Exploring the role of storytelling in environmental communication: A study of a documentary campaign aimed at South African millennials

by
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Declaration

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: March 2020

Abstract

As we enter the Anthropocene epoch, humanity's impact on the planet has resulted in environmental effects that cannot be allowed to continue unabated. Researchers concur that scientific advances alone will not be able to solve these issues and that behaviour change is critical. Communication is a fundamental aspect of how the environment and environmental issues are understood and learned about. Therefore, in order to affect behaviour change, communication practitioners need to create materials that are as engaging and effective as possible. Narrative structures, or stories, have the ability to provide explanations and concrete examples of otherwise abstract and inaccessible facts. When considering the audience for these communications, the millennial generation is arguably the most important as the largest segment of the global population. My research aims to explore how storytelling can optimise environmental communications to reach a millennial audience in order to drive behaviour change through the study of a documentary campaign targeting South African millennials. This campaign provides a rich context for this study as, even though people in the global south are likely to experience more severely the consequences of environmental issues, there is scant empirical evidence concerning (young people's) engagement with sustainability-related issues in Africa. Informed by my pragmatist position, I draw on grounded theory methodology and employ a qualitative approach to conduct and analyse data obtained from 20 semi-structured interviews. Regarding the current engagement of South African millennials with sustainability-related issues, I find that there is a disparity between their high levels of awareness, literacy and concern about these issues on the one hand and their limited behavioural response on the other. I suggest twelve key reasons, grouped into internal and external barriers, to explain what might be holding South African millennials back from taking action to address specific sustainability-related issues. I explore the effectiveness of four storytelling elements employed in the creation of the documentary campaign. My research findings contribute to an emerging understanding of the role of storytelling in the environmental communication literature, and also provide practical insights for practitioners regarding the use of these techniques to engage South African millennials specifically.

Opsomming

Noudat ons die Antroposeen betree, word die omgewingsgevolge van die mens se impak op die planeet al hoe duideliker – gevolge wat ons nie onbeheers kan laat voortduur nie. Navorsers is dit eens dat wetenskaplike vooruitgang nie genoeg is om hierdie kwessies op te los nie, en dat gedragsverandering noodsaaklik is. Kommunikasie is fundamenteel vir hoe daar oor die omgewing en omgewingskwessies gedink en daarvan geleer word. Om gedragsverandering teweeg te bring, moet kommunikasiepraktisyns dus materiaal skep wat so boeiend en doeltreffend moontlik is. Narratiewe strukture, of verhale, het die potensiaal om verduidelikings en konkrete voorbeelde van andersins abstrakte en ontoeganklike feite te bied. Wat die teikengehoor van hierdie kommunikasie betref, is die millenniërgenerasie, wat die grootste segment van die wêreldbevolking uitmaak, stellig die belangrikste. My navorsing beoog om te bepaal hoe die vertelkuns omgewingskommunikasie kan optimaliseer om ’n millenniërgehoor te bereik en gedragsverandering aan te moedig. Dít word gedoen deur die studie van ’n dokumentêre veldtog wat op Suid-Afrikaanse millenniërs afgestem is. Hierdie veldtog voorsien ’n ryke konteks vir die studie, want hoewel diegene in die globale Suide waarskynlik die gevolge van omgewingskwessies in ’n groter mate ervaar, is daar weinig empiriese bewyse dat (jong)mense in Afrika erns maak met volhoubaarheidsuitdagings. Op ’n pragmatistiese grondslag maak ek dus staat op die metodologie van gegronde teorie en gebruik ek ’n kwalitatiewe benadering om 20 semigestruktureerde onderhoude te voer en die data daaruit te ontleed. Met betrekking tot Suid-Afrikaanse millenniërs se huidige houding jeens volhoubaarheidskwessies dui die studie op ’n teenstrydigheid tussen hulle hoë vlakke van bewustheid, geletterdheid en kommer oor hierdie kwessies enersyds, en hulle beperkte gedragsreaksie andersyds. Ek doen 12 kernredes aan die hand, wat ek in interne en eksterne hindernisse indeel, om te verklaar wat moontlik verhoed dat Suid-Afrikaanse millenniërs tot aksie oorgaan om bepaalde volhoubaarheidskwessies die hoof te bied. Ek verken die doeltreffendheid van vier vertel-elemente wat in die ontwikkeling van die dokumentêre veldtog gebruik is. Die navorsingsbevindinge dra by tot ’n groter begrip van die rol van vertelkuns in omgewingskommunikasieliteratuur, en bied ook praktiese insigte vir praktisyns oor die gebruik van hierdie tegnieke om Suid-Afrikaanse millenniërs in die besonder betrokke te kry.

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This study would also not have been possible without WWF-SA as well as the participants who so kindly shared their time and experiences with me. Thank you for arming me with such rich data to grapple with.

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Dedication

For Richard and Goose,

the loves of my life.

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List of Acronyms and Abbreviations

CAQDAS	computer assisted data analysis software
IECA	International Environmental Communication Association
NGO(s)	non-governmental organisation(s)
U.S.	United States
UN	United Nations
UN DESA PD	United Nations Department of Economic and Social Affairs Population Division
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCCD	World Congress on Communication for Development
WCED	World Commission on Environment and Development
WWF	Word Wide Fund for Nature
WWF-SA	Word Wide Fund for Nature – South Africa

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Chapter 1 – Introduction

1.1 Selecting a research area

At the starting point of my study, a key consideration was to select a research area that is genuinely interesting to me both professionally as well as personally. As commonly noted by experienced researchers: “a topic in which you are only vaguely interested at the start is likely to become a topic in which you have no interest and with which you will fail to produce your best work” (Saunders, Lewis & Thornhill 2000:1).

As a documentary producer, my work is largely focused on creating communication materials about social and environmental issues in the developing world – often in partnership with a variety of non-governmental organisations (NGOs) and corporates. Central to all of these projects has been figuring out the best way to invoke change through increasing awareness and inspiring action.

My experience in doing this type of work has led to a developing interest in telling human-centred stories in particular. One of the reasons for this is that I have to create communication materials that cut across educational levels and cultural differences. As will be explored in this paper, I believe there is an opportunity to critically examine aspects of storytelling that may make this technique an ideal tool for this purpose.

On a personal level, I have always been struck by how impressionable and vulnerable we are in the face of a story – how powerful they really are. There are a multitude of beautiful, and scary, and thought-provoking, and wounding stories that have shaped me. As novelist Chimamanda Adichie (2009:14) explains, “Stories have been used to dispossess and to malign, but stories can also be used to empower, and to humanize. Stories can break the dignity of a people, but stories can also repair that broken dignity.”

Just as stories can be used to restore the dignity of humanity, I believe there is also an opportunity for stories to create a dignified relationship between people and nature – for stories to 'demystify' sustainability through a combination of language and visuals in order to bring about much-needed behaviour change.

1.2 Identifying a research opportunity

In 2018, I had the opportunity to put my ideas about storytelling into practice within a professional capacity when I was asked to pitch a series of micro-documentaries to the Worldwide Fund for Nature - South Africa (WWF-SA) to illustrate the importance of promoting green energy sources, sustainable farms and fisheries, and protecting our wetlands and catchment areas.

This documentary campaign provided me with an ideal setting to explore the role of storytelling in environmental communication within an academic praxis. Below I provide a brief description of the context and opportunity for the research.

1.2.1 The World Wide Fund for Nature – South Africa

Founded in 1961, the World Wide Fund for Nature (formerly the World Wildlife Fund) operates in over 100 countries across 5 continents. The organization's global vision is "to stop the degradation of the planet's natural environment and to build a future where humans live in harmony with nature" (WWF 2018:1). In 1968, WWF-SA opened its doors. The organization has invested more than R2-billion rand over the past 10 years in environmental programmes and initiatives in their drive to build a sustainable and equitable future where people and nature thrive (WWF-SA 2018).

2018 marked the 50th year that WWF-SA has been working towards delivering innovative solutions that meet both people and nature's needs. They are achieving this through combining a global reach with a foundation in science that requires action at all levels: from local to global, from industry to communities, and from government to individuals. All of WWF-SA's efforts are focused on six major areas: Oceans, Land, Wildlife, Food, Climate and Energy, and Water.

1.2.2 'For Nature. For You.'

February 2018 saw the launch of WWF-SA's *For Nature. For You.* communications platform – a public-facing brand campaign aiming to inspire a new generation of millennial South Africans to see, feel and believe in the connections between themselves (their health, wealth, social status) and nature in order to inform a change in their behaviour i.e. to ultimately have them become environmentally conscious and active. Historically, Baby Boomers have made up the majority of WWF-SA's audience however, this segment is both limiting and declining. There are more than 14 million millennials in South Africa, making up approximately 27 percent of the population (Statistics South Africa 2019), making them an ideal target for WWF-SA's ambition to broaden their existing audience.

The longer-term strategy is to take South African millennials through a journey that ends in both changing perceptions and behaviours, including the possibility of donating to WWF-SA's programmes in various ways.

Phase one of the campaign focused on three of WWF-SA's six areas of activity: Water, Food and Energy. The various elements of the campaign consisted of a 30-second television advertisement, three 30-second radio advertisements, static social media posts in the form of celebrity- and user-generated content, blog posts, live streams, tweets, statistical infographics, and three 60-second micro-documentaries.

1.2.3 An opportunity to explore how storytelling influences millennials

The micro-documentaries became the basis of my exploratory study because I considered them to be the richest example of storytelling tools being used within this specific environmental communications campaign. The primary directive for these micro-documentaries was for them to drive awareness of specific issues, and WWF-SA's role in addressing them. The secondary goal was for viewers to become predisposed to being more involved with these issues.

The micro-documentaries further gave me the opportunity to interact with millennials and get their direct feedback regarding what they know about specific sustainability issues, how they engage with them and how the structure of the micro-documentaries affected them or influenced their behaviours.

Millennials are currently the largest generation alive (Vogels 2019) and are thought to be more concerned about, and highly motivated to protect the environment (Goto Gray, Raimi, Wilson & Árvai 2019). Therefore, learning about millennials' behaviour is critical to enable effective change towards sustainability.

I present more in-depth background information on the brief received by WWF-SA, the approach and media platforms considered, as well as the storytelling framework and story structure used to create the microdocumentaries in section 3.3.1 as part of my Research Design chapter.

1.3 Problem statement

As we enter the Anthropocene epoch, humanity's impact on the planet has resulted in environmental effects that cannot be allowed to continue unabated. Researchers concur (Ripple, Wolf, Newsome, Galetti, Alamgir, Crist, Mahmoud & Laurance 2017; Skubala 2018) that we cannot rely on scientific advances to solve environmental issues. Behaviour change is critical.

Considering that millennials are the largest generation alive, changing their behaviour so that they may play an active role in protecting the environment is essential (United Nations 2019). Yet, access to information alone appears to have limited influence (Heo and Muralidharan 2019) and many continue to participate in unsustainable activities (Kadic-Maglajlic, Arslanagic-Kalajdzic, Micevski, Dlacic & Zabkar 2019).

A Google search for the term 'sustainability' yields 1 790 000 000 results – and that's without delving into the details of (to name a few related topics) 'climate change', 'carbon footprinting', 'biodiversity' and 'global warming'. The problem is certainly not finding information; the challenge is finding useful, credible, and most

importantly, relatable information that we can act on. Information is almost useless unless it can be interpreted by the right person, at the right time and place. The challenge, therefore, is to create effective environmental communications designed to target specific generations.

Communication is a fundamental aspect of how the environment and environmental issues are understood and learned about (Hansen 2011). The quality of our communication will influence how swiftly and deeply we can adapt our societies, and how successfully we will address the environmental crisis. In other words, only when information is transformed into meaningful knowledge and effectively channelled, can it become a more effective tool to understand environmental problems, to orient decision-making towards solutions, and to behave and act towards sustainability.

In this context, there is an opportunity to research how storytelling can add to the efficacy of communication methods by creating meaning out of complex concepts and large data sets, so that they are not only comprehensible, but resonate with an audience to create an emotional response that spurs action. Through a study of a documentary campaign, my research explores how storytelling elements can help to effectively communicate sustainability-related issues to South African millennials.

1.4 Research objectives

My study aims to explore the potential role of storytelling in environmental communication through a study of a documentary campaign targeted at South African millennials. The scope, depth and overall direction of my study is described via three research objectives encompassing investigations into the following:

1. To provide an overview of South African millennials' current engagement with specific sustainability-related issues.
2. To establish what the common barriers to converting awareness into behaviour change are.
3. To identify effective elements of storytelling in environmental communication.

1.5 Rationale for the research

Millennials do not typically visit news sites, read print newspapers, or watch television news. Instead, this generation spends more time on social networks, mostly via mobile devices (American Press Institute 2015). Therefore, to communicate with millennials, communications practitioners need to use these platforms – and use them in such a way that makes information accessible.

Narrative structures, or stories, are considered as having the ability to provide explanations and concrete examples of otherwise abstract and inaccessible facts (Fischer, Schäfer & Borner 2018). These 'translations' in turn can structure human comprehension and shape our ability to achieve a transformed future. Therefore, expanding knowledge around storytelling is important both theoretically for environmental communication and practically to enable change.

I anticipate that my study will contribute towards the body of knowledge that aims to improve the effectiveness of environmental communications materials, especially as they relate to millennials. My research may open new ways of converting these messages into action, by using storytelling techniques specifically.

1.6 Research strategy

I undertook an exploratory study, the design of which was informed by the component approach of Maxwell's 'Interactive Model of Research Design' (2013), consisting of goals (described in section 1.4), a conceptual framework, methods and validity.

My conceptual framework integrated three main elements: a holistic research philosophy, experiential knowledge and data, and existing theory and research. My research philosophy comprised of a qualitative research approach as this approach is well suited to exploratory and descriptive studies (Creswell 2014). My research approach was supported by a pragmatist research paradigm and a grounded theory methodology. Pragmatism, as an epistemological position, is reflective of my own view that reality is continuously being renegotiated, debated, and interpreted (Morgan

2014). I took a pragmatic approach to grounded theory as my overall research methodology as it encouraged me to remain realistic in how I carried out my study, and open to emerging data.

I further drew on the experiential knowledge I've gained from working as a documentary producer and my extensive involvement in a range of communications-led projects. Finally, I conducted a review of existing literature to ascertain the key authors and themes relevant to my research area.

The second component of Maxwell's (2013) model is methods. I collected qualitative data using semi-structured interviews. I took a non-probability sampling approach to selecting my interview participants and conducted 20 interviews in total that lasted between 30-60 minutes each.

I took a manual approach to analysing my data after quickly realising that ATLAS.ti was not able to offer me the level of visibility and tangibility I needed to engage with my data on a deeper level. I carried out a multi-level (i.e. initial and focused) coding process and supported this with ongoing memo-writing.

Finally, in line with the fourth component of Maxwell's (2013) model: validity, I was both mindful of and attempted to mitigate my own and my participants' bias both before and during the interview process.

1.7 Chapter outline

In this chapter I have explained how I selected an area of research and identified a specific research opportunity therein. Further, I have presented the problem statement, research objectives and rationale for my study. I have also outlined my research strategy.

Chapter 2 contains a critical review and analysis of the selected literature that forms the theoretical framework of this study. This includes the field of environmental communication as the overarching context of my study, millennials' relationship with

sustainability-related issues, an overview of barriers to converting awareness into behaviour change, and the role of storytelling in environmental communication.

In Chapter 3, I describe my research design, which was informed by the component approach of Maxwell's 'Interactive Model of Research Design' (2013). I present my research philosophy as the undertaking of a qualitative research approach, supported by a pragmatist research paradigm, and a grounded theory methodology. I then discuss my research context, data collection and analysis methods, followed by aspects of validity that were pertinent to my study. Finally, I outline my research limitations and conclude the chapter with a note on relevant ethical considerations.

In Chapter 4, I present my research findings for each of the research objectives introduced in section 1.4. I begin by providing an overview of South African millennials' current engagement with specific sustainability-related issues in the fields of water, food and energy. Next, I establish what the barriers to converting awareness into behaviour change are. Following this, I identify effective elements of storytelling in environmental communication. I conclude this chapter with an overview of respondents' feedback on the research process.

In Chapter 5, I present a summary of the key findings pertinent to my research objectives and discuss them with the reviewed literature. I provide practical insights for environmental communication practitioners who are looking to incorporate storytelling elements into their communication materials, as well as some recommendations for future research for environmental communication scholars. I conclude this study by reflecting on my research journey.

Chapter 2 – Literature review

2.1 Introduction

In this chapter, I explore the central themes that form the theoretical framework of this study. I begin by drawing on Boulding's *The Economics of the Coming Spaceship Earth* (1966) to introduce the concept of the Anthropocene.

Next, I explore the field of environmental communication. I provide an overview of the key events that led to the formal establishment of the International Environmental Communication Association (IECA), before considering the scholastic imperative of the discipline. From here, I present the theoretical underpinnings of environmental communication and examine why it is referred to as a 'crisis discipline'. I conclude this section by reflecting on the development of the field.

In the next two sections, I explore millennials' relationship with sustainability-related issues. Upon defining this generation, I reflect on their New Environmental Paradigm orientation. Following this, I discuss why it is important to engage millennials, before outlining significant predictors of pro-environmental behaviour amongst this particular generation. I then turn my attention to the barriers that need to be overcome to convert awareness into behaviour change.

In the penultimate section of this chapter, I explore the role of storytelling in environmental communication. Upon describing the purpose of storytelling, I consider its role in the development of the human-nature relationship and argue that it is storytelling, rather than statistics, that stands the better chance of success in this regard. Following an examination of visual, digital storytelling in particular, I outline the components of the classic communication model and briefly explain narrative transportation theory. Then, I present elements of effective sustainability-related communication.

I conclude this chapter with a brief reflection on potential opportunities to develop narrative-based environmental communication, and how my research aims to contribute to this emerging exploration.

2.2 Touchdown 'Spaceship Earth'

On 17 June 2019, the most recent revision of *World Population Prospects* was published by the Population Division (PD) of the United Nations' (UN) Department of Economic and Social Affairs (DESA). The aim of this biennial report is to provide a comprehensive review of global demographic trends and prospects for the future. One of the key findings of the 2019 report is that, in just over a decade, about 8.5 billion people are likely to be on Earth, and nearly 10 billion by 2050, in contrast to 7.7 billion today (UN DESA PD 2019).

'Spaceship Earth' (Boulding 1966) is today, more than ever, a fitting metaphor as we "chart the boundaries for a safe planet" (Rockström 2010:72). In his landmark essay, *The Economics of the Coming Spaceship Earth*, Boulding (1966) explains and compares the open-earth system of the past – with its seemingly unlimited resources – with the closed-earth system of the future. To do this, he references characteristics associated with a 'cowboy' and a 'spaceman'. For Boulding (1966:7), the open-earth system might also be referred to as the 'cowboy economy' – "the cowboy being symbolic of the illimitable plains and also associated with reckless, exploitative, romantic, and violent behaviour, which is characteristic of open societies". In contrast, the closed-earth system of the future could also be referred to as the 'spaceman economy' – "an economy in which the earth has become a single spaceship, without unlimited reservoirs of anything, either for extraction or for pollution, and in which, therefore, man must find his place in a cyclical ecological system" (Boulding 1966:7-8).

Therefore, in order to transition from an open-earth system with infinite reservoirs (the 'cowboy economy') to a closed-earth system without infinite reservoirs (the 'spaceman economy'), it is important for human beings to reconsider their relationship with nature: "We are now in the middle of a long process of transition in

the nature of the image which man has of himself and his environment" (Boulding 1966:7-8).

Not long after *The Economics of the Coming Spaceship Earth* was published, The Club of Rome (an association made up of leading scientists, economists, businessmen and businesswomen, high-ranking civil servants and former world heads of state) further emphasised the idea of a closed-earth system in *The Limits to Growth* (1972). Here, the authors schematised relationships between population growth, industrialisation, resource demand, pollution and food production to demonstrate that it is simply not feasible to draw resources from the natural world to support economic growth indefinitely (Meadows, Meadows, Randers & Behrens III 1972). Even when they took technological advances into account, their extrapolations of ongoing 'business-as-usual' patterns remained grim-looking (Meadows et al. 1972).

Despite more attempts to raise awareness of humanity's challenges in a finite world, sufficient progress is yet to be made (UN DESA PD 2019). It is still more of an aspiration than a reality to put societies and economies on a truly sustainable development path (Sterner 2019). Indeed, the development of human enterprise has been so dramatic that the relatively stable, 11,700-yearlong Holocene epoch – the only state of the Earth, as proven by science, that could sustain contemporary human societies (Steffen, Broadgate, Deutsch, Gaffney & Ludwig 2015) – has been overthrown by these very same human societies. This has resulted in the proposal of a new epoch – that of the 'Anthropocene' (Crutzen 2002). The human effect on the global environment is now so large that humankind itself has become a powerful geophysical force (Steffen et al. 2015; Steffen et al. 2018). This means that human beings' actions are having a dominating effect on the earth. Indeed, the hegemony of the consumption-oriented social paradigm of the 21st century is resulting in six times more resources being consumed today than 50 years ago, whilst the difficulties to reverse this trend continue to mount exponentially (Lorek & Spangenberg 2014; Steffen et al. 2018).

2.3 Sustainable development: A complex concept

In 1987, the Bruntland Commission Report (or *Our Common Future*) established the most widely accepted definition of sustainable development as development that "meets the needs of the present, without compromising the ability of future generations to meet their own needs" (World Commission on Environment & Development [WCED] 1987:43). Nearly three decades later, in January 2016, the Sustainable Development Goals (SDGs) came into effect to end poverty, protect the planet and ensure peace and prosperity for all by 2030 (United Nations Development Programme [UNDP] 2017). The adoption of these goals by more than 150 world leaders suggests that the term 'sustainable development' has solidified a place in our lexicon. There is still, however, a lack of consistency in the way the term is interpreted (Blewitt 2017). So much so, that during the first World Congress on Communication for Development (WCCD) in 2006 it was noted that there were no less than 89 interpretations of 'sustainable development' (WCCD 2006). Borrowing from the quote popularly attributed to the late physicist Richard Feynmann, "Whoever says that he understands quantum theory, in all probability does not.", Martens (2006:40) suggests that the same can be said about sustainable development: "Whoever says he knows what 'sustainability' is, in all probability does not".

Sustainable development is a complex concept with which to grapple. Attempting to meet the needs of all those living today and in the future (WCED 1987) whilst simultaneously maintaining planetary boundaries (Rockström 2010) means that, in order for sustainable development to be realized, dynamic interaction processes between natural and social systems – taking place at different spatial and temporal levels – need to be carried out (Clark 2010). When considering the effects that actions here and now might have on other places and at other times, and how best to determine limits (be they minimum socio-economic standards or maximum tolerable ecological burdens), it becomes apparent that sustainability issues are not an exclusive occupation for science (Fischer et al. 2018). Rather, the value dimension inherent in the types of decisions that need to be made means that sustainable development also requires social negotiation processes to take place (Veland, Scoville-Simonds, Gram-Hanssen, Schorre, El Khoury, Nordbo, Lynch, Hochachka & Borkan 2018).

The moral imperative for people to engage with sustainability issues aside however, Ellis (2018) argues that, in practical terms, science alone does not, cannot and should not have all the answers – not for earth's limits, nor for human futures. Fittingly, it is scientists themselves who have defended this position. The *World Scientists' Warning to Humanity* was penned in 1992 by the Union of Concerned Scientists and more than 1500 independent scientists, including the majority of living Nobel laureates in the sciences. This statement called on humankind to curb the destruction of the environment and cautioned that "a great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided" (Kendall 1992). Through their statement, scientists made it clear that we cannot rely on scientific advances to solve environmental issues. Behaviour change is critical.

Twenty-five years later, Ripple et al. (2017) published the *World Scientists' Warning to Humanity: A Second Notice*. This article was a response to the initial warning going unheeded (Skubala 2018). This *Second Notice,* signed by 15 364 scientists, has more scientist co-signers and formal supporters than any other journal article ever published (Skubala 2018). It calls for action and behavioural change to avert irreversible damage to the planet by stressing that in order to "prevent widespread misery and catastrophic biodiversity loss, humanity must practice a more environmentally sustainable alternative to business as usual" (Ripple et al. 2017:1028). The authors further caution that "soon it will be too late to shift course away from our failing trajectory, and time is running out. We must recognize, in our day-to-day lives and in our governing institutions, that Earth with all its life is our only home" (Ripple et al. 2017:1028).

As behavioural change depends on people being informed, motivated and committed (Fischer et al. 2018), it becomes critical to engender these qualities in people by making sustainable development approachable and understandable (Veland et al. 2018). The onus, therefore, is on effective environmental communication – creative forms thereof that can be used to prepare new narratives of change in such a way that they help create a mobilized society: one whose people are armed with the necessary knowledge, the corresponding readiness and the required skills that will be best poised to lead the charge towards dynamic change (Fischer et al. 2018).

2.4 Environmental communication

Our respective understandings of, and roles within the environment can't be separated from the ways in which we communicate with one another about these things. As Cantrill and Oravec (1996:2) observe, the "environment we experience and affect is largely the product of how we come to talk about the world". That is, the manner in which we communicate about the environment has a powerful impact on how we perceive both it and ourselves and, therefore, how we describe our relationship with it (Pezzullo & Cox 2017).

In this section, I begin by defining 'environmental communication' as communication about environmental affairs and describing its purpose as enabling the meaning-making and performing of pro-environmental activities. Next, I provide a chronological breakdown of how the field of environmental communication came to be, followed by an outline of the scholastic imperative of the field – in essence, what it is that environmental communication scholars are concerned about. The penultimate focal points of this section look at the theoretical underpinnings of environmental communication and why it is often referred to as a 'crisis discipline'. Finally, I conclude the section by reflecting on the development of the field and identifying opportunities for further scholarship.

2.4.1 Defining 'environmental communication'

Quite simply, environmental communication entails the transmission of information about affairs related to our natural world. It includes all of the various forms of "interpersonal, group, public, organizational, and mediated communication that constitute the social debate on environmental issues and problems, and our relationship with the rest of nature" (Meisner 2015:1). A more robust definition offered by Pezzullo & Cox (2017:32) describes environmental communication as "the pragmatic and constitutive modes of expression – the naming, shaping, orienting, and negotiating – of our ecological relationships in the world, including those with nonhuman systems, elements and species".

Anyone – from the most committed supporters of the environment, to the fiercest critics of ecological conservation – who is engaging in debate regarding the environment is participating in the activity of environmental communication (Meisner 2015). In this sense, it is both a lay task that can be performed by anyone, and a field of practice that has been developed by skilled communicators (Meisner 2015).

From a scholarly point of view, the field of environmental communication includes analysing existing communication about environmental affairs and finding strategies for improving communication about environmental issues (Shanahan 2013). More succinctly, it involves the study of "the link between communication practices and environmental affairs" (The Environmental Communication Commission of the National Communication Association in Pleasant, Good, Shanahan & Cohen 2002:197).

2.4.2 The purpose of (environmental) communication

Broadly speaking, we rely on communication for two things: (1) to do things and (2) to create meaning. Firstly, we need to communicate in order to do things – "to inform, persuade, educate, alert, argue, reconcile and negotiate with each other" (Meisner 2015:12). In this way, communicating about the environment is a practical, and indeed necessary activity for action (Watzlawick, Bavelas & Jackson 2011). It is extremely difficult to promote a strategy, raise awareness, change behaviour, influence public opinion, engage in conflict resolution, pass legislation or question assumptions without employing some form of communication (Meisner 2015).

The second thing we look to communication to do is to create meaning – "to shape how we see and value the world of things, events, conditions, and ideas" (Meisner 2015:14). In this way, environmental communication informs our understanding of the issues, the underlying problems thereof, the individuals and organizations involved, the potential solutions and, foremost, the environment itself (Meisner 2015).

If communication is such a fundamental aspect of how the environment and environmental issues are understood and learned about (Hansen 2011), it follows then

that the quality of our communication will influence how swiftly and deeply we can adapt our societies, and how successfully we will address the environmental crisis. In other words, only when information is transformed into meaningful knowledge and effectively channelled, can it become a more effective tool to understand environmental problems, to orient decision-making towards solutions, and to behave and act towards sustainability.

2.4.3 A timeline of environmental communication

Fields of inquiry do not simply come about by willing them into existence, and environmental communication is no different. It emerged as the outcome of "a layering of signification over time" (Senecah 2007:22). Table 2.1 below presents some key events and publications that have shaped the field of environmental communication's purpose and meaning. While there are many other ways possible to outline the chronology of these key events[1], I have constructed this one based on my review of the field.

Table 2.1 A timeline of environmental communication

	Year	Key Event/ Publication
Modern Environmentalism	1962	Silent Spring (Carson)
	1968	Santa Barbara, California oil spill
	1968	UNESCO Biosphere Conference

[1] Comfort, S.E. & Park, Y.E. 2018. On the field of environmental communication: A systematic review of the peer-reviewed literature. Environmental Communication 12(7): 862-875.
Pleasant, A., Good, J., Shanahan, J. & Cohen, B. 2002. The literature of environmental communication. Public Understanding of Science 11: 197-205.

	1972	Stockholm Declaration
Study of Environmental Communication	1981	*John Muir, Yosemite, and the Sublime Response* (Oravec)
	1988	International Association for Media and Communication Research establishes an environmental/science/risk communication working group
	1991	Inaugural (biennial) Conference on Communication and Environment
	1996	Environmental Communication Commission within the (U.S) National Communication Association is founded
	2004 - 2006	Volumes I-III of *The Environmental Communication Yearbook*
	2007	Environmental communication divisions in the European Communication Research and Education Association are established + *Environmental Communication* publishes its first issue
	2011	International Environmental Communication Association (IECA) is formally established

As a field of study, environmental communication is a relatively recent endeavour. In an effort to orientate its starting point, it is useful to reflect on the birth of modern environmentalism for context. The relationship between humans and the environment beginning to be considered as one that affects regular people is typically dated to the mid-twentieth century (Parks 2017). Events such as the 1962 release of Rachel Carson's *Silent Spring*, a series of major environmental disasters (for example, the 1968 Santa Barbara oil spill in California) and the rise of global nuclear proliferation resulted in a developing awareness of human and environmental health as being interlinked (Hays 1987).

In 1968, sixty nations met in Paris for the first intergovernmental meeting on environment and development: the United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Conference. Four years later, more than a hundred nations gathered in Stockholm for the first United Nations Conference on the Human Environment. This conference culminated in the Stockholm Declaration: an intergovernmental document explicitly recognising the right to a healthy environment and placing great emphasis on protecting both species and their habitat (Comfort & Park 2018). Environmentalism became an official planetary concern.

Shortly thereafter, social scientists developed a growing interest in the communicative facets of environmental change. For many, the start of the study of environmental communication is marked by Christine L. Oravec's (1981) Quarterly Journal of Speech essay entitled *John Muir, Yosemite, and the Sublime Response* (Pleasant et al. 2002; Cox 2007; Senecah 2007; Milstein 2009; Shanahan 2013; Comfort & Park 2018). In her essay, Oravec (1981) described the environment as the umbrella under which everything else fit and was linked, and in so doing put forward ways to focus communication studies in a new and profound way. From there, scholars' appetite to further examine the connection between environment and communication has been evidenced via multiple institutional accommodations. These advances include the creation of an environmental/ science/ risk communication working group by the International Association for Media and Communication Research in 1988 (Senecah 2007) and the first Conference on Communication and Environment in 1991 (Pleasant et al. 2002). This was followed by the formation of environmental communication divisions in the United States (U.S.) National Communication Association in 1996

and the European Communication Research and Education Association in 2007 (Comfort & Park 2018).

The biennial Conference on Communication and Environment (COCE) eventually led to the publication of *The Environmental Communication Yearbook* from 2004 – 2006 (Cox 2007). The yearbook itself then led to the creation of *Environmental Communication*, a field-specific journal that published its first issue in 2007 (Shanahan 2013). Finally, the most recent notable milestone has been scholars and practitioners' formal establishment of the International Environmental Communication Association – intended to unify environmental communication scholars and coordinate research worldwide (Comfort & Park 2018). To this end, Pezullo and Cox (2017) report that interest has grown not only in North America, the United Kingdom and Europe, where "environmental communication has grown substantially as a field" (Carvalho 2009:1), but also throughout the rest of the world too.

2.4.4 The scholastic imperative of environmental communication

The ways in which people communicate about the natural world are of particular concern to those scholars researching environmental communication. They believe that such communication has widespread influence during a time of major environmental problems caused largely by human beings (Milstein 2009). Scholars draw their theory and methods "primarily from communication, environmental studies, psychology, sociology, and political science" (Meisner 2015:1). In this way environmental communication can be described as interdisciplinary in nature – both a field within the communication discipline and a meta-field that traverses disciplines (Milstein 2009). Across the board however, research and theory within the field are united by two main tenets: a) an emphasis on communication and the relationship between humans and the environment (Cox 2007), and b) recognition of the value in understanding the processes whereby symbol-using humans work out their relationships with each other in order to socially construct environmental perceptions, values, policies, and behaviours (Senecah 2007).

Many of the key issues that environmental communication researchers look to explore, and that practitioners are faced with, are most easily explained via "the standard questions of *who*, *what*, *where*, *when* and *how"* (Meisner 2015:1). These questions are reflective of the interconnected dimensions of communication (Pleasant et al. 2002), and may take the form of:

- *Who* gets to participate in discussions?
- *What* aspects of environmental issues are discussed?
- *Where* and *when* does the communication take place?
- *How* are people communicating?

Hansen and Cox (2015:1) note that the questions explored by environmental communication scholarship are often related to the production and consumption of mass media: "Traditional broadcast and print media and newer forms of digital communication have been instrumental in defining 'the environment' as a concept and domain, and in bringing environmental issues and problems to public and political attention." This mirrors what Hansen (2011:7) called 'the three foci of environmental communication research': "examining influences on the *production* of media messages, examining the *content* of these messages, and examining the *effect* of such messages on audiences".

2.4.5 Theoretical underpinnings of environmental communication

The complexity of environmental issues, with their intricate links to the material, cultural, social, economic, and political aspects of our lives, calls on scholars to draw on various conceptual, theoretical, and methodological frameworks to help understand and mitigate these vast concerns (Hansen & Cox 2015). The more viewpoints we explore, the more dynamic our understanding of these issues will be, and the greater the number of choices we will have to deal with the most pressing problem of our time.

For Oepen (2000:10), "perceptions of the environment are to a large extent determined by cultural contexts, visions, lifestyles and value judgements which are

acquired through communication". This is echoed by Pezzullo & Cox (2017:7) who explain that "our beliefs, choices and behaviours about the environment are integrated, shared and judged through communication". However, it is Milstein (2009:2) who harnesses this line of thinking into three, interconnected assumptions that are central to environmental communication theory:

> *"The ways we communicate powerfully affects our perceptions of the living world; in turn, these perceptions help shape how we define our relations with and within nature and how we act toward nature. Thus, environmental communication scholars often speak of communication as not only reflecting but also constructing, producing, and naturalizing particular human relations with the environment."*

Furthermore, many theories of environmental communication incorporate the assumption that human representations of nature are 'interested' (Cox 2007). This means that all forms of communication regarding nature are influenced by social, economic, and political contexts and interests (Milstein 2009). These contexts and interests assist in shaping our communication, often subconsciously, and lead us to "see nature through particular lenses while also obscuring other views" thereof (Milstein 2009:2).

2.4.6 Environmental communication as a 'crisis discipline'

The first issue of Environmental Communication, published in 2007, advocates for the recognition of environmental communication as a distinct area of study and practice. In the issue's first article, Cox (2007) argues that environmental communication should be treated as a 'crisis discipline', comparable to conservation biology and other mission-driven fields that seek to take a bilateral approach to pressing problems: via both research and calls to action. Cox's (2007:14) most influential theory is that "dominant systems of representation" affect how society deliberates about environmental issues, and that these debates, in turn, have a significant impact on the quality and health of the natural environment. Cox's (2007) argument, that there is a principal ethical duty of environmental communication as a

crisis discipline, and that it is not being engaged with accordingly, invited several responses from fellow scholars.

Plec (2007) demonstrates support for Cox's positioning by exploring coherence as a framework for understanding environmental communication as a crisis discipline. She advocates for the significance of coherence because of the way it frames judgement: not as a practice of evaluative power, but as embodied recognition of implication. This stance is in contrast to Senecah (2007), who warns against a narrow definition of environmental communication as a crisis discipline and suggests that many of Cox's concerns can exist under a more encompassing disciplinary umbrella that includes advocacy but does not deem it mandatory.

However, more recent conversations between many of those who study this field do see it as a 'crisis discipline', taking guidance from Cox (2007) by basing their argument on the shared imperative between conversation biology and environmental communication (Milstein 2009; Meisner 2015). In the case of the former, the trans-discipline of conservation biology seeks to demonstrate and explain the biological elements of ecological collapse in a twofold attempt to stop and reverse it (Meisner 2015). In the same way, many argue that the onus is on environmental communication researchers to not only attempt to explain but also to drive transformation within the society that has simultaneously caused ecological collapse and inadequately responded to this crisis (Milstein 2009).

Finally, as many of those studying this field believe it to be a 'crisis discipline' similar to conservation biology, studies often surpass simply identifying, explaining, or critiquing environmental communication (Hansen 2011). Researchers feel obligated to ensure that communication concerning environmental affairs be as ethical and effective as possible. Such communication is vital if we are to "avoid violent conflicts and address environmental health and justice issues in the most effective ways possible". (Meisner 2015:2).

2.4.7 Reflecting on the development of environmental communication

Notwithstanding significant advances in environmental communication literature over the past two decades, there remains much to learn and much work to be done.

Leading scholars in the field critically examined its development in a special issue of *Environmental Communication*. Lester (2015) argued that environmental communication scholarship inadequately tackled two things: a) invisibility – in particular, the environmental communicative processes that are carried out away from the public eye, and b) transnationality – an important consideration due to environmental concerns transcending national boundaries. Anderson (2015:381) argued for more outreach and multi-stakeholder partnerships that explore how "various actors involved in environmental communication (i.e. scientists, policy-makers, advocacy groups, industry and government) are framing the issues. And how do these connect with public interests and concerns?" Similarly, Cox (2015) challenged his fellow scholars to resist media-centrism and consider media messages within broader cultural, political, and economic systems. Finally, Besley (2015:400) stressed that scholars need to apply themselves to making environmental communication scholarship relevant outside of academia, as the existing disconnect is at odds with the field's "serious and pertinent nature".

Whereas previous research focused on issues such as nuclear power, emissions, endangered species, and acid rain; recently, major studies have increasingly focused on climate change (Shanahan 2013). This is echoed by Schäfer and Schlichting's (2014) findings that the amount of research looking at how climate change is represented in the media has increased significantly in recent years.

Even more recently, Comfort & Park's (2018:862) review found that "attention to environmental communication has exploded in recent years and that the field is methodologically open-minded". They too note that researchers have turned their attention away from general environmental risk towards climate change specifically in the past decade. A selection of Comfort & Park's (2018) key findings regarding the

current scope of the field, coupled with proposed opportunities for further scholarship are listed in Table 2.2.

Table 2.2 Reflecting on the development of environmental communication

Current scope of the field	**Opportunities for further scholarship**
Scholars seem to be focussing on content and representation.	This implies that the other two typical foci of mass communication – message effects and message production (Hansen 2011) – are relatively underexplored.
Scholars have been analysing journalism as a main point of interest since the 1970s, with a particular emphasis on print-based news.	This emphasis on journalistic output fails to take the richness of our media environment and the diversity of mediated information producers into account.
Following the emergence of risk-related studies in the 1980s and environmental messaging in advertising in the 1990s, the main topic of enquiry today is climate change.	Even though climate change is considered to be humanity's most urgent and complex issue, it is not the only issue affecting the public and the environment as there are countless other problems that persist.
The field focuses on U.S. and European issues.	People in poorer countries suffer unduly from the consequences of environmental degradation and climate change (Baettig, Wild & Imboden 2007). There is an opportunity for the field to speak for those that environmental issues impact the most.

Now that I have established the field of environmental communication as the home of my study, in the following section I provide an overview of millennials' – as the specific target group of my research – relationship with sustainability-related issues.

2.5 Millennials' relationship with sustainability-related issues

A popular narrative is emerging regarding the importance of motivating and mobilizing young people – primarily millennials – because they are thought to be

more concerned about, and highly motivated to protect the environment (Goto Gray et al. 2019). Even though our lifestyles remain unsustainable in many respects as we continue to engage in overproduction and overconsumption (Backhaus, Breukers, Paukovic & Mourik 2012), young peoples' awareness of these issues continues to grow, which has in turn started to have a significant impact on their decision-making (Kadic-Maglajlic et al. 2019).

Millennials will comprise 31.5 percent of the global population by the end of 2019, based on Bloomberg's analysis of United Nations data (Miller & Lu 2018). As the first generation to have "grown up in a world where climate change is part of the daily international dialogue" (Astor 2019:3), millennials are in a unique position – one characterized by vast opportunity coupled with relentless uncertainty. While each generation has undoubtedly had its risks and challenges, millennials have been forced to face the realities of, for example, extreme weather patterns, rising sea levels, rapidly increasing genetically modified crops and the extinction of various species (Farrell 2019).

In this section I provide a description of the millennial generation, followed by a review of a recent and growing body of research that focuses on young people's engagement with sustainability-related issues. Specifically, I draw on existing literature that seeks to identify, analyse and understand how environmental behaviours and attitudes are formed amongst this segment of the population, and which factors may influence millennials' intentions to engage in environmental actions.

It should be noted that the large majority of existing studies are confined to "so-called WEIRD (Western, Educated, Industrialized, Rich, Democratic) societies" (Liu, Qu, Lei & Jia 2017:414), which are only representative of a small proportion of humanity (Henrich, Heine & Norenzayan 2010). Indeed, there is scant empirical evidence concerning (young people's) engagement with sustainability-related issues in Africa.

2.5.1 The millennial generation

A 'generation' refers to a group of people who were born within a distinct period of time and who have experienced profound social and historical events during critical developmental phases of their lives (Smola & Sutton 2002; Twenge & Campbell 2008). The lasting impact of these events remains fairly constant throughout an individual's lifespan and creates generational characteristics shared with others in the cohort (Goto Gray et al. 2019). These characteristics can comprise a common world view, beliefs and attitudes (Kupperschmidt 2000). In essence, this shared perspective stays with members of a generation "throughout their lives and is the anchor against which later experiences are interpreted" (Scott 2000:356).

The millennial generation consists of people born between and including the years 1982 and 2000 (Goto Gray et al. 2019). These offspring of the Baby Boomers and younger siblings of the Generation Xers are 19-37 years old in 2019. They came of age during the Information Revolution – characterized by the advent of the Internet in 1995, which was a defining event for them (Debevec, Schewe, Madden & Diamond 2013). The Internet enabled the world to witness many significant events that took place throughout the 'global village', such as the 11 September 2001 terrorist attacks that led to the invasion of Iraq and Afghanistan and the 'War on Terrorism' with security measures being implemented across the globe. The world also witnessed earthquakes and tsunamis in the Indian Ocean in 2004 and in Japan in 2010, the burst of the dot.com bubble, swine flu, the continuing global energy crisis, both China and India's rising economic powers, North Korea's nuclear threat, the collapse of Middle Eastern regimes, social media's rapid growth and influence, global warming, and the global financial crisis that occurred in the late 2000s (Debevec et al. 2013).

Millennials are extremely techno-savvy due to having grown up with the internet and believe that it is their use of technology that differentiates them from other generations (Vogels 2019). The millennial generation is commonly described as being entrepreneurial, ambitious, opinionated, self-reliant, distrustful of institutions, quick to learn, and self-involved (Smola & Sutton 2002; Twenge & Campbell 2008). They

are also ethnically diverse, accepting of diversity, and enjoy working in teams (Vogels 2019).

2.5.2 Millennials and the environment

There is a belief, popularized by the media, that millennials are especially environmentally conscious (Sheahan 2005), and that it is this particular generation, motivated by a New Environmental Paradigm orientation, that is poised to act to protect the environment (Dunlap 2008).

A New Environmental Paradigm

A paradigm is a worldview that provides those individuals or societies who subscribe to it with a clear picture of "how things fit together in the world" (Allen & Spialek 2018:806). Researchers who explore people's attitudes, values, and actions in relation to the natural environment commonly refer to the 'Dominant Social Paradigm' and the 'New Environmental Paradigm' (Allen & Spialek 2018). Adopters of the Dominant Social Paradigm are united by a worldview that rejects environmental regulation, and promotes limited intervention by the state, private property rights, and economic individualism (Shafer 2006). On the other hand, adopters of the New Environmental Paradigm are united by a worldview that supports environmental protection and restrictions on industrial and population growth and contends that ecological collapse is caused by human interactions. Those who embrace this paradigm promote efforts to halt and reverse such destruction and problem-solving initiatives to address global environmental issues (Dunlap 2008).

Some research supports the notion that millennials are environmentally orientated. For instance, Guevarra's (2010) study revealed that millennials demand a more environmentally sensitive workplace and Polonsky, Vocino, Grimmer and Miles (2014) found that, amongst this generation, contemporary sustainability and environmental policy issues are prioritized ahead of issues such as civil rights and economic reform. Rogers (2013) reported that millennials would prefer products and policies that would minimize the environmental impact of humans. This was

supported by Rosenburg's (2015) study whereby they found that millennials search for brands that they find to have a positive impact on the environment. Moreover, Smith (2010) found that, if they were inexpensive and made from recycled materials, millennials would likely endorse green products amongst their peers. There is a strong indication that millennials are challenging companies and political leaders to upweight sustainability as a key concern.

There are, however, other studies that counter these generalizations and propose that, notwithstanding the promise of their environmentally-friendly attitudes and concern for the environment, many millennials struggle to convert such attitudes into action (Gaudelli 2009); that is – that millennials are more attitudinally green than behaviourally green (Uyeki & Holland 2000; Diamantopoulos, Schlegelmilch, Sinkovics & Bohlen 2003; Johnson, Bowker & Cordell 2004; Muralidharan & Xue 2016; Naderi & van Steenburg 2018).

2.5.3 The importance of engaging millennials

Issues linked to the environment are particularly salient amongst young people as the inevitable inheritors of a deteriorating ecological environment. Through bearing the burden of being surrounded by an endangered environment, millennials are found to be very aware of environmental issues (Johnstone & Hooper 2016).

Nevertheless, the general consensus suggests that while they are environmentally literate and enthusiastic about adopting greener lifestyles, millennials experience difficulty translating their knowledge and intentions into pro-environmental behaviour (Gaudelli 2009). Variations of pro-environmental behaviour have also been found within this cohort: Hanks, Odom, Roedl and Blevis (2008), Smith (2010) and Debevec et al. (2013) all found younger millennials to be less engaged in environmentally responsible behaviour than their older counterparts.

In order to play an active role in protecting the environment, millennials need to be engaged (United Nations 2019). Heo and Muralidharan (2019) reported that, irrespective of how knowledgeable and confident millennials felt about addressing

environmental issues, if they weren't engaged enough to behave in an environmentally responsible manner then they neither had nor would not change their behaviour.

In the environmental context, engagement is widely recognized as an important tool for actualising behavioural change. In broad terms, it is possible to split definitions of engagement into two research streams: whereas one stream describes engagement as behavioural in nature (van Doorn, Lemon, Mittal, Nass, Pick, Pirner & Verhoef 2010), the second stream describes it as "a psychological state of being occupied, focused, and committed to an issue" (Higgins & Scholer 2009:20). In the environmental context, the concept of engagement is commonly viewed as either a form of behaviour (Steg & Vlek 2009) or as a degree of environmental concern (Hirsh, DeYoung & Peterson 2009).

Scholars frequently draw on a critique of the theory of planned behaviour to lay the foundation for research centred around the role of engagement in millennials' sustainable consumption activities and, specifically, what motivates their engagement towards adopting environmentally sustainable behaviours.

The theory of planned behaviour

As "one of the most widely cited and applied behaviour theories" (O'Brien, Morris, Marzano & Dandy 2017:90), the theory of planned behaviour forms part of a tightly inter-related cluster of theories that takes a cognitive approach to describing individuals' behaviour based on their attitudes and beliefs (O'Brien et al. 2017). The theory of planned behaviour emerged from the theory of reasoned action (Ajzen 1991), which suggested that the best predictor of behaviour is intention to act. Intention, however, is itself the product of a synthesis of attitudes towards a behaviour. The central components of the theory of planned behaviour and the connections between these components are illustrated in Figure 2.1 and discussed below.

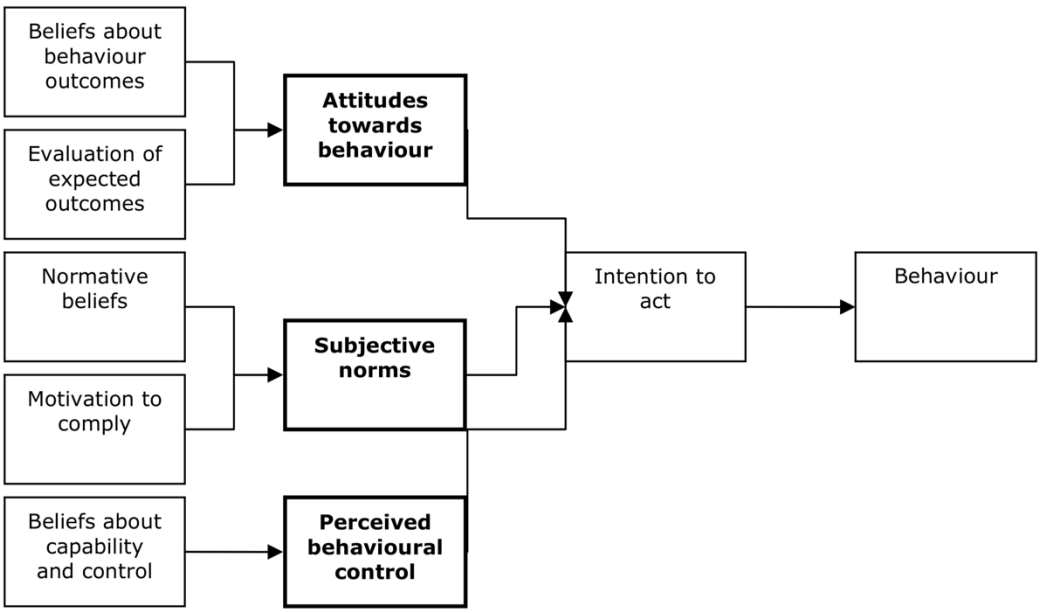

Figure 2.1 The theory of planned behaviour
Source: O'Brien et al. (2017)

According to the theory of planned behaviour, "behaviour is preconditioned by the internalisation of attitudes, subjective norms, and perceived controls" (O'Brien et al. 2017:6). 'Perceived controls' refers to the perceived ease or difficulty with which someone will be able to perform or conduct the behaviour (O'Brien et al. 2017). It is the confluence of these three 'ingredients' at the pre-decision phase that influences intent, thus guiding action (Johnstone & Lindh 2018). In other words, attitudes, norms, and perceived control shape a person's intentions, and intending to take a certain action will make it more likely to occur.

The common critique of the theory of planned behaviour concerns the intention-behaviour gap – specifically, that it is not a given that intent will manifest into action (Johnstone & Lindh 2018). Contrary to what the theory of planned behaviour suggests, "millennials often value hedonistic instant gratification and are subject to peer pressure and socialisation processes" (Alexander & Sysko 2012:7). Therefore, whereas some millennials behave sustainably for egoistic reasons, others express wilful ignorance (Davies & Gutsche 2016). In addition, learning can be both active and passive, that is, "intentional or incidental" (Newton, Tsarenko, Ferraro & Sands 2015:1976). And, for the most part, it is haphazard or ambivalent processes characterised by incidental circumstances that translate into sustainable behaviour

(Davies & Gutsche 2016). Hence, the simplistic linear model of the theory of planned behaviour takes on a multidimensional quality with additional, and often competing, variables requiring consideration (Johnstone & Lindh 2018).

2.5.4 Significant predictors of pro-environmental behaviour amongst millennials

A comprehensive body of work in the environmental literature has studied characteristics of people who engage in pro-environmental behaviours that differentiate them from those who don't. Typical variables examined included an individual's age, gender, number of children, education, and socioeconomic status (Olli, Grendstad & Wollebark 2001; Casimir & Dutilh 2003). In a comprehensive review of this area of research however, Diamantopoulos et al. (2003) concluded that, even though sociodemographic variables cannot be overlooked, they provide limited utility whilst attempting to create a profile of those that engage in pro-environmental behaviours or understand why they do so. In addition, previous research indicates that demographic variables usually have less explanatory significance than psychographic variables.

A significant contribution to the understanding of psychographic contingencies under which pro-environmental behaviour occurs amongst young adults in particular is a study conducted by Kadic-Maglajlic et al. (2019). Here, the authors demonstrated that pro-environmental engagement (determined by self-identity and values) is a significant predictor of young adults' pro-environmental behaviour. Furthermore, they found that emotional intelligence enhances engagement's effect on pro-environmental behaviour, and it has "a significant direct effect" on pro-environmental behaviour (Kadic-Maglajlic et al. 2019:1). This process is illustrated in Figure 2.2. and unpacked in further detail below.

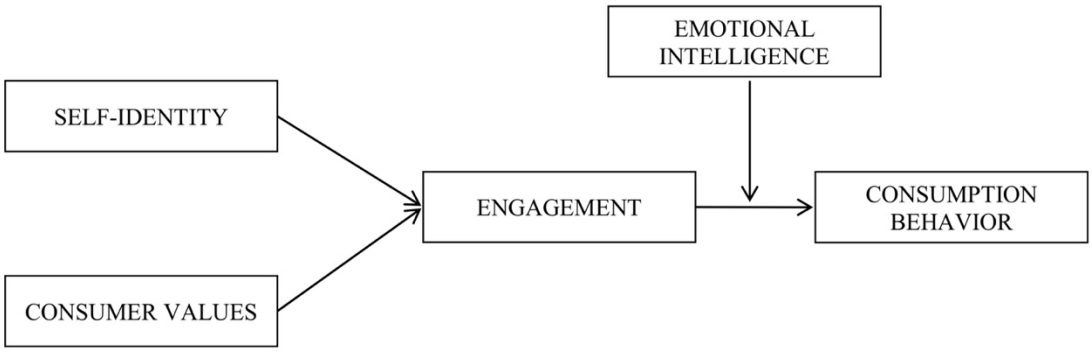

Figure 2.2. Comprehensive conceptual framework for pro-environmental behaviour
Author: Adapted from Kadic-Maglajlic et al. (2019)

From a psychological point of view, it is during the stage of an individual experiencing young adulthood when the development of social identity through peer association and a sense of belonging to peer groups becomes especially key (Steinberg & Morris 2001). Therefore, Kadic-Maglajlic et al. (2019) proposed their framework to demonstrate engagement as a key driver of young adults' sustainable behaviour, which is also informed by behaviour-relevant self-identity and values. Furthermore, over and above young adults' values, the emotions associated with their aspiration to transform the broader environment also perform a key role in driving their sustainable behaviour (Almers 2013). The significance of emotional abilities in determining the actions of young adults led Kadic-Maglajlic et al. (2019) to draw on emotion regulation theory – specifically emotional intelligence – to demonstrate that a noticeable facilitator of the relationship between engagement and sustainable behaviour is in indeed this psychological characteristic.

It should be noted that some authors, e.g. Fukukawa (2003) and Carrington, Neville & and Whitwell (2010), warn against relying too heavily on theories that artificially designate decision-making into ‘perfect’ environmental and social conditions via the use of distinct sequential stages. They argue that, for the millennial subgroup in particular, sustainable behaviour is a lot more complex than what is explicated by these ‘neat’ theories, and that they neglect incidental and ethical aspects reliant on socialization processes.

Next, in section 2.6, I turn my attention to exploring the gap between millennials' awareness of sustainability issues and their displays of pro-environmental behaviour.

2.6 Barriers to converting awareness into behaviour change

Millennials' awareness and concern about sustainability-related issues on the one hand, in contrast to their limited behavioural response on the other is reflective of the widely-reported 'value-action' or 'attitude-behaviour' gap (Blake 1999; Kollmuss & Agyeman 2002). Even though there are numerous theoretical frameworks that have been developed in an attempt to explain this gap, a definitive explanation still evades researchers. The implication thereof is that the question of what drives pro-environmental behaviour is so complex that visualizing it via one single framework is not possible.

The aspects that inform millennials' behaviour frequently conflict and compete with one another and prove that – despite increasing concern for the environment amongst young adults – it would be unwise to assume that this concern will necessarily translate into action (Goto Gray et al. 2019). The literature often differentiates between the internal and external factors that hold back behavioural change. As such, scholars such as Blake (1999) and Kollmuss and Agyeman (2002) categorize the reasons that may impede individuals when they try to adjust their behaviours toward living more sustainable lifestyles into the psychological (internal) and the social, cultural, financial, and structural (external).

In this section I draw on a representative sample of studies in this field – namely those of Rajecki (1982), McKenzie-Mohr and Smith (1999), Blake (1999), Kollmuss and Agyeman (2002) and Lorenzoni, Nicholson-Cole and Whitmarsh (2007) – to construct a summary of barriers, including descriptions and examples thereof, to pro-environmental behaviour commonly cited in the existing literature that researchers have found to have a negative impact on pro-environmental behaviour. This summary is presented in Table 2.3.

Table 2.3 Summary of barriers to pro-environmental behaviour commonly cited in the existing literature

Factor	**Description**	**Examples**
Direct vs. indirect experience	Direct experiences have a stronger influence on people's behaviour than indirect experiences (Blake 1999; Kollmuss & Agyeman 2002).	Acquiring knowledge about an environmental problem in the classroom (indirect experience), as opposed to directly experiencing it (e.g. first-hand observation of the deceased fish in the lake), will result in a weaker correlation between attitude and behaviour.
Normative influences	People's attitudes are informed by social norms, cultural traditions, and family customs (Rajecki 1982; Lorenzoni et al. 2007).	If the dominant culture propagates an unsustainable lifestyle, it is less likely that pro-environmental behaviour will manifest, and it is more likely that the gap between attitude and behaviour will increase.
Temporal or place discrepancy	Peoples' environmental attitudes, perceptions and resulting behaviour towards the environment change over time and place (Rajecki 1982). From a research methodology point of view, this means that results may be inconsistent when too much time passes between data collection for attitudes and data collection for action	Following the Chernobyl accident, the majority of Swiss residents were vehemently opposed to the use of nuclear energy. However, when a memorandum to put a 10-year stop to building new reactors in Switzerland was put forward, it passed by only a very tiny margin (Kollmuss & Agyeman 2002).

	(Kollmuss & Agyeman 2002).	
Attitude-behaviour measurement	The measured attitudes of respondents are often much broader in scope than the measured actions. Consequently, respondents may think of themselves as environmentally-friendly or already upholding a sustainable lifestyle (Blake 1999). From a methodology point of view, this can lead to large discrepancies in results (Kollmuss & Agyeman 2002).	'Do you care about the environment' (attitude) is a much broader question than 'do you recycle' (action).
Individuality	Barriers existing within an individual, concerning attitude and temperament (Rajecki 1982; McKenzie-Mohr & Smith 1999).	Lack of knowledge; confusion and scepticism; distrust in sources of information; externalization of responsibility and blame; a reliance on technology; perceiving environmental issues as distant threats; prioritising other pressing concerns; a reluctance to adapt one's lifestyle; fatalism; and helplessness
Responsibility	Those who do not act pro-environmentally believe that they are unable to influence the situation or that the responsibility to do so lies elsewhere; similar to the psychological concept of	A lack of trust in, and being suspicious of, an institution e.g. local and national government, business and industry means that individuals are less inclined

	'locus of control' (McKenzie-Mohr & Smith 1999; Blake 1999).	to adopt the actions prescribed.
Practicality	There are social and institutional constraints that hinder individuals from acting pro-environmentally irrespective of their attitudes or intentions (Rajecki 1982; Lorenzoni et al. 2007).	Lack of time/ money/ information. People keep engaging in present behaviour because it is the easiest thing for them to do.

As demonstrated in Table 2.3 above, behaviour is rooted in societal and individual structures that entail a variety of barriers and constraints that inhibit attitudes from transforming into behaviour. It is important to note that numerous barriers frequently overlap or work together to intensify pro-environmental engagement constraints (Lorenzoni et al. 2007). For example, the ease and habitual use of a private vehicle, coupled with the perceived lack of efficient and accessible public transport, are often offered as reasons for continuing to make use of the former mode of transport (McKenzie-Mohr & Smith 1999). Furthermore, different groups of people experience different barriers (Lorenzoni et al. 2007). Thus, there are many barriers to realising sustainable behaviour that exist and need to be overcome, before an individual will act pro-environmentally (Kollmuss & Agyeman 2002).

Millennials are characterised by multiple contrasting qualities: high intent, low action. Low awareness, high wariness. Short on funds, willing to spend more. Each one of these discrepancies presents a valuable opportunity to study this generation, understand the barriers to addressing their attitude-behaviour gap, and design environmental communications messaging that can help navigate the chasm.

2.7 Role of storytelling in environmental communication

Storytelling is a well-known, powerful, two-way interactive means employed to communicate messages and engage audiences. Taking the approach of communicating information in an accessible and practically relevant manner, for

example through weaving knowledge into a narrative storyline, has been evidenced to upweight an audience's level of engagement (Greenhalgh 2001), their enthusiasm to use the evidence as a basis for decision-making (Rapp 2010), and their ability to act upon the knowledge (Downs 2014).

2.7.1 The purpose of storytelling

Storytelling, the ancient practice of using stories to impart knowledge, is one of the few human traits that is truly universal across cultures and through all of known history (Greenhalgh 2001). An oft cited reason for this widespread activity is that human beings gravitate towards order and sequence (Dettori 2012). We use our innate abilities to arrange the thousands of independent events in our lives into a tidy, comprehensible structure with a past, present and future – and storytelling is one of the tools we employ to do this (Rutledge 2011). In this way, storytelling is, and always has been, the antidote to information overload.

Crafting stories is an intrinsically social activity in two ways: firstly, stories are usually the products of collaboration amongst several persons and secondly, stories are created to be shared (Dettori 2012). When referring to the practice of 'storytelling', Hutchings (2014:214) stresses the broadly encompassing nature of this activity:

> *"We mean to spark up essential and compassionate conversations, poetry writing, creating theatre screenplays, engaging with film and video, music, photography or any form of expression that nourishes the mind and can actively deepen an understanding of environmental issues; the very spark that is required to creatively harness the re-thinking, re-imagining and re-telling of our world stories".*

Storytelling has the ability to create a shared understanding of an issue amongst people and, by means of its engaging nature, it has the dual potential to a) attract and maintain interest and b) foster the development of meaningful connections amongst audiences (Duarte 2010). An additional benefit of storytelling is that it is often easily

accessible and does not rely on the audience being privy to specialised knowledge in order to grasp or relate to the information being relayed (Dahlstrom 2014). This is because, when scientific knowledge and messages are presented through a coherent narrative, the human brain seems to comprehend and retain them more effectively (Greenhalgh 2001). So much so, that as Dahlstrom (2014:13615) describes it "…narratives seem to offer intrinsic benefits in each of the four main steps of processing information; motivation and interest, allocating cognitive resources, elaboration and transfer into long-term memory". Certain studies even suggest that the use of narratives may be the single most effective way to seed new ideas and concepts within humans' brains (Duarte 2010; Stephens, Silbert & Hansson 2010).

2.7.2 Storytelling and the human-nature relationship

While storytelling has developed as a tool for communicating science in the fields of health care and science education, amongst others (Dahlstrom 2014; Downs 2014), integrating it into environmental communication is an underexplored area (Sundin, Andersson & Watt 2018).

As Galafassi et al. (2018:72) recently indicated, there is the potential for storytelling to be "a key contributor to social learning, as it is particularly well-suited to give access to sources of knowledge and to drive action relevant for climate transformations". In this way, storytelling can stimulate meaningful discussions regarding the reimagining of our relationship with nature (Nisbet, Hixon, Moore & Nelson 2010) and can see to it that large segments of society are no longer excluded from the discourse (Gibbons 1999). If, through environmental communication, "a meaningful and synergistic relationship between humans and the environment can be achieved", then humans can start to reassess their values and norms and consider some important questions (Nisbet 2018:15). These could take the form of: 'What does living in the Anthropocene mean?' and 'How can we reconstruct and redefine our relationship with nature to reflect a more-than-human outlook?'.

2.7.3 Storytelling over statistics

Narratives are more likely than traditional scientific communication to contribute towards increased engagement with an audience. This is because narratives assist in bridging the gap between *logos* and *pathos*. These concepts derive from 'Aristotle's Rhetoric', the ancient Greek text concerning the art of persuasion (Sundin et al. 2018). *Logos* refers to the logic of the argument itself, whereas *pathos* refers to the inherent emotions of the receiver (Rapp 2010). Bridging these two can lead to audiences becoming increasingly willing to be receptive to and in turn act upon the evidence presented (Rapp 2010).

Through putting information into perspective, stories are easier to understand and are more absorbing than conventional logical-scientific communication (Dahlstrom 2014). Narrative structures, or stories, are considered as having the ability to provide explanations and concrete examples of otherwise abstract and inaccessible facts (Fischer et al. 2018). These 'translations' in turn can structure human comprehension and shape our ability to achieve a transformed future. The potential of stories to convey information, to explain problems and to arouse emotions has awakened the interest of various scientific disciplines under the concept of storytelling (Veland et al. 2018). One such example of this is a study conducted by Small, Loewenstein and Slovic (2007) entitled *Sympathy and callousness: The impact of deliberative thought on donations to identifiable and statistical victims*. Here, the authors found that sharing a representative story of one real person was twice as likely to generate action than the sharing of a much larger statistical problem.

This demonstration of a single story raising more awareness than a statistic has broader applications to the practice of storytelling in general. To optimise an individual's ability to connect with a story, our stories need to involve one main character – a 'heart' of the story. Small et al.'s (2007) study shows that neither a group nor a statistic has the ability to connect with audiences to the extent that one strong character has. As each one of us is just one person, it naturally follows that we are able to develop a stronger connection with just one other person – and therefore connect more to a story with one main character. Therefore, telling a story through a

single perspective, i.e. one personal story, is the most likely approach that will lead to action.

2.7.4 Visual, digital storytelling

There are many different forms of storytelling and many different techniques used to create stories. In what is usually referred to as 'visual storytelling', storytelling techniques can be employed to visually portray a narrative through various mediums such as video, photography, graphics or illustrations. A more recent storytelling trend is to 'go digital', i.e. to use modern technologies that essentially enable anyone to share their stories (Lambert 2013). There are, of course, more traditional forms of storytelling that exist too, such as theatrical performances.

Whereas the more traditional forms of storytelling many not appeal as much to millennials, an evolution towards greater digitization certainly does. Indeed, Honeybun-Arnolda and Obermeister (2019:4) argue that digital storytelling can have "similar effects and even greater reach". Galafassi et al. (2018) note that in their 'climate-related art catalogue', theatre and performance have the most entries. However, film follows closely behind. A decline in theatre and play in the United States as the result of attendance being considered an unnecessary expense (Statista 2014) is in contrast to the astounding rise of Netflix (with 61% of millennials using it) and other online streaming services (Rainie 2017). Recently, we have witnessed the BBC's Blue Planet II's phenomenal success whereby the series garnered 4.2 million views for its first episode alone – and tangibly drove awareness and even political change regarding the plastics issue. This demonstrates that there is still a need for "stimulation, emotional engagement, moral and ethical contemplation", but it is being met via various digital media (Henseler 2014:1). This is supported by Atchley (2018:2) who explains that "digital storytelling is the contemporary expression of the ancient art [of storytelling]. It combines the best of two worlds: the 'new world' of digitized video, photography and art, and the 'old world' of telling stories". In essence: storytelling is not declining, it is adapting to technology.

In the following sections I turn my attention to recommendations made within the literature pertaining to specific considerations and techniques that can be employed when developing sustainability-related communication materials. In order to provide context for these suggestions, I begin by presenting the classic communication model and the theory of narrative transportation.

2.7.5 The classic communication model

Shannon and Weaver's (1948) classic communication model is hailed as the beginning of the modern field of communication (Foulger 2004). The model has six components: sender, message, channel, audience, effect and feedback. The model advocates for choosing senders strategically, creating persuasive messages, opting for appropriate communication channels and formats, and using visuals that will support and strengthen one's messages (Shannon & Weaver 1948).

The perspective on communication has evolved from being sender- and media-centric, to being receiver- and message-centric (Servaes & Lie 2015). Whereas the communication process was regarded by earlier models as simply a message traveling from a sender to a receiver, today it is the process of communication and the significance of this process that are emphasised (Servaes & Lie 2015). As a result, the focus is moving towards exchanging meaning and developing relationships as opposed to simply transmitting information in a top-down fashion (McAnany 2012).

Storytelling is able to foster a shared understanding about a situation, subject or issue, and can engage an audience, attract and maintain their interest and help them to create meaningful connections. This is supported by Sundin et al. (2018) who explain that an audience's engagement and willingness to act upon knowledge can increase when storytelling is used to communicate evidence in an understandable and practical way. Whether your goal is to educate, build optimism, inspire or instil curiosity, you will have more impact if you elicit emotion and create a lasting memory.

2.7.6 Narrative transportation theory

Developed by Gerrig (1993), narrative transportation is a concept that suggests that people become travellers when they engage with stories because they are transported to somewhere different. In addition, by altering their values, attitudes and behaviours, this transportation even has the ability to change people. Two noteworthy terms within this focus area are 'narrative persuasion': referring to how stories are able to change people's attitudes and behaviours, and narrative transportation theory: the broad heading for studies that examine and explain the influential power of stories (Green & Brock 2000).

van Laer, de Ruyter, Visconti and Wetzels (2014) carried out a meta-analysis of the application of narrative transportation theory across a variety of disciplines. The authors describe narrative as "a subtle approach to persuasion" (van Laer et al. 2014:798). The narrative can establish a favourable psychological state in people through drawing them into a story, which can in turn lead to persuasive effects. Narrative transportation has three elements: "the person processes the story, the person is transported into the story and the transported person loses track of reality" (van Laer et al. 2014:801). The adoption of the intentions and attitudes weaved into a story is an indication that the receiver has been persuaded (van Laer et al. 2014). Narrative transportation theory offers a scholarly explanation for why sustainability-led communications can benefit from storytelling.

2.7.7 Elements of effective sustainability-related communication

All endeavours undertaken to promote sustainable behaviours involve some form of communication. How this communication is developed can influence its impact to varying degrees. Windahl, Signitzer and Olson (1997), McKenzie-Mohr and Smith (1999) and Sundin et al. (2018) suggest the following elements to develop effective communications:

Know your audience

It is important to develop communications with a particular audience in mind. Prior to embarking on communications development activities, practitioners should be familiar with the attitudes, beliefs and behaviours of their selected audience (Windahl et al. 1997; Selman 2001). Personal or localized messages can help to persuade the target audience to engage in behaviour change (Windahl et al. 1997).

Capture attention

Communication must first gain attention in order to effectively convince a target audience to shift their behaviour. Windahl et al. (1997) explain that successful communication strategies entail a message that is graphic and easily understood. This can be accomplished by using vivid and concrete information. It is likely that a message will be retained in two ways when it is communicated utilizing vivid information: firstly, via initial intake and secondly, via encoding it can be recalled at a later stage (McKenzie-Mohr & Smith 1999).

Frame the message

How an issue is presented or 'framed' can affect the probability of people engaging with it (McKenzie-Mohr & Smith 1999). Furthermore, a vital factor as to whether a message will be effective in realising an intended behaviour is how the message is presented (Windahl et al. 1997). Most people believe that they are already maintaining sustainable lifestyles (McKenzie-Mohr & Smith 1999; Agyeman & Angus 2002), leading them to hold a positive perception of their current behaviour. Different tactics are employed to respond to this belief. On the one hand, some initiatives (e.g. Greenpeace or dooms-day documentaries) contest this idea, while on the other hand other initiatives take the approach that positive depictions of society should be maintained and used to increase the adoption of sustainable behaviours incrementally (Windahl et al.1997; Selman 2001). McKenzie-Mohr and Smith (1999) support the latter approach and argue that environmental communication is most effective when executed incrementally.

Furthermore, Miller and Riechert (2013:54) explain that the discursive context in which issues are introduced has a key impact on audiences: “It makes a difference if the issue of endangered species, for example, is discussed in terms of economic development, biodiversity or aesthetics. In fact, debate about environmental issues usually is more about how to look at issues than about the facts or values involved.”

Christiansen (2018) points out that, in the social movement literature, studies have started to pay attention to the role that visuals could play in issue-framing (Rodriguez & Dimitrova 2011; Luhtakallio 2013). In order to further develop this topic of inquiry, researchers are beginning to suggest different ways to examine visuals and visual framing (Luhtakallio 2013). Presently, however, there is scant evidence of empirical research in the existing literature that explores how issues may be framed by using visuals (Bell 2001; Rodriguez & Dimitrova 2011).

Make your message easy to remember

All sustainable activities reply upon a functioning memory (McKenzie-Mohr & Smith 1999). People have to remember what to do, as well as when and how to do something. Sundin et al. (2018) advocates for the development of messages that are clear and specific and further explains that it is more effective to focus a piece of communication on a single desired behaviour.

Use a credible source

McKenzie-Mohr and Smith (1999) posit that who (for instance, an individual or an organization) presents the sustainability-related message can have a notable impact upon both how it is received as well as subsequent behaviour. Therefore, ensuring that whoever delivers the message is deemed credible by the target audience is an essential consideration. Generally speaking, it is when individuals or organizations have expertise or are seen as trustworthy that an audience tends to view them as credible.

Research undertaken by Johnstone and Lindh (2018) found that there is a relationship between the use of influencers and increased awareness of environmental issues amongst millennials. This indicates that practitioners should partner with influencers

who are regarded as trustworthy to reduce the intention-behaviour gap. For millennials, the intermediary role of influencers' moderating and mediating abilities can drive their adoption of sustainable behaviours. Influencers can act as the communication mediums that strengthen millennials' sustainable behaviours as well as position the reasons for intending to adopt sustainable behaviour as socially acceptable. Therefore, by fostering the conscious and unconscious normalisation of sustainability values, influencers have the ability to influence millennials' attitudes and morality.

It should be noted however, that the role of celebrities as messengers for pro-environmental action is a source of much controversy (Anderson 2009; Boykoff 2009). While it is true that celebrity culture is very attractive to many young people, very little research exists concerning the effectiveness of using celebrities as messengers for pro-environmental action. Scholars warn practitioners that the reputation, credibility and trustworthiness of a celebrity must be thoroughly examined before involving them in sustainability campaigns (Anderson 2009; Boykoff 2009). A British study conducted by Hibberd and Nguyen (2013) discovered that while some 16-26-year olds felt that partnering with celebrities was a smart way to raise the profile of an environmental issue, more felt celebrities' high carbon lifestyles and lack of relevant expertise deemed their involvement questionable.

2.8 Chapter summary

In this chapter, I explored the field of environmental communication as the overarching context of my study, discussed millennials' relationship with sustainability-related issues, presented an overview of barriers to converting awareness into behaviour change, and introduced the role of storytelling in environmental communication.

There is an opportunity to accelerate exploration efforts within the still young inter- and transdisciplinary field of research and practice of sustainability narratives. Structured exchanges, systematic synthesis and creative developments that can respond to new contexts, needs and challenges in communication in the context of

sustainable development are required. I aim to contribute to the emerging exploration of the role of storytelling in environmental communication by drawing on a documentary campaign aimed at South African millennials, with the intention of proposing suggestions for the design of narrative-based environmental communication.

Chapter 3 – Research design

"'Would you tell me, please, which way I ought to walk from here?', asked Alice.
'That depends a good deal on where you want to get to', said the Cat.
'I don't much care where', said Alice.
'Then it doesn't matter which way you walk', said the Cat."

Alice's Adventures in Wonderland (Carroll 1989:63-4)

3.1 Introduction

In this chapter, I motivate my research approach and describe the research process I undertook in order to contextualise the research findings that follow in Chapter 4. Cresswell (2014:295) describes a research approach as a "plan or procedure for research that spans the decisions from broad assumptions to detailed methods of data collection and analysis. It involves the intersection of philosophical assumptions, designs, and specific methods." Drawn to the idea that there are numerous parts that contribute to the construction of the whole and requiring a framework to reflect this, I opted to use Maxwell's 'Interactive Model of Research Design' (2013) as the guiding structure for my research journey. As depicted in Figure 3.1 below, following this particular strategy meant taking a component approach, whereby "the different parts of a design form an integrated and interacting whole, with each component being tied to several others, rather than being linked in a linear or cyclic sequence" (Maxwell 2013:216).

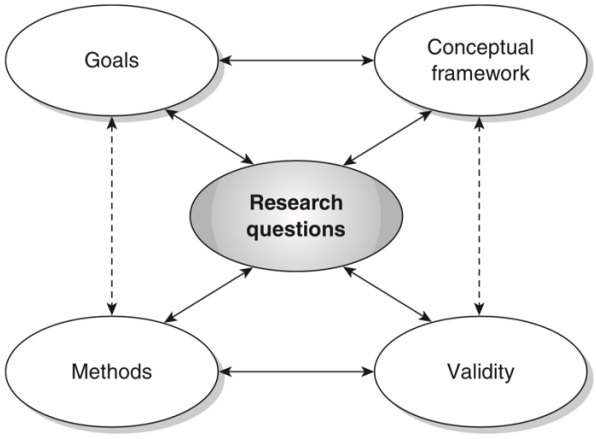

Figure 3.1: An interactive model of research design
Source: Maxwell (2013)

Although I attempt to present my research journey in this chapter by following accepted academic format i.e. a linear progression of activities (Mouton 2001; Bryman, Bell, Hirschsohn, dos Santos, du Toit, Masenge, van Aardt & Wagner 2014), it is important to note that my real-world experience was far less orderly, and entailed what Batchelor and Di Napoli (2006:13) describe as "beginnings and endings, change and renewal, disorientation and displacement". Maxwell's (2013) model is well suited to the iterative nature of my research process in that it accepts a diversity of data sources and methodological choices and doesn't presuppose any particular order of directionality (Yin 2009).

Having already presented my research objectives (what Maxwell would liken to 'Goals') in Chapter 1, I start by describing the conceptual framework which guided this study. This is followed by a discussion of the methods employed. Upon reflecting on the validity of my study and outlining my research limitations, I conclude this chapter with a note on ethical considerations.

3.2 Conceptual framework

A conceptual framework is a visual or written product (Miles & Huberman 1994). Its purpose is to "explain, either graphically or in narrative form, the main things to be studied – the key factors, concepts, or variables – and the presumed relationships among them" (Miles & Huberman 1994:18). A conceptual framework is not something that can be found; it is something that I, as the researcher, had to build by drawing on what Maxwell (2013:223) terms "pieces from elsewhere" and Becker (2005:275) describes as "prefabricated parts" or "modules". Following Maxwell's (2013) advice, I drew on experiential data (3.2.2) and existing theory and research (3.2.3) to construct my conceptual framework. Underpinning all of these sources however, was a holistic research philosophy (3.2.1), comprising of the research paradigm (3.2.1.1), approach (3.2.1.2), and methodology (3.2.1.3) that I drew on to inform my work.

3.2.1 Research philosophy

Research philosophy is "an overarching term relating to a system of beliefs and assumptions about the development of knowledge and the nature of that knowledge in relation to research" (Saunders et al. 2000:726). In simple terms, a research philosophy could then be described as a belief regarding how to go about gathering, analysing and using data.

In determining my own research philosophy, I began by establishing that I was neither setting out to explain nor predict the world, but rather to understand it. This process falls under a branch of philosophy labelled 'axiology', which takes into account the role of the researcher's own values throughout the research process (Saunders et al. 2000). Therefore, placing value on trying to understand the world – or rather a specific phenomenal aspect thereof – also meant that the manner in which I conducted my research, and what I valued in my findings, was accordingly informed.

When differentiating between research philosophies, the term 'paradigm' is often employed (Holden & Lynch 2004).

3.2.1.1 Research paradigm

"Everything must be taken into account. If the fact will not fit the theory – let the theory go."

The Mysterious Affair at Styles (Christie 1920:120)

American philosopher Thomas Kuhn (1962) initially used the term 'paradigm' in *The Structure of Scientific Revolutions* to mean a philosophical way of thinking. As explained by Maxwell (2013:224), a research paradigm, or worldview (Mackenzie & Knipe 2006), refers to "philosophical assumptions about the nature of the world (ontology) and how we can understand it (epistemology)" and can "also typically include specific methodological strategies linked to these assumptions". In other words, a paradigm provides researchers with a set of shared beliefs that shape how

they see the world, and how they interpret and act within that world. In this way, a researcher's worldview will influence all stages of the research process (Maxwell 2013; Bryman et al. 2014; Creswell 2014).

The underlying philosophical research paradigm I assumed for this study is pragmatism, the origins of which are attributed to the philosophers Charles Sanders Peirce, William James, and John Dewey (Hookway 2012). Pragmatism is primarily a philosophy of meaning: "it considers words and thought as tools and instruments for prediction, problem solving and action" (Ormerod 2006:906). As a philosophy, pragmatism "emphasizes the practical application of ideas by acting on them to actually test them in human experiences" (Gutek 2014:76).

A pragmatist research paradigm is reflective of my own view that reality is continuously being renegotiated, debated, and interpreted (Morgan 2014). Pragmatists emphasise the use of both positivist and interpretivist philosophy and view them on a continuum rather than as contradictions (Brierley 2017). By rejecting a position between these two opposing viewpoints, pragmatists acknowledge that there are many different ways to interpret the world and conduct research, that no single point of view can ever offer the full picture and that multiple realities may exist (Creswell 2014). In this way, pragmatism is a deconstructive paradigm that "sidesteps the contentious issues of truth and reality" (Feilzer, 2010:8), and "focuses instead on 'what works' as the truth regarding the research questions under investigation" (Teddlie & Tashakkori 2011:295). Although pragmatism is usually linked to mixed methods research, Morgan (2007) advocates for the application of the paradigm's philosophical tenets to purely qualitative social research too.

Pragmatism maintains that research needs be treated as a human experience and, most importantly, an experience that is driven by the beliefs and actions of the researcher (Morgan 2007) and that seeks to determine practical solutions to a research problem (Teddlie & Tashakkori 2011). It achieves this through highlighting the role of communication in shared meaning-making (Morgan 2007), which is consistent with my study's aim of exploring the role of narrative tools to convey an understanding of sustainability issues effectively with the aim of encouraging behaviour change.

Another aspect of pragmatism is that it takes the transferability of results into account. There is acknowledgement that a degree of context-specificity exists and that this can impact the generalizability of a study (Morgan 2007). This supports my assumption that there are cultural norms and existing communication modes that need to be considered when utilizing storytelling principles within a specific context – a particularly pertinent consideration for my study's attempt at developing a storytelling model for converting awareness into action amongst South African millennials. Bryant (2009) supports this notion when he explains that pragmatist researchers make claims for their own findings, yet they also acknowledge that further developments and wider claims (for instance, the development of a universally applicable storytelling model) require drawing on a variety of potential sources. These may include additional studies by the researcher or others, and further contributions from those who were involved in the initial research context itself. In essence, for the pragmatist: "all claims to knowledge must be seen as instrumental and provisional" and "any attempt to provide clear demarcations between lay insight and expert knowledge will ultimately prove unsustainable" (Bryant 2009:32).

3.2.1.2 Research approach

I adopted a qualitative approach to my study. Denzin and Lincoln (2005:20) describe qualitative research as "a multifaceted approach involving an interpretative, naturalistic attitude to subject matter". Qualitative research is multifaceted, and therefore suitable for fostering the development of a holistic picture of a particular phenomenon.

Qualitative research methods, as per Creswell (2014), are compatible with exploratory and descriptive research. They are also appropriate for research endeavours that aim to understand and interpret the meaning and intentions underlying human behaviour (Guba & Lincoln 1994; Suddaby 2006). These characteristics made qualitative research methods a suitable fit for my exploration of barriers to pro-environmental behaviour and identifying storytelling techniques which may be useful in overcoming these. Furthermore, by adopting this approach, I was in a position to provide descriptions of my participants' experiences. These descriptions offer an

understanding of the "meaning" attached to these experiences, the "distinct nature" of the phenomenon, and the "impact" of the phenomenon (Meyer 2001:334).

Upon reflection, electing to undertake a qualitative study was the first decision I made at the start of my research journey. As qualitative research generally requires more flexibility and a broader concept of 'research design' than quantitative studies (Yin 2009), this was one of the foremost reasons as to why I was drawn to Maxwell's 'Interactive Model of Research Design' (2013). Furthermore, a qualitative study requires the research design to facilitate reflexivity: "a chance for researchers to rethink, ground, or justify their own decisions" (Bryant & Charmaz, 2007:519) through every stage of the study. Thus, Maxwell's model enabled me to undertake a qualitative study whereby I more or less simultaneously collected and analysed data, developed and modified theory, elaborated or refocused my research questions, and identified and dealt with validity threats.

3.2.1.3 Research methodology

Glaser and Strauss introduced grounded theory in their 1967 book, '*The Discovery of Grounded Theory: Strategies for Qualitative Research'*, as a new empirical approach to challenge the hypothetic-deductive ones which dominated the social sciences at the time. Whereby purely inductive reasoning leads to bottom-up theory building, grounded theory is a constant comparative method that functions in the context of discovery (Krupnik & Turek 2014). Today, grounded theory is considered by many to be one of the most developed and successful empirical research methodologies (Reichertz 2007). It is a full, holistic approach whose strength lies not in particular techniques, rules or solutions, but on the ongoing "conscious and apparent" (Krupnik & Turek 2014:36) use of data, knowledge, literature, experience and intuition.

In line with my underlying research paradigm, I adopted a pragmatic approach to grounded theory as my overall research methodology. Subsequent to Glaser's (1998) own claim that grounded theory occupied a pragmatic position that went beyond other philosophical schools of thought, today pragmatism is widely acknowledged as having significantly influenced both the development and application of grounded

theory (Bacon 2012; Bryant 2009; Charmaz 2014). For Charmaz, "the pragmatist foundations [of grounded theory] encourage us to construct an interpretive rendering of the worlds we study rather than an external reporting of events and statements" (2014:339). In simple terms, a pragmatic grounded theory approach supported my research in that it encouraged me to take a realistic and attainable approach to addressing my phenomenon of enquiry.

The key premise of grounded theory is to remain "open to the portrayals of the world as encountered and not force data into theoretical accounts" (Timonen, Foley & Conlon 2018:2). Hallberg (2010), Dunne (2011) and Charmaz (2014) suggest that, through an awareness of existing theories and constructs, this goal can be achieved more productively.

There exists confusion and suspicion towards grounded theory as it continues to suffer from the misleading idea of the researcher as a 'blank slate' (Urquhart & Fernandez 2013). Hallberg (2010), Dunne (2011) and Charmaz (2014) argue that it is no longer a realistic proposition to consider the researcher as a blank slate. The authors advocate that, rather than a hindrance, it is useful to grounded theory for researchers to draw on their existing theoretical and conceptual orientation (obtained from sources such as the literature and experiential knowledge). The proviso here is that the researcher does not go so far as to test hypotheses, but instead "works hard at remaining open to their data" (Timonen, Foley & Conlon 2018:4). In this way, grounded theory can be used to expand existing theoretical perspectives i.e. to complement existing literature, knowledge and experiences.

3.2.2 Experiential knowledge and data

Experiential knowledge is succinctly defined by Schubert and Borkman (1994:227) as "information and wisdom gained from lived experience". This refers to how, through direct engagement, we can come to know about and understand things and events. The background and identity of the researcher has evolved from being treated as 'bias' that needs to be removed from the study to a valuable component thereof that needs to be drawn upon (Maxwell 2013).

Indeed, there is growing support for the explicit incorporation of what Strauss (1987) termed 'experiential data' into one's research. As per Maxwell (2005:38): "Separating your research from other aspects of your life cuts you off from a major source of insights, hypotheses, and validity checks". Relevant to this study, the experiential knowledge I have acquired is that which I've gained through having worked in various documentary formats – ranging from personal narratives to community stories to fact-based coverage – and extensive involvement in a range of communications-led projects. In the documentary world, because it is less scripted than fiction formats, there is a lot of room for intuition and drawing on past experiences to inform future approaches. Part of the role of a documentary producer is to gauge the effectiveness of these initiatives. Therefore, experience across this spectrum has led me to make certain decisions regarding formats that work best.

Taking Maxwell's (2005) advice, I was mindful of not going so far as to uncritically force my assumptions and values onto my study. Instead, I employed what Reason (1988:12) refers to as 'critical subjectivity': "a quality of awareness in which we do not suppress our primary experience; nor do we allow ourselves to be swept away and overwhelmed by it; rather we raise it to consciousness and use it as part of the inquiry process". In other words, I acknowledged the subjectivities derived from my personal and professional experiences but remained self-reflective: both aspiring to detachment but at the same time accepting its ultimate impossibility.

3.2.3 Existing theory and research

I conducted an initial literature review to fulfil three main goals. Firstly, I needed to explore the field of my intended research to "gain a thorough awareness and understanding of current work and perspectives in the area" (Ridley 2012:1). This was necessary so that I could focus my research objectives and present a well-informed thesis (Ridley 2012). Secondly, I aimed to present my readers with an analytical review of the extant literature relevant to my thesis topic to facilitate an understanding of the rest of my study (Marshall Egan 2002). Finally, my review of the literature intended to highlight the gaps therein which justify the focus of my thesis (Kaminstein 2017).

I took a multi-level approach to reviewing existing literature. I began by using keywords to search for academic articles on appropriate research databases such as Stellenbosch University's online library platform, EBSCOhost, ScienceDirect, Taylor and Francis Online and Google Scholar. Examples of some of the keywords I used are 'storytelling', 'environmental communication', 'millennials' and 'South Africa'. I found that the amount of existing literature dropped substantially when the keyword 'South Africa' was employed.

As my research progressed and I began to analyse my findings, I intensified my literature review efforts so that I could start to compare emerging data against existing theoretical constructs (Charmaz 2011). I expanded my review of existing literature by using the references provided in each article within my 'start set' (Wohlin 2014) to apply a snowball technique. As the most important characteristic of a start set is diversity (Wohlin 2014), mine consisted of several different publishers, years and authors. Furthermore, I expanded my keyword search to include synonyms (for example, 'story' and 'narrative') to avoid only capturing papers using a specific terminology and missing those using a slightly different one. Care was taken to apply a constrained snowballing effort to my start set so that I was able to establish links with other key sources of information, without succumbing to information overload (Ang 2014).

3.3 Methods

In this section I discuss my research context, data collection (the process of gathering information) and analysis (the process of inspecting collected data with the goal of discovering useful information) activities.

3.3.1 Research context

The documentary campaign created for WWF-SA provided the research context for data collection and analysis activities. Participants in the research were exposed to the videos and their reactions captured and analysed. In this section, I present the background information on the documentary campaign including the brief initially

received, the approach adopted and media platform considerations. Finally, I detail the storytelling framework and the story structure used in the creation of the micro-documentaries.

The brief

The brief received was to create three pieces of video to embody WWF-SA's *'For Nature. For You.'* campaign. The three focus areas were Water, Food and Energy.

Each of these focus areas encompasses a vast topic with multiple aspects to them, which are clearly too numerous to cover in a short form video. Therefore, consideration needed to be given as to which particular aspects of each issue would form the primary angle of each film.
Another component of the task was to make these issues accessible to a broad demographic of South African millennials – specifically those who may not yet be engaging with environmental issues.

In essence, the documentary campaign needed to generate awareness amongst a young, urban audience as to how the activities in their daily lives are affected by nature, thereby building a stronger appreciation of nature. Ideally, this increased mindfulness of environmental issues should translate into adopting more sustainable behaviours.

Finally, the videos needed to be suitable for dissemination across multiple platforms: cinema, TV, online and mobile.

The approach

The documentary campaign takes three individuals from diverse backgrounds and shows how their activities in their daily lives are influenced by nature, thereby identifying them as ambassadors. The three selected individuals were Buhle Sithela, Ryan Sandes and Zola Nene.

1. *Buhle Sithela*

When individuals get creative with renewable energy, the world can change. 22-year-old Khayelitsha resident Buhle Sithela (see Photo 3.1) is passionate about cinema and believes in its power to educate as well as entertain.

Buhle found a way to bring the joy of cinema to his community using clean energy. The sun powers his business as he hosts open-air screenings in his neighbourhood, maintaining a clean carbon footprint while inspiring a new generation of film fans.

The specific angle of the 'Energy' video was running a business with a low carbon footprint.

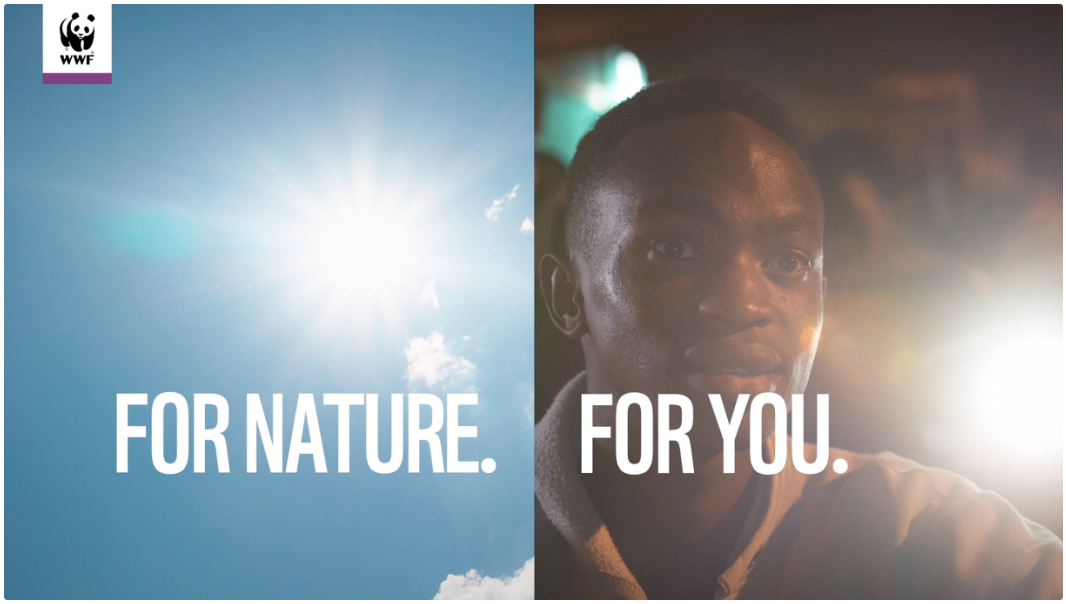

Photo 3.1 Buhle Sithela
Source: GOOD WORK (2019)

2. *Ryan Sandes*

For extreme trail-running sensation, Ryan Sandes, water is the fuel that keeps him going. And while running up and across mountain peaks, he has a close-up view of our springs and streams – he sees first-hand how beautiful and fragile they are.

The specific angle of the 'Water' video was protecting our water sources.

Photo 3.2 Ryan Sandes

Source: GOOD WORK (2019)

3. *Zola Nene*

Celebrity chef Zola Nene knows the best way to make sure good ingredients are available in the future is to care about where they come from today.

The specific angle of the 'Food' video was sourcing food sustainably.

Photo 3.3 Zola Nene

Source: GOOD WORK (2019)

Media platform considerations

The videos were kept to a maximum of 60 seconds so that they were usable on Instagram (where there is a 60 seconds duration limit), and well suited to other social media platforms. Furthermore, the videos were composed of bold, clear imagery so that they were easily visible on a small screen (e.g. mobile), and the visuals used reflected what was happening in the story so that if audio was switched off, or if subtitles weren't read, the overall gist could still be understood.

Storytelling framework

The storytelling framework for each video took the following format:

- The following of an activity performed by an ambassador, from the end product back to the source
- The use of a single voice (of the featured ambassador, as opposed to a narrator)
- The recounting of the story as a personal experience
- The use of simple and relatable language (avoiding complex terms and environmental jargon)

The framework purposely avoided statistics and/ or figures, and negative messaging.

Story Structure

Below is a condensed version of the structure each video followed. For more detailed versions and Vimeo links to each piece, refer to Appendices A-C.

The starting point is the ambassador's key activity:

'Energy' video: Buhle shows a movie to his community
'Water' video: Ryan drinks fresh water at the end of a training session
'Food' video: Zola cooks in the kitchen of a restaurant

The footage then reverses – winding back through the person's day, through their movements and interactions, ending up at the point where nature has provided the source:

'Energy' video: Buhle charges batteries via a solar panel
'Water' video: Ryan collects water from a clean source high up on a mountain
'Food' video: Zola buys a SASSI green listed fish at the harbour from small-scale fishers

3.3.2 Data collection

The four most common types of data collection within the realm of qualitative research are "interviews, focus group discussions, observational methods and document analysis" (Babbie & Mouton 2001:278). I gathered qualitative data for my study using semi-structured interviews.

I took a non-probability sampling approach, specifically a purposive one, to selecting my interview participants. As per Crabtree & Miller (1999:34), a key feature of non-probability sampling techniques is that "samples are selected based on the subjective judgement of the researcher, rather than random selection". Theoretical and practical reasons influenced my decision. From a theoretical point of view, my interest was foremost in exploring the intricacies of the sample under study, whilst inferring generalisations from the sample to the population being studied was a secondary consideration (Bryman et al. 2014). Practicality-wise, selecting participants for inclusion in a non-probability sampling exercise is a much simpler, faster and cheaper exercise compared to probability sampling selection procedures (Bryman et al. 2014). These practicalities often contribute to the widespread use of non-probability sampling methods amongst students pursuing undergraduate and masters level dissertations (Babbie & Mouton 2001).

I specifically selected participants that were known to me that I believed would be both willing and able to provide and articulate their thoughts and experiences using rich descriptions, and, in so doing – challenge and enrich my own understanding of

the phenomenon at hand (Maxwell 2013; Bryman et al. 2014). Selected participants needed to fulfil the following set of criteria:

- Be a millennial (between the ages of 18-36 years old in 2018),
- Of South African nationality,
- Living in Cape Town, South Africa.

For grounded theory, Creswell (2014) suggests that a sample consist of 20 – 30 participants. However, for a South African master's level study, Babbie and Mouton (2001) suggest that a general rule of thumb indication is between five and 20 or 25 participants. These recommendations helped me to estimate how many participants I would need. However, I took Maxwell's (2013) advice and rather let the number of participants be informed by the extent to which I felt I had addressed my research objectives. I concluded that there was no need for further interviews when I was no longer discovering any new themes i.e. it appeared that saturation had been reached (Glaser & Strauss 1967). In total, I conducted 20 interviews.

Table 3.3 provides some information about the 20 participants interviewed, namely: their age, gender, native language, level of education, and employment status.

Table 3.1 Details of 20 participants

Respondent ID	**Age**	**Gender**	**Native language**	**Level of education**	**Employment status**
1	20	F	English	Undergrad	Studying
2	25	F	isiXhosa	Undergrad	Employed
3	22	F	English	Undergrad	Employed
4	30	M	English	Postgrad	Self-employed
5	23	F	isiXhosa	Postgrad	Employed
6	35	M	English	Undergrad	Self-employed
7	27	M	Afrikaans	Postgrad	Employed
8	25	F	English	Postgrad	Self-employed
9	21	M	English	Undergrad	Employed

10	34	F	Afrikaans	Undergrad	Employed
11	33	F	Afrikaans	Postgrad	Employed
12	33	M	English	Undergrad	Self-employed
13	30	M	English	Postgrad	Employed
14	28	F	English	Postgrad	Self-employed
15	34	M	isiXhosa	Undergrad	Employed
16	22	F	isiXhosa	Postgrad	Self-employed
17	26	M	English	Undergrad	Employed
18	32	F	English	Postgrad	Self-employed
19	21	M	English	Undergrad	Studying
20	35	M	English	Undergrad	Employed

Potter and Hepburn (2014) advocate for the use of in-person interviewing as a valuable data-collecting tool in qualitative research. An in-person interview method "enables the researcher to interact with participants and observe non-verbal cues during the interview process" (Potter & Hepburn 2014:292). I conducted all 20 interviews face-to-face. Interviews took place in two locations: my workplace and coffee shops, and they all lasted between 30-60 minutes. I obtained informed consent from all of the interviewees prior to their participation in the study, and I recorded and transcribed all of the interviews so that note-taking didn't disrupt the effectiveness of communication between myself and the respondent (Gall, Borg & Gall 1996). I used Temi, an automatic transcription service, to transcribe my interviews. The service was inexpensive but sometimes not very accurate, so I additionally manually checked each text file against the recorded audio.

I adopted a semi-structured interview approach, consisting of an interview guide that developed and evolved as I alternated between data collection and analysis – examining what I already had, and then reflecting on what new data would add the most to my understanding (Bryman et al. 2014). The benefits of constant reflection were twofold: they gave me a clearer sense of my research objectives and the interview questions that it would take to address those objectives, and I developed a better sense of who my best sources would be for future interviews.

I began each interview by playing the three videos from my laptop. None of the participants had encountered the videos as part of the media campaign so this was their first exposure to them. I conducted the interview immediately after the viewings.

The pre-defined questions within my interview guide enabled me to gather information regarding specific themes that started to emerge. My interview guide also created a space for an open-ended component to each interview, whereby I had the opportunity to uncover themes that had not previously been identified. As per Denzin and Lincoln (2005:27), this further enabled me to "gain clarity and a deeper understanding of the complexity of the situation". As a result, my findings and analysis thereof are reflective of the views of the participants.

My interview questions were designed to elicit respondents' reactions to the videos, as well as to provide an entry point to a broader discussion about the sustainability-related issues raised within them. Below are examples of some of the questions I asked/ broad themes I explored during my interviews with participants.

1. *What organisation is presenting this series?*
2. *Based on what you watched, what does this organisation do?*
3. *What is the final tag line of each piece in the series?*
4. *What do you think that means?*
5. *How did you respond (feel/think about) to this video series?*
6. *What key messages do you recall from this series?*
7. *What did you react most strongly to (positively and negatively)? Describe your reactions.*
8. *Do you remember any particular facts or figures from this series?*
9. *Do you remember any particular individuals from this series?*
10. *Do you remember any particular processes that were highlighted by this series?*
11. *Did you feel that these were important issues prior to your exposure to this series?*
12. *Have your opinions changed after your exposure to this series?*
13. *Do you have any impulses that you are inclined to act upon after watching this series? What are they?*

14. *What do you think the calls-to-action of this series are?*
15. *How likely are you to follow the calls-to-action of this series?*
16. *What changes would you make to this series?*

Through taking a pragmatic grounded theory approach to my research, I was mindful that I was taking a very active role in the data collection process (Bryant 2009). This meant that I maintained an awareness that I was not harvesting data that was naturally occurring. As reality is always being constructed, data is something that I, as a social actor, was 'carving out' (Strubing 2007) from reality, rather than it being an individual, isolated accomplishment (Bryant 2009).

I took guidance from Weiss' *'Learning from Strangers: The Art and Method of Qualitative Interview Studies'* (1994) to construct and refine my academic interviewing technique. I found the following passage in particular, which speaks to the importance of developing a productive relationship with the interviewee, integral to my own approach:

> *"What is essential in interviewing is to maintain a working partnership. You can get away with phrasing questions awkwardly and with a variety of other errors that will make you wince when you listen to the tape later. What you can't get away with is failure to work with the respondent as a partner in the production of useful material"* (Weiss 1994:119).

After each interview, I logged the Respondent ID, interview date and duration in my notebook, along with a short summary of my initial impressions and any particular responses that stood out. These summaries made it easier for me to analyse the transcribed interviews at a later stage.

3.3.3 Data analysis

Data analysis is the procedure through which a phenomenon is deconstructed into its constituent parts in order for it to be better understood (Mouton 2001). Charmaz (2005:207) describes data analysis undertaken through grounded theory methods as

“wrestling with data, making comparisons, developing categories, engaging in theoretical sampling, and integrating an analysis”. I performed grounded theory analysis using the two main processes advocated by Strauss and Corbin (1994): coding and the adjunctive procedure of memo-writing.

Hesse-Biber (2007:330) notes that a student of hers once made the point that one of the toughest skills "is the ability to see what is in the data". It is for this same reason that I abandoned the use of ATLAS.ti, a computer assisted qualitative data analysis software (CAQDAS), quite early on in my data analysis efforts: I felt that I was unable to see what was in my data when viewing it through a computer screen.

Following the popular argument that qualitative research is often more aligned to art than science (Babbie & Mouton 2001), being unable to visually engage with my data was problematic. Although the use of CAQDAS in grounded theory is encouraged as a way to make the coding process more efficient (Bryman et al. 2014), it is also criticized as contributing to “increasingly deterministic and rigid processes, increased pressure on researchers to focus on volume and breadth rather than on depth and meaning, time and energy spent learning to use computer packages, increased commercialism, and distraction from the real work of analysis” (St John & Johnson 2000:393). The argument offered by Charmaz (2011) however, is most prevalent in my particular case: CAQDAS distances the researcher from the data.

In order to analyse my data, I quickly realized that I needed it to remain visible and tangible. Therefore, I restarted my data analysis process by printing out all of my transcripts and gathering up a selection of multi-coloured highlighters and Post-it notes, a pair of scissors, Prestik and string. I then proceeded to code my data by cutting up my transcripts, colour-coding certain words, phrases or sentences via highlighter and grouping them under different coloured Post-it notes to denote relevant, emerging categories. I used string to link codes that were relevant to more than one category. During this process, I kept an A4 sheet outlining my research objectives at hand and discarded all collected data that was irrelevant to addressing them. Image 3.1 shows the coding process after my first round of data analysis and sorting.

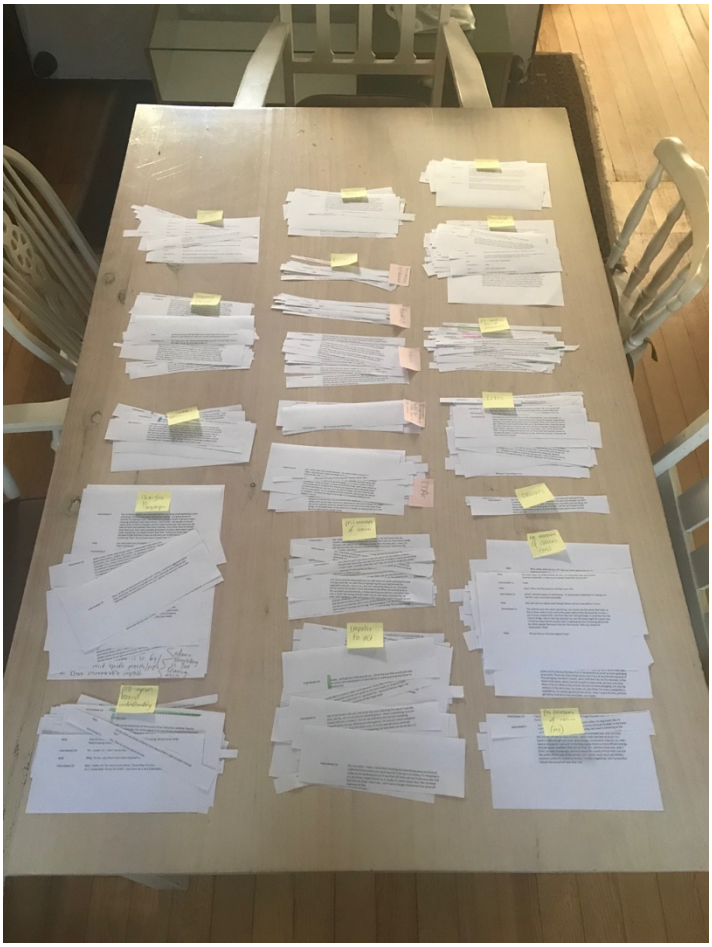

Image 3.4: Manual data analysis and sorting

Source: Author

I made use of four fundamental processes of grounded theory: 'theoretical sensitivity', 'constant comparison', 'theoretical sampling' and 'coding' (Bryant 2009). These processes are appropriate to use when a researcher is looking to explore theory and concepts that are connected to, or emerge from, real life events and circumstances (Cohen & Crabtree 2006).

"To gain theoretical sensitivity, we look at studied life from multiple vantage points, make comparisons, follow leads, and build on ideas" (Charmaz 2014:135). There are two components to 'theoretical sensitivity'. The first component entails being sensitive to the data, and the relationships between categories, that are discovered in the development of grounded theory (Glaser 1978; Glaser & Holton 2004). An important component of theoretical sensitivity is 'insight' (Charmaz 2014): the capacity to give meaning to and understand the data, and the ability to separate what is pertinent to the research enquiry from what isn't. The second component involves a

capacity to identify concrete instances in data as part of pre-existing theory (Glaser 1978).

Throughout my explorative data analysis process, I exercised theoretical sensitivity by connecting insights that emerged from my data whilst simultaneously evaluating and comparing different theoretical perspectives to help make sense of what was emerging through my data.

To engage in 'constant comparison' is to systematically compare data within and across other data (in my case: individual interviews) in order to develop a theory (Gilgun 2015). As per Suddaby (2006:636), this process enables the researcher to make decisions "regarding the initial collection of data based on an initial understanding of the phenomenon at hand". The next step is then to engage in 'theoretical sampling': using your developing theory to review your sampling and questions. In my study, this meant regularly assessing who I would interview next and which themes I wanted to explore in order to expand upon my findings and develop a theoretical understanding of the phenomenon at hand (Gilgun 2015). Cohen & Crabtree (2006) stress that, to remain purposeful and relevant, it would be remiss of the researcher to plan further data collection before initial analysis and the emergence of surprise findings.

The process described above is underpinned by a 'coding' procedure. 'Coding' is both the initial and most important step between data collection and the development of a valid theory from the data (Charmaz 2014). Essentially, a 'code' is "a keyword or label used to identify the content of a data segment to create order and to make it easier to find again later" (Montgomery & Bailey: 2007:67). The process of assigning codes to text, picture or audio/video footage segments is referred to as 'coding' (Kolb 2012).

I carried out a multi-level coding process consisting of initial and focused coding. During my initial coding phase, I exercised 'open coding' whereby I used whatever codes seemed to fit and work best for the data – as opposed to preconceived ones (Glaser & Holton 2004). As per Strauss and Corbin (1994:61), open coding is "the process of breaking down, examining, comparing, conceptualizing, and categorizing

data". I 'open-coded' by reviewing my data numerous times before I started creating tentative labels for segments of data to summarize what I saw happening.

As my research progressed, I began to focus my coding efforts by taking an abductive approach to iteratively compare emerging themes alongside existing concepts and theories whilst continuing to collect data (Bryant & Charmaz 2007) – in essence, I looked to combine "the rational and imaginative aspects" of my research (Reichertz 2007:214). I exploratively grouped and categorized my codes to try and understand 'what was going on' (Gioia, Corley & Hamilton 2012). An example of how I progressed from having multiple codes to fewer categories is shown in Figure 3.2. I coded particular quotes as examples of 'Desire', 'Activity' and 'Memory' respectively, and then grouped these codes into the category of 'Passion Points'.

My coding process was reflective of my pragmatist position whereby concepts (codes) should be seen as tools, and as per Ormerod (2006:900) "tools are assessed in terms of usefulness for particular tasks" (in this case, addressing my research objectives).

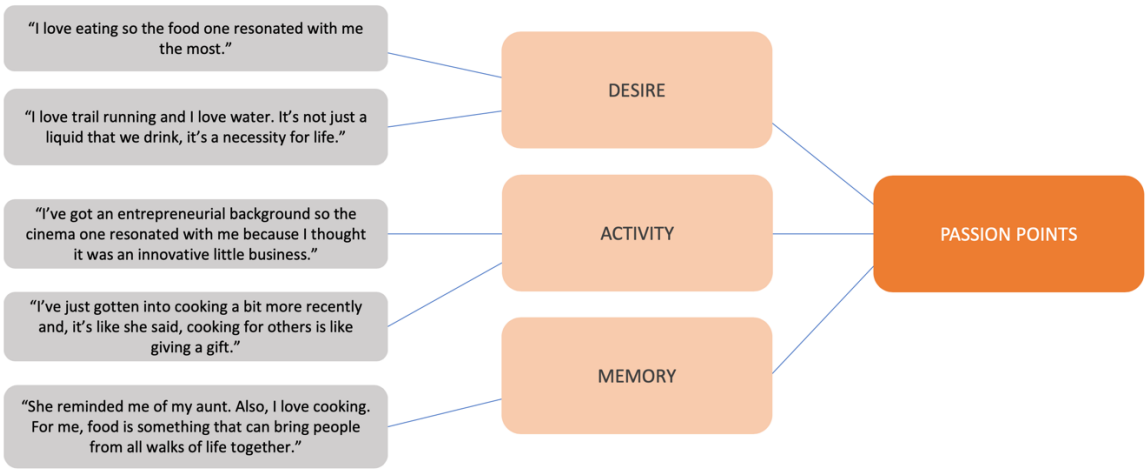

Figure 3.2: Sample data structure for 'passion points'
Source: Author

I undertook ongoing memo-writing efforts to support my coding process. Bryant and Charmaz (2007:33) describe memos as "the narrated records of a theorist's analytical conversations with himself/herself about the research data; as such they provide particular ways of knowing". My memo-writing efforts were predominantly

speculative – centred around questions, ideas and possible connections that came to mind. I opted to handwrite these notes to maintain further tangibility with my thoughts, as well as to enable me to quickly supplement my text with rough sketches and diagrams when I required visual aids to make sense of ideas and connections.

Quantifying my data

There is an erroneous perception in the research community that if your method is qualitative, then numbers somehow cannot or should not be used (Becker 1990; Hammersley 2008). Unfortunately, this perception can prevent numerical data from being used to gain a better understanding of the phenomenon under study. As per Maxwell (2010:480):

> *"The use of numbers is a legitimate and valuable strategy for qualitative researchers when it is used as a complement to an overall process orientation to the research. The inclusion of quantitative data does not inherently make the research a mixed-method study."*

Using percentages, I quantified certain trends by creating pie charts in Microsoft Excel to generate further data in support of my overall research findings. Within a qualitative research paradigm, this is usually described as 'quantitizing': "the process of converting qualitative data to numerical codes that can be statistically analysed" (Teddlie & Tashakkori 2011:289).

3.4 Validity

Having presented the goals (Chapter 1), conceptual framework (3.2.) and methods (3.3) employed for this study, in this section I focus on the final component of Maxwell's 'Interactive Model of Research Design' (2013): validity. In order to realise validity, Maxwell (2013) describes two broad types of barriers that need to be overcome. Researchers need to be cognisant of "researcher bias, and the effect of the researcher on the setting or individuals studied, generally known as reactivity" (Maxwell 2013:243) during all stages of the research process. Whereas 'bias' implies

a distortion of the collected or analysed data due to the researcher's existing values and preconceptions (Maxwell 2013), 'reactivity' entails how the researcher and the research participants respond to one another throughout the research process (Maxwell 2013). Whilst completely avoiding bias and reactivity is impossible (Bryman et al. 2014), action can be taken to understand and reduce these elements (Yin 2009).

I was mindful of both my own and my participants' potential bias whilst conducting my interviews. I attempted to mitigate my own bias both pre- and during the interview process. When constructing my interview guide, I was careful to start with general questions first before moving on to specific ones to reduce question-order bias. There is a tendency for participants to compare and judge subsequent questions based on their responses to earlier questions (Shah 2019). During the interview process, I steered away from leading questions, and rather kept the questions simple and open-ended so as to avoid participants responding in favour of a particular assumption (Shah 2019).

I attempted to mitigate my participants' bias in two ways. Firstly, I made sure that none of my interviewees knew that I had produced the videos. In this way, they were not put in a position whereby they felt that they had to sensitize their responses so as not to come across as criticizing the interviewer's (my) work. Participants have a tendency to respond inaccurately so that they can be liked (Shah 2019). Secondly, I tried to phrase my questions in a manner that allowed participants to feel that they would be accepted no matter what their answer was (Shah 2019). Pro-environmental behaviour is generally regarded as socially desirable (Naderi & van Steenburg 2018). Therefore, social desirability may have influenced the way in which respondents reported upon their environmental awareness and behaviours.

Another way to ensure validity in qualitative research is for the researcher to provide enough information and, in so doing, empower the reader to understand the meaning and context of what is being presented (Babbie & Mouton 2001). Similarly, Bryman et al. (2014) explain that the degree to which the research provides information and the method by which the end product is achieved will decide the trustworthiness of the research process. Validation therefore depends on the transparency with which the

procedures employed for data collection and analysis are shared (Yin 2009). Discussing the various elements that informed my conceptual framework, followed by detailing the activities of data collection and analysis within this chapter, is consistent with the objective of ensuring validity throughout the research process.

3.5 Ethical considerations

With reference to project number REC-2018-6535, I received ethical clearance from Stellenbosch University's Research Ethics Committee (Humanities) on 16 April 2018 (see Appendix D). Anonymity and informed consent are two of the important ethical concerns that qualitative researchers should take into account (Babbie & Mouton 2001). I ensured anonymity of participants by creating Respondent IDs for each individual. These Respondent IDs were used within this report so that individual responses cannot be linked with participants' identities. Before each interview began, I provided the participant with background to the research and retrieved a signed letter of consent (see Appendix E).

3.6 Research limitations

My study provides some new insights into the factors that may encourage or impede pro-environmental behaviours amongst South African millennials, and the role of storytelling in environmental communication. However, as with any study (Brutus, Aguinis & Wassmer 2013), this research is subject to certain limitations.

I acknowledge that it is not only millennials that need to change their behaviour. However, as the target audience of the documentary campaign that I used as my research context was millennials, this is the specific generational segment that my study focuses on. My study participants were all based in Cape Town. As my research relied on face-to-face interviews, I only selected participants from the city that I am based in. I recognize however, that regional biases may exist, and that my study is perhaps not generalizable to the entire South African millennial population. A limitation of this study is therefore the narrow focus on the target audience of South

African millennials, and future research could explore this work with study participants of different demographics.

When considering communications, it is easy to focus solely on the message and forget about the medium. The method in which an audience will be exposed to a piece of communication (in terms of reach and platform) is important to take into account as well. As a documentary producer, my role is focused on the message, or rather, the creation of the 'delivery mechanism' for this message. Other team members' (e.g. media strategists and buyers) roles are to determine how to disseminate this message so that it reaches the intended audience. Both of these aspects of communication are important, but my study is limited in that it only focuses on the first of these.

Finally, my study favoured self-reported measures. Self-reported data is limited by the fact that it can rarely be independently verified (Brutus et al. 2013). In other words, I had to take what my respondents said during their interviews at face value. However, self-reported data can contain several potential sources of bias (Aguinis & Edwards 2014), such as:

- *Selective memorising:* to remember or not remember experiences or events that have taken place
- *Telescoping:* to recall events that occurred at certain time as occurring at a different time
- *Attributing:* to take personal responsibility for positive events and outcomes, but attribute negative events and outcomes to external entities
- *Exaggerating:* to represent outcomes or embellish events as more significant than they really were

I undertook, as far as possible, to reduce the impacts of these potential sources of bias on my research through the research validity strategies outlined in section 3.4 above.

3.7 Chapter summary

In this chapter I have presented my research design, informed by the component approach of Maxwell's 'Interactive Model of Research Design' (2013), that aimed to fulfil the research objectives introduced in section 1.4. My conceptual framework (3.2) integrated three main elements: a holistic research philosophy (3.2.1), experiential knowledge and data (3.2.2), and existing theory and research (3.2.3). My research philosophy comprised of a qualitative research approach, supported by a pragmatist research paradigm, and a grounded theory methodology. Detailed descriptions of my research context, data collection and analysis methods are outlined in section 3.3. In section 3.4, I outlined aspects of validity that were pertinent to my study and in section 3.5 I provided a note on relevant ethical considerations. Finally, in section 3.6 I described my research limitations.

Chapter 4 – Research findings

4.1 Introduction

In this chapter, I present my research findings for each of the research objectives outlined in section 1.4.

I begin by providing an overview of South African millennials' current engagement with specific sustainability-related issues in the fields of water, food and energy. I show that although all respondents were aware of all three of the issues pertaining to this study, action was only being taken by some to address water and food-related issues. I present three main reasons to explain the shift from non-awareness to awareness of water, food and energy-related issues: *empirical evidence*, *information in the media*, and *word of mouth*. Following this, I discuss *why* and *how* some respondents were taking action to address water- and food-related issues.

Next, I establish what the barriers to converting awareness into behaviour change are. I suggest twelve key reasons, grouped into internal and external barriers, to explain what might be holding South African millennials back from taking action to address specific issues related to water, food and energy. I identify internal barriers as *lack of knowledge*, *frustration with 'free riders'*, *lack of proximity*, *susceptibility to convenience*, *individualism, behavioural inconsistencies* and *apathy*. Then, I present external barriers as *infrequent communication*, *diminished urgency*, *expense*, *home ownership* and *government responsibility*.

Following this, I identify effective elements of storytelling in environmental communication. I offer descriptions and present respondents' reactions to four storytelling elements employed in the creation of a documentary campaign for WWF: *authentic visuals and sounds*, *a framing statement*, *a linking device*, and *ambassadors as storytellers*.

I conclude this chapter by noting my respondents' feedback on the research process. I consider how their participation in this study, including viewing of the videos, may have triggered an intention to adopt more sustainable behaviours.

4.2 Establishing the engagement of South African millennials with specific sustainability-related issues

"I personally believe that we need to look after the planet. There's a company selling these t-shirts now saying, 'There's no Planet B'. I think that sort of sums it up – we've only got one planet to live on, so we need to look after it."

- Respondent 7

In this section, I report the findings pertaining to my first research objective aimed at establishing South African millennials' current engagement with specific sustainability-related issues in the fields of water, food and energy. As shown in Table 4.1, my research showed that although South African millennials' awareness of these specific sustainability-related issues is high, action is only being taken by some to address issues pertaining to water and food.

Table 4.1: South African millennials engagement with specific sustainability-related issues

SPECIFIC ISSUE	AWARENESS	ACTION
Water	100%	50%
Food	100%	70%
Energy	100%	0%

4.2.1 Awareness of specific sustainability-related issues

"These are massive things in the world now. So yeah, I am personally aware of them, and I think these are things we need to fix."

- Respondent 1

As per Table 4.1, all of the individuals I interviewed indicated that they were aware of the specific sustainability-related issues pertaining to this study. However, there was

evidence that for the majority of respondents the shift from non-awareness to awareness around these issues (i.e. a developing understanding of the fragility and value of our natural resources) was a recent occurrence. For example, Respondent 10 explained, *"Recently I've become aware about the importance of using more renewable energy sources because we're getting global warming and coal-powered electricity is bad. And I know we've now got a water crisis in Cape Town so we need to preserve as much water as we can."*

Respondents gave three main reasons to explain their shift from non-awareness to awareness: *empirical evidence*, *information in the media*, and *word of mouth*. Examples of specific inciting incidents were shared.

Empirical evidence

The first reason given was empirical evidence: objective degradation of environmental conditions that respondents personally experienced. Respondents identified 'seeing is believing' moments as the turning points that brought issues such as overfishing, drought conditions and energy sources to their attention. For instance, Respondent 5 explained that when diving, she "*sees parts of the ocean where there used to be fish – now there's nothing"*. In a similar vein, Respondent 15 described how "*flying into Cape Town and seeing how empty the dams are made me realise this water crisis is real"*. For Respondent 17, experiencing the effects of load-shedding brought energy into sharp focus: "*There's nothing like the electricity going off when you're in the middle of making supper to make you take an interest in this renewable energy business"*.

Information in the media

The second reason given was information in the media: an increase in media coverage related to sustainability and environmental issues in recent decades has resulted in society becoming increasingly aware of the effects that our actions have on the health of the environment. Responses indicated that the media played a significant role in developing respondents' awareness of sustainability-related issues. For example, Respondent 6 explained that she is constantly exposed to information via online

media channels that makes these issues difficult to ignore: *"It's all over the Internet these days – social media posts and articles about global warming and climate change – so it's hard to not be aware of this stuff"*, and it was when Respondent 13 *"started hearing about 'Day Zero' in the media,* [that] *I knew I needed to start using water more sparingly."*

Word of mouth

The third reason given was word-of-mouth: specifically, knowledge gained from oral communication with those closest to them that brought sustainability issues into respondents' frame of reference. In Respondent 3's case for example, his awareness of food-related issues developed when he "*started dating a vegetarian and finding out why she didn't eat meat"*. Whereas it was Respondent 8's friends "*carrying on about 'conscious living' – you know, things like animal rights and the crazy amount of water it takes to 'grow' a cow"* that made her start questioning her own lifestyle choices. For Respondent 19, it was one of her university professors sharing his prediction that *"there'll be water wars happening by 2025"* that *"scared* [her] *into saving water"*.

4.2.2 Action being taken to address specific sustainability-related issues

As Table 4.2. illustrates: whereas 50% of the individuals I interviewed described taking action to address water-related issues and 70% described taking action to address food-related issues, none of the respondents reported that they were actively addressing energy-related issues.

Table 4.2: Action being taken by South African millennials to address specific sustainability-related issues

SPECIFIC ISSUE	RESPONDENTS	%
Water	R6, R7, R9, R11, R13, R15, R17, R18, R19, R20	50%

Food	R1, R2, R3, R4, R5, R7, R8, R9, R10, R11, R12, R15, R16, R17	70%
Energy		0%

Figures 4.3 and 4.4 further show a different gender and age breakdown[2] of water- and food-related action takers.

The 'Water' graph shows that, of the 50% of respondents taking action, 60% are older millennials, equally split between male and female. In the younger millennials category, only male respondents were taking action.

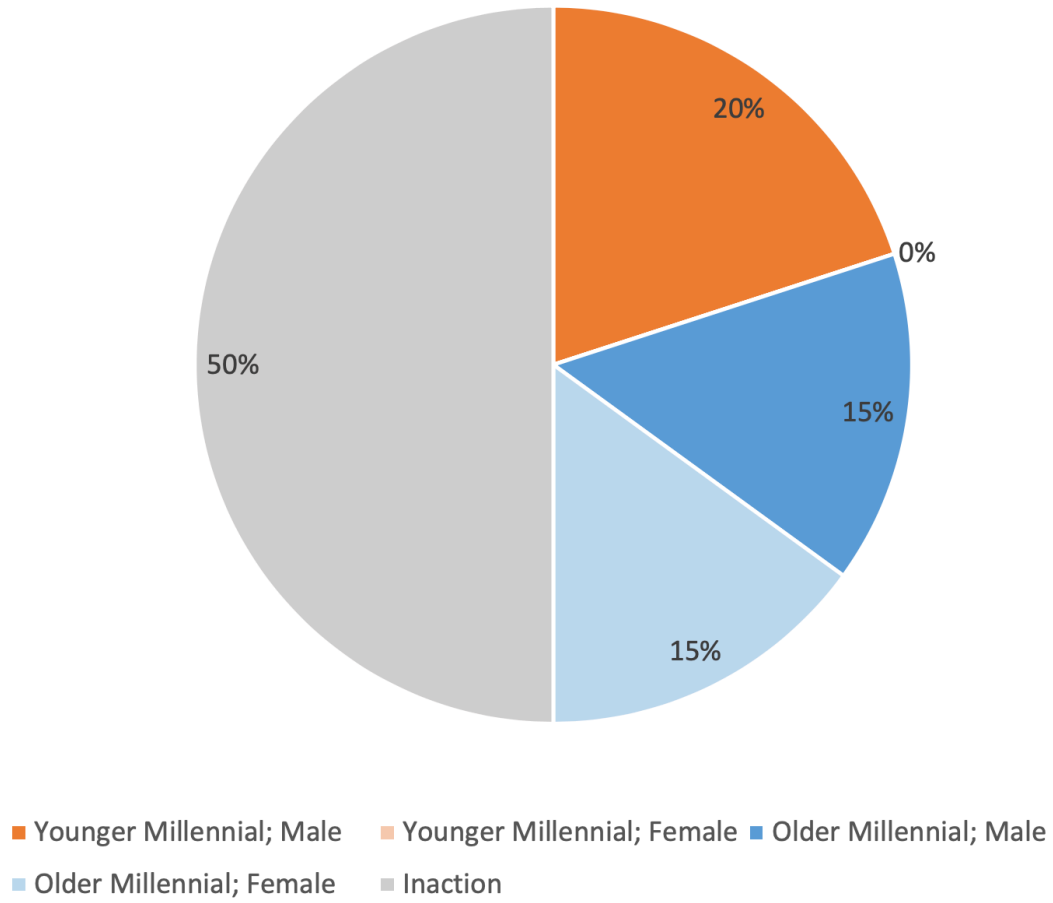

Figure 4.1: Gender and age breakdown of water-related action takers

Source: Author

[2] As the median age of the respondents was 28, I classified young millennials as being between the ages of 19 and 27, and old millennials as 28-37-year olds.

The ‘Food’ graph shows that, of the 70% of respondents taking action, the large majority are younger millennials, and there are twice as many females as males. Of the older millennials, the active participants are slightly more heavily weighted towards males.

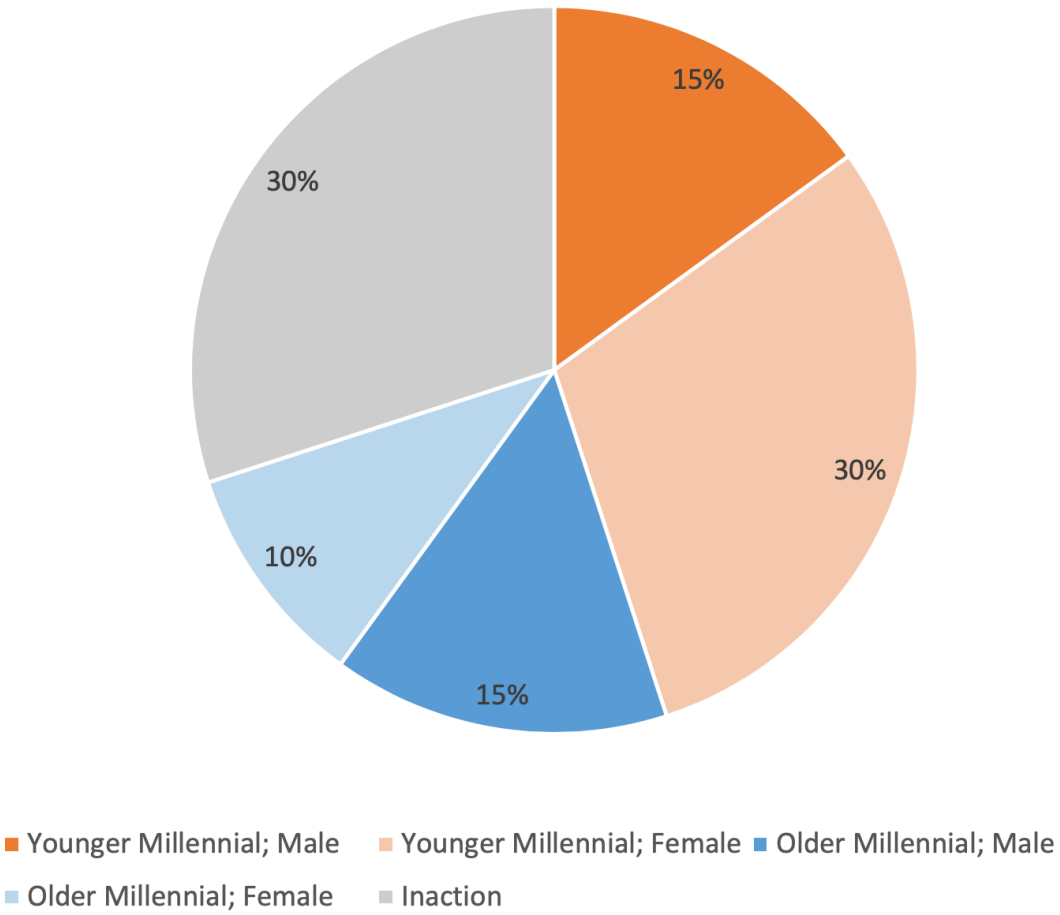

Figure 4.2: Gender and age breakdown of food-related action takers

Source: Author

My data thus appears to indicate that certain issues might be age and gender sensitive. Whereas older millennials are slightly more likely to take action with respect to water, females are more likely to take action with respect to food.

Respondents described *why* and *how* they were taking action to address water- and food-related issues.

Water

Cape Town officials announced in January 2018 that the 4 million-strong city was three months away from running out of municipal water. April 12, 2018 – the date of the biggest drought-induced municipal water shortage in modern history – was dubbed 'Day Zero' and brought on by three consecutive years of anaemic precipitation (Ziervogel 2019). Respondents described a developing sense of urgency concerning this natural resource in the form of *"counting down to Day Zero"* [Respondent 19], *"since the drought brought water into sharp focus"* [Respondent 18], and *"the water restrictions made me more aware of how much water I was using"* [Respondent 17] that propelled them to adapt their water consumption behaviour.

In response to the state of crisis concerning the city's water supplies, respondents began to engage in more responsible water-use activities. These activities ranged from: *"not opening the tap full blast anymore"* [Respondent 6], *"using buckets in the shower and then using the water captured to flush the toilet and water my plants"* [Respondent 7], *"going to the spring to collect drinking water"* [Respondent 11], *"not washing my car or watering my garden anymore"* [Respondent 17], and *"installing a water tank on my property"* [Respondent 20]. I detected a strong sense of pride in the relaying of these activities but noticed that all of the examples shared occurred in the context of a home environment – no-one spoke about what they were doing to conserve water at, for example, university or work.

Food

With respect to food, most respondents described caring for animals and personal health considerations as the main reasons why they adjusted their eating behaviours. For instance, it was Respondent 1 *"starting to become increasingly concerned about the welfare of animals"* that drove her to cut down on meat, and it was *"knowing the truth about what happens to animals"* that pushed Respondent 11 to become vegetarian. Another reason for taking action, *"becoming increasingly health conscious"*, was offered by Respondent 12. He explained a desire to be healthier as upping the importance of both *"the quality of the lives of the animals and the quality*

of the food" he eats. Similarly, Respondent 2 shared that learning about the potentially detrimental effects of meat to his body: *"I read somewhere that meat can be harmful to your gut and potentially carcinogenic at some point"* encouraged him to adjust his diet: *"so I started to moderate my intake in case there's some truth in that – my thinking is quite evidenced-based"*.

Respondents listed changes they'd made in both their purchase and consumption behaviours regarding food. These ranged from *"shopping at a particular deli now because the meat they stock there is organic"* [Respondent 4], *"only buying free range chicken from Pick n Pay"* [Respondent 7], "only buying *"free range eggs*" [Respondent 8], to *"eating less meat now"* [Respondent 10], and *"not eating meat during the week"* [Respondent 16]. I observed that meat was the most specifically-referenced foodstuff. This outtake was reinforced by Respondent 10's reflection on the Food video: *"It was interesting for me to see her sourcing fish and talking about sourcing the vegetables ethically because I only ever really think about meat as being the problem child when I think about food and sustainability"* [Respondent 10].

4.3 Barriers to converting awareness into action

"If you think you are too small to make a difference, try sleeping with a mosquito."

- Dalai Lama (n.d.)

In this section, I report my findings pertaining to the second research objective aiming to discover what the barriers to converting awareness into action were. As shown in Figure 4.1, my findings suggested twelve key reasons why South African millennials might not have taken action to address specific sustainability-related issues in the fields of water, food and energy.

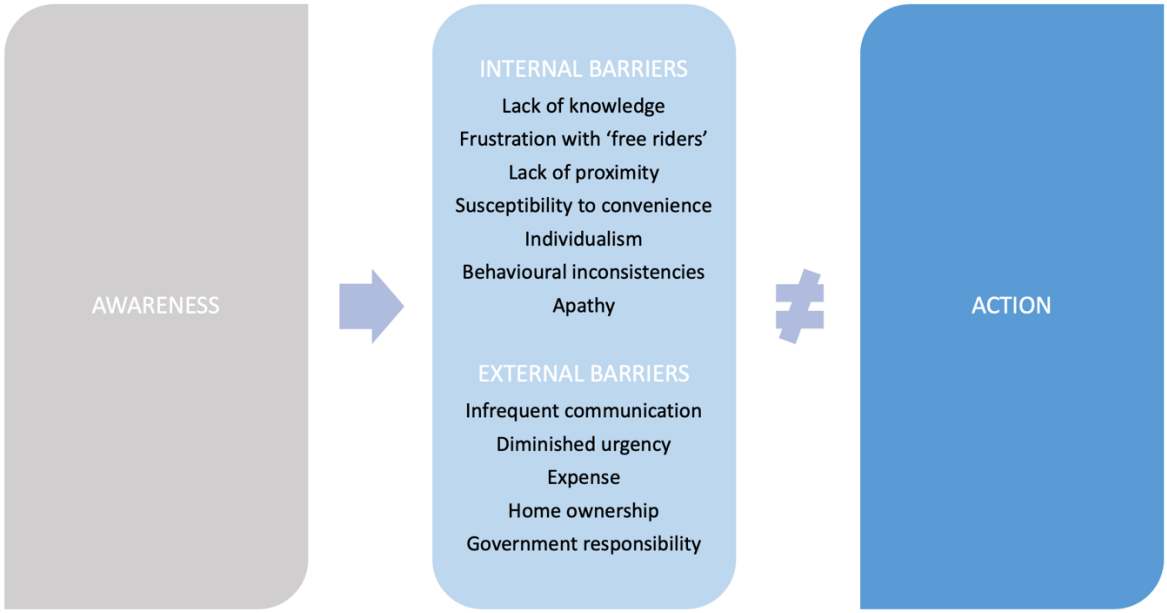

Figure 4.3: Barriers to converting awareness into action
Source: Author

I split these twelve key reasons into two broad groupings: internal and external. I identified internal barriers as lying with the respondents and having to do with their attitudes and temperaments. External barriers were identified as perceived social and institutional constraints that prevented respondents from acting in an environmentally-friendly manner irrespective of their attitudes or intentions. The particular layout of Figure 4.1 is purposeful in that I have mapped these two groups as equal-weighted barriers that exist between the states of awareness and action. I have not illustrated a hierarchical or sequential relationship between internal and external barriers as the data collected for this study did not provide conclusive insights as to the nature of the relationship between them.

4.3.1 Internal barriers to converting awareness into action

Internal factors identified were *lack of knowledge*, *frustration with 'free riders'*, *lack of proximity*, *susceptibility to convenience*, *individualism*, *behavioural inconsistencies* and *apathy*.

Lack of knowledge

A lack of knowledge about how to adopt pro-environmental behaviours hindered action being taken. With regard to energy in particular, Respondent 11 pointed out that although he buys into the benefits of using green energy, he was unable to act on this because he didn't know how to: "*I understand why we should use green energy, but do I know of ways to do this in my life or business? No.*" Similarly, even though Respondent 18 was aware of the limits of energy usage: *"I know that we shouldn't be using more energy than we need"*, she did not feel that she was in a position to offer any meaningful contribution by way of a solution: *"I can't do much about that because I still need to use electricity, so what am I supposed to do?"*.

Frustration with 'free riders'

There was a perceived inequity when social comparisons were carried out. Respondents expressed a growing frustration with those who didn't partake in action to address sustainability-related issues, yet benefitted from others' who did, and the unfairness thereof: *"Why am I going to change my lifestyle if all these other people aren't going to?"* [Respondent 14]. Upon reflecting on why she wasn't *"doing her bit"*, Respondent 20 explained that she knows *"there are so many people out there that are not even trying, so why must I carry their weight?"* as what's stopping her. With regard to conserving water in particular, Respondent 7 similarly expressed his irritation with those lapsing back into non-environmentally friendly behaviours: *"There are so many selfish people out there who think 'oh the dams are full now so we can just go back to how we were'"*. This prompted him to question his own sustained efforts: *"Why am I still saving like crazy and using so much less to make up for these people who do nothing?"*.

Lack of proximity

It was difficult for respondents to prioritize environmental issues that didn't feel relevant, personal or critical to everyday life. For example, Respondent 1 shared that *"We get blackouts from load-shedding, so I feel the effect of energy (or lack thereof). And then we also had water restrictions, so I was affected by that too. But food – I*

don't know, unless you're sourcing or preparing the food yourself then I think it's a difficult one to feel the impact of." Respondent 11 offered a slightly different perspective. He explained that, whereas eating contaminated food or drinking dirty water could result in adverse effects to one's body, coal-powered energy was not perceived to be a potential health hazard: *"Well, if you eat contaminated food or drink dirty water that's going to have a direct impact on you. I'm not going to get sick from the electricity that's wired into my house though – whether it comes from a green energy source or not. I turn the light switch and it comes on and it's fine. So, there isn't a direct impact on you so much I guess."*

The abstract nature of energy hindered the conversion of awareness into action for all respondents. For example, Respondent 15 pointed to not feeling the effects of energy-related issues: *"Electricity is less tangible. It's more abstract, you know. Rationally I can understand, and 100% percent buy into the need to use more efficient energy generation processes and fuels. But it's not close to home. I don't really feel that as much. So, I haven't really thought too much about energy conservation."* This was echoed by Respondent 10 who felt that energy wasn't *"tangible enough for people to care"*, and Respondent 18 who explained that *"on a practical level, people don't care where their energy comes from – you just get energy."*

Susceptibility to convenience

A lack of convenience was central in preventing respondents from engaging in behaviour alternatives. As summed up by Respondent 6: *"If it's not convenient, we're not really interested."* She described being partial to expedience as inhibiting sustainable food purchasing decisions in particular: *"We just can't be bothered to make an effort. We just want to get the stuff, eat or drink it, and throw the packaging away."* Respondents continued to engage in present behaviour because it was the easiest thing to do: *"We're lazy. We're creatures of comfort. We take whatever's cheapest, easiest, tastiest"* [Respondent 9]. Furthermore, habituation deactivated the link between intention and behaviour in that *"If you've been doing something a certain way your whole life, why would you suddenly want to change? We get stuck in our habits and what's happening right now, we struggle to see or care about the future"* [Respondent 8].

Individualism

Certain values linked to individualism tended to be more strongly associated with continuing to exhibit anti-environmental behaviours; acting to one's own advantage rather than considering society at large was a barrier to behaviour change. Respondents described a lack of altruism – *"we can't see past ourselves. We only care about number one*" [Respondent 10] – and a greater concern for aspiring to benefit themselves rather than focussing on the welfare of society and achieving group goals – *"we're more worried about the individual than the collective"* [Respondent 16] – as reasons why engaging in sustainable behaviours was overlooked.

Behavioural inconsistencies

Respondents shared how they justified inconsistencies in an attempt to reconcile their intentions with their limited pro-environmental behaviours. For example, in Respondent 5's case: *"How I see it is that for every one thing you do, you maybe do two bad things, but at least you're doing one good thing and you kind of justify in your mind that at least you're doing something. So, like, I can have this McDonalds burger because I eat vegetables 5 days a week or whatever it is. Also, it's hard to do everything. So, you've kind of got to pick one thing I think."* Similarly, Respondent 7 described how she mentally balances her conflicting decisions: *"With certain things like eating for example, you'll save in one area – so you'll do something and think hey that's environmentally less impactful, but then you'll do something later that maybe uses a lot of packaging and then you think, well I kind of balanced this out with my previous decision so I'm fine. So, I guess you're not always consistent.*" Upon reflection of his actions to date, Respondent 9 believed his impact to be fairly neutral: *"I think if I measured my behaviour over the long term, I think I'm okay. I don't think I'm making things worse"*. This reconciled position influences his present behaviour: *"[so] when I decide to take a slightly longer shower than usual, I tell myself I've earned it."*

Apathy

While certain respondents claimed to care about specific or general environmental issues, their behaviours did not often align with their expressed environmental values, as articulated by Respondent 11: *"I'm conscious of this stuff and it means something to me, but I'm not taking it a step further and actually doing anything differently."*. Respondent 1 shared how she was grappling with her inaction: *"I definitely don't feel like I'm doing enough. I never really feel like I'm doing enough. But then I don't really feel the urge to do more."* Respondent 9 echoed this sentiment when he explained that although he *"think(s) about these things a lot, I don't execute for some reason…"*. This suggests that although they expressed a strong desire to live more sustainably, respondents found changing their behaviours to be much more difficult than their desire would suggest.

4.3.2. External barriers to converting awareness into action

External factors identified were *infrequent communication, diminished urgency*, *expense*, *home ownership* and *government responsibility*.

Infrequent communication

Respondents pointed to inconsistent degrees of communication from external sources such as *"the government, media and NGOs"* [Respondent 4] as hampering the adoption of sustainable behaviours. Respondent 8 didn't foresee his behaviour changing immediately but noted that it might if he was reminded about sustainability-related issues on a regular basis: *"If they expose me to this kind of message more often and keep telling me how important it is to address this stuff now then it's likely that I will get better at living more sustainably in the medium to long term."* Similarly, Respondent 2 expressed that sustainability-related issues require constant communication in order for change to be realised: *"If these things are urgent then they need to be constantly reminding us to do something about it. You see this message, or this picture, or this video, and it impacts you at that moment, but then, you know, we all lead busy lives and we get distracted and forget"*.

Diminished urgency

When a perceived sense of crisis began to dissipate, respondents were less inclined to maintain their pro-environmental behaviours. Referring to the water crisis in the Western Cape, respondents admitted that *"since Day Zero went away"* [Respondent 8] and *"the water restrictions have lessened up a bit"* [Respondent 6] their behaviour has changed. They've been *"using more water"* [Respondent 19], *"taking longer showers"* [Respondent 4] and *"flushing"* [Respondent 10]. During the water crisis, respondents were communicated to in such a way that they went into crisis mode and action was evoked: *"it was everywhere – they were telling us the taps were going to run dry, so we had to act now"* [Respondent 7]. In contrast, *"when they tell us that the dams are filling up"* [Respondent 15] respondents were led to believe that the crisis had been averted: *"there's no water crisis anymore"* [Respondent 10] and behaviour change was no longer an urgent requirement: *"so we don't need to be so strict about saving"* [Respondent 4].

Expense

In some cases, adopting sustainable behaviours was associated with high costs, and sustainable products deemed luxury goods rather than contributors to survival. Respondents shared that, regardless of their intentions, they simply could not afford to change their behaviour in certain instances. For example, when it came to food, some respondents shared that *"it's not that I don't want to but eating sustainably is not always the easiest, most convenient option"* [Respondent 5] and *"organic fruits and vegetables are expensive"* [Respondent 13]. As the demand for eco-friendly products didn't outweigh the demand for traditional products, they couldn't compete in price. With regard to green energy products in particular, *"there aren't enough people living off the grid yet, so it still costs a lot of money to get the infrastructure"* [Respondent 8]. And, as respondents were finding it tough financially – *"I don't have the means to do this stuff – it's too expensive"* [Respondent 17]; *"I can't afford solar panels"* [Respondent 20] – they felt that they didn't have a choice but to *"wait until the price goes down"* [Respondent 19] so they could *"jump on to this"* [Respondent 6].

Home ownership

Another demographic factor inhibiting pro-environmental behaviour was home ownership. As most respondents lived in rented accommodation, they explained that this particular living situation made it difficult for them to take action: *"I'm not really doing anything for that [energy] because it's really hard to in the apartment I rent. One day if I have my own place then I'd like to be disconnected from the grid and grow my own food. I think that would be really great."* [Respondent 5]. They didn't believe that, as tenants, it was financially viable for them to address the source of energy powering their homes: *"We move a lot so you're not going to invest if you're going to leave"* [Respondent 9], and that only if they *"owned a home one day, I would care about where the energy was coming from"* [Respondent 10].

Government responsibility

For the three respondents who were home owners at the time of their interviews, they were of the opinion that the responsibility to address energy-related issues in particular lay with the government: *"I feel like energy isn't really my responsibility to be honest. I pay taxes – the same for water but water is a finite resource whereas light isn't – so I feel like energy should be something that comes out of parliament and that they should be implementing independent, like sustainable energy providers* [Respondent 7]. Respondent 20 concurred that *"the government should be the one looking for alternative sources of energy. I pay my taxes and when I switch on my lights there must be power,"* but that water was a slightly different matter: *"Water I think is slightly different because if it doesn't rain then there's no water. Government still needs to desalinate salt water, but I think that's a bit different. We can harness water as well – and I know we can harness sun light, but the cost advantages are not there for energy I don't think. Water is cheap to harvest."*. Finally, Respondent 9's decision was to continue with his current behaviour until the government offered an alternative: *"Until the government starts helping me with solar panels, I'm just going to keep on using the electricity that I need to. I don't really know what else I'm supposed to do there."*

4.4 Exploring the role of storytelling in environmental communication

In this section, I report my findings pertaining to the third research objective aimed at exploring the role of storytelling in environmental communication. In sections 4.4.1 to 4.4.4 I present respondents' reactions to four storytelling elements employed in the creation of a documentary campaign for WWF-SA: authentic visuals and sounds, a framing statement, a linking device, and ambassadors as storytellers. The campaign aimed to share particular stories regarding sustainability-related issues in the fields of water, food and energy with South African millennials in order to stimulate engagement.

4.4.1. Authentic visuals and sounds

The campaign took a documentary-style approach to the visuals and sounds that were captured for these pieces. To start with, documentary cinematography is distinct from that usually seen in commercial or fictional work; there are visual cues that suggest to the viewer that what they are seeing is based in the real world (Bakker, Meulenberg & de Rode 2003). These cues are often only registered subconsciously, but when taken in aggregate, they result in the audience trusting that what they are seeing is authentic. Table 4.3 lists three visual cues employed in the creation of this campaign.

Table 4.3: Visual cues employed in the creation of the campaign

Visual Cue	**Description**
Natural light	Only natural light is used in these pieces, as opposed to artificial lighting that isn't an expected feature of the shot.
Handheld camera	Documentary work is often filmed with the camera in hand (or shoulder mounted) in order to react quickly to the movements of the documentary subject in real time, as opposed to fictional

	work, which will often create a new camera set-up for each movement of the actor.
Delayed camera reactions	In documentary work, the movements of the subject aren't usually pre-planned, and therefore the camera operator can only react to the subject's movements a fraction after they have started to happen. This means that the camera movement usually has a slight lag behind the subject's movement, the focus may stray before being corrected again, etc. These delayed camera reactions are a subtle cue of authenticity.

In terms of the audio, Table 4.4 outlines two techniques that add to the verisimilitude of the campaign.

Table 4.4: Audio techniques employed in the creation of the campaign

Audio technique	**Description**
Sound design	Rather than try to achieve perfectly clean sound, the natural environmental sounds were embraced, e.g. traffic in the distance, trickling water, children playing, etc. This is an indicator that these are real locations as opposed to a set.
Voiceover	When working with the subjects on the voiceover for the pieces, they were deliberately not given a script to read. Instead, a guided interview technique

	was used whereby the thematic areas necessary for the messaging of the video was covered, but the delivery was as much as possible in the natural speaking voice of the participant. This includes slight stumbles in speech, pauses, and what is referred to as "filler sounds" in linguistics (Tottie 2011). In a commercial voiceover, this would ordinarily be trimmed out, but in this case, they were allowed to remain for the purposes of signalling authenticity.

Respondents were more affected by the visuals than the audio and explained that it was being able to see that brought the relevant sustainability-related issues to life: *"The words they use are powerful, but it's really seeing their actions that brings it home for me"* [Respondent 17]; *"I liked that the whole journey was shown. It wasn't just spoken about. It makes it more real when you can see"* [Respondent 15]. The use of authentic imagery also prompted consideration of potential future emulation of what was seen on-screen: *"They look real. Like anyone can actually do these things"* [Respondent 15]; *"I liked seeing the effect of the solar power – of it being able to actually project a movie. That stuck in my mind. Maybe I could do that"* [Respondent 2].

Being able to identify where filming had taken place also contributed towards the acceptance of authenticity. Referencing the 'Food' video, Respondent 6 relayed that *"It helped that I recognised the location. That had an impact on me. Seeing her at Kalk Bay Harbour made me think 'hey, I could do that'"* [Respondent 6]. Similarly, upon watching the Water piece, Respondent 12 explained that *"It's seeing the scenery – Table Mountain – that makes you think f**k, we live in a really beautiful world that needs us to start taking better care of it"* [Respondent 12]. *"Seeing this stuff play out so close to home"* prompted Respondent 19 to reflect upon his behaviour and consider *"thinking a bit harder about my part in the ecosystem now."*

4.4.2. Framing statement

Frames are packages of ideas and critiques that illustrate specific aspects of a particular issue and thus provide a socially constructed guide to interpretation (Christiansen 2018). The documentary campaign was framed through the statement: *'For Nature. For You.'* The existence of a relationship between *'nature'* and *'you'* was easily comprehended: *"people and planet – they're linked"* [Respondent 5]; *"we're connected to the environment"* [Respondent 8]. Respondents offered nuanced descriptions concerning the type of relationship existing between *'nature'* and *'you'*. Some respondents explained it as being co-dependent: "*the marriage between the natural world and the human world and how they're intertwined and rely on one another"* [Respondent 9], and mutually beneficial: *"By helping nature, it's a win-win because in doing so you're also helping yourself"* [Respondent 4]. Likewise, Respondent 3's outtake was that taking care of nature is not only in nature's best interests, but also in our own: *"It benefits both. Sustainable processes and methods are good for you and the environment"*.

Converse to the above, other respondents described a dependent relationship – entailing nature being able to survive without people, but people not being able to survive without nature: *"Nature doesn't need us. We need to treat nature right to look after ourselves. We can't take nature for granted if we want to survive"* [Respondent 6]. Respondent 18 further emphasised that we (humans) rely on nature for our existence: *"Without nature there would be no 'us'. So, if we don't look after nature, we won't be looking after ourselves"*. Similarly, Respondent 9 argued that protecting nature is paramount to human survival: *"we need to act in a way that doesn't negatively impact the environment. That's the only way we'll stick around."*

Respondent 2 highlighted the role of temporal proximity: *"Generally when people talk about saving the environment the reason they give is that it's so future generations can benefit. For me, 'For Nature. For You.' means 'save the environment for right now, for yourself'. I think this is a better approach because it brings it home – makes it more immediate."* We focus on immediate problems because we have too many things to worry about. This is congruent with Markway's (2013) finding that,

even though our brains are naturally wired to scan for danger, we prefer to focus on issues that need to be addressed immediately. Therefore, if, global climate change for example, is positioned as something 'future generations' will suffer the effects of, this indirect personal impact will hinder action being taken today.

The data shows that respondents recognized the role that they needed to play in bringing *'For Nature. For You.'* to fruition. However, there is also evidence of respondents acknowledging the action that WWF-SA, as the organisation delivering this message, was taking to facilitate this process. It was understood that, reflective of the organisation's attempt to reposition itself as both nature- and human-centric, WWF-SA is *"doing stuff to protect nature that you'll also benefit from"* [Respondent 5], *"concerned with protecting nature, and what's good for nature is good for you"* [Respondent 17], and *"working for nature but they're also working for you"* [Respondent 20].

4.4.3. Linking device

This campaign required a visual method of showing – non-verbally – a connection between the start and end point of a journey in order to make sense of the *'For Nature. For You.'* framing statement. Therefore, a linking device was employed to illustrate the importance of going back to the source. Respondents identified this 'rewind effect' as drawing attention to the source through *"showing the end but then reversing it to take me back to nature – back to where everything comes from"* [Respondent 7] and found that this technique delivered the intended message in an easily understandable way: *"it explained the importance of knowing where something comes from in a way that I could follow"* [Respondent 5].

The linking device provoked contemplation as to where the food, water and energy that we consume originates from: "*they showed exactly where those end products actually came from, which is a good thing because it challenges mindlessness"* [Respondent 8]; *"I like that the way the videos were structured forced me to think about what goes into things, where they actually come from. Yeah, they made me think."* [Respondent 19]. It also stimulated thought regarding the implications of

one's actions: *"Looking back at those steps, and maybe even relating them to carbon footprint makes us think about the consequences of what we're doing"* [Respondent 11].

Through *"demonstrating the link between the end product and the source"* [Respondent 17] the device prompted consideration of the source, which *"we tend to forget about because it's only the end product that sits on the shelf in front of us at Pick n Pay"* [Respondent 10]; *"we only engage with at the end of the manufacturing line"* [Respondent 1]. Respondents noted that because they *"rarely engage with these things in their natural state"* [Respondent 9], the visual depiction of the source was instrumental in making a connection that might otherwise not have occurred: *"If the video hadn't actually shown the going back to the source part, I don't think I would have made that connection naturally. For example, if it just said 'we all need water, remember where it comes from, don't waste it' it wouldn't have touched sides for me"* [Respondent 20].

Interestingly, there is evidence of a lot of inference amongst these responses as they incorporated a lot more detail than was offered in the videos. There are two potential reasons for this. Firstly, as described in section 4.2.1, there is a high level of awareness of these issues amongst respondents. The second reason is that this documentary campaign was designed to be deliberately narrow in scope, using easily digestible concepts without overloading the audience with detail as a way of sparking off thought rather than providing information.

4.4.4. Ambassadors as storytellers

The use of an ambassador can enable a single person's story to represent a larger issue, in that a *personal narrative* that is *relatable* and draws on *passion points* can *humanize an issue*.

Personal narrative

Respondents reacted positively towards seeing people who have a genuine connection with food, water or energy demonstrating the link between nature and our own lives*: "I really liked that the stories were personal. The people who were telling them actually do this stuff, they weren't just random people saying stuff"* [Respondent 3].

The use of a personal narrative also resulted in the inference of conclusions that were significant, yet not explicitly intended. Respondent 13 described how he thought that Buhle Sithela was encouraging entrepreneurship in the energy video: *"I think he was planting a seed for the younger generation who want to start their own businesses – he's showing us that there are sustainable and cost-effective opportunities out there. I think that's quite cool."* This could be construed as evidence that when a connection is made with a person on-screen, the effects go further than the surface level of what is being told to them. In this case, respondents didn't only hear the words spoken by Buhle, but rather viewed his life as a model that could influence others' behaviours: *"It's inspiring – seeing a young guy like me from the townships doing something like that. He's an entrepreneur, but he's also trying to do something nice for the community, and he's doing it in a good way for the environment. Wow"* [Respondent 17].

A personal narrative delivered the intended message in a way that a more didactic approach may not have been able to achieve: *"I think that if we really want to see more people changing their behaviours, living more sustainably, that kind of thing, then we need to raise awareness of these issues in ways like this – by using stories, not pointing fingers or throwing numbers out there"* [Respondent 10]. Interestingly, even the single respondent who began by explaining that a fact-sharing approach would be more successful in stimulating pro-environmental behaviours seemed to start questioning this stance by the end of his dialogue:

> *For me, a fact sharing approach and in particular some difficult fact sharing might be more effective. However, one has to be careful about the intensity of fact sharing because I think we can respond negatively if someone is stuffing information in our faces. So, the risk of stuffing facts, hard facts, in my face is*

that I find it intimidating and offensive and intrusive. I wouldn't think that about a story though. Hmm." [Respondent 18]

Relatability

Respondents commented on how they were able to relate to what they saw on screen: *"I think what these do is make you associate these issues with your own life"* [Respondent 6], and that being exposed to stories that *"resonated rather than lectured"* [Respondent 20] was useful in *"helping to bring it home"* [Respondent 11]. Respondents commented that this was a *"good"* [Respondent 1; Respondent 6; Respondent 16]/ *"better"* [Respondent 3; Respondent 9; Respondent 20]/ *"useful"* [Respondent 2; Respondent 8; Respondent 12'] approach that came across as *"more relatable"* [Respondent 14] as opposed to *"alienating me by wagging their fingers at me"* [Respondent 15] which "*a lot of these types of communications"* [Respondent 19]/ *"typical save the world content"* [Respondent 17] tends to do.

Passion points

The challenge of trying to aim environmental communications at South African millennials is that this demographic constitutes a diverse group, therefore a storytelling element needed to be used to unite this diversity. These videos focused on passion points – because they cut across socio-economic, cultural, gender and language groups. Furthermore, 'food', 'water' and 'energy' are very broad, abstract issues so passion points can help narrow the focus to make these issues relatable. The cross-cutting passion points that were drawn on for this series were entrepreneurship ('Energy' video), cooking ('Food' video), and trail running ('Water' video).

With reference to the 'Water' video, certain respondents shared that this piece resonated with them the most because they too engage in the same type of sport that was depicted: *"I trail run so I felt a more personal connection to the water video"* [Respondent 7]. Respondent 10 agreed with the message being delivered by Ryan Sandes (the featured ambassador) as she too has a *"passion for running in the mountains – and water now that I think about it. It's not just a liquid that we drink,*

it's a necessity for life so ja, I completely agree with what he was saying in the first video" [Respondent 10].

A passion for food and cooking meant that the 'Food' video resonated most with other respondents: *"I love eating so the food one resonated with me the most"* [Respondent 1]; *"She reminded me of my aunt. Also, I love cooking. For me, food is something that can bring people from all walks of life together"* [Respondent 10]; *"I've just gotten into cooking a bit more recently and, it's like she said, cooking for others is like giving a gift. That's why I'm trying to get better at cooking, because I think it's a nice way to give"* [Respondent 15].

Entrepreneurial respondents gravitated towards the 'Energy' video: *"I've got an entrepreneurial background so the cinema one resonated with me because I thought it was an innovative little business. Once he's got his panels, he's pretty much independent of anything – he just needs the sun"* [Respondent 20].

Humanizing an issue

Respondents could easily explain what each video in the series was highlighting, and it was interesting to note that, whilst doing so, they largely referred to what 'he' or 'she' said. For example:

"He was saying that we have to be better at conserving water." [Respondent 5]
"He explained that if you protect the water supply then you'll still get to drink water. It makes sense." [Respondent 15]
"She says that we must know where our food comes from – that we must source our food ethically." [Respondent 19]
"She mentioned that we need to make smart food choices now to help us in the future." [Respondent 1]
"He spoke about using the sun for solar energy." [Respondent 18]
"He showed how solar energy can be used to power an outdoor cinema." [Respondent 10]

The use of 'he'/'she' indicated that respondents treated the information as being received from a person, which suggests strength of human connection as opposed to just receiving fact-based communication. Surprisingly, whether the ambassador was recognised or not did not seem to make a difference (whereas Zola Nene and Ryan Sandes have large followings, Buhle Sitela is relatively unknown). Respondents tended to speak with equal amounts of comprehension about the respective issues. This implies that whereas humanizing an issue is important, who is doing the humanizing is less so.

4.5 Respondents' feedback on the research process

In this final section, I consider the feedback received from participants as to how their involvement in this study, including viewing of the videos, could influence their future behaviour. In short, I found that, for most participants, the research process may have triggered an intention to be more reflective and to adopt more sustainable behaviours.

When reflecting on the possible influence of the research process, Respondent 16 shared how it had initiated a flurry of self-reflective questions about her behaviour that left her feeling uncomfortable:

> *"Throughout this conversation and while I was watching the videos I've just been thinking, 'What are you doing? Are you doing enough, if anything at all? Are you even really aware this is a problem?' Like, I'm aware that, you know, water is a precious resource, I'm aware that sustainable fishing is the best way to fish and that we should be using, you know, we should be getting off the grid more but like in my life I don't know where my actions show that. You know, I just don't know if I actually follow through with this stuff in my day to day. And that makes me feel weird"*

For Respondents 15, 18 and 19, their participation was a reminder to *"be more mindful of the choices I make in everyday life"* [Respondent 15], to *"respect the source of things"* [Respondent 18] and to *"try and source what I need as ethically as I*

can" [Respondent 19]. Respondent 6 further reflected that she would endeavour to be more appreciative of her *"life sources – the food, water, and energy that powers my home"* as the research process had caused her to acknowledge that she may not have done so to date: *"I guess I just take these things for granted"*.

Whereas Respondent 9 shared that he was uncertain as to whether he would alter his behaviour right away: "*I'm not sure how likely it is that I'm going to take any immediate action, but this interview has definitely contributed to my increased awareness of these issues"*, Respondents 3 and 4 felt compelled to *"do better"* [Respondent 7]: *"Now that I've watched these, I feel like – okay, we can actually do something here, there's something that I can do."* [Respondent 3]; *"They opened my mind up as to what's happening, and also what I can do about it."* [Respondent 4].

Chapter 5 – Conclusion and recommendations

5.1 Introduction

The intention of my study was to explore the role of storytelling in environmental communication through an analysis of a South African millennials-oriented documentary campaign. The study's objectives were to establish South African millennials' current engagement with specific sustainability-related issues in the fields of water, food and energy, to identify the barriers to converting awareness into behaviour change, and to explore effective elements of storytelling in environmental communication.

In this final chapter, I present an abridged version of the findings pertaining to my research objectives and discuss them alongside the reviewed literature. I provide practical insights for environmental communication practitioners who are looking to incorporate storytelling elements into their communication materials, as well as some recommendations for future research for environmental communication scholars. Next, I propose a platform in the form of a conference for environmental communication practitioners and scholars in South Africa to collectively explore how best to affect behaviour change in our environmental context. I conclude this chapter by reflecting on my research journey.

5.2 The engagement of South African millennials with specific sustainability-related issues

The findings related to my first research objective indicated a high level of awareness of, and concern for, specific sustainability-related issues in the fields of water, food and energy. Yet, I discovered that only certain respondents were taking action to address issues pertaining to water and food, and no respondents were taking action to address issues pertaining to energy. The disparity between South African millennials' awareness, literacy and concern about sustainability-related issues on the one hand, in contrast to their limited behavioural response on the other is reflective of the widely-reported 'value-action' or 'attitude-behaviour' gap (Blake 1999; Uyeki & Holland

2000; Kollmuss & Agyeman 2002; Diamantopoulos et al. 2003; Johnson et al. 2004; Gaudelli 2009; Muralidharan & Xue 2016; Naderi & van Steenburg 2018).

I further discovered differences in sustainable behaviour within the millennial cohort. For instance, a greater number of older millennials described taking action to address water related issues. This finding is consistent with Hanks et al. (2008), Smith (2010) and Debevec et al.'s (2013) studies whereby they too report a higher degree of engagement in environmentally responsible behaviour amongst older millennials. This disparity may be attributed to a knowledge gap between older and younger millennials regarding water conservation. Perhaps more educational programmes explaining the importance of water stewardship and outlining the specific steps that can and should be taken to make a difference would be useful in addressing this.

In contrast to the above findings however, my study revealed that younger millennials appear more inclined to take action in respect of food-related issues. This is reflective of a British study conducted by Roe and Buser (2016) whereby the authors discovered that younger millennials make up over a third of all vegans, and – also similar to my study's findings – female millennials are the most engaged, outnumbering their male counterparts by 5:1. Interestingly, Roe and Buser's (2016) study also found that plenty of male millennials would like to reduce meat consumption, but social barriers sometimes stand in the way. Speaking at the Royal Geographical Society International Conference in August 2017, Dr. Roe explained: "What we have discovered is that many young men are interested in eating less meat, they just need social permission to do so." However, times are changing. She continued, "As more men make vegetarian and vegan choices, that permission is becoming more readily available".

My findings also align with Deloitte's 2019 Global Millennial Survey. This survey, based on the views of 13,416 millennials questioned in 42 countries, provides a reference point when comparing South African millennials' awareness and concern about sustainability-related issues with that of their global counterparts. The report found that the top personal concern amongst global millennials is 'climate change/ protecting the environment/ natural disasters' (Deloitte 2019). Interesting to note is that South African millennials were found to be more likely to determine their support

for a business based on the impact of its products or services on the environment or society (see Figure 5.1).

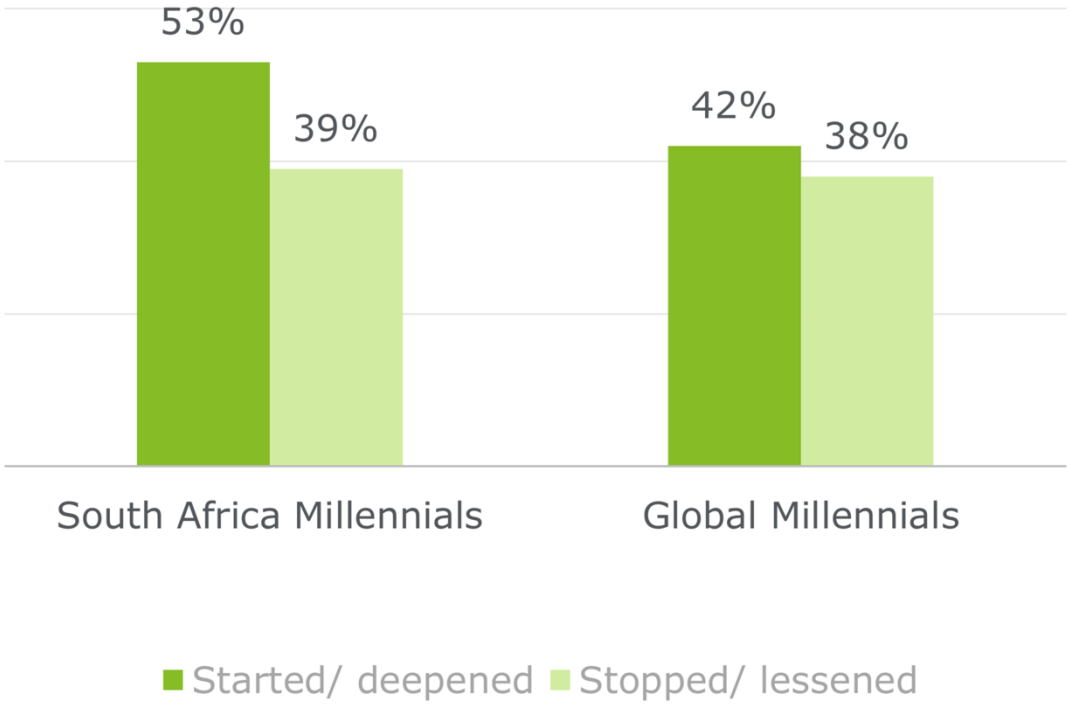

Figure 5.1 Millennials' support for businesses
Source: Deloitte (2019)

Interestingly, the similarity in the findings between the Deloitte survey and my own study highlights the influence of the sampling strategy on research findings and cautions against inferring unqualified generalisations from the data. Indeed, it is important to note that both the Deloitte survey and my own study are based on a similar sample profile, which does not appear to be fully representative of the general South African millennial population. For example, of the 300 respondents who participated in the Deloitte study, 73% were described as studying or have completed studies at a university/college level and only 10% as unemployed.

This is similar to my own study sample whereby of the 20 participants who participated, 100% of them were either studying or had completed studies at a university/college level. This is in contrast to a national average of 4% of South African children entering the education system earning a degree (The Economist 2017), and the national unemployment rate sitting at 29% (Statistics South Africa 2019). It is therefore apparent that both Deloitte's and my study suffer from the same

weakness in that neither of us factored South Africa's specific diversity into our sampling. The learning here is that more reflective samples may have given both of us different sets of findings.

South Africa's specific millennial diversity might explain why the South African environmental movement has been criticised for its elite nature (Lawhon & Fincham 2006). Whereas 'tree-hugging' environmentalists gain media attention, less attractive issues e.g. environmental problems in the townships – which are more relevant to the average South African – are not framed as environmental problems and are not covered by the media (Berger 2002). This criticism is understandable when considering the pressing issues that face township residents – many of whom are millennials: there are more than 14 million millennials in South Africa, making up approximately 27 percent of the population (Statistics South Africa 2019). Within this cohort, only 6% of 25-34-year-old South Africans are tertiary educated (Organisation for Economic Co-operation and Development 2018) and 34,2% are unemployed (Statistics South Africa 2019).

Although data does not seem to exist for South African millennials specifically, as this generation makes up more than a quarter of the country's population, it is useful to reflect on the data presented in Table 5.1 regarding water, food, and electricity access in South Africa.

Table 5.1 Water, food, and electricity access in South Africa

Water	46.4% of South African households are estimated to have water piped to their homes, 26.8% have access to water on their property while 13.3% have to share a communal tap (Statistics South Africa 2018).
Food	In urban areas, 28% of households are at risk of hunger while 26% are already experiencing hunger. In rural communities these statistics hit 32% and 36% respectively. Roughly 50% of South Africa's population is food insecure or at risk of food insecurity (South African National Health and Nutrition Examination Survey 2018)

Electricity	85,4% of households are connected to an electricity supply from the mains (Statistics South Africa 2018).

Given that the majority of environmental communications that South African millennials have been exposed to have concerned 'elite' issues, and when considered in the context of the challenges for the basic provision of services that most South Africans face, it may be that pressing household needs outweigh macro concerns about the broader environment. Whilst remaining mindful of its limitations, this idea that personal needs are prioritized is supported by findings from the Deloitte survey whereby the top two concerns listed by South African millennials were crime/ personal safety and unemployment. Future research could investigate how the persistence of immediate pressing social needs may affect South African millennials' ability to engage with environmental issues.

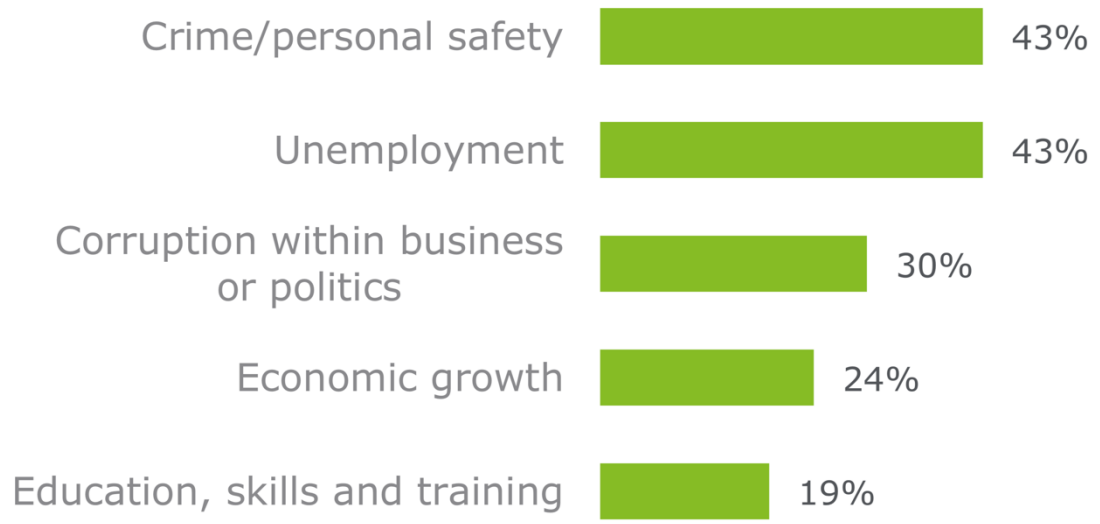

Figure 5.2 Top concerns for South African millennials
Source: Deloitte (2019)

In the next two sections I consider *awareness of* and *drivers of behavioural change in* sustainability-related issues amongst my study respondents.

5.2.1 Awareness of specific sustainability-related issues

The evidence that there was 100% awareness of sustainability-related issues in the fields of water, food and energy amongst respondents was not surprising as this corresponded with previous study findings with a similar sampling profile. Shehan (2005) and Goto Gray et al. (2019) report that millennials are environmentally conscious, concerned about and highly motivated to protect the environment. Furthermore, this generation has been found to increasingly take sustainability issues into account when making decisions (Kadic-Maglajlic et al. 2019).

Based on my research findings, reasons for South African millennials' engagement with sustainability-related issues in the fields of water, food and energy could be categorized as empirical evidence, information in the media, and word of mouth. This is aligned with Farrell (2019), Astor (2019), and Steinberg and Morris's (2001) assertions respectively whereby they describe millennials as being forced to face the realities of, for example, environmental degradation, being the first generation to grow up in a world in which climate change is part of the daily global discourse, and placing particular importance on a sense of belonging to peer groups resulting in a strong degree of influence stemming from this source.

5.2.2 Drivers of behaviours taken to address sustainability-related issues

Respondents demonstrated their adoption of a New Environmental Paradigm (Dunlap 2008) when discussing why and how they were taking action to address water- and food-related issues. This was evident in their recognition that their activities are determined by the environment and that they rely heavily on the environment and its resources, as opposed to seeing themselves as superior to all other species and believing that the earth will provide them with unlimited resources. Kadic-Maglajlic et al. (2019) explain how the degree of engagement (determined by self-identity and values) predicts a degree of behaviour. These same elements of self-identity and values appeared in my findings (e.g. identifying as a vegetarian, caring about animals) as reasons that propelled respondents to adopt sustainable behaviours.

My study further supports Kadic-Maglajlic et al. (2019) point regarding emotional intelligence as boosting the effects of engagement on pro-environmental behaviour. I noted that there was a lot of emotive language used when discussing water and food-related issues, yet none when discussing energy ones – correlating to no action being taken on this front. This finding is also supported by Almer (2013) who explained that, in addition to young adults' values, the emotions associated with their aspiration to transform the broader environment perform a key role in driving their sustainable behaviour. Therefore, in order to influence millennials to act on their desire to safeguard the environment, it is useful to recognize opportunities to induce specific moods or emotions to shape these aspirations.

5.3. Barriers to converting awareness of sustainability-related issues into action

The aim of my second research objective was to discover the barriers to converting awareness of sustainability-related issues into behaviour change amongst South African millennials.

Whereas multiple 'major barriers' to behaviour change have been identified (Rajecki 1982; Lorenzoni et al. 2007), only limited research has explored the ranking of these – for example, in order of most commonly found, or degree of difficulty in overcoming. Therefore, it remains unclear as to whether the prominence of the barriers as per my respondent group corresponds with existing findings.

My findings suggest that the primary cause of inaction is that adopting sustainable behaviours comes at a cost – both in terms of effort and finances. As per my respondents' feedback that their resources are limited, they have to prioritise what these resources are expended on. Supporting Goto Gray et al.'s (2019) study, respondents appeared to prioritize actions based upon personal importance. This personal importance was affected by exposure to multiple sources of influence affecting their environmental choices, such as conforming with peer groups – evidence that can be likened to that of Kollmuss & Agyeman (2002). It follows then

that if behaving pro-environmentally doesn't rank highly in a millennial's priority set, then it won't receive the effort or expense required to take action.

Furthermore, my findings indicate that there can be a knock-on effect when individuals notice others not acting in a pro-environmental way, and therefore will not feel inclined to modify their own behaviours. I defined this barrier in my Findings chapter as 'frustration with free-riders'. As per Goto Gray et al. (2019), this is concerning as it can lead to an unravelling of societal cooperation that can lead to mass inaction.

Finally, my study expands our knowledge of barriers as they relate to millennials specifically. While parallels can be drawn between barriers that I identified and those that appear in the existing literature, the literature relating specifically to the millennial group has been limited. As a result, little is known about how age or other factors might affect environmental action. For example, while a lack of information and government responsibility are oft cited reasons for not engaging in pro-environmental behaviours, there is no data analysing how this might be influenced by individuals' age and gender. My study contributes to knowledge by showing that change in behaviour in relation to specific environmental issues might be age and gender sensitive.

5.4 Contribution of my study to the literature on environmental communication

Table 5.2 outlines the contributions of my study in addressing the opportunities for further scholarship identified during my review of the literature. While focusing on millennials, my study investigated the underexplored effects of specific environmental messages on awareness and decision making. Its scope went beyond print-based news to research the effect of short 'social media style' videos. It further considered issues that have received less media attention than climate change. Finally, it focused on identifying the drivers and barriers to behaviour change in a global south economy: South Africa. While less surveyed, people in the global south are likely to experience more severely the consequences of environmental issues.

Table 5.2 Contributions of my study to the literature on environmental communication

Current scope of the field	**Opportunities for further scholarship**	**Contribution of my study**
Scholars seem to be focussing on content and representation.	This implies that the other two typical foci of mass communication – message effects and message production (Hansen 2011) – are relatively underexplored.	As a producer of environmental communication, I attempted to research how particular outputs played a role in shaping and influencing the understanding and decision-making potential of South African millennials.
Scholars have been analysing journalism as a main point of interest since the 1970s, with a particular emphasis on print-based news.	This emphasis on journalistic output fails to take the richness of our media environment and the diversity of mediated information producers into account.	My study draws on videos produced for a non-governmental organization disseminated across multiple platforms (cinema, television, online and mobile).
Following the emergence of risk-related studies in the 1980s and environmental messaging in advertising in the 1990s, the main topic of enquiry today is climate change.	Even though climate change is considered to be humanity's most urgent and complex issue, it is not the only issue affecting the public and the environment as there are countless other problems that persist.	I focus specifically on water, food and energy-related issues.
The field focuses on U.S. and European issues.	People in poorer countries suffer unduly from the consequences of environmental degradation and climate change (Baettig, Wild & Imboden 2007). There is an opportunity for	My study explores South African millennials' engagement with water, food and energy-related issues in South Africa.

	the field to speak for those that environmental issues impact the most.	

5.5 Storytelling recommendations for environmental communication practitioners specifically for the South African Millennial context

As per Kadic-Maglajlic et al. (2019:9), "Telling a compelling story is a compelling way to persuade." In this section, I outline five ways in which the impactful tool of storytelling can be applied to environmental communication materials. Practitioners can *use authentic visuals and sounds*, *develop a creative structure*, *humanize their stories* and *use vernacular languages* to persuade South African millennials to, for example, use energy and water wisely, source food sustainably, extend the life of things, choose environmentally-friendly products/ services, travel sustainably, and establish resources in their communities.

Use authentic visuals and sounds

The campaign used in my study took a documentary approach to visuals and sounds, which enabled respondents to accept the pieces as authentic. It may be possible to argue that this approach has the ability to heighten the effects of narrative transportation theory (Gerrig (1993). As per van Laer et al. (2014), the adoption of the intentions and attitudes embedded in a story is an indication that people have been persuaded. My findings show that in the space of 60 seconds the respondents were able to develop an alignment with the activities seen in the documentaries as a result of the authentic imagery that depicted real actions. It therefore follows that this approach can be effective in helping environmental communications practitioners to achieve 'narrative persuasion' (Green & Brock 2000).

Develop a creative structure

Each film in the campaign was structured through the use of a linking device: a rewind effect that connects the start to the end point of the film and therefore reveals the origin of the resource. This linking device proved effective in stimulating thought

in respondents who felt that our society tends to focus solely on the products at the end of a manufacturing line. They inferred a sequence of ideas beyond what was presented on screen through descriptions of products sitting on shelves in the supermarkets. This technique also allowed the message to be transmitted largely non-verbally, which is especially useful when viewing videos on mobile devices (Henseler 2014). This adoption of a creative structure is aligned with Windahl et al.'s (1997) assertion that transmitting information in a graphic and clearly understood manner enables effective communication strategies. I would recommend that environmental communication practitioners find creative, dynamic ways of structuring their storytelling efforts in order to garner attention and provoke contemplation.

Humanize the story

Respondents reacted positively to having the information delivered by people for whom the relevant sustainable behaviours are integral to their lives. Respondents appreciated being exposed to stories that resonated rather than lectured, affirming the position that a human approach can be more effective than a didactic one. This is congruent with Greehalgh (2001)'s assertion that our brains retain fact-based knowledge more effectively when introduced via a coherent narrative. Further to that, a representative story of a single, authentic person is twice as likely to generate action than a statistics-based message (Small et al. 2007), therefore environmental communication practitioners should endeavour to centre their messaging around a strongly representative individual.

Use vernacular languages

When interrogating the success of the campaign, it became clear that it didn't fully realise its desired goals. While there is clear evidence of this campaign stimulating thought and respondents questioning their own sustainable behaviours, there wasn't a marked shift towards action being taken in the short-term. This led me to dig deeper and question why this was the case. One possible explanation is the criticism highlighted earlier in this chapter by Lawhon and Fincham (2006) that environmental communications in South Africa have a tendency to be elitist. Upon reflection, I realize that the campaign may have fallen into the trap of being out of touch with the

broader South African population. Kadic-Maglajlic et al. (2019) stresses the role of engagement amongst millennials in shaping their environmentally-friendly behaviour. For these communications to be engaged with more strongly, perhaps vernacular languages should have been used – as opposed, or in addition, to English. It is therefore recommended that, when campaigns such as these are developed, careful consideration is taken to use the most commonly spoken languages of the intended audience.

Attune the message to the intended audience

As per Windahl et al. (1997) and Selman (2001), needing to understand one's audience is a pre-requisite for creating a communications campaign. Upon reflection, I feel that this advice was not fully taken into consideration when the videos were created. It has become apparent that there are often more urgent needs than the desire to adopt sustainable behaviours for many South Africans (Berger 2002). As outlined earlier in this chapter, simply achieving food security is a priority for roughly 50% of South Africans (South African National Health and Nutrition Examination Survey 2018) so considering the sustainable origins of the food may be a distant concern. Therefore, environmental communication practitioners should pay attention to the most pressing concerns of their target audiences to ensure that the presented information is not out of touch with their realities.

5.6 Recommendations for future research

My research was exploratory in light of South African millennials' engagement with sustainability-related issues, as well as the role of storytelling in environmental communication, being largely underexplored topics. This study may therefore act as the impetus for further scholarship opportunities. I make a recommendation as to how this particular field of research may evolve from a dissemination point of view, as well as highlight four potential focus areas for future research.

"Environmental knowledge achieves robustness through continual interaction – or conversation – between fact-finding and meaning-making"

- Sheila Jasanoff (2010:16)

While it is generally agreed that research on environmental issues should be shared widely, too often this valuable knowledge is locked in academic papers and conferences – or, when it is disseminated, it retains this scientific style without being translated into something more accessible for a general audience. As per Sundin et al. (2018), a growing number of studies are demonstrating narrative's usefulness in developing audiences' abilities to learn, retain knowledge, and take action.

In an effort to combat society's sluggish and insufficient response to scientific evidence with regard to sustainability-related issues, I propose that environmental communication scholars embrace and channel the humanities. As Galafassi et al. (2018:73) states, "artistic practices offer possibilities for revealing limitations of existing knowledge systems and foster experiences that promote novel ways of understanding and responding to climate change, more attentive to our embodied, imaginative and emotional experiences". This presents an opportunity for environmental communication scholars to facilitate cooperation between science and the humanities as two traditionally polarized areas of knowledge production and dissemination. In doing so, this could foster appreciation of, and engagement with, non-scientific ways of interpreting and communicating about sustainability-related issues.

In line with this, I argue that storytelling can be a vital tool for effectively sharing scientific results with target audiences. Context can be provided to the audience through a story or a narrative, making complex scientific data easier to understand and analyse.

I suggest four potential focus areas for future research aimed at improving the effectiveness of storytelling:

Using celebrities vs. unknown people as ambassadors

This campaign used three ambassadors to represent the issues at hand: Zola Nene is a celebrity chef and widely recognized, Ryan Sandes is an elite athlete and known well within a niche sport, and Buhle Sithela is a young, unknown entrepreneur. My research data wasn't extensive enough to show any discernible differences in levels of engagement between the three 'tiers' of recognisability. In line with Johnstone and Lindh's (2018) finding, harnessing a celebrity's audience can assist with the reach of a message. However, it would be useful to study whether the viewer absorbs, retains and acts on the message to a greater or lesser degree. As per Hibberd and Nguyen (2013), the legitimacy of celebrities' involvement in environmental causes is questionable due to perceived lack of expertise and unsustainable lifestyle choices.

Monitoring behaviour over time

The scope of my study entailed the exploration of immediate responses to viewing the campaign. A worthwhile area of research would be to conduct a longitudinal study on millennials' retention and behaviour in response to being exposed to environmental communications over time. In our current environment, millennials receive their information about the world primarily from fast-paced, online sources – especially social media (Atchley 2018). Exposure to so many issues inevitably means that some suffer from being fleeting concerns whereas others engender longer lasting dedication. If an analysis could show what the influential factors were in fostering a deeper level of engagement, this would be beneficial to communications practitioners when considering their campaign strategies.

Ancillary motivations for pro-environmental behaviour amongst millennials

My research showed that although millennials understand the environmental consequences of their actions and have the motivation and social awareness to engage in sustainable behaviours, the process of integrating their beliefs and actions is yet to truly begin. In fact, some respondents reported comparable behaviours for reasons that are unrelated to a concern for the environment, such as personal health. Similarly, a study conducted by Naderi & van Steenburg's (2018) found that some people may

purchase and drive a hybrid car to save money on gasoline, and others may do so in a quest to enhance their social status by showing an interest in environmental conservation. Future research could examine these ancillary motivations for the adoption of pro-environmental behaviours among this specific generation so that communications can be accordingly tailored.

Combating 'green fatigue'

When analysing the data from my respondents, what was concerning was how many people were aware of the importance of the sustainability-related issues at hand yet seemed apathetic to doing much about them. This seems to fall in to a pattern of what some term 'green fatigue': a sense of disillusionment that sets in when the cause is too hopeless, governments are unconcerned, and individuals are too impotent (Smith 2012). As the visibility of issues has increased with little progress shown, there is a danger that disillusionment will lead to disengagement from the issues altogether. Studies that explore the type and frequency of communications that keep audiences engaged, motivated and active could contribute significantly to strengthening the environmental communications field.

5.7 Opportunity for environmental communication scholar and practitioner cooperation

In June 2019, the 15th biennial Conference on Communication and Environment (COCE) was held at the University of British Columbia, Vancouver, Canada. The conference brought together "scholars, practitioners, artists, students and concerned citizens from around the world to share research, good practices, experience, and stories in order to help foster more effective, inspiring, ethical, and hopeful environmental and sustainability communication" (IECA 2019:2). Given the success of this initiative and the mounting need for deepening the impact of environmental communication in South Africa, I recommend the initiation of an Environmental Behaviour Change Communication gathering in South Africa, with a specific focus on South Africans and our unique environmental context.

South Africa definitely has its share of environmental issues and a number of organisations committed to raising awareness thereof. It would also be useful to understand how awareness is converted into measurable changes in behaviour. For example, a global initiative established in Australia in 2007 and locally organised by WWF-SA, *'Earth Hour'* aims to raise awareness for energy conservation. Approximately 100 000 people participate annually (WWF-SA 2019), turning off their lights on the last Saturday night of March. Echoing Tyrell's (2018) query, it would be worthwhile to know what the propagation of this short-term pro-environmental activity into longer-term behaviour change is.

The strategies underpinning successful campaigns go beyond raising awareness and instead consider how to enter the hearts, minds and behaviours of those they want to change (Tyrell 2018). Therefore, it may be an opportune moment for environmental communication scholars and practitioners to convene to explore how to affect long-term pro-environmental behaviour change in South Africa using best-practice storytelling techniques.

I would like to acknowledge that Prof. Heila Lotz-Sisitka of the Department of Education at Rhodes University has been working in the field of environmental communication for many years. She has built a vast network of African practitioners and scholars in the form of the Environmental Education Association of Southern Africa. This body could be instrumental in convening such a discussion of environmental behaviour change communication.

5.8 Conclusion and reflection

In conclusion, my study undertook to show how an increased and integrated use of storytelling may assist environmental communication in fulfilling its purpose. Albeit an underexplored topic in the literature, the engagement of South African millennials with sustainability-related issues provided a rich context for this exploration. There is little doubt that millennials are conscious of the growing environmental concerns that face us. However, the fact that they are largely aware but less likely to take action revealed that there are certain barriers that inhibit them from acting on their

convictions when it comes to saving water, investing in alternative energy sources or sourcing food sustainably.

Regarding the current engagement of South African millennials with sustainability-related issues, I found that there is a disparity between their high levels of awareness, literacy and concern about these issues on the one hand and their limited behavioural response on the other. I suggested twelve key reasons, grouped into internal and external barriers, to explain what might be holding South African millennials back from taking action to address specific sustainability-related issues. I explored the effectiveness of four storytelling elements employed in the creation of a documentary campaign for WWF-SA.

This study presents a snapshot in time. Although the millennial generation is especially motivated, targeted communications to help narrow the gap between their intentions and actions are required. I propose that environmental communication practitioners look to use authentic visuals and sounds, develop a creative structure, humanize their stories and use vernacular languages to persuade South African millennials to actualize the behaviour changes that are so desperately needed.

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Appendices

Appendix A – 'Energy' video final script

Final Script
WWF For Nature. For You.
Buhle Sithela

Link to completed film: https://vimeo.com/272190228

TIME	SCENE DESCRIPTION	AUDIO TRANSCRIPT	VISUALS
0:00-0:10	Buhle sits in the dark, the dancing light from a movie reflected on his face. He is in the front row of a small crowd of people, with out-of-focus rope lights in the background and the beam of a projector over his shoulder.	"I guess I always knew that I was going to be an entrepreneur. Because I'm always full of ideas, I will try to find new ways to survive."	Buhle in med CU in the dark, rope lights / fairy lights in BG, dust in projector beam. Wider shot reveals the crowd around him in the dark watching a movie on an outdoor pop-up screen, lighting provided by the rope lights hung from nearby structures.
0:10-0:20	The footage starts to reverse – Buhle now gets up from his seat and walks back towards the projector.	"So for me, to host the cinemas in the township was the first experience that I got through Sunshine Cinema."	Buhle in med CU, now in reverse: rising from seat, walking backwards towards projector. CU: Beam of projector being switched off. Wide: Crowd getting up from seats and dispersing backwards.
0:20-0:30	Buhle setting up the various elements of his movie screening as we move from evening backwards into day.	"I like to show African films and local films because the kids in my township can relate to these films. I think that creates a great vibe in the community because once they start seeing me carrying out my equipment they know that there's a screening coming out."	Buhle is involved in the various aspects of setting up for his screening – all shown in reverse: • Putting projector in place • Setting up chairs • Pulling down screen • Popcorn popping in the machine • Stringing up the rope lights
0:30-0:40	It's now daytime, and Buhle is unpacking his mobile cinema kit. The footage starts moving forwards again as Buhle unfolds his solar panels and angles them towards the sun.	"For me, I realise when doing this screening we do need an energy; that's why I use solar panels to power up my mobile cinema. By reusing the light from the sun, I am making sure my business has a low carbon footprint."	Buhle in med CU, unpacking the various elements of his mobile cinema kit in reverse. We see him walking backwards through Khayelitsha wheeling his mobile cinema kit. The footage starts rolling forwards: Buhle unfolds his solar panels and angles them towards the sun as the camera tilts up towards the sunshine Low angle wide shot: Buhle with solar panels and the sun flaring behind his head.
0:40-0:50	Split-screen treatment showing Buhle in cinema scene at night, and the sun during the day.	"It's how WWF inspires me. Because when they promote green energy sources, they're doing it to keep the movies playing."	Full screen: a time-lapse of the sun with light clouds moving across the sky. On-screen text, on LHS: FOR NATURE. Half-screen, on RHS: image appears of Buhle at his cinema screening at night, looking directly into the camera, relaxed and content. On-screen text, on RHS: FOR YOU. WWF logo appears on-screen.

Appendix B – 'Food' video final script

Final Script
WWF For Nature. For You.
Zola Nene

Link to completed film: https://vimeo.com/278109393

TIME	SCENE DESCRIPTION	AUDIO TRANSCRIPT	VISUALS
0:00-0:10	Zola is cooking in a kitchen, preparing an amazing-looking fish dish. Various ingredients are scattered around her on the work surface.	"Cooking to me is more than just preparing a meal for somebody. It's more about giving them a gift, personally made by you."	Medium Close Up: Camera is placed inside an oven, in the dark. The oven door opens to reveal Zola's face, bending down and reaching inside. Wide: Zola taking a dish out of the oven and placing it on the counter behind her. Close Up: She reveals a steaming whole baked fish inside, prepared with herbs, slices of lemon, etc. Med: Plating up the fish onto a bed of greens. CU: She puts a ladle into a saucepan, and starts spooning some of the steaming sauce over the fish.
0:10-0:20	The footage starts to reverse – Zola now spoons the sauce back into the pan.	"So, it's really important to know where your ingredients come from."	CU, now in reverse: the sauce flows upwards back into the ladle, and back into the saucepan. We see some of the previous shots, now in reverse: • The fish being prepared • Zola placing the dish back into the oven. • The oven door closing on the camera again.
0:20-0:30	Preparing the food in the kitchen.	"When you use sustainably sourced produce, you're guaranteed a certain quality. You can definitely taste the difference."	Shots in reverse show Zola moving backwards through the steps of preparing the dish: • CU of vegetables being chopped • Fish being dressed with herbs • Ingredients being mixed for the sauce. Zola removes an apron in reverse and walks backwards out of the kitchen with a reusable shopping bag of ingredients.
0:30-0:40	Zola at Kalk Bay Harbour with the local fishing fleet.	"That's why I like to go as close to the source as possible; go directly to the veggie farmer, go directly to the fisherman. It's our responsibility to know exactly where your food comes from."	Zola walking backwards along a dock at Kalk Bay Harbour with her full shopping bag. She chats to a local fisher with the boats behind them bobbing in the harbour. They are talking through the catch of the day, pointing at the fish (all on the SASSI Green List).

0:40-0:50	Split-screen treatment showing clean ocean water, and Zola in the kitchen holding the finished plate of food.	"If you want to ensure that we have great ingredients in the future, we need to make smart choices now about where we get them. So when WWF promotes sustainable farms and fisheries, They're ensuring that there's food on the table that's good for me, and you."	Full screen: slow-motion footage of waves in clean, blue ocean water. On-screen text, on LHS: FOR NATURE. Half-screen, on RHS: image appears of Zola in her kitchen, holding the finished plate of food, looking directly into the camera, relaxed and content. On-screen text, on RHS: FOR YOU.
0:50-0:55	Final logo sequence		On-screen text and WWF logo: "See how every action, big or small, makes a difference on wwf.org.za"

Appendix C – 'Water' video final script

Final Script
WWF For Nature. For You.
Ryan Sandes

Link to completed film: https://vimeo.com/283023777

TIME	SCENE DESCRIPTION	AUDIO TRANSCRIPT	VISUALS
0:00-0:10	Late afternoon: Ryan running through an urban area – he is hot and sweaty, clearly at the end of a long run. Buildings and concrete surround him.	"To be an extreme athlete it takes a lot of focus and dedication, but one thing any athlete can't do without is water."	Close-up: Feet running along concrete towards the camera. Med shot, moving: Ryan running towards the camera. He comes to a stop and pulls out a soft Salomon water bottle.
0:10-0:20	Ryan glugging down water at the end of his run – the scene pauses and starts to rewind.	"Most of us think water just comes out of a tap; you really appreciate it that much more when you follow it back to the source."	Ryan holds his water bottle above his mouth, squeezing out a stream of clear, cold water into it. The water freezes mid-stream, and then starts to flow backwards up into the bottle. Some of the previous shots play in reverse: • Running backwards away from the camera • Feet running backwards on concrete
0:20-0:30	Ryan running backwards along Tafelberg Road, so that we see the transition from urban to natural landscape. The city is in the background as he runs along the side of the mountain.	"The one thing I love about trail running is having that direct connection to nature. I get up close to springs and streams where a lot of our water comes from."	Moving backwards with Ryan along the mountain road, framed centrally with the camera on a gimbal.
0:30-0:40	Running backwards up a trail on the side of Table Mountain. Ryan clambers backwards over some rocks to a stream, where he pulls out his water bottle. He fills his bottle in reverse from the clean, cold water – water flowing upwards through the rocks. Ryan stands under a small waterfall, water splashing over his face as he faces upwards, enjoying it.	"But it also means when we're in a drought or the catchment areas are polluted, I really see first hand the consequences. So it really makes you realise how vulnerable our water is, and just how important it is to use it carefully."	Series of shots showing Ryan's skill on the trail: • Low angle shot showing him flying along a rocky mountain path • Low angle shot between two rocks – Ryan leaping in reverse from one rock to the other • Tracking shots from in front and behind as the path gets steeper up the mountain • Close-up shots of shoes connecting with the ground Wide: Ryan walking backwards over rocks towards the stream CU: filling bottle in reverse from the stream Med: Ryan standing in front of small waterfall.

0:40-0:50	Split-screen effect: Mountain stream pouring down rocks, Ryan drinking water from his bottle in an urban area.	"So when WWF protects our catchments and wetlands, they're making sure the water continues to flow, so that we can keep on going."	Full screen: slow-motion footage of water pouring down the rocks of a mountain stream. On-screen text, on LHS: FOR NATURE. Half-screen, on RHS: image appears of Ryan at the end of his run in an urban area, pouring water out of the bottle into his mouth. On-screen text, on RHS: FOR YOU.
0:50-0:55	Final logo sequence		On-screen text and WWF logo: "See how every action, big or small, makes a difference on wwf.org.za"

Appendix D – Notice of Approval

UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

NOTICE OF APPROVAL

REC Humanities New Application Form

16 April 2018

Project number: 6535

Project Title: Understanding and navigating cognitive dissonance in sustainability oriented change initiatives

Dear Miss Kelly Scott

Your REC Humanities New Application Form submitted on **16 April 2018** was reviewed and approved by the REC: Humanities.

Please note the following for your approved submission:

Ethics approval period:

Protocol approval date (Humanities)	Protocol expiration date (Humanities)
05 April 2018	04 April 2021

Please take note of the General Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

If the researcher deviates in any way from the proposal approved by the REC: Humanities, the researcher must notify the REC of these changes.

Please use your SU project number (6535) on any documents or correspondence with the REC concerning your project.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

FOR CONTINUATION OF PROJECTS AFTER REC APPROVAL PERIOD

Please note that a progress report should be submitted to the Research Ethics Committee: Humanities before the approval period has expired if a continuation of ethics approval is required. The Committee will then consider the continuation of the project for a further year (if necessary)

Included Documents:

Document Type	File Name	Date	Version
Research Protocol/Proposal	KScott_21415080_Research Proposal	22/01/2018	
Informed Consent Form	KS_Interviewee Consent Form Template_FINAL	16/03/2018	
Data collection tool	KS_Interview Questions_v2	16/03/2018	
Request for permission	KS_Gatekeeper Consent Form_Signed	12/04/2018	
Default	Response to REC Stipulations	12/04/2018	

If you have any questions or need further help, please contact the REC office at cgraham@sun.ac.za.

Sincerely,

Clarissa Graham

REC Coordinator: Research Ethics Committee: Human Research (Humanities)

National Health Research Ethics Committee (NHREC) registration number: REC-050411-032.
The Research Ethics Committee: Humanities complies with the SA National Health Act No.61 2003 as it pertains to health research. In addition, this committee abides by the ethical norms and principles for research established by the Declaration of Helsinki (2013) and the Department of Health Guidelines for Ethical Research: Principles Structures and Processes (2nd Ed.) 2015. Annually a number of projects may be selected randomly for an external audit.

Investigator Responsibilities

Protection of Human Research Participants

Some of the general responsibilities investigators have when conducting research involving human participants are listed below:

1.Conducting the Research. You are responsible for making sure that the research is conducted according to the REC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research. You must also ensure that the research is conducted within the standards of your field of research.

2.Participant Enrollment. You may not recruit or enroll participants prior to the REC approval date or after the expiration date of REC approval. All recruitment materials for any form of media must be approved by the REC prior to their use.

3.Informed Consent. You are responsible for obtaining and documenting effective informed consent using **only** the REC-approved consent documents/process, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least five (5) years.

4.Continuing Review. The REC must review and approve all REC-approved research proposals at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period.** Prior to the date on which the REC approval of the research expires, **it is your responsibility to submit the progress report in a timely fashion to ensure a lapse in REC approval does not occur.** If REC approval of your research lapses, you must stop new participant enrollment, and contact the REC office immediately.

5.Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the REC for review using the current Amendment Form. You **may not initiate** any amendments or changes to your research without first obtaining written REC review and approval. The **only exception** is when it is necessary to eliminate apparent immediate hazards to participants and the REC should be immediately informed of this necessity.

6.Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research related injuries, occurring at this institution or at other performance sites must be reported to Malene Fouche within **five (5) days** of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the RECs requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch University Research Ethics Committee Standard Operating Procedures. All reportable events should be submitted to the REC using the Serious Adverse Event Report Form.

7.Research Record Keeping. You must keep the following research related records, at a minimum, in a secure location for a minimum of five years: the REC approved research proposal and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the REC

8.Provision of Counselling or emergency support. When a dedicated counsellor or psychologist provides support to a participant without prior REC review and approval, to the extent permitted by law, such activities will not be recognised as research nor the data used in support of research. Such cases should be indicated in the progress report or final report.

9.Final reports. When you have completed (no further participant enrollment, interactions or interventions) or stopped work on your research, you must submit a Final Report to the REC.

10.On-Site Evaluations, Inspections, or Audits. If you are notified that your research will be reviewed or audited by the sponsor or any other external agency or any internal group, you must inform the REC immediately of the impending audit/evaluation.

Appendix E – Consent Form

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jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH

Dear (enter name of interviewee),

My name is Kelly Scott and I am currently studying towards an MPhil in Sustainable Development. I would like to invite you to participate in a research project entitled *Exploring the role of storytelling in environmental communication: A study of a documentary campaign aimed at South African millennials.*

Please take some time to read the information presented here, which will explain the details of this project and contact me if you require further explanation or clarification of any aspect of the study. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

Through this study, I intend to explore how storytelling can optimise environmental communications to reach a millennial audience in order to drive behaviour change through the study of a documentary campaign targeting South African millennials. To this end, I would appreciate the opportunity to conduct an interview with you regarding your involvment in (enter project title). The interview will take (enter amount of time). We don't anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time.

Please note:

- The interview will be recorded and a transcript will be produced.
- The actual recording will be securely stored.
- There is no payment for participation in this study.
- All or part of your interview may be used for my academic paper. Furthermore, your words may be quoted directly. With regards to being quoted, please initial next to any of the following statements that you agree with:

	I wish to review the notes, transcripts, or other data collected during the research pertaining to my participation.
	I agree to be quoted directly.
	I agree to be quoted directly if my name is not published and a made-up name (pseudonym) is used.
	I agree that the researchers may publish documents that contain quotations by me.

If you have any questions or concerns about the research, please feel free to contact:

Kelly Scott
084 800 3288
misskellyscott@gmail.com

Jess Schulschenk (Supervisor)
076 173 1632
jess@sustainabilityinstitute.net

RIGHTS OF RESEARCH PARTICIPANTS: You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development. You have right to receive a copy of the Information and Consent form.

If you are willing to participate in this study please sign the attached Declaration of Consent and hand it back to me.

RIGHTS OF RESEARCH PARTICIPANTS: You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development. You have right to receive a copy of the Information and Consent form.

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