly during the analysis process and to minimise the volume of material to handle.
- Read through documents without taking notes and, at the end, write down any features that seemed important or interesting.
- Read through the data a second time, highlighting interesting sections and writing down keywords and notes pertaining to the highlighted areas. This is the actual coding.
- Review the codes to simplify, improve, and group them.
- Generate theoretical ideas from the codes, including connections between code groups and concepts.
- Data can contain multiple codes, and do not restrict the number of codes initially.
- Coding is not analysis, but rather a way to organise and consider the meaning of the data.

The transcripts were entered into the computer assisted qualitative data analysis software, Atlas.ti, for coding. There has been some criticism of this computer-aided software and its tendency to force a quantitative way of thinking about qualitative data, for example by counting code instances (Bryman et al. 2011). However, I used it only as a data organising tool and applied my own thinking to the grouping and further analysis of the research. I used the open coding feature in Atlas.ti to mark sections of text in an inductive way.

An important consideration in deciding the size of data segments to be coded, what to name the codes, and how best to combine them, is the need for qualitative research to retain elements that show the context in which the data was collected (Bryman et al. 2011). A common criticism of the coding method is that fractured data

loses its context and the flow of the narrative (Bryman et al. 2011). This tendency is exacerbated by the use of computer assisted qualitative data analysis software (Bryman et al. 2011). Initially, the quotations that I coded were short sections of the interviewees' speech. While fracturing the data is a necessary part of the analysis process, these short quotations lost their context and it became difficult to understand. On the second round of coding, I used longer quotations to correct this imbalance, making the grouping of codes easier.

Throughout the coding process, I made comments next to interesting quotations and iteratively adjusted codes for a more logical clustering of data fragments. Since the interview questions were all about the songwriting and listening experience at Reforest Fest as well as experiences of Reforest Fest itself, the codes were of a musical nature as opposed to being about resilience. After the codes were rearranged inductively, I overlaid the 3Rs framework on the data. The 3Rs coding was made easier by the presence of the inductive codes because the data was less scattered.

It is important to not only consider coding as a way to fragment and retrieve data, but also as a way to draw connections between codes and link them to broader phenomena (Bryman et al. 2011). Once the initial coding process was complete in Atlas.ti, I exported the code reports into Microsoft Word and reread all the codes pertaining to each of the 3Rs. This allowed me to pull together the musical themes of my research in a way that matched a resilience framework.

My search for themes is analogous to thematic analysis, which is a flexible method not linked to any philosophical orientation (Braun & Clarke 2006). In this method, the goal is to extract themes from the data and to interpret features of the research topic (Bryman et al. 2011). In some cases themes are interpreted to be codes, while in others, themes are at a higher level of abstraction than codes (Bryman et al. 2011). In either case, the quantitative element of coding (the number of times a code appears) is irrelevant to the importance assigned to a code (Braun & Clarke 2006; Bryman et al. 2011). Instead, it is the informed judgement of the researcher that determines the relative importance of a code or theme (Bryman et al. 2011). Figure 2 shows an example of the coding structure I used in the data analysis. Quotations (the bottom level in the hierarchy diagram) were assigned codes with a "+" for a positive response and a "-" for a negative response. These codes were then

assigned to one or more of the 3Rs (the top level in the hierarchy diagram) outside the Atlas.ti software.
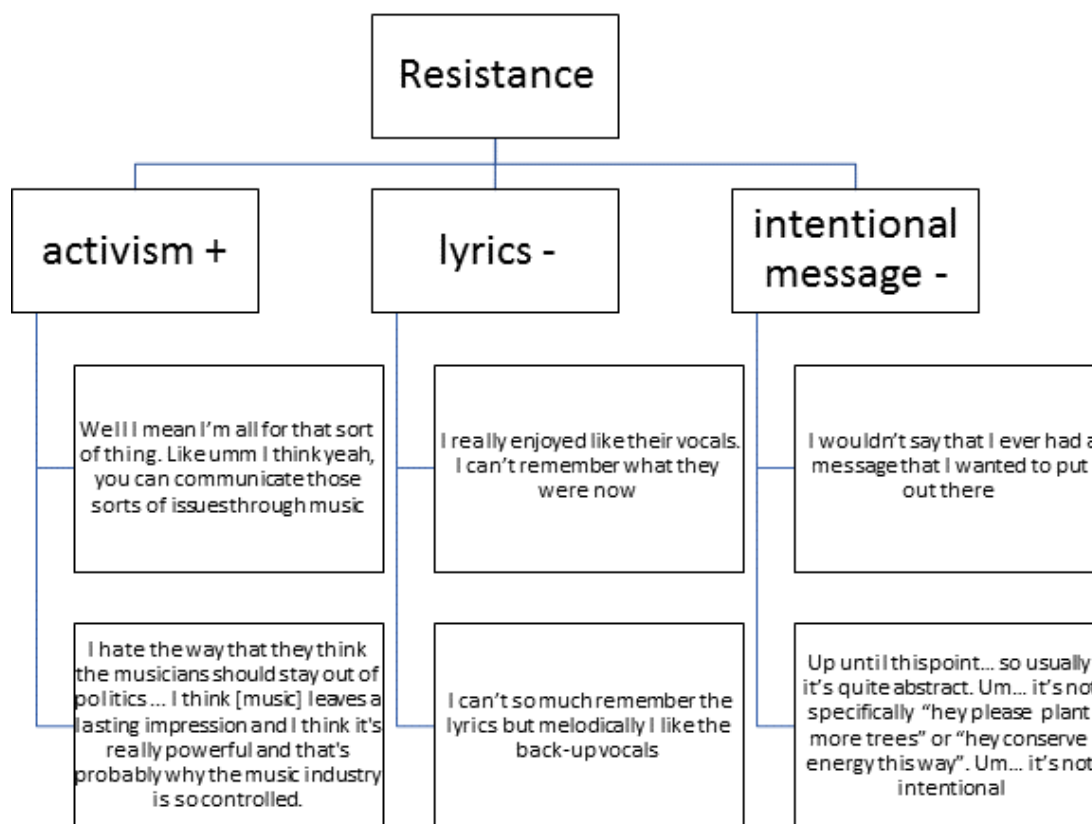
Figure 2 - Example of coding structure

3.4.6 Validity and reliability

The weaknesses of qualitative research are external reliability, internal reliability, external validity, and subjectivity (Flyvbjerg 2006; Bryman et al. 2011). It is difficult to replicate qualitative studies (external reliability) due to their unstructured nature, and the subjective decisions made by the researcher (Bryman et al. 2011). Internal reliability is difficult to ensure because I was the only observer, so there is no way to confirm inter-observer consistency (Yin 2011; Bryman et al. 2011). External validity refers to generalisability (Yin 2011; Bryman et al. 2011), and this will be difficult since there is one case study of Reforest Fest and this is not a multiple case study design. Another common criticism is a lack of transparency in the process followed by the researcher (Bryman et al. 2011).

These weaknesses are rejected by some authors (Flyvbjerg 2006; Bryman et al. 2011), in favour of an alternative criterion called trustworthiness that has been proposed for evaluating qualitative research (Yin 2011; Bryman et al. 2011). Trustworthiness comprises credibility, transferability, dependability, and confirmability (Bryman et al. 2011). I will discuss these in the following paragraphs.

Credibility concerns stem from the view that there could be multiple interpretations of an event (Bryman et al. 2011). The credibility of a researcher's interpretation usually comes from respondent validation (Bryman et al. 2011). I adopted a slightly different approach, using five sources of data. First, I gained experience from two weekends as both an attendee and performer at Reforest Fest. Second, I listened to performers' lyrics and noted relevant examples. Third, I journaled reflections and descriptions while at Reforest Fest, using discussions with attendees to verify my thoughts. Fourth, I used interviews as a source of data, clarifying any ambiguities in interviewee responses during the interviews to minimise misinterpretation. Fifth, discussions with fellow researchers (other MPhil students in Sustainable Development) throughout the research process allowed me to keep a broader perspective on my findings.

Transferability concerns are related to the uniqueness of a case study, which is likely to reduce its applicability to other situations (Bryman et al. 2011). The recommended method of addressing this is by providing rich descriptions of the context to allow researchers to examine similarities to other contexts (Bryman et al. 2011). I have, as far as possible, provided descriptions of the Reforest Fest context in Chapter 4, which will allow others to make a judgement about transferability.

Dependability is a parallel to reliability, and relates to the merits of the research (Bryman et al. 2011). It can be ensured by maintaining complete records of research materials (Bryman et al. 2011). I have stored all interview transcripts, field notes, and data analysis files that can be audited by peers at a later stage if needed.

Confirmability relies on approaching objectivity as closely as possible (Bryman et al. 2011). I maintained awareness of my own personal perspectives and values. By maintaining this awareness, I did not knowingly allow my opinions to influence the interviews. To allow the reader to clearly distinguish between my voice and that of the interviewees, my own observations and thoughts have been separated from the interviewees' statements in Chapter 4.

In addition to the trustworthiness criteria, my research methods also addressed a more traditional validity concern. "To serve as a foundation for generalizations, case studies should be related to a theoretical framework, which in turn may be adjusted as case study results provide new evidence" (Mikkelsen 2005 in Blaxter, Hughes & Tight 2010:72). As mentioned in Section 3.3, my goal is not to generalise to a population, and my research design (Yin 2011) and sampling method (Maxwell 2008; Miles, Hubeman & Saldana 2014) would not permit such a generalisation. My case study is related to the 3Rs theoretical framework, which assists with external validity in this way.

3.5   Summary

As stated by Blaxter, Hughes, and Tight (2010), the qualitative approach to this exploratory case study allowed me to aim for depth of insight using examples that I considered interesting. Yin (2011) lists five features of qualitative research, which serve as a good framework in which to summarise this chapter:

1. Studying meaning in real-world contexts: my research studies the role of music in fostering resilience in transformative spaces toward improving ecosystem stewardship. It investigates this in the context of Reforest Fest, which is a transformative space (as discussed in Chapter 4) with music at its core, aiming to improve ecosystem stewardship in its attendees. I was an active participant in both weekends of the festival and interviews occurred shortly after the festival to add alternative perspectives and more depth to my own thoughts.

2. Representing the views of others from their perspectives: the interviews I conducted focused on the opinions and journeys of the interviewees themselves. I made an effort to hold back my own opinions to enable an uninfluenced account of the interviewees' perspectives.

3. Covering the relevant context: in Chapter 4, I will describe the context and history of Reforest Fest in order to establish the setting in which people formed their opinions and perspectives. I adopted minimal structure in my approach to allow for flexibility and the emergence of interesting insights while collecting data within that context. In Table 2, I described briefly some contextual background that will assist in adding more understanding to people's thoughts.

4. Providing insights into concepts that may help to explain human behaviour: the interviewees provided insights into what they liked and disliked about Reforest Fest and its music. They also provided reasons for their behaviour at Reforest Fest. These insights, covering the role of music at Reforest Fest, could help to explain why people attended the festival or why they react the way they do to messages in the world of music.

5. Endeavor to use multiple data sources as opposed to a single source: I ensured that my data was obtained from multiple listeners and multiple songwriters/performers. I also obtained a perspective from one of the organisers of Reforest Fest to verify the intent behind the festival, and to test how the attendees' opinions, performers' opinions, and my own observations were aligned with the intent of the festival.

Chapter 4 - Results

4.1   Introduction

This section describes the results of my case study. I begin by describing the context in which my research took place. I include descriptions of the setting, as well as photographs, to give the reader a clearer understanding of Platbos Forest and Reforest Fest. After describing the context, I provide the interviewees' perspectives on music and its potential for fostering resilience in transformative spaces. In grouping interviewees' opinions, I begin with a relatively narrow view of the link between music and the 3Rs at Reforest Fest, after which I describe a broader system-based view of the role of music at Reforest Fest. At various points throughout this chapter, I also include my own thoughts and reflections about the experience.

4.2   Platbos and Greenpop

4.2.1 History of Platbos Forest

Pepin (2017) and Platbos (n.d.) provide a history of the Platbos forest, which I present briefly here. Growing on an ancient sand dune, Platbos Forest is a unique and endangered ecosystem. The forest is located close to Gansbaai (see Figure 3) and it is the southernmost indigenous forest in Africa. Some of its trees are over a thousand years old, which adds to the already rare canopy make-up of Platbos, having elements of coastal forest cohabitating with Afromontane elements. Platbos is also home to diverse fauna. This includes bushbuck (*Tragelaphus scriptus*) – which would be locally extinct if not for Platbos – and the endangered Leopard Toad (*Sclerophrys pantherina*). Predators, such as Cape leopards and caracals, feed on prey, such as baboons, antelope, and porcupines in the forest, with many bird species adding to this biodiversity.

Apart from housing a unique ecological diversity, Platbos offers benefits to society (ecosystem services) that are typical of forests around the world. These include carbon sequestration in the biomass of trees, temperature regulation, contributions to the water cycle, and mineral circulation through the root systems. The presence of a pollution-sensitive lichen, in the genus *Usnea*, indicates that air is clean and oxygen-rich, and the *Usnea* in Platbos can reach almost a metre in length.

During the 1940s, large areas of the forest were cleared to grow potatoes and chillies, and for cattle grazing. The trees themselves provided valuable timbers or firewood, depending on the species that were felled. This deforestation decreased the soil fertility and the land was abandoned, allowing alien trees to populate the forest. The alien species, for example the rooikrans or red-eyed wattle (*Acacia Cyclops*), are more flammable than the indigenous trees, as evidenced by fires in 2006 that destroyed forests around Platbos. The fire risk is exacerbated by climate change, and an inappropriate fire management policy that was tailored for the management of fynbos. In the recent past, the area was also inappropriately zoned as Agricultural Land, due to its former use, but has since been rezoned as a Contract Nature Reserve.

Figure 3 - Map showing Platbos Forest
Source: Platbos (n.d.)

Reforestation initiatives began in 2008, with the Trees for Tomorrow Reforestation Project. Reforestation involves clearing alien trees and replacing them with indigenous species to maintain the biodiversity of the forest ecosystem. Saplings for reforestation are grown using organic fertilisers and vermicompost, while the buildings around the nursery are powered by solar energy. Part of the vision for the Platbos Conservation Trust also includes "fostering increased environmental awareness amongst the people of South Africa" (Platbos n.d.:18). This aligns with the goals of a non-profit organisation called Greenpop, with whom Platbos has partnered since 2011.

4.2.2 Greenpop

Greenpop is an award-winning social enterprise (Greenpop 2016) and a non-profit organisation based in Cape Town, South Africa with a focus on reforestation and environmental activism. The idea for Greenpop was born in 2010, after a group of ten friends discussed concerns over their environmental footprint (Greenpop n.d.). The group set an initial goal of planting 1 000 trees in under-greened townships of Cape Town during September 2010 (Greenpop n.d.). They researched appropriate planting locations, raised funds, and put together a team of like-minded individuals (Greenpop n.d.). After successfully implementing this "once-off" initiative, other locations in Cape Town requested assistance, companies were offering to support further work, and Greenpop was founded (Greenpop n.d.). Greenpop currently runs urban greening initiatives, organises reforestation projects, spreads environmental awareness, and "activates" people through workshops and green festivals throughout southern Africa (Greenpop 2016; Greenpop n.d.). By 2016, they had planted over 66 000 trees during 350 projects in South Africa, Zambia, and Tanzania (Greenpop 2016).

Greenpop holds four beliefs and eight values (Greenpop n.d.). These are:

- Beliefs
    - Reconnecting people with the planet in meaningful ways to allow caring for the planet to become second nature
    - Encouraging activism without anxiety by promoting positivity to motivate change as opposed to "doom and gloom" messages that can lead to stress and apathy
    - Making it enjoyable to change the world and do charitable deeds for people and the planet
    - Popularising environmentalism by making it appealing, accessible, enjoyable, and creative
- Values
    - Thrive: go beyond sustaining to enhance "thrivability"
    - Collaborate: form a network of support through partnerships with local and global organisations
    - Be agile: be willing to adapt plans and methods when new information is presented
    - Dig it: be passionate and enthusiastic about the work

- o Keep promises: earn the trust of others by delivering on time and as promised
- o Treat others like gold: appreciate and respect every member of the team to nurture relationships and build a community
- o Live it: practice environmentalism in your personal life as best you can
- o Do great things: innovate, activate, and take action

Among the many projects organised by Greenpop (for more information, see https://greenpop.org/our-work/), this thesis focuses on its partnership with the Platbos Conservation Trust. As mentioned in Section 4.2.1, this partnership began in 2011, with the first Reforest Fest held in 2012. The goal of this partnership is to assist the Platbos Conservation Trust to reforest Platbos with the original species that occupied the forest (Greenpop 2018a). In the partnership, Platbos Conservation Trust performs most of the clearing work, mulching of felled alien plants, and growing and planting sponsored saplings through the year. Greenpop's role is to bring together additional manpower to place sponsored saplings in the ground once a year at Reforest Fest. Thus far, 50 645 trees have been planted by 4 600 attendees at the annual Reforest Fest events (Greenpop 2018a). Recent 2017 monitoring data shows that the reforestation initiative in Platbos is successful, with increasing cover of indigenous species, reduced open spaces, and reduced alien species cover (Greenpop 2018a).

4.3 Reforest Fest

Once a year, enthusiastic conservationists descend upon Platbos forest for a weekend of reforestation and festivities at Greenpop's Reforest Fest, Africa's largest annual reforestation festival (Greenpop 2018a; Greenpop 2018b). The collaboration between Platbos and Greenpop was seen as the best way to gather great minds and motivated hands towards their cause. Greenpop's goal is to make greening popular, and they believe it is important to make environmentalism enjoyable and accessible. In this way they could be seen as a "gateway" environmentalist organisation (providing a light introduction to environmentalism) where those artists and audience members who have been somewhat complacent in their attitude toward environmental issues can expose themselves to new ideas in a fun and relaxed setting. The festival setting is conducive to spreading ideas without appearing patronising and offers a taste of practical, holistic sustainability knowledge as opposed to purely theoretical information.

The festival started informally, with a small group of like-minded individuals camping in the forest and planting trees (Songwriter 3 2018). There was always a musical element to the festival, but over the years it has evolved, through trial and error, to become more sophisticated and the infrastructure has grown significantly (Songwriter 3 2018). The goal of Reforest Fest is to create a temporary community that makes people feel comfortable enough to have discussions and receive information that will help them to adapt their behaviour towards more sustainable living (Organiser 1 2018). The festival is about co-creation, collective action, trees, and love, as stated by signs at the entrance to the festival (see Figure 4). It is targeted towards the everyday person, not politicians or academics, and hopes to invoke the power of collective action in an immersive experience. Attendees at the 2018 festival appeared to be mainly middle-class white South Africans. Music, talks, and workshops provided spaces for people to congregate and discuss the issues that they feel passionately about, be it recycling, divesting from fossil fuels, or reconnecting to nature.

Figure 4 - Signs at Reforest Fest

Photo Credit: Author (24 March 2018)

Reforest Fest is a zero-waste, low-water-consumption, paperless, vegetarian music festival that encourages camping in the forest. Attendees are issued with recycling bags and are instructed on how to appropriately reuse non-recyclables. The toilets are compost, long-drop style facilities employing a waterless "flush" method of throwing sawdust into the pit after using the facilities. The food was mostly healthy and all vegetarian or vegan. Dedicated meat-lovers complained about the concept in jest, but they appeared to be happy with the meals after eating them. It is also perceived to be a lifestyle project in addition to being a reforestation project, with an introduction to healthy and sustainable living (yoga, healthy meals, recycling, and minimal resource usage) (Songwriter 3 2018). In 2018, the camping site was located in a fire-break between the indigenous forest and the alien species (see Figure 5).

Figure 5 - Campsite in the fire break
Photo credit: Author (24 March 2018)

Planting trees is the heart of Reforest Fest. During the 2018 festival, 8 300 trees were planted in Platbos forest by 1 268 people (Greenpop 2018b). Attendees (including the artists performing at the festival) were divided into planting teams, each of which worked on a different section of the planting area. The planting technique was strictly monitored by the team leaders in terms of placement, depth of holes, and mulch quantities used. There was some biomimicry involved in the planting, by placing multiple tree species together in a cluster (as occurs naturally in the forest) and providing a mulch-based nutrient source to mimic a dead older tree. The clusters contained both apex and pioneer species to shade out and out-compete invasive species and accelerate regrowth (Greenpop 2018a). Biodiversity, learning from nature, and mimicking what works in the forest were used to maximise the trees' chances of survival.

Figure 6 - Planting trees in the forest
Photo credit: Author (24 March 2018)

As mentioned in Chapter 3, the festival is divided into a family-oriented weekend and a friends-oriented weekend. The Family Fest targets children and toddlers, hoping to plant a seed of conservationism in their young minds. Greenpop arranges activities for the young conservationists to keep them entertained and perhaps allow time for their parents to explore the forest or attend talks and demonstrations.

There is, of course, a day of tree-planting involved on both weekends; however, more trees are planted during Friends Fest (5 500 trees compared to 2 800 trees) due to the physical abilities of the older attendees and the larger number of participants. The content of Friends Fest is similar to Family Fest, with a slightly calmer energy on the site, and a few additional talks. The overall event was well-organised on both weekends, and it was clear that Greenpop had done this before. This also applied to the music at the festival.

In total, over the two weekends, there were eight theatrical performances, eight guided walks through the forest, 12 workshops, 20 talks, and 19 musical performances (Greenpop 2018b).

4.4 Music at Reforest Fest

Greenpop hopes that after having a deep environmental connection through planting trees, people will be more open to receiving messages of environmentalism from the musical performances (Organiser 1 2018). Most of the music at Reforest Fest took place on the main stage. This was a tree-lined, organic-looking stage made of wood (see Figure 7), with the audience seated on reed mats at its base. Performers were assisted by a very professional Greenpop sound crew that was able to adapt to performer requirements.

Figure 7 - Main stage at Reforest Fest
Photo credit: Author (23 March 2018)

Performers at Reforest Fest are selected using three main criteria (Organiser 1 2018). These are money, demographics, and the artist's message. Being a non-profit organisation, Greenpop cannot afford to pay their performers large sums of money. As a result, money will not be the main motivation for many of the artists. There is some consideration of race when selecting performers since, due to South Africa's history, it appears that it is mainly white South African performers who can afford to perform for less money. In contrast, it appears that black artists require significantly more money to support their performances. Greenpop tries as best they can to move

the demographic as high as 60% black artists; however, this is not always possible. The artists also need to have a message or philosophy that matches Greenpop's vision for the festival. Those with a strong environmentalist philosophy or message are preferred, but it seems that as long as the message is not counterproductive, promoting consumerism and unsustainable behaviour for example, the artist will be allowed to perform.

Greenpop has also played a role in forming bands. Jeremy "Loops" Hewitt and Misha "O'Dale" Teasdale are two of Greenpop's co-founders. Jeremy is an internationally recognised South African musician with hits featured on the popular 5FM radio station, and Misha was his manager at the start of his career. These gentlemen are very familiar with the music industry and have adopted a nurturing approach to mentoring new bands that form at or through Reforest Fest and Greenpop. There have been a number of these bands, some of which return to Reforest Fest to perform as a regular gig. One of the bands who formed through Greenpop recently is called Buncha G's, which performed for the first time at Reforest Fest this year (see Figure 8).

The music line-up of bands for the two weekends was as follows:

Family Fest

- Secret Sunrise (Wake Up, Shake Up!)
- Dreamer
- Brothers Remedy
- Perfect Shadows
- Mazula
- The Flamels
- The Fishwives
- DJ Pure

Friends Fest

- Secret Sunrise (Wake Up, Shake Up!)
- Satya Jones
- Perfect Shadows
- Chico Muya
- Conservation Music, Gershan Lombard, Jack Mantis, and Chuma Mgcoyi
- Ronald Stevens (Buncha G's)

- Money for Bali
- TouchWood
- Nick Preen and The World of Birds
- Psychedelic Theatre (fire dancing and percussion)
- Jews for Techno (DJ)

Figure 8 - Buncha G's performing on the Reforest Fest stage
Photo credit: Ashleigh De Villiers (24 March 2018)

Music had a strong presence at the festival on both weekends from Friday evening to Sunday evening. Friday was a day for arrival, setting up tents, becoming familiar with the site, and settling in. At supper-time, the bands started performing to keep us entertained, which saw many attendees congregate around the stage and nearby food stalls. Saturday was the main day of activity at the festival. It started with the morning "Wake Up, Shake Up!" where attendees were encouraged to dance along to the music to energise and motivate us for the day of tree-planting ahead. On the way to the planting site, the planting teams were taught team songs and war cries that would be sung during the planting to create camaraderie. In the yellow team, our songs were "we all live in a yellow planting team", sung to the melody of The Beatles' Yellow Submarine, and "bananana" (because bananas are yellow), sung to the opening melody of Beethoven's 5th Symphony. There was also improvised drumming and singing during the tree-planting. Performers at Reforest Fest were involved in the

tree-planting activities along with other attendees, and some of them would lead this improvised drumming and singing.

Saturday evening was much the same as Friday's, with music during supper, and some talks (including my own talk and performance during Friends Fest, see Figure 9) happening immediately after the planting had concluded. Saturday at Friends Fest included an Earth Hour meditation, where the entire festival was plunged into darkness after gathering all attendees to the main stage. After the Earth Hour meditation, the lights remained off, and fire dancers performed in the open area in front of the main stage (see Figure 10). Accompanying the dancers were the rhythmic sounds of an Australian didgeridoo and an Indian tabla. Sunday was a day for talks, lectures, and discussions around sustainable living, after which the festival concluded with a celebratory party for the Greenpop crew (the attendees were also invited).

Figure 9 - Author's talk and performance
Photo credit: Sonya Samson (24 March 2018)

Figure 10 - Fire dancing after Earth Hour meditation
Photo credit: Sonya Samson (24 March 2018)

My original expectation was that most of the music performed at Reforest Fest would have a sustainability theme, or at least an ecological-conservationist subtext. My initial reaction upon listening to the lyrics of the songs performed was disappointment. Most of the songs were generic, indie-folk style, acoustic dance songs, with a few down-tempo songs accompanying them for balance. Between the live acts, the sound crew played pop music at ambient levels to allow socialising among the audience. There were some lyrics I heard during live performances with ecology- and society-related themes, which I wrote down in order to identify which artists to approach later (see Table 3).

Some ecological lyrics also came from the children's talent show during Family Fest, where one young boy sang a song stating, "I am a walking tree, you are a walking tree", and another duo of girls sang a song about a river carrying leaves. I would later realise the less obvious and subtler role music could play in fostering resilience in the transformative space, which I will discuss further in Section 4.5.4.

Table 3 shows the lyrics I noted with a social-ecological theme during band performances. It is listed per band and per song showing either a theme, or specific lyrics in quotation marks.

Table 3 - Social and ecological lyrics identified at Reforest Fest

Band	Song	Lyrics/theme
Dreamer	Talk About It	Do not conform to society's norms
	Hurricane	Descriptions of landscapes and weather
Perfect Shadows	Ripple Effect	Be the change you want to see in the world
	Wasting Time	Do not be what other people want you to be
	Laughing	Anti-consumerism, anti-shallowness, and anti-materialism
Mazula	If That's Love	Love, connections, and allowing people the space to be themselves
	Long Term Living	Short-term thinking is causing long-term problems. The importance of slowing down.
	Dear Diary	Searching for meaning and self-identity
	Token Song	Imagining a better future and appreciating the present
	Something In Season	"river", "riptide", "rainbows", "seasons", "cool breeze"
	Fly Fly	Optimism for Africa. Uses some isiXhosa lyrics
Fishwives	Cassie	Descriptions of nature e.g. "ocean, sun and sea", "moon", "palm trees" and "sunsets"
	Rain Song	Praying for rain, "autumn sun", "stones on a dirt road"
Satya Jones	Unknown	Imagery of waves, birds, sun, flowers. "we live in a paradise"
	Ocean Life	Descriptions of trees and mountains
	Space Drum Improv.	This got people into a meditative state
Money for Bali	Drop	"Fire burning, blazing", "a mountain climb to the top of the town"
TouchWood	Storming Kites	"thunder", "grey clouds into the blue", "lightning", "sky began to tremble"
	Zambia	"we may be small but we're doing the best we can" written for Greenpop at their Zambia reforestation initiative.
	One Billion Rising ad campaign	"this is our time to rise", "behind the darkest sky"

4.5   Interview trends

Initially, my view of a potential role for music in this environment was narrow. I was looking for very direct links between music and the 3Rs framework. My preconceived connections were, for example, activist lyrics leading to resistance, lyrics about nature and landmarks leading to rootedness, and people listening to music while being creative leading to resourcefulness. However, after hearing the responses of my interviewees, it became apparent that I was neglecting a broader role for music in the transformative space of Reforest Fest. I will begin by presenting the narrower focus of my results, in which it is easier to separate resistance, rootedness, and resourcefulness. I will then discuss a broader role for music at Reforest Fest in which the distinction between resistance, rootedness, and resourcefulness is less clear.

4.5.1 The role of music at Reforest Fest: a narrow understanding of resistance

The most "obvious" musical connection with resistance is activist music. After my initial disappointment at not hearing many songs at Reforest Fest with activist themes, I was curious about people's attitudes towards activism in music. While my interviewees were aware that my research focus was Reforest Fest, they spoke about the music at Reforest Fest as well as activist music in general. My interviewees' opinions about activist music are discussed below.

There was general support for the idea of activist music.

> *Well I mean I'm all for that sort of thing. Like um I think yeah, you can communicate those sorts of issues through music* (Listener 1 2018)

> *I don't think you can censor art… I hate the way that they think the musicians should stay out of politics and that they shouldn't try and… come with a message that unites people… we don't know where the majority of these musicians come from. We don't know what their backgrounds are, we don't know what their belief systems are. We don't know how they got to be where they are in the first place, so now to take that away from them just because they are famous is nonsensical. You can't tell me that they don't have an opinion and that they're not living feeling human beings...* (Songwriter 1 2018)

Some interviewees also believe that musicians could be well-positioned to understand, interpret, and express the opinions and grievances of a wider community.

> *Musicians, artists, we're all creative, dude. You think out that box and the message that you resonate generally resonates on the frequencies that everyone else that listens to your music resonates on as well* (Songwriter 1 2018)

The interviewees suggested that music is effective in expressing these opinions because it communicates on an emotional level as well as an intellectual one, allowing it to transcend boundaries and even challenge worldviews.

> *Music is something that transcends boundaries and languages and… I think it's definitely a great medium… to basically bring awareness or spread consciousness… 'cause it is a medium that… can penetrate conditioning or defence… that people might have towards a certain particular, let's say ideal way of being* (Songwriter 2 2018)

> *So I do think that music is completely powerful and has the ability to change emotion and mentalities and things* (Songwriter 4 2018)

Despite support for musical activism in theory, there were conditions placed on this activist music. Many of these conditions centred around the content of the activist message, how it is conveyed, and where it is conveyed.

In terms of the activist message content, some interviewees were cautious about the controversial nature of activist messages.

> *[P]eople can also push for like, I don't know, controversial things…and obviously anything can be offensive as well. So yeah… I guess it's about finding… a sensitive way of conveying your message* (Listener 1 2018)

Although, these messages are only considered controversial if the listener disagrees with them.

> *I generally appreciate any sort of like social and environmental activism so I generally receive it… I will take it pretty well. But I guess it also depends on if it's something I don't agree with, then I won't like it* (Listener 1 2018)

Interviewees were concerned about these controversial messages raising issues that are not a true reflection of a society's thoughts. This could lead to false alarms and unnecessary panic.

> *I think they can actually make things a lot worse as well and bring to the surface the issues that maybe aren't there* (Songwriter 4 2018)

Other concerns over the message content were about a possible disconnect between the message delivered by an artist and the perceived behaviour of the artist. Honesty and artists reflecting their own beliefs have appeared as important requirements for activist messages to reach an audience. Any hint of pretence can make an audience question the motives of a performer.

> *[Y]ou have to be careful about what you say and if it actually pertains to your life… I don't agree with people who just sing about things because they know it's like a cool topic for instance… if you write authentically, you won't really go wrong* (Songwriter 4 2018)

> *Some people can put a false, like, face on…they sing about um… social issues or anything like that, and you can hear it immediately… [they] just do it… to get the fame out of it* (Listener 5 2018)

One listener indicated that activist messages in song lyrics are too "obvious". More specifically, they are often a genre-free collaboration between famous people to raise funds for charity. This listener seems to think these predictable songs lose an audience.

> *There's too many, it's a collaboration of six artists singing a song with really obvious lines, that nobody ever will play in their car… I feel like a lot of songs come out as campaigns and then you just get like every artist, cross genre* (Listener 4 2018)

Apart from being too "obvious", some interviewees have expressed their fatigue at hearing negative messages that play on their guilt and would prefer to hear an empowering message of love.

> *I suppose we all get that we're [messing] up the planet, everybody gets that they're [messing] up the planet* (Listener 2 2018)

> *We are connected to nature. We are connected to Gaia. And so from that we want to preserve it and from that we want to do acts of love towards the planet we live on rather than "the world needs saving" and "we're all [rubbish]" and "everything must be…" and I can't deal with that. I think it perpetuates anxiety* (Songwriter 1 2018)

Listeners generally seem to receive messages with a social theme more readily than those with an ecological theme.

> *I think in South Africa the focal point of the social issues would probably dominate… if somebody wrote an environmental song… I think from an environmental focus on something really obscure, like a type of fynbos that's going to go extinct, that currently in our climate it just wouldn't catch…* (Listener 4 2018)

The reason for the social focus may be because songwriters are trying to connect with their audience through messages that are relatable.

> *I think that you need to always remember you're trying to connect with people, to hear the story in the first place* (Listener 4 2018)

> *Yeah I think sort of just inherently a lot of the type of songs are all about maybe social more than environmental issues. Because you know it's kind of generally trying to speak to like the human experience [laughs]* (Listener 1 2018)

Interestingly, in contrast to the separation of social and ecological messages expressed by the interviewees, songwriters seemed more likely to perceive social and ecological systems as intimately connected.

> *I don't think you can separate the one from the other. I mean the social and...it goes together. You can't have...this society that we're building at the moment is going so far away from what our blueprint is. And that blueprint is based on being at one with nature. So now if you're talking about ecological versus social, to me they are one and the same. We were brought up through that pattern anyway, so trying to separate us, the two, is going to lead us into...I've got absolutely no idea what road, but that's the road that we're going down at the moment. But I actually think I, and I genuinely do believe that a lot of people are starting to wake up to the idea that you've got to, well we've got to respect this planet that we're living in* (Songwriter 1 2018)

> *[I]f we had a closer look at it, we'd see that everything is actually related, whereas social, political, all of these things actually tie into our relationship with nature. Like I feel like the moment that you, perhaps let's say, accept your identity, you start to respect those around you, you start to respect*

yourself, you see that you're actually just messing or killing yourself by polluting (Songwriter 2 2018)

Having presented many of the conditions around the content of activist messages, I will move on to interviewees' concerns over how the message is conveyed.

Songwriter 4 decided to change the way a song was performed at Reforest Fest to avoid offending the audience. While the song delivered a serious message, it was performed in a humorous accent to make it less aggressive and more jovial. The songwriter believed that the audience would not be willing to receive the message if it appeared accusatory.

> *[M]aybe if we… make it a bit more of a joke, then you can get the message across without seeming judgemental you know. You don't want to be like, people hating you for having a message… and then rather than feeling like making change, they will feel judged and hate you, so [laughs] maybe the better way to go about it is to be more comedic… I think one has to be very careful about how you go about sending a message… I feel like it sometimes can come across the wrong way and lose your audience* (Songwriter 4 2018)

In addition to activist lyrics, musicians can be activists through the stories they tell between songs (and the image they portray in their stage persona), or by performing for charity.

> *I can actually choose to say something meaningful with my lyrics, that's one way. Then secondly um get involved with charities and perform for them at a cheaper rate or do it for free or raise funds for them… You can use your status or social status or whatever to bring attention to different um organisations or things that you think need change and, you know, support them and be a voice for them* (Songwriter 4 2018)

> *[B]y [musicians] affirmating [sic] what they're about to the audience, they're able to put the audience into a headspace of "oh wow, that's aspirational. I see this musician and the energy that they're putting into social environmental change. I see the energy that's necessary for it. I see the significance of it." Thus potentially there's opportunity for a shift to happen* (Organiser 1 2018)

Listeners seemed to remember the stories the bands told during and between songs quite easily.

> *[A]ll of these [messages] are kind of at the time really just coming through simple anecdotes* (Organiser 1 2018)

> *[TouchWood] had a nice story that they met at the festival like years earlier and sort of conceived the idea for their band there. I thought that was quite cool* (Listener 1 2018)

> *The fact that they spoke about it, that the TouchWood band, they met there, you know, there was a really poignant story* (Listener 2 2018)

> *I think you can have the catchiest song but if the lyric doesn't tell the story of the issue you're trying to convey, then the only other way you can use music is if you create it in a setting where you tell a story around the song…* (Listener 4 2018)

It may also be the case that song lyrics themselves are not the best vehicle for conveying activist messages, increasing the importance of focusing on how the message is delivered. Some songwriters expect listeners to engage with and remember their lyrics.

> *[W]e tell stories using our vocals. People must listen to that. The beat yeah, great, cool and the gang but... Tupac Shakur actually said this, man. He was like, uh, yeah, I dig that you come into a room and you start bouncing your head and nodding your lid, but listen to my lyrics* (Songwriter 1 2018)

However, none of the listeners I interviewed remembered the lyrics that were sung at the festival. I recall struggling to hear lyrics sometimes, and I was concentrating on the lyrics and writing them down immediately, whereas most listeners would not have done so. While listeners do not remember the lyrics, there were some that remembered how the songs made them feel emotionally or intellectually.

> *I really enjoyed like their vocals. I can't remember what they were now, but at the time thinking like oh wow these like the lyrics are beautiful…* (Listener 1 2018)

> *So that's an interesting comment that I made because I don't remember a single lyric now* (Listener 4 2018)

> *I can't remember the words they sang but I remember the thoughts I had there was, "why did I ever… why did I never think about that, it's actually a valid point."* (Listener 5 2018)

It is also rare for songwriters to intentionally set out to deliver a specific message, with some claiming that it stifles their creativity (creativity will be discussed further in 4.5.3).

> *I feel like it almost cages your creativity to have a set, like here's three things that we have to say* (Songwriter 2 2018)

Among the songwriters I interviewed, lyrics are usually a secondary factor in writing the song, with melodic and harmonic structure created first. In addition, the process is usually improvisational with no intentional goal.

> *I struggle a lot with lyrics, in general… I generally start murmuring a melody and taking voice notes and saving it and kind of thinking about it and then the lyrics come later* (Songwriter 3 2018)

> *The process usually begins with a guitar riff and then the words come later. I would have to play it over and over so that the melody appears, and then once the melody is there, then the words come* (Songwriter 2 2018)

> *I literally write the whole song within 10 minutes. It's like a moment of inspiration that comes to me and if I don't write the music in that moment, it's as if it just disappears. Um so what I have to do is take a phone and record as the inspiration hits and then the next day I'll piece it… like I'll just keep playing it in like a loop, over and over and over again… each time it becomes more structured and more clear and then the next day then I'll like listen to the recording that I made and write out what was the best ideas* (Songwriter 4 2018)

This may be an appropriate approach because music with a catchy melody was deemed to be a good vehicle to reach a wider audience.

> *There is pressure from a commercial perspective to have something that radio can play, to have something with a bit of a jingle to it* (Listener 3 2018)

> *[A]s part of this campaign, one of my friends made a song about saving water, and this got played on like ads on the radio and stuff, umm and it's a really nice little jingle tune* (Listener 1 2018)

Sometimes, in a collaborative songwriting venture, two songwriters will draw different meanings from the same song after it has been written.

So we write the same songs and we can get it completely… I love that. It's not about that at all for me [laughs]. There you go! I have a completely different take on the song we wrote together (Songwriter 1 2018)

That concludes the section on conditions for how activist messages are conveyed. The following results will address the conditions for where activist messages are conveyed.

Interviewees seemed to agree that popular music is unlikely to spread activist messages. They believe that censorship of the music industry, and its drive for profit, means that activist messages do not reach a wide audience. There appears to be a trade-off between commercial success and activism.

I feel like the conscious messages that are coming through are not going to get the airplay because… it doesn't sell, it doesn't make money (Songwriter 2 2018)

[T]he most popular music is pop music… because it is easily digestible… but the real hard-hitting songs are not easily digestible (Listener 3 2018)

There is also a perception that trends in political music have changed since the peak of protest music in the 1960s and 1970s. This may not necessarily be true, as will be discussed in Chapter 5.

In the 60s and the 70s musicians were largely the litmus of what was happening um on a political and social front, globally. You look at musicians today, and it's, that has significantly shifted… (Organiser 1 2018)

Listeners do not want to feel ambushed by activist music. They want to have the choice of when and where they listen to activist messages.

Oh um I guess it depends on the environment that you are in. I mean Greenpop did sort of have, you know, an agenda like an environmental, like sustainable agenda. So in that situation any sort of social and environmental message coming through would be appreciated and um you know accepted happily. But I guess I would have to say that there will be situations where, yeah, it might not be as appropriate to be pushing certain social and environmental agendas (Listener 1 2018)

Like the people that were [at Reforest Fest], now and this is just my opinion, the people that were there are way more conscious than your average Joe.

So to that audience, yeah it makes hundred percent sense. But the greater population, the concept of not using so many plastic bags, and recycling so often, and not using plastic straws and you know, that concept is foreign to a lot of people (Listener 2 2018)

In some contexts, people just want music to entertain them. In that situation activist messages do not get through.

I think there definitely needs to be more of an awareness but it's also like, are people willing to listen? You know what I mean? Like I don't know if people are willing to listen with this type of stuff… I think for the most part people just want to be entertained and not be too heavy (Listener 2 2018)

While I was having a conversation with an attendee at Reforest Fest, he mentioned the risk that artists are generally "preaching to the converted" with activist music. This is probably because people who are willing to put themselves in a position to hear activist messages are most likely thinking about activism already. Artists do not have to work to connect with these listeners first, especially in a setting like Reforest Fest, which is attended by those with an interest in activism.

4.5.2 The role of music at Reforest Fest: a narrow understanding of rootedness

The most "obvious" interpretation of rootedness in the music at Reforest Fest pertains to three aspects of the festival: what elements of the musical performances did the attendees connect with? Did the attendees experience any connection between the music and the act of planting trees? Did the music help people to connect to each other or nature?

Listeners seem to connect to various aspects of a musical performance. Some of the strongest points of connection appear to be instrumentation, stage presence, and rhythm. Weaker connections were made with melody and it was rare for listeners to connect with lyrics (as mentioned above).

Instrumentation was one of the strongest points of connection for listeners, even though I asked no questions about instrumentation directly. The reasons for the connection were often enjoyment of the timbre of the instrument, or that the listener also plays a particular instrument and feels a connection with the performer in that way.

So I enjoyed TouchWood the most and I think that's because, first of all I have a personal love for string instruments… and then, I just generally don't like brass instruments, so if there was a brass instrument [in a band], I just didn't like it (Listener 4 2018)

I thought they had beautiful voices and yeah I like that they were playing the violin and yeah, like sort of string instruments. I just enjoy that generally. Yeah I liked their choice of instruments (Listener 1 2018)

I love acoustic music like guitar and all that. I also play guitar myself, and drums… they're all basically young people, for me to see how they do that is just mind blowing… and also the guy that played the saxophone. For me a sax, I love saxophone, so for me that standed [sic] out, and combined with the drums, with the guitar and all that, that I play myself… my next instrument that I would like to play is the saxophone (Listener 5 2018)

I like guitar music, I mean as a personal thing. I play the guitar myself and I just love watching good guitarists perform. And I like Chico Muya, I liked his, in fact I play drums as well, so I really enjoyed the fact that he's got a kick drum while he's playing. So I was like, I was very impressed and I really enjoyed that, and that was something I was like "wow I should do that!" I want to actually get myself an acoustic kick drum and start jamming like that because I tap my leg anyways (Listener 2 2018)

Stage presence was also something that people could connect with. This was especially true for listeners that have music performance and dancing as hobbies.

[I] like the sort of bouncy energy of [Nic Preen and the World of Birds'] music… I really enjoyed the feminine energy as well, of the band [TouchWood]. I think the drummer was a boy but the three girls were like sort of in the fore [laughs]. Yeah I thought they had a really nice presence (Listener 1 2018)

[Chico Muya] also standed [sic] out because he didn't only sing, there was a lot of indirect or direct conversation between him and the crowd itself… for [TouchWood] playing and singing there was no effort involved. They just did it so smoothly, they didn't even know they were playing… [Nic Preen and the World of Birds] had a very very good energy on stage, which was yeah. So it's not all about the words, it's also about the energy… it's also just their

performance, their stage personality. They got the crowd amped (Listener 5 2018)

But the lead singer [of Nic Preen and the World of Birds] was exceptional, bro, his performance, his energy, doing hand stands… from a performer perspective I must say, that was for me like the ultimate performance… I think they could have even been playing out of tune, but their stage presence and their energy would have carried it, in a sense. What I was amazed by was his ability to exhibit as much energy as he was, but then still maintain his breath when performing (Listener 3 2018)

I think it's just [Nic Preen's] energy on stage hey, I remember there's, I have a vague memory of him standing on his hands [laughs] during the performance, so that's something that stood out, and just getting people jumping is something that I admire (Songwriter 2 2018)

[Regarding Nic Preen and the World of Birds] I don't know, it wasn't a lyric thing and it wasn't, it was just general like stage presence and some uplifting vibes that I really enjoyed. I found that they were really great performers and I think that's the one band that stood out for me (Songwriter 4 2018)

From my own observations, it appeared that people connect with the rhythm or beat of the music very early in the listening experience. The audience would often bob their heads in time with the beat before the performer could play a note or sing a word. I also observed children at the "tinker station" hammering in time to the beat of the music that was playing on the adjacent stage, completely subconsciously. Some of the interviewees shared this acknowledgement of rhythmic connectedness.

[I]f you think about it we're tribal beings, dude, I mean the first thing is that we had musically, and probably the first thing that we ever experienced was someone just hitting on something. There was probably no vocals or anything involved in that whole process anyway, so I'd imagine as a throwback that's something that we still feel… It's just losing yourself. And when shaman go into trances and everything they're not doing that to lyrics. They're doing it to the beat (Songwriter 1 2018)

I think generally when I listen to music, I'm more listening to like the beat and the rhythms, not so much the lyrics. But that's just me yeah. I'm a dancer as

well, so I think I'm sort of generally more attuned to music as opposed to lyrics and singing (Listener 1 2018)

I think maybe, rhythm is what you remember initially. Or rhythm's what draws you in, or rhythm is why you come to the stage (Listener 4 2018)

These elements of the musical performance seem to allow for a connection between the performer and the audience, after which they could communicate a more activist narrative (in or between songs) that the audience would remember.

Interviewees still struggled to see a direct connection between the tree-planting and the music at Reforest Fest in a narrow sense, apart from some bands mentioning it in their stories between songs.

I wouldn't say there was a massive connection, but having said that, the fact that the bands addressed it, you know what I mean? (Listener 2 2018)

So for that, my, my first answer is, no not really. So I can't say that the music was all about planting trees like explicitly (Listener 3 2018)

No, actually not at all. They were like separate parts for me. There was the festival where we went and we planted trees and then there was the music, and to me there was no overlap between those two things (Listener 4 2018)

I don't know specifically if [there was a connection] between the music and the act of planting trees… (Songwriter 3 2018)

However, the presence of music did help people feel a connection with each other. It fostered a sense of community and made socialising easier. People would dance together in front of the main stage and connect while moving (see Figure 11).

I thought the music was quite good and it was nice to bring everyone together after sort of working all day. Yeah, I guess sort of sharing the musical experience with other people that you've been with the whole day. It was like a way sort of to consolidate the friendships and like the solidarity. That we're all sort of like-minded and interested in the same sorts of things and that we're doing good things but having fun at the same time… I'd sort of see someone that I had been chatting with during the day and then you know, we'd dance and stuff, and music is such a like social lubricant I guess – like it's very…everyone's relaxed and happy and chatty. It's a very easy

environment to kind of, yeah, connect to the people all around you (Listener 1 2018)

All the people were smiling, were happy, were amped. Yeah, isn't that saying that say "music is a universal language", yeah so with music everyone connected like that… with the music, with the drums, like that gives it energy, makes everyone amped. So it basically breaks away from the awkwardness (Listener 5 2018)

Figure 11 - Reforest Fest attendees dancing together
Photo credit: Justin De Klerk (24 March 2018)

While none of the interviewees addressed this, possibly due to their inability to recall lyrics, there were themes of rootedness, in terms of connecting to place, in the song lyrics. As can be seen in Table 3, there were numerous references to the geography of South Africa and to nature in general. There was even one band that used isiXhosa lyrics in their song, which immediately rooted the song to South Africa.

4.5.3 The role of music at Reforest Fest: a narrow understanding of resourcefulness

As a reminder, resourcefulness in this thesis refers to knowledge, creativity, innovation, and learning. The most apparent link between music and resourcefulness at Reforest Fest stems from thinking creatively while listening to music, and the use of music in knowledge transfer.

Creative processes can be enhanced by music, according to two interviewees who discussed being creative while listening to music.

> *[Music] definitely enhances my creativity definitely yeah. I can say that for sure… I generally go for music without lyrics as well... Like if I'm studying I definitely like to listen to music, but without lyrics, but then if I'm doing something more creative, like say painting or I don't know, dancing as well, yeah I enjoy the lyrics as well* (Listener 1 2018)

> *Definitely [more creative] when I'm around music, 100%. So often I have ended up writing a song because I've been watching a series and there's some beautiful little like emotive melody happening in the background, just like a chord progression and I start singing over it, or I hear something and I'm like [gasp], or a song hits me and fills me with a certain feeling that now I'm stuck with and I need to somehow get out of me and I'll grab my guitar and try sing it out. So definitely I'm a responsive artist for sure. I create via response for sure* (Songwriter 3 2018)

Four interviewees could draw inspiration from music but needed silence for the creative process. Their creativity also manifests while driving or when they are completely alone.

> *[I]f I'm not with [my songwriting partner], the only time songs really come is when I'm driving… we had cars for 10 years here that didn't have a car stereo so we're always driving with no music… I think sometimes not having music allows music to come through. Now we use our phone and we have a thing that we can plug into, so we have music in the car but then I don't write so much in the car now… I think you can watch a musical performance or be in music and get inspiration from it, but very rarely does that inspiration manifest in that moment. So you can gain inspiration, for me it manifests in silence* (Songwriter 1 2018)

I definitely write best when I'm on my own and silent [laughs]. So music does inspire me, absolutely, but it's not like the moment that I hear a song… I'm immediately going to write a song necessarily. I have to be sort of in the right frame of mind with like, no one around me… it's a sort of very vulnerable space that I enjoy being in by myself (Songwriter 2 2018)

I can't work when there's music playing. I work in complete silence... I get distracted very easily so, if I hear music then I'll start singing along… [silence helps with both] concentrating and creativity, yeah (Listener 2 2018)

[Songs] make me tap into the feelings and the emotions and remembering things that have happened to me that later, when it's quiet I can turn into something. That's how it works for me. So I'm most creative when it's silent or natural sounds like crickets or just wind far away, I absolutely love it (Listener 4 2018)

Addressing the knowledge aspect of resourcefulness, some interviewees mentioned that music can be used to disseminate knowledge about a particular place or neighbourhood (particularly with hip-hop) or to transfer knowledge from generation to generation (particularly in historical tradition).

[W]hen you go to school, we learn about history. I always say to people "listen, but what history are you actually learning?" You're learning one aspect of history. There's a whole story that, the other side that you're not hearing. The unfortunate thing was that a lot of the other side was done through music and the oral tellings [sic] of it. And that was passed down and when that's lost, it's gone and there's no way of recapturing that… It's the most powerful form of passing stuff down from generation to generation… hip-hop was based on telling a story about what's going on in the ghetto. So that's not something that's going to get lost overnight… It was about telling the story, it was about oral tradition. It came from slavery, dude, from people chatting to each other in slavery and talking a language that their slave masters didn't understand. And then pass it down to the next person, pass it down, and then it evolved into hip-hop (Songwriter 1 2018)

[M]y two favourite hip-hop albums from South Africa is an album, the first one is Bambata, by Zola… Zola speaks to the community that he is from and what people are going through. And his story as someone who was involved in crime from a young age and just like the amazing transformation that he's

made… And the other album is called "The Book of Proverb" by an artist called Proverb... He even does a full song about the suicide problem in Kimberley, which is his home town (Listener 3 2018)

There was also mention that possibly music is no longer used in this way in modern society.

I think it's important, especially in this modern day that it's something that we've lost so much is the storytelling aspect of music… [original hip-hop was] telling a message about what was going on and it was for real. This is what is going on in the ghetto. Now it's been taken off and it's something else (Songwriter 1 2018)

4.5.4 The role of music at Reforest Fest: a broader, systems view

In this section, I will highlight the broader, system-related role music played at Reforest Fest. These unexpected results arose through interviewees expanding their answers around the narrower questions I asked during the interviews. Due to the interconnectedness of the 3Rs in this section, it is difficult to separate these results into resistance, rootedness, and resourcefulness as distinct categories. Instead, I will mention which of the 3Rs are most strongly linked to the interviewees' opinions where this is possible.

At Reforest Fest music was not used as a primary vehicle for transmitting a message, but rather as a "lure" to attract festival goers who expect activist messages and are open to them. This addresses the condition for receiving activist messages in an appropriate setting, as mentioned in Section 4.5.1.

Connecting (rootedness) seems to be an important first step in the activist (resistance) process, and Greenpop's innovative (resourcefulness) use of music results in an approach to activism that is more holistic than simply singing activist lyrics in music.

I think the premise of the whole experience is that what we were trying to do is more than just plant some trees, was to create a temporary community. And through having this temporary community experience people will better adapt to behaviour change opportunities and conversation… and in order to make that interaction comprehensive, exciting, fun, aspirational, we found that there are various things that we can do that will get people wanting to be there or wanting to return. And so those are definitely the music side… And

obviously music is something that you can entertain with and so we feel that music really has a role in terms of bringing people together to enjoy themselves and allow them to celebrate… even one of our logos it's got a guitar and a spade that cross over each other because we feel that Greenpop is about making greening popular and we do that by attaching ourselves to things that are significant within the pop-culture space… (Organiser 1 2018)

[T]he planting and the trees are what is at the centre but then it spreads out into other things so it's an opportunity for also having a good time, there's music, there's talks, there's yoga… I think they understand that as beings we need holistic experiences, so being able to connect mind, body soul, all your different senses, your ears, good food, feeling, touching... And yeah I think it's good because I think it extends your reach to people, it nourishes all different levels of what you may need. It's about kind of creating a lifestyle more than actually just, just doing one particular project (Songwriter 3 2018)

This approach of using music to introduce an enjoyable element to the planting experience seemed to work. One of the festival attendees also arranges a reforestation initiative in Borneo. This attendee was very surprised at the number of people planting trees, and the pleasant atmosphere created by Greenpop. The Borneo initiative has a more serious attitude, which may be why it has far fewer participants.

This use of music as a resource to attract participants may be necessary because modern technology has given rise to "armchair activism" where people no longer have to leave their homes to participate in resistance.

I think that the world is quite jaded and that there is such an influx of information and music and entertainment and technology that it's actually really hard to penetrate people, and you would think that with the growth of technology and platforms, and possibilities that like it would kind of be like "the world's your oyster and you can get as far as you want", but I actually think it's made it a lot harder… it's really hard to get that emotional response and connection out of people, because they feel that they can watch a video and donate ZAR10.00 and they've done their bit and they don't really need to get involved (Songwriter 3 2018)

Attendees at Reforest Fest were put in a festive and positive mood that was conducive to receiving environmentalist messages (resistance). In that way, the music and the reforestation worked together in a resourceful way to make people feel connected to nature (rootedness).

> *I think it really comes down to understanding human interests, human desires human needs and meshing it together to give people, not only a sense of like purpose and they need to be also rewarding them. Humans are indulgent and so it's very hard to get people to do anything for the sake of just good, that's the sad truth. So, if you can find a way to get people to make change and do good while having a really great time and having a couple of beers and maybe listening to some music, you've got yourself a really good recipe for potentially changing the world [Laughs]* (Songwriter 3 2018)

> *[M]ost of the people that were at the Fest, they were there for one reason, for tree planting and for music, because they love it. So for instance the day with the tree planting if there was, if there was no music, everyone would have been like, "OK it's nice tree planting", but it's also a festival and at the festival there must be music* (Listener 5 2018)

> *So I do think it's a very effective strategy. Otherwise it's like a work camp, like you're just asking people to come work. And people would come but then I don't think it's a festival where you're trying to holistically make people, maybe more conscious about themselves and the environment, and their role in it and like all the other parts that fit in, like the "no waste". If you just went in and said "you're going to plant trees for one day and then we're going to lecture you on how to be better people the next day… and you must pay to do this," then I don't think people would come* (Listener 4 2018)

The tree-lined, organic-looking stage and the camping experience provided a reminder that all the festival activities were occurring in a natural setting (rootedness). The food and facilities were able to provide festival attendees with an introduction to an alternative low-impact lifestyle, involving vegetarianism, low water consumption, and minimal energy usage (resourcefulness). This enables attendees to imagine an alternative future (resourcefulness) involving environmentally-friendly living. There are even signs at the festival reminding us that "you are nature" (rootedness) and "imagine there's no plastic" (resourcefulness and resistance) (see Figure 12 and Figure 13).

Figure 12 - "You are nature" sign at Reforest Fest
Photo credit: Shift Facebook page (24 March 2018)

Figure 13 - "Imagine there's no plastic" sign at Reforest Fest
Photo credit: Ashleigh De Villiers (24 March 2018)

Music was also used to motivate attendees to plant as many trees as possible. This addresses forms of rootedness and resistance since tree-planting connects people with nature in an act of environmentalism, with the whole process fostering ecosystem stewardship.

The "Wake Up, Shake Up!" music had an energising effect on most attendees and boosted morale before the tree-planting section of the festival.

> *I guess the music was good. It was quite energetic so it was a good way to sort of get people moving in the morning, and yeah I guess just to get excitement levels up* (Listener 1 2018)

> *Saturday morning, you know that energising music that was put forward and… the intention was literally around reforesting. You know before it started they said "guys this is why we're here. We're here to plant", and we were being encouraged to stamp and to stomp and to move around and so obviously I was feeling the earth, I didn't have shoes so I was standing in thorns which was good… that was definitely the section of the music that brought me closest to, I would say nature, and literally provide the energy for the digging and the clearing and the planting that we did later* (Listener 3 2018)

There were also a few artists that took the liberty of re-energising the attendees during the planting by drumming (see Figure 14) or playing their instruments of choice.

> *I do think that the drumming that was happening during the planting was cool in that… the beat of the drums was just like… it felt like it could keep me going… the drive of the drum [laughs] made me feel like I could go on* (Songwriter 2 2018)

> *Like I was playing ukulele and singing, and she was playing some flute… and I think it like boosted some morale. And then we did a… at the end we ran around singing "In the Jungle" [laughs] and people started like jamming and dancing around and singing with, so, I think that music definitely changes the energy of people without a doubt* (Songwriter 4 2018)

Figure 14 - Drummers performing during planting
Photo credit: Author (24 March 2018)

Many attendees saw the evening music as a reward for the day of hard work, and some used it as motivation to keep working hard during the day.

> *I think the evening was a reward, you know. The whole experience of the evening [of music and festivities], for me, was a reward for the day [of planting trees]* (Listener 2 2018)

> *I think that if you're up there and you're planting and your spirit's flagging a bit, if someone says to you "but don't forget, tonight we can just go listen to the music or you can dance out the stress in your body from the day", then you probably are going to be like "OK I can plant one more tree"* (Listener 4 2018)

These connections between the music and tree-planting activities indicate that the interviewees initially considered a narrow view of music's role in resilience. Initially, when asked directly if they saw a link between music and planting trees, they could not identify anything; however, through their answers above, they did see a link when they were not confining themselves to the narrow view.

Listener 1 stated that there is generally a power dynamic between listeners and performers.

> *I think musicians and performers are in a position of um… they have people's attention and they capture people's attention* (Listener 1 2018)

However, Songwriter 3 mentioned that the tree-planting experience at Reforest Fest, whilst physically connecting with nature (rootedness), has the ability to reduce the power dynamic (resistance) between listeners and performers by fostering a sense of camaraderie (rootedness), and thereby increasing the likelihood of activist messages (resistance) resonating with the audience. In addition, by allocating the performers to planting teams, it adds extra manpower to the planting initiative (resourcefulness), and addresses the condition for receiving activist messages in Section 4.5.1 where artists should be perceived to reflect their own behaviour in their activist message (resistance).

> *I would say [there is a connection] between the music and the community of planters… a lot of our closest and dearest fans… they've watched us grow [through previous Reforest Fests]… and there's definitely like a sense of camaraderie… I think it's the psychology of a shared experience and I feel like… it's the fact that it's structured like a community and I think it makes people feel freer to let down boundaries and kind of bond… so I definitely say I feel that connection more so than if I had to play at a gig in town… When you're out planting trees, talking, cracking jokes, doing labour, this and this, you really see each other as… a fellow person and a fellow team member and then when that team member gets on stage… it's a whole different type of love and support and interest and camaraderie where when you're at a gig in say town, it's somebody who's seen you but they don't really know you… there's a bit of an us-and-them dynamic and they're supporting you because they either like the music or they like the party not particularly because they feel connected to you* (Songwriter 3 2018)

The power dynamic (resistance) between performers and listeners can sometimes affect the ability for listeners to connect (rootedness) with the performers. While at Friends Fest, on the Friday evening, one group of performers arranged a fireside "jamming" session. I had taken my guitar along to Reforest Fest to participate in such "jamming" activities, having played guitar for 17 years. This type of musical performance is meant to be quite participatory and inclusive (rootedness) while being a creative (resourcefulness) activity, as suggested by Songwriter 1, who enjoys collaborative improvisational music.

So my favourite is just jamming with people and seeing what comes out. That's my absolute favourite where nothing's rehearsed and that's when, for me, the magic really comes out and songs just writes itself [sic] (Songwriter 1 2018)

Some of the performers at the fireside session had played together in the past and were able to communicate with each other very easily while playing songs that were familiar to them. For an outsider like me, without prior knowledge of their repertoire, and without having the chord progressions explained before starting the performance, it was difficult to participate in the music-making process. To improve participation, they could have run through the chord progressions in a "rote-learning" style, or perhaps they could have divided the parts of the song so that participants only had to learn one phrase at a time. Their song choice also involved many chord changes, with several different song sections involving different chords. I found it difficult to stay abreast of the performance, and by the time I caught up, the song was ending. Several other guitarists gave up on the fireside session and started their own "jam" back at the campsite. Those with percussive instruments were able to participate more easily, since there were no tempo or time signature changes.

I would have expected the fireside performance to involve songs with simple chord progressions that were repetitive, to encourage others to join in. I felt that their song choices were exclusionary, leading me to consider it a boastful exhibition of skill and virtuosity as opposed to a participatory experience. I would speculate that if I were on a planting team with these performers, and had spent a day planting trees with them, I would have had the confidence to stop one of them and ask them what was being played, or to even suggest a different song.

Having planted trees with some of the speakers at Reforest Fest, I noticed that I did not feel a sense of apprehension or adoration while they were delivering their talks. Similarly, I felt increased confidence when talking to Reforest Fest attendees that were part of the audience during my talk and performance, where I was on the stage and benefited from the power dynamic.

While imperfect, it remains an effective and innovative (resourcefulness) tactic by Greenpop to employ music as a means of attracting and connecting (rootedness) participants in their activist (resistance) reforestation initiatives.

4.6   Summary

Platbos Forest is a unique ecosystem that is being reforested to preserve its biodiversity. An environmentalist non-profit organisation called Greenpop has been involved with this reforestation effort since 2011, hosting Reforest Fest on the Platbos premises annually since 2012 to encourage the public to assist with reforesting and involve more people in environmentalism.

Reforest Fest is a holistic, environmentally friendly experience, with everything one would expect from an eco-conscious music festival. The goal of the festival is to create an immersive experience where people form a community to share environmentalist ideas and plant trees together. The festival occurs over two weekends, with the first geared toward families with young children, and the second targeting adults.

The interviews I conducted yielded data that was linked to the 3Rs framework of resilience. There are narrow results, that can be divided into resistance, rootedness, and resourcefulness, and broader system-related results that are more difficult to separate into each of the 3Rs. The narrow results are as follows:

The narrow understanding of resistance at Reforest Fest relates to activist messages in and around the music. There was support for activist music, and thoughts that musicians may be well-positioned to understand, interpret, and express the opinions of a broader community. Using music as a tool for this expression was considered effective because it allows communication on both the intellectual and emotional levels. However, there are conditions under which the interviewees would be willing to receive activist messages. These conditions may be grouped under three categories: the message content, how the message is conveyed, and where it is conveyed.

In terms of message content, there is apprehension regarding the controversial nature of activist messages and a worry that activist songs can highlight false concerns; sensitivity to any disconnect between artists' messages and behaviour; a dislike for "obvious" lyrics and fatigue over negative activist messages; and the idea that social messages are more relatable than ecological messages.

Conditions on the way activist messages are conveyed include the need to use narrative between songs instead of song lyrics to convey the message and using humour to avoid alienating the audience. Narrative is important since the audience

does not necessarily hear or remember lyrics, songwriters often do not set out to intentionally convey a lyrical message, and lyrics are open to interpretation by the audience and performers. Lyrics also appeared to be secondary to melody and harmony in the songwriting process, which might be useful because there are benefits to having a catchy melody with which to deliver a message. Humour may be required when the message of the song could be considered accusatory.

Conditions on where the message is conveyed include an idea that pop music is a poor vehicle for activist messages; listeners do not want to be "ambushed" by an activist message, they want to expect it, but there is an element of "preaching to the converted" in this case.

The narrow understanding of rootedness at Reforest Fest relates to the audience connecting with a musical performance, a connection between music and planting trees, and connections between attendees through music. When attending a musical performance, listeners connected with instrumentation, stage presence, rhythm, and stories told by the artists between songs. Interviewees could not find a connection between the music and the act of planting trees in a narrow sense, but could in a broad sense, and music did allow them to connect with each other. The songs that were performed at Reforest Fest also contained nature- and place-based lyrics; however, the interviewees could not recall any of these lyrics.

A narrow understanding of resourcefulness at Reforest Fest relates to music enhancing creativity and transferring knowledge. It was found that music inspires creativity in some interviewees while other interviewees find it distracting, and knowledge transfer in music (both intergenerational knowledge transfer and location-based knowledge dissemination) does not seem to be popular among those with access to the internet, which applies to most people at Reforest Fest.

Apart from these narrow insights, there was a broader role for music in fostering resilience in the Reforest Fest transformative space. At Reforest Fest, music was not used as a vehicle for delivering activist messages but was instead used to attract people to the space. Connecting seems to be a prerequisite for delivering and receiving activist messages, and the innovative use of music at Reforest Fest enabled this connection. A contrasting reforestation initiative in Borneo, which was less popular, suggests that by adding a festive atmosphere to the reforestation, more people were willing to join the Reforest Fest initiative. Another reason that music was needed to attract people to the reforestation initiative is because of the growth of

"armchair activism", where people are more likely to use the internet for activism as opposed to becoming physically involved in activism, and reforestation requires physical involvement.

Once people were in the Reforest Fest space, there were direct and indirect reminders that people should feel connected to nature. Music was also used to motivate and reward the attendees with a festive atmosphere before and during planting and a party after the trees were planted. The tree-planting also assisted by reducing the power dynamic between listeners and performers, since we were all planting trees together. The camaraderie made it more likely for activist messages to resonate with listeners and was also an indication that performers were sincere when delivering their activist messages. The importance of reducing the power dynamic was demonstrated in an uncomfortable participatory music performance where I felt excluded. This broader discussion makes it clear that the role of music in this transformative space was not as simple or narrow as I had initially expected at the beginning of my research.

Chapter 5 - Discussion and conclusions

5.1 Introduction

This chapter will discuss my results in relation to the literature covered in Chapter 2, including insights from the literature on ethnomusicology and ecomusicology.

The overarching goal of this thesis was to determine the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship. I compare my results with the literature and provide recommendations for further research. I discuss my results in this chapter in a similar sequence to that of Chapter 4, beginning with the collaboration between Platbos Conservation Trust and Greenpop, with Reforest Fest acting as a transformative space. I then discuss results based on a narrow understanding of the role of music in fostering resilience in the Reforest Fest transformative space through the 3Rs framework. Thereafter, I discuss a broader, system-based understanding of the role of music at Reforest Fest. While discussing the role of music in both the narrow and broad sense, I introduce literature in the fields of ethnomusicology and ecomusicology to aid in explaining my music-related results.

5.2 Reforest Fest as a transformative space

In Chapter 2, I stated that Maclean, Cuthill, and Ross (2014) recommend management policies that promote the actions of ecological stewardship groups, especially "in areas needing stronger people-place connections and/or social capital. This suggests developing new, more engaged, governance forms such as co-management with diverse stakeholders" (Maclean, Cuthill & Ross 2014:153). Reforest Fest is a collaboration between two groups, the Platbos Conservation Trust and Greenpop, that focus on and promote ecosystem stewardship. The collaboration hopes to strengthen people's connections with nature by bringing together environmentally-minded individuals from diverse backgrounds to share their thoughts and ideas around sustainability in a temporary community. These two non-profit organisations have taken to improving the management of Platbos forest from the bottom up, to correct shortcomings in top-down policy (similar to policy misfit in Brown 2016), involving incorrect zoning and fire management, to restore the forest to its original state as far as possible.

Reforest Fest could also be considered a transformative space. In Chapter 2, I highlighted attributes of transformative spaces, according to Drimie et al. (2018). Bringing diverse actors together toward a common goal, as Reforest Fest does, was the first attribute. The diversity introduced at Reforest Fest was not reflected in the demographic breakdown of attendees, since most were white South Africans. Instead, there was a diversity in people's attitudes toward activism, ranging from those with strong activist convictions to those with weak activist convictions that were attending only for the festive atmosphere. Due to South Africa's apartheid past, it is likely that those who were willing and able to spend money on a festival such as Reforest Fest would be from the white South African community. When discussing the festival with family members who experienced poverty during the apartheid era, they could not understand why somebody would pay to do labour in the sun, sleep on the floor, and have minimal running water and no electricity (in fact, they would expect to be paid to engage in these activities).

The second was that they should be experimental and iterative. The festival was an experimental idea that has evolved over its multiple iterations to incorporate lessons learnt from previous festivals. And the third attribute was that these spaces should address the root causes of problems. According to Greenpop, the root cause of many ecological problems, including the deforestation of Platbos forest, is a disconnect between humans and nature, and the festival seeks to reconnect people to nature through planting trees and being surrounded by nature and structures that appear very organic. According to the organisers of Reforest Fest, the intention behind using music in this space was to attract people to the forest and to make the acts of reforestation and sustainable living pleasant experiences.

As discussed in Chapter 4, the role of music in fostering resilience in this transformative space can be understood through a narrow linkage with the 3Rs and a broader, system-related linkage with the 3Rs. I will begin by discussing the narrow view.

5.3   The role of music at Reforest Fest: a narrow understanding of resistance

The narrow understanding of resistance at Reforest Fest relates to activist messages in and around the music. The distinction between activist music and protest music is a complex issue requiring a separate discussion. The understanding presented in this thesis is that protest music implies resistance against a specific situation, and

activist music indicates a call to action to bring about positive change. In the context of music, this distinction is difficult to make, especially when considering the subjective interpretation of the listener (Turino 2008a; Turino 2008b; Pedelty 2011; Stimeling 2012) as discussed in Section 5.3.1 below and evident in interviewee responses in Section 4.5.1 above.

There have been numerous instances throughout history where music has been used as a tool for protest (Valassopoulos & Mostafa 2014; Kutschke 2015). Local South African examples include music that protested apartheid, such as Johnny Clegg and his band Juluka, who combined "white" folk-rock music with Zulu *maskanda* music (Ballantine 2004). "At a time when the inhumanity and the contradictions of the apartheid system were reaching breaking point, Juluka thus embodied a number of potent cultural transgressions" (Ballantine 2004:109). "Juluka's very existence was perceived as a threat by the apartheid regime and its notions of the absolute separation of strictly bounded cultures" (Coplan 2005:13). Other examples include Bright Blue's anti-apartheid song "Weeping" (1988) and songs by various Afrikaans singer-songwriters such as Koos Kombuis and Johannes Kerkorrel (Ballantine 2004; Byerly 2008). Some South African musicians, such as Hugh Masekela, Jonas Gwangwa, Julian Bahula, and Dudu Phukwana, worked internationally to incorporate exiled musicians into the anti-apartheid struggle, while playing politically motivated concerts and encouraging cultural boycotts against South African musicians on tour (Coplan 2005).

Drewett (2005) has used the case study of Roger Lucey (an anti-apartheid musician) to demonstrate how the South African government silenced musicians who were critical of apartheid. Byerly (1998) describes the complexities involved in the two waves of anti-apartheid music, while also suggesting that more subtle messages of resistance were required as an adaptation (a form of resourcefulness) to censorship, and the role that identity (rootedness) played in the anti-apartheid cause. Lee Hirsch's documentary *Amandla!: A Revolution in Four-Part Harmony*, though simplified and slightly one-sided (Byerly 2008), also demonstrates the effectiveness of the anti-apartheid struggle through music.

My initial expectation was that Reforest Fest would exhibit this style of "protest" music. I had imagined the role of music to be one that directly fosters resistance in these transformative spaces. After finding very little in the form of protest or activist music I sought opinions on activist music from my interviewees.

5.3.1 Support for activist music

My interviewees thought that using music, as a tool for activist expression, would be effective because it allows communication on both the intellectual and emotional levels. To explore this multi-level communication, I will use Thomas Turino's (2008b) explanation of semiotics in music. Turino (2008b) adopts the semiotic framework of Charles Sanders Peirce in describing the role of music in society. In brief, the framework consists of icons, indices, and symbols. Icons are signs that resemble what they represent, for example a drawing of a horse represents a horse. An index is a sign that is experienced in conjunction with the object it represents, for example smoke is an index for fire. Symbols are signs that only have meaning through social agreement, for example language or music notation.

Icons allow us to recognise general forms and allow for imaginative thought. Indices connect us to our experiences and create a strong emotional response. Symbols are general and abstract, making them widely applicable but less potent than icons and indices. The majority of signs in music are icons and indices, connecting with imagination and emotion, while literal lyrics are symbolic, appealing to the intellectual (Turino 2008b). The effects of iconic and indexical signs in music integrate various parts of the self which are referred to as "physical", "emotional", and "rational" (Turino 2008b; Kagan & Kirchberg 2016). This explains interviewees' opinions that music communicates on multiple levels.

However, there are conditions under which the interviewees would be willing to receive activist messages. These conditions may be grouped under three categories: the message content, how the message is conveyed, and where it is conveyed. I will begin by addressing interviewees' conditions with respect to the content of the message.

5.3.2 Conditions for activist messages: message content

In terms of message content, there is apprehension regarding the controversial nature of activist messages and a worry that activist songs can highlight false concerns; sensitivity to any disconnect between artists' messages and behaviour; a dislike for "obvious" lyrics and fatigue over negative activist messages; and the idea that social messages are more relatable than ecological messages.

First, I will address interviewees' views that activist messages can be controversial, and that artists can raise unnecessary or false issues through these messages. The interviewees say that they only enjoy hearing activist messages with which they agree. This may be why artists tend to wait until achieving fame before voicing their activist opinions (Pedelty 2011), since there is less risk of losing the audience with a controversial opinion. Songwriter 1 emphasised that musicians are human beings and as such will have opinions. Songwriter 4 was concerned that those opinions might be strong but may only be true for a few people. If the artist has a significant following, these opinions might seem more prevalent than they are, or they might spread through the artist's fanbase. This increases the possibility of making an issue seem more pressing than it is.

Second, interviewees expressed a sensitivity to any perceived hypocrisy in activist messages. Folk music and singer-songwriter audiences often expect the artists to be true representations of their own personal circumstances (Turino 2008c; Pedelty 2011). Pedelty (2011; 2016) describes how rock and pop artists who try to convey a message of ecologically responsible living are subject to scrutiny in terms of their elaborate stage shows (high energy consumption) and high fuel consumption due to flights and tour buses. Since most artists at Reforest Fest fell into the indie-folk genre, the audience would have expected some consistency between a message and an artist's behaviour. The fact that the artists planted trees with the audience at the festival may have assisted in reducing any perceived hypocrisy in activist messages of ecological stewardship from the artists.

The third condition placed on the message content was a dislike for "obvious" lyrics and fatigue over negative messages. I have understood "obvious" lyrics to be those that seek to inform or persuade the listeners in a blatant or direct manner through plain speech with little metaphor. According to Pedelty (2011:2858–2859 Kindle location), "nothing is more boring than music made solely for the purpose of achieving some simple, tangible effect". In order for lyrics to be powerful, they must incorporate iconic and indexical functions in the music through metaphor and imagery as opposed to plain speech that is purely symbolic (Turino 2008a).

There was also an opinion that the messages should not be too negative, as many songs about environmental degradation can be. According to Ingram (2010:135), "the rock music of the sixties also made environmental apocalypse perversely attractive". Similarly, Rehding (2011:414) identifies two fundamentally different approaches in

ecomusicology as "alarmist, dystopian apocalypse vs. nostalgic, utopian cultural memory". There is some music (which Pedelty calls "new age" music), such as Jack Johnson's environmentalist music, that emphasises healing rather than critical ecological insight (Pedelty 2011). Pedelty (2011) sees a place for both the dystopian imagery of punk rock and the utopian imagery of "new age" music, the former projecting a business-as-usual scenario, and the latter imagining alternative futures.

And fourth, listeners had the idea that social activist messages are more relatable than ecological activist messages. Interviewees perceived this to be especially true in the South African context, where social injustice is prevalent, due to issues of the past. Stimeling (2012) suggests that social justice themes in songs are perhaps more important than lyrics pertaining to environmental devastation. "Perhaps one reason for the relative dearth of songs about environmental matters is uncertainty on the part of composers and performers as to whether environmental music really matters" (Pedelty 2011:693–694 Kindle location). Interestingly, the songwriters I interviewed seemed to perceive social and ecological issues as intimately connected. This could be related to the songwriters' involvement in environmentalism with Greenpop for some time (being exposed to Greenpop's "you are nature" attitude), while many listeners were first-time attendees. If this is the case, then the listeners' opinions may be more representative of the broader population.

5.3.3 Conditions for activist messages: how messages are conveyed

Conditions on the way activist messages are conveyed include using humour to avoid alienating the audience; and the need to use narrative between songs instead of song lyrics to convey the message.

The first condition I will address is using humour to avoid alienating the audience. Songwriter 4 employed this strategy during the festival with a song that was considered aggressive. This can be useful when the audience may find the song accusatory or when the song protests their way of life; however, there is also a balance required between writing predictable music that panders to listeners' expectations, and music containing extreme irony, antagonism, or discord, either of which will lose an audience (Pedelty 2011). In an environment like Reforest Fest, where activism is encouraged, the humorous approach may not have been necessary.

Secondly, using narrative is required because the audience does not necessarily hear or remember lyrics, songwriters often do not set out to intentionally convey a lyrical message, and lyrics are open to interpretation by the audience and performers. It is common for word-based symbolic thought to be suspended when deeply engaged with the listening experience (Turino 2008b). As a result, any lyrical content may be missed in a particularly emotional performance (Turino 2008b; Pedelty 2011). It is actually the moments before and between songs during which performers are able to best articulate their messages (Pedelty 2011). Haley (2008) states that the narrative around a work of art (including musical art) is just as important as the art itself. In addition, when a performer is telling a story between songs, the iconic and indexical signs in the music fall away, leaving room for the symbolic signs of language to convey a message. The interviewees found it relatively easy to recall the stories performers told between their songs, supporting these insights from the literature.

Songwriter 1, the songwriting partnership, had different interpretations of the same song during their interview. From the artist's perspective, the transfer of a message or meaning through the music is not always intentional since meaning arises from the listener's past experiences (Turino 2008b; Pedelty 2011). Listeners will often have varied physical and emotional reactions to an artistic performance, since listeners have their own iconic and indexical references on which they draw during the performance (Turino 2008b; Stimeling 2012). This means that messages may be misinterpreted if they are conveyed through the songs themselves.

It is also rare for the songwriters I interviewed to have an intentional message to deliver. If an activist message is present, it usually appears by chance. Turino (2008b) states that artistic creativity often flows from a subconscious space, where the artist's inner thoughts connect him or her to the natural world, communicated through patterns and forms that outline sensations and experiences (Turino 2008b). Therefore, an artist may feel like he or she is channelling something from outside their conscious selves in order to be creative (Nettl 2015). Intentional messages are very much a conscious act, and this could have a negative effect on the subconscious creative process, as stated by Songwriter 2.

The songwriters I interviewed developed lyrics after completing a melodic and harmonic structure, which highlights that they do not intentionally shape a song around a message. Prioritising the melody could be positive since a catchy melody could allow activist messages (if they do emerge in the songwriting process) to resonate with a wider audience through repeat listening. It is possible that repeat listening may lead the less metaphorical lyrical content of a song into more indexical territory, thereby increasing its emotional power (Turino 2008a) especially if the lyrics invoke a sense of nostalgia (Stimeling 2012).

5.3.4 Conditions for activist messages: where messages are conveyed

Conditions on where the message is conveyed include an idea that popular music is a poor vehicle for activist messages; and listeners do not want to be "ambushed" by an activist message, they want to expect it, but there is an element of "preaching to the converted" in this scenario.

First, regarding activist messages in popular music, some interviewees and authors (for example Gottlieb 2017) are under the impression that activist music was more popular in the 1960s and 1970s; however, a study of the trending themes in the Billboard top 40 charts from 1960 to 2010 showed that romantic relationships have been the dominant theme during the entire period (67 percent of all songs analysed), while social and political issues were consistently only seven percent of the songs over the years (Christenson et al. 2018). This suggests that activist messages were never prominent in popular music.

However, the interviewees and literature do agree that activist messages are not prominent in contemporary popular music. Record labels and music corporations provide "a forum for environmentalist protest, if it is suitably vague and unfocussed" (Ingram 2010:236), and "American pop culture eschews politics: it is a sexual turnoff and a detoxicating downer. It hurts the sell" (Pedelty 2011:2263–2264 Kindle location). As mentioned earlier, activist messages can be considered controversial, and people enjoy listening to messages with which they agree. This decreases the audience to which an activist song will appeal, and the popular music industry tries to maximise listenership for maximum profit. As a result, most music of dissent can be found not in the mainstream music industry, but rather in independently released music (Gottlieb 2017).

Secondly, the reason for listeners needing to expect activist messages in music rather than being "ambushed" could be because "[s]ome people think of music simply as entertainment, something to be enjoyed after the serious business of living has been concluded" (Turino 2008a:189). Messaging in popular music seems to promote escapism – drinking alcohol and dancing – and forgetting about the challenges we face in society (Pedelty 2011; Gottlieb 2017). This is an indication that listeners need to be emotionally and intellectually prepared to receive activist messages. Unfortunately, this also means that there may be an element of "preaching to the converted", where the audience already believes in the activist message that is being conveyed, reducing the need for the activist message.

This leads me to believe that while music shows some capacity to foster resistance through lyrical activist messages in the transformative space of Reforest Fest, it is subject to many conditions. These conditions weaken the capacity for music to convey activist messages directly (the narrow understanding of resistance) and suggest that there are other roles for music that can support resistance less directly (as will be discussed in Section 5.6).

Having addressed the role of music in a narrow understanding of resistance, I will move on to a similar discussion on rootedness.

5.4   The role of music at Reforest Fest: a narrow understanding of rootedness

The narrow understanding of rootedness at Reforest Fest relates to the audience connecting with a musical performance, including instrumentation, stage presence, and rhythm; a connection between music and planting trees; the role of music in forming connections between attendees; and the role of music in forming connections between attendees and nature.

5.4.1 Connecting with a performance

First, I will discuss the audience connection with instrumentation. Interviewees seemed to connect with instruments that they play themselves, for example the hobbyist guitarists and drummers I interviewed enjoyed watching artists play these instruments. These interviewees wanted to emulate what they saw on the stage, and in this way, connected with the artists through a shared musical talent or interest. Alternatively, interviewees connected with instruments with timbres that they perceive to be pleasant, for example those that enjoy the sound of string instruments felt a

connection with the cellist and violinist in the band TouchWood. Titon (2009) states that preferences in timbre vary around the world, and can therefore be a way of connecting to place. Turino (2008b) notes that instrument timbre is an iconic sign, and may therefore invoke an emotional response from the listeners. This emotional response could result in a strong connection with the music being performed.

Secondly, there can be quite an intimate connection made between listener and performer through their stage presence (Pedelty 2011). There is also speculation that the audience's brain state matches that of the artist on stage in some ways (Levitin 2008). The interviewees seemed to enjoy high-energy performances. For example, the interviewees found the hand-stand performed by Nic Preen particularly memorable, as well as the high energy of his performance in general, which made them feel energised. The interviewees who are also performers, or who are looking for ways to improve their performances, felt particularly connected to Nic Preen's stage persona.

Third, the perception of rhythm has been associated with pleasure and reward (Levitin 2008). The brain constantly updates an estimate of where the next beat will fall, and gains pleasure from correctly matching the estimate with the actual beat (Levitin 2008). Many attendees at Reforest Fest seemed to connect to the rhythm of a performance instantly. An example of this could be seen in the child that was hammering to the beat at the tinker station. This station was adjacent to the stage, and the child was completely unaware that he was connecting to the rhythm of the music. This connection was evident in the audience members nodding their heads to the beat while listening, and when the audience started dancing to the music. The drumming during planting also provided a rhythm with which to wield the spades during the manual labour involved in the planting exercise. This seems to have triggered a reward centre in the brain, which allowed participants to continue with the planting despite feeling tired. This relates to Titon's (2009:7) finding that "[w]ork song, found… all over the world, is a kind of music whose function ranges from coordinating complex tasks to making boring and repetitive work more interesting".

5.4.2 Music and planting trees, connecting with people, and connecting with nature

Interviewees could not find a connection between the music and the act of planting trees in a narrow sense, but they could find a connection in a broader sense, by the music motivating and energising them to plant the trees. They noted that artists spoke about the planting during their performances but did not think about the broader implications of having this common ground with the performers. They indirectly addressed the broader role of music in the activist setting and how it related to the planting of trees during their answers to other questions. I will discuss the broader role of music in Section 5.6.

However, music did allow attendees to directly connect with each other. "Through moving and sounding together in synchrony, people can experience a feeling of oneness with others" (Turino 2008b:2). Historically, collective music making has been used to enhance social cohesion and practice social skills (Levitin 2008). The interviewees felt that music acted as a "social lubricant", making attendees feel relaxed and removing any potential awkwardness that may have been present when meeting new people at the festival.

The songs that were performed at Reforest Fest also contained nature- and place-based lyrics; however, the interviewees could not recall any of these lyrics. Music could have the ability to make people feel closer to nature (Pedelty 2011). People can feel a strong emotional connection to their surroundings and these emotions can be invoked in songs that describe the landscapes under threat from human actions (for example a study by Stimeling 2012). In these songs, it is possible that the listeners do not realise that they have heard an environmental message, but they do feel something so powerful that it could change their perceptions (Stimeling 2012). An interesting example was Satya Jones, who described mountains and waves in some of his lyrics. Since he, and most attendees, live in Cape Town, this description provided an immediate connection to place. Similarly, the isiXhosa lyrics sung by Mazula also used language to immediately root their song to South Africa.

The capacity for music to foster rootedness appears strong, even in this narrow understanding of rootedness as it relates to connections between people, nature, and the act of planting trees. This suggests a need to exploit these strengths to facilitate connections with resistance and resourcefulness in transformative spaces. The

following section will investigate the role of music in a narrow understanding of resourcefulness.

5.5   The role of music at Reforest Fest: a narrow understanding of resourcefulness

The role of music in a narrow understanding of resourcefulness at Reforest Fest relates to music enhancing creativity and music transferring knowledge. Interviewees voiced opinions on these two aspects of resourcefulness, but the broader aspects of resourcefulness at Reforest Fest emerged out of interviewees expanding on their answers to the interview questions. These broader aspects will be discussed in Section 5.6. This section will discuss only the narrow understanding of resourcefulness.

5.5.1 Music, creativity, and knowledge

It was found that music inspires creativity in some interviewees while other interviewees find it distracting. Most interviewees discussed the role of music in creativity in relation to their songwriting process. I was inspired to ask about music and creativity after Songwriter 1 (during my first interview) told me that they need silence to write a song, and it usually happens while driving. They implied that having music playing in the car blocked new music from emerging.

Little is known about the creative process of composing music (Nettl 2015). Composers vary in the duration taken to compose a musical piece, as well as the circumstances surrounding the process, with most forms of composition having an element of improvisation at the start (Nettl 2015). Some write songs while waiting in a restaurant, others while driving, and yet others after receiving visions, with durations varying from an afternoon to decades (Pedelty 2011; Nettl 2015).

In terms of knowledge transfer, Pedelty (2011) notes that music plays a role in fostering ritual around the world, some of which involves telling place-based stories for knowledge transfer. He also views the concert experience as a form of modern-day ritual. However, knowledge transfer in music (both intergenerational knowledge transfer and location-based knowledge dissemination) does not seem to be popular among modern communities with access to the internet, which applies to most people at Reforest Fest. Songwriter 1 suggested that humans have lost the tradition of passing down historical knowledge orally through song, although this may only be true in some (I would imagine mainly urban) settings. Songwriter 3 also stated that

technology has provided a surplus of information to those who have access to the internet, which implies that song is not required for knowledge transfer if a community has this access.

This suggests that the capacity for music to foster resourcefulness (in a narrow sense) is limited. It appears to be strongly dependent on context and individual preference, and it is again important to create the correct context (as was the case with resistance) for resourcefulness to flourish. The next section will discuss a broader perspective on the capacity for music to foster resilience in the Reforest Fest transformative space. As mentioned earlier, it appears that Reforest Fest leveraged the strong capacity for music to foster rootedness, to assist in fostering resistance and resourcefulness, by attracting the right people to the space and providing a musical catalyst for connections. In this way, music also assisted in fostering the transformative space itself.

5.6   The role of music at Reforest Fest: a broader, systems perspective

At Reforest Fest, music was not used as the primary vehicle for delivering activist messages but was instead used to attract people to the space and to make a holistic, lived sustainability experience more enjoyable. In Brown's (2016) application of her 3Rs framework to Hurricane Katrina case studies, she notes that one of the reasons people returned to New Orleans after the hurricane was the music. She also notes how grassroots activist movements were inspired by failures of top-down governance to form a social movement and address these shortcomings. These are two scenarios that played out in the Reforest Fest case study as well, with music attracting attendees to the site, and Greenpop and the Platbos Conservation Trust collaborating to correct shortcomings in top-down governance. While not emphasised by Brown (2016), the 3Rs appear to be interrelated and seemed to support each other in this case study.

5.6.1 Music as a "lure" for collaboration

Connecting like-minded individuals (rootedness) seemed to be a prerequisite for delivering and receiving activist (resistance) messages, and the innovative (resourcefulness) use of music at Reforest Fest enabled this connection (rootedness). Brown (2016) also notes that people have the power and capacity to build resilience through collective action. And collective action is one of the goals of Reforest Fest (as can be seen in Figure 4 in Chapter 4).

Collective action was enabled, in part, by the music at the festival. The festival was able to attract activists with different levels of activist conviction, creating a diverse range of opinions in the space, as is required for a transformative space (Drimie et al. 2018). The "hardcore" activists would come for the reforestation and to connect with nature, while those with less conviction would come to have an enjoyable time with friends, with the reforestation as a secondary part of the experience.

I would imagine that an even more diverse group of people, both in terms of opinions and demographic composition, could be attracted to the festival by including more diversity in musical genre at the festival. Genres like gospel, kwaito, house music, and jazz are most popular in South Africa (Shaw 2007), and incorporating some of these genres may assist in attracting people from more diverse backgrounds. Hip-hop is also popular amongst the black South African population (Shaw 2007), and is "particularly well equipped to deal with environmental matters" (Pedelty 2011:955 Kindle location). An increase in demographic diversity could also deflect critiques of music festivals where the music is considered to have only a superficial connection to Africa or South Africa (for example Ballantine 2004).

5.6.2 A connected future in a transformative music festival

Once people were in the Reforest Fest space, there were direct and indirect reminders that people should feel connected to nature (rootedness). These reminders included signs (see Figure 4 in Chapter 4), camping in the forest (see Figure 5 in Chapter 4), and the organic appearance of the main stage (see Figure 7 in Chapter 4). Some interviewees also felt a connection to nature while dancing to the music because they were barefoot and stomping the ground, feeling the grass and thorns beneath their feet. This supports the view that "[i]magining an ecological system as external to ourselves, something exclusively nonhuman, inhibits our ability to think about environmental matters more critically and creatively" (Pedelty 2011:1083–1084 Kindle location).

The music festival also provided a glimpse into a future where humans, while connecting with nature, have minimised their ecological footprint through a vegetarian diet, reduced water and energy consumption, use no paper or plastic, and recycle as much as possible (elements of resourcefulness with some resistance to modern ways of living). This could be considered a form of ecosystem stewardship.

By allowing attendees to act through tree-planting and sustainable living, as opposed to just hearing about sustainability, Reforest Fest also balances exploration and exploitation (Duit & Galaz 2008). As stated by Pedelty (2011: 2369-2370 Kindle location), "[l]istening is not enough, but doing becomes a part of your physical and mental muscle memory". By making people act in addition to listen, messages of environmentalism could bring about more permanent change in the recipients of the message (Pedelty 2011). These experiences have the potential to enable larger scale sustainability transformations through the awareness they raise, and the new ideas and collaborations fostered in the space.

While music itself was not directly responsible for some of these points, the entire space is set up around the music festival and music was a key factor in attracting people to the experience (as mentioned above). Music also provided a nucleation site for all activities at the festival, attracting people to a common focal point and allowing them to interact and collaborate. These reflect the role of music in fostering the transformative space itself.

5.6.3 Tree-planting and power dynamics

The tree-planting also assisted in reducing the power dynamic between listeners and performers, since we were all planting trees together. The camaraderie (rootedness) made it more likely for activist messages (resistance) to resonate with listeners for two reasons. Firstly, the message was being received as advice from a peer as opposed to instructions from somebody with more power. And secondly, it was an indication that performers were sincere when delivering their activist messages (addressing possible perceptions of hypocrisy mentioned in Section 5.3.2).

The importance of reducing the power dynamic was demonstrated in an uncomfortable participatory music performance where I felt excluded. Participatory music, where the "audience" acts as part of the performance, is generally accepted to be an effective way to foster social cohesion (rootedness) (Levitin 2008; Turino 2008c; Kagan & Kirchberg 2016). Turino (2008c) lists repetition and simplicity as two of the four properties of participatory performance. Participatory music values social cohesion over the quality of the art produced (Turino 2008c). The core players' responsibility is inclusivity, which may require them to restrain their own desire for flashy improvisation, fast tempos, or dramatic shifts in the music (Turino 2008c). When repetition is lost, or the music becomes too complicated, new performers feel less secure in their ability to join the music-making (Turino 2008c). Similarly, shows

of virtuosity, if not brief and restrained, can overvalue the expert over those with less skill and discourage participation (Turino 2008c).

My experience could be an example of core musicians in a participatory performance failing in their responsibilities for inclusion (Turino 2008c). Instead of repetitive and simple music with no defined start and end point (Turino 2008c), the music was of a presentational style (with a clearer distinction between performer and audience) with frequent variation, shows of virtuosity, and a defined beginning and end. This was an example where the performers felt connected to each other, but it was to the detriment of the "participatory" audience. If I had been in a planting team with these performers, I might have been inclined to ask them questions about the music or suggest alternative songs. More participatory music at a festival like Reforest Fest could lead to increased social cohesion, but it must be executed with the spirit of participation as opposed to presentation.

5.7   Recommendations for further work

After thinking about social resilience, I began to wonder if there is a tipping point or threshold on the social side of social-ecological systems in which social resilience moves from "the ability of communities to withstand external shocks to their social infrastructure" as defined by Adger (2000:361), to communities using their social infrastructure to "shock the external", moving from persistence to transformation in the social-ecological system. It struck me that in South Africa, there are economically poorer communities that are simply trying to withstand external shocks, and there are economically richer communities (like that of Reforest Fest) that possess enough social resilience to shape "external" factors like their ecological environment. I would not be inclined to state that economics is the only determining factor in this threshold, but it would be interesting to improve the understanding of these system dynamics.

The quantitative study on trends in American popular music charts (Christenson et al. 2018) showed that activist music has not become more or less popular since the 1960s. A similar study on South African charts would be interesting to compare. With the censorship of music in South Africa's past, and the variety of languages spoken in the country, it would be an interesting exercise to gather data on popular trends in South African music. During my research I had discussions with a record label marketing manager, who noted that South Africa is still compiling an equivalent to the Billboard charts in America. A company called RadioMonitor has data on radio airplay in South Africa, but only for the past two years. Once the data becomes

available, this analysis might be useful for discovering trends in musical activism on a South African scale.

In addition, it would be useful to analyse the role of music in fostering resilience at a different festival. Some interesting festivals to study might be AfricaBurn, Purpur, or the Bushfire festival in Swaziland that have a somewhat activist theme. This will allow expansion to other cases and will enable generalisability to a wider population. A longitudinal study of Reforest Fest resilience could also yield interesting results.

Since this study focused on the South African middle-class, it may only partially represent the role of music in fostering resilience. The study also does not consider systemic transformation beyond the temporary and transient moment of the festival. Future research could explore how the relationship between music and resilience can contribute to more systemic changes beyond the scope of this study.

Conservation Music, a team that performed at Reforest Fest, is currently on a tour through Africa. On this tour, they will make music with local musicians to spread a message of ecological conservation. In the past, they have gathered data on the number of people affected by the music they perform and how well music serves to educate local communities about environmentalism; however, they have not had the time to analyse this data. It would be useful to determine how many people claim to be inspired to change due to hearing the music and compare that to actual changes in lifestyle some time later.

Since the field of ecomusicology shares some of the principles used in studies of social-ecological system resilience, it would be valuable to develop a framework for studies at the interface of these two fields. This would have to entail clarification of common terminology that is understood differently in each field, and possibly the study of multiple case studies as was done by Brown (2016) in developing the 3Rs framework.

5.8   Conclusion

The collaboration between the Platbos Conservation Trust and Greenpop, two non-profit organisations, culminates in the annual festival of environmentalism and sustainable living, Reforest Fest, that is a form of transformative space with a goal to improve ecosystem stewardship in its attendees. There is a strong role for music in this space where attendees are exposed to potentially transformative new ideas and experiences. The capacity for transformation is a key aspect of resilience, making

this an ideal case study to investigate the role of music in fostering resilience in transformative spaces toward improved ecosystem stewardship.

Participation, participant observation, and interviews conducted with performers and audience members (or songwriters and listeners) helped to provide an understanding of the role of music in this space. The results have been grouped into the role of music in both narrow and broad understandings of the 3Rs of resilience. Narrow understandings of resilience are the more direct roles for music, that are easily segregated into each of the 3Rs, while the broader understanding of resilience involves a more system-based role for music in the space. Findings from the narrow view feed into the broad view of these results.

In a narrow sense, the capacity for music to foster resistance in the transformative space was weakened by conditions that interviewees placed on receiving activist messages. Similarly, the capacity for music to foster resourcefulness was dependent on individual preference and context. However, the capacity for music to foster rootedness at Reforest Fest appeared to be strong and facilitated the expression of resistance and resourcefulness by addressing some of the conditions for resistance and catalysing an appropriate context for resourcefulness.

In a broader sense, music was used to attract diverse activists, some of whom may not have been "hardcore" activists, to the space by creating a festive and enjoyable atmosphere around the event. The festival was also set up to express connections with nature, with music providing a constant nucleation site for collaboration, networking, energising, and sharing ideas among attendees. The music and the act of planting trees in teams with no hierarchy fostered a sense of community among all attendees including performers. This allowed messages of activism and sustainability to resonate with attendees as peers as opposed to being top-down instructions. The festival also provides an introduction to sustainable living, by having measures in place to reduce attendees' ecological footprints and allowing them to live the experience instead of learning about it. In this way, music played a role in fostering the transformative space itself, potentially enabling larger scale sustainability transformations.

In summary, this study suggests that the capacity for music to foster resilience in transformative spaces toward improved ecosystem stewardship lies in its proclivity to support rootedness, which enables aspects of resistance and resourcefulness to manifest in a manner that is appropriate for the context. Through fostering

rootedness, music also played a significant role in fostering the transformative space itself. This suggests a role for music in new transformative spaces, contributing to the literature on fostering transformative spaces that can contribute to supporting social-ecological transformations to sustainability.

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Appendix A – Reforest Fest talk

Hi everybody. Are we all here for the talk on ecomusicology? Great. There's some space at the font here if you want to move forward, and around the fire pit there at the back. Cool. My name is Siraj Jardine, and I'm a chemical engineer who's here to talk to you about ecomusicology. Well, I'm also a studying sustainable development, which is why I know something about it. Now I can't pretend to be an expert on the topic, but I am busy researching ecomusicology as part of my degree, and I have a confession to make…I need your help to do my research, and I'll explain how during this talk.

So let's start off with a definition of ecomusicology. It's the study of music, culture, and nature, and from the name, I'm sure you can tell that it has an "eco" part and a "music" part. The "eco" part comes from ecocriticism, which is the study of cultural creations like adverts and film, that depict humans' relationship with nature. Musicology is simply the academic study of music, and can be divided into historical musicology and ethnomusicology which studies cultures and music. Ecomusicology includes both forms of musicology. The term was first used in the 1970s, but there have been studies that can be considered "ecomusicological" without actually using the term, since ancient times. For example, in ancient Greece, the "Harmony of the Spheres" text could be considered a study in ecomusicology, and the Hindu Vedas have a story of creation in which sound features quite prominently. But the term ecomusicology gained popularity after an international conference in 2012, so it's fairly new.

The major themes in ecomusicology are…well there are three of them that I want to talk about here. The first is that ecomusicology is a field, not a discipline. A discipline is generally quite strict about what you can study and how you can study it, whereas a field is more of a meeting place for multiple disciplines and ways of thinking. This is how a chemical engineer like me can do a study that is quite "ecomusicological". The second theme is that it criticises the divide between humans and nature. It insists that humans are one with nature, which is similar to the theme here at Reforest Fest, I mean, all over the place you find signs that say "you are nature". And the third theme is the importance of a sense of place. That's involves connecting with your community and your surroundings, and acknowledging the importance of context in where music is made and how it is interpreted.

Current topics of interest in the field are musicians as activists, ecofeminism expressed through music, musicalisation of natural sounds (so, recording the sounds found in nature and making music out of them), the benefits of vegetarian music festivals like this one, greenwashing in the petrochemical industry using music in advertising, and musical instrument manufacture. I will talk a bit more about some of these today. Under the topic of musicians as activists, there is a concern over the perceived hypocrisy of a rock star touring the world, burning fuel, putting on elaborate stage shows with high-energy lighting, living a lavish life, and then preaching a message of sustainable living. The vegetarian angle on music festivals was found to significantly reduce the ecological footprint of the music festivals. I actually saw that Greenpop was doing a survey at the entrance today to try to calculate the ecological footprint of this festival, and I'd be really keen to see the results of that. And a lot of musical instruments are manufactured from wood, including Stradivarius violins that are made from Brazilian Pernambuco, and guitars that use rosewood, both of which have experienced overharvesting issues in the past. There are studies on all of these. There is also a case in Australia involving the manufacture of didgeridoos, but I will talk about that one more a little later.

If you're interested in these types of topics, there are a couple of cool books you could read to get more of an idea. These are "Current Directions in Ecomusicology" by Allen and Dawe, which presents a nice overview of what is going on in the field now. There's "Jukebox in the Garden" by Ingram, which is more about environmentalism in popular music. And there's a book by Mark Pedelty called "Ecomusicology: Rock, Folk, and the Environment", in which he forms a band called the Hypoxic Punks and travels around America trying to spread a message of environmentalism. That book also deals with the history of activist music in America and the hypocrisy issues I described earlier.

Anyway, returning to that story about Australian didgeridoos. Robin Ryan did a study that addressed didgeridoo manufacture from eucalypt trees, and how it affected what we call the resilience of the social-ecological system around that. A social-ecological system, as the name implies, is a system of humans interacting with an environmental system and affecting each other.

On the ecological side of things, higher temperatures (due to climate change, which we could say was caused by humans anyway so it's kind of social as well) are affecting the speed at which the trees proliferate because the seeds don't like the higher temperatures. Second, the insects that eat the leaves of these trees become more active in the higher temperatures, so they end up destroying more trees as well. The higher CO_2 concentrations in the air cause the leaves to grow thicker, which changes the pitch of the gumleaf instruments that the Aboriginal communities play, where they take two leaves and place them together and blow through them, kind of like a saxophone reed. Because the leaves are thicker, the gumleaf instruments are lower in pitch, so it affects the music that is played with them. Termite communities are also being destroyed by cyclones and wild fires. These termites are crucial to the eucalypt ecosystem and they also hollow out the eucalypt trees to make the more "natural" didgeridoos. This is how climate change can affect the Aboriginal culture, ecological affecting social.

On the social side, the demand for didgeridoos has become very popular in Europe and America, due to genres like world music. This means there is more demand for the eucalypt trees that are used to make them, and these trees are being overharvested. As a result, there are fewer trees for the Aboriginal communities to use. This is like social affecting ecological through cultural demand and overharvesting (and of course climate change), and the ecological affecting social Aboriginal culture. My research looks at these music and social-ecological system connections but not from a musical instrument manufacture perspective, rather from the music itself. I'm looking at what effect *music* can have on our relationships with the environment, and what we call the "resilience" of these social-ecological systems.

The concept of resilience can be divided into three parts: persistence, adaptability, and transformability. Persistence is a more traditional interpretation of resilience, which is a "bounce-back" type of concept. An example would be like, if a hurricane came through and took out half of this forest, persistence would be about the forests ability to recover from that in exactly the same form it's in now. Adaptability is about how the system components and relationships change, but the function remains pretty much the same. Like if the same hurricane came through and took out half the forest, but before the hurricane there was a specific species of tree that was providing shade. Now after the hurricane, there's a different species that provides the shade. So the roles of the different trees have changed, but the forest is still very much the same on the whole. Transformability would be if the hurricane came

through, and afterward, the forest completely changed to something else. An example is probably that guy in India who planted a tree per day for thirty-something years and then transformed a barren sandbank into a forest. Now the sandbank was quite persistent in that it remained a sandbank for a while, but then there was a tipping point or threshold at which the man planted enough trees for different forms of wildlife to move in and for the trees to start proliferating at such a rate that it became a forest.

Now, when I'm looking at the music side of resilience, there's this framework of the 3Rs of resilience that I will use. These 3Rs are resistance, rootedness, and resourcefulness. So why have I chosen the 3Rs? Well firstly because there are just three, we can all remember them! There are other frameworks that have seven or nine elements and that can get a bit tricky to remember. Secondly, it's an agent-centred framework that acknowledges the power of individuals, households, and small communities like Reforest Fest. And thirdly, it focuses on the social aspects of resilience, which is where music will fit in anyway.

So like I said earlier, the 3Rs are rootedness, resistance, and resourcefulness. Rootedness has to do with a sense of place. So bringing it back to music, it's about how music can make us feel connected to each other, connected to nature, or connected to what we would call home. Resistance is about politics and power dynamics, and that can be about how music can play a role in activism, like the music protesting the Vietnam war back in the 60s, or musicians as activists, or even that hypocrisy in musicians being activists. And resourcefulness has to do with innovation, creativity and imagination. So that will be how can music promote creative thinking or allow us to imagine new futures for ourselves.

So what do I need you to do? I'd like you to see if you can identify the 3Rs at Reforest Fest in general and in the music you hear at Reforest Fest more specifically, both in the melodies and the lyrics. I'd like you to tell me how you feel about environmental issues being communicated through music. Songwriters in the audience, is it about writing a catchy tune first and foremost, or is it more about the message? And what about the South African context, do you think social issues are more important that environmental ones given our past? Just to give you an example of what I want you to listen for in the music, I'd like to play a song for you that sort of shows you what I mean. It's a song by Passenger called "Scare Away the Dark", and it has elements of resisting our current way of life, and a bit of rootedness by

describing forests and trees, and also a little bit of resourcefulness in encouraging us to think outside the box.

I just need the sound engineers to turn up my guitar volume… Thanks, ok here we go.

Passenger – Scare Away the Dark

Well, sing, sing at the top of your voice
Love without fear in your heart
Feel, feel like you still have a choice
If we all light up we can scare away the dark
We wish our weekdays away
Spend our weekends in bed
Drink ourselves stupid
And work ourselves dead
And all just because that's what mom and dad said we should do

We should run through the forests
We should swim in the streams
We should laugh, we should cry
We should love, we should dream
We should stare at the stars and not just the screens
You should hear what I'm saying and know what it means

To sing, sing at the top of your voice
Love without fear in your heart
Feel, feel like you still have a choice
If we all light up we can scare away the dark

Well, we wish we were happier, thinner and fitter
We wish we weren't losers and liars and quitters
We want something more not just nasty and bitter
We want something real not just hashtags and Twitter

It's the meaning of life and it's streamed live on YouTube
But I bet Gangnam Style will still get more views
We're scared of drowning, flying and shooters
But we're all slowly dying in front of computers

So sing, sing at the top of your voice

Oh, love without fear in your heart

Can you feel, feel like you still have a choice

If we all light up we can scare away the dark

And oh, oh, oh oh, oh, oh no

Oh, oh, oh oh, oh, oh no

Oh, oh, oh oh, oh, oh no

Sing it out now

Oh, oh, oh oh, oh, oh no

Sing it out now

Oh, oh, oh oh, oh, oh no

Sing it out now

Oh, oh, oh oh, oh, oh no

Well sing, sing at the top of your voice

Love without fear in your heart

Feel, feel like you still have a choice

If we all light up we can scare away the dark

Thank you. Thanks a lot. Yeah I hope you managed to hear those elements of the 3Rs in that song and you have a better idea of what I'm talking about now. If you have any thoughts about the festival that you want to share, I'll be walking around the festival the whole day, and you will most likely find me at the main stage writing notes on the lyrics I hear. You're welcome to come up to me and tell me any insights you've heard or seen. For now though, are there any thoughts about what I've said?

Appendix B – Sample interview guide

Questions for semi-structured interviews:

For attendees

- **How did you hear about Reforest Fest?**
  - starting with an easy question to make the interviewee feel at ease
- **What made you decide to attend Reforest Fest?**
  - investigating their motives, was it the environmental aspect, the music, or the combination of both?
- **Tell me about your reaction to the music you've heard so far.**
  - Trying to gauge if the music has helped them feel anything related to the 3 Rs of resilience (rootedness, resistance, or resourcefulness). This may require some probing and follow-up questions.
  - I will listen for clues showing if the lyrics meant anything to them, or if it was just the catchy melodies or rhythm that they appreciated
- **While you were planting trees, did you have any thoughts about the music you had listened to?**
  - Hoping for more connections between the music and social/environmental issues, e.g. maybe the music spoke about pollution, the importance of trees, climate change, water, machines vs human labour, poverty etc.
- **How do you feel about social and environmental issues being communicated through music?**
  - Do they feel it's tacky/hypocritical? Do they think it should happen more? Do they think that in South Africa, we need to worry about social injustices first and environmental issues second?

For artists

- **How did you hear about Reforest Fest?**
  - starting with an easy question to make the interviewee feel at ease
- **What made you decide to perform at Reforest Fest?**
  - investigating their motives, was it the environmental aspect, the exposure, or the combination of both?
- **When you write songs, what is your process?**
  - Is the social/environmental aspect just a coincidence?
  - Are lyrics or melody, or rhythm more important to you?
  - Do they consider any of the 3Rs of resilience (rootedness, resistance, or resourcefulness) in the writing process?
  - What are they hoping to achieve through their music? A sense of place? Activism? Entertainment only?
  - Talk about specific songs at Reforest Fest
- **Tell me about your reaction to the music you heard at Reforest Fest.**
  - Trying to gauge if they can see the 3 Rs of resilience (rootedness, resistance, or resourcefulness) in other people's music. This may require some probing and follow-up questions.

- **How do you feel about social and environmental issues being communicated through music?**
  - o Do they feel it's a tricky balance between catchy tunes and delivering a message? Do they think it should happen more? Do they think that in South Africa, we need to worry about social injustices first and environmental issues second?
- **Are you more creative in silence or around music?**

For the organiser

- What was the intent behind bringing music into a reforestation initiative?

- What were you hoping to achieve with the music?

- Why not have a reforestation initiative without music?

- Do you think you've achieved what you wanted to achieve with the music?

- I noticed that your music line-up has changed over the years, how do you select the artists? Are there specific criteria you use to choose the artists?

- Is there anything you've learnt over the years regarding the music?