

THE VISUAL COMMUNICATION OF ENVIRONMENTAL AWARENESS
ISSUES IN JEFF ORLOWSKI'S, *CHASING ICE* (2012) AND
YANN ARTHUS-BERTRAND'S, *HOME* (2009)

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THE VISUAL COMMUNICATION OF ENVIRONMENTAL AWARENESS ISSUES IN
JEFF ORLOWSKI'S, *CHASING ICE* (2012) AND YANN ARTHUS-BERTRAND'S,
HOME (2009)

BY

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DECLARATION

I, Nadia Elize van der Walt 211105023, hereby declare that the dissertation for the degree, *Magister Technologiae* in Photography, is my own work, except where otherwise stated, and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another University or for another qualification.

Sources are acknowledged by giving explicit references. A reference list is appended.



Nadia van der Walt

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ABSTRACT

This study presents an investigation into the visual communication complexities within the genre of documentary film, specifically aimed at the development of a set of criteria of cinematic techniques for the visual communication of environmental awareness issues. This process utilises a theoretical approach to understanding the development and communicative possibilities of documentary film, as well as an analytical interpretation structured on semiotic film theory. The theoretical investigation reveals Bill Nichols' (2010) documentary modes as an established analytical model. This study engages with four of Nichols' six modes – namely, the poetic, the expository, the observational and the participatory modes, as the criteria for the extraction of scenes and/or images from *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand. Once Nichols' modes have been identified, a semiotic reading is conducted. Gillian Rose's (2016) visual analysis framework underpinned by Pieter J. Fourie's (1988) semiological approach to film analysis, is utilised to read the selected film texts. A comparative analysis of *Chasing Ice* (2012) and *Home* (2009) reveals that the inclusion of different and multiple modes constructs the visualisation of environmental awareness issues in the documentary film genre. The cinematic techniques specific to the documentary modes represented in *Chasing Ice* (2012) and *Home* (2009) are appropriated in the construction of three *film shorts* within the researcher's documentary film study, *Karoo* (2017). This combination of theory and practice yields the researcher a considered and informed approach to constructing documentary imagery aimed at visualising the current environment of the Karoo Basin prior to the possibility of shale gas exploration and/or exploitation.

Keywords: Cinematic techniques, *Chasing Ice* (2012), *Home* (2009), Bill Nichols, Nichols' documentary modes, semiotics, documentary film, environmental documentary film, environmental awareness, visual communication

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LIST OF ABBREVIATIONS

AEON-ESSRI	Africa Earth Observatory Network – Earth Stewardship Science Research Institute
EIS	Extreme Ice Survey
GPO	General Post Office
GM	General Motors
UAV	Unmanned Aerial Vehicle

LIST OF DEFINITIONS

Aerial shot – “A shot from above, usually made from a plane, helicopter, or crane” (Cook, 2004:929a).

Environmental awareness – “Knowing of the impact of human behaviour on the environment” (Kollmuss & Agyeman, 2002:253).

Film – “I have followed convention and termed a work in either medium ‘a film’. The expression, still widely used even for work entirely produced in video, suggests we wish to separate the traditional article from the more ephemeral music and experimental video products” (Rabiger, 1992:3).

Frame – “The smallest compositional unit of film structure, the frame is the individual photographic image both in projection and on the film strip. The term also designates the boundaries of the image as an anchor for composition” (Cook, 2004:934a).

Genre – “A category used to classify a film in terms of certain general patterns of form and content, such as the Western, the horror film, or the gangster film” (Cook, 2004:934b).

Mise-en-scène – “A term that describes the action, lighting, décor, and other elements within the shot itself, as opposed to the effects created by cutting” (Cook, 2004:936a).

Montage – “Its simplest meaning is ‘cutting.’ Sergei Eisenstein, however, developed an elaborate theory of montage based on the idea that contiguous shots relate to each other in a way that generates concepts not materially present in the content of the shots themselves” (Cook, 2004:936b).

Narrative film – “A film whose structure follows a story line of some sort. The mainstream of film history from the medium’s birth through the present has been narrative” (Cook, 2004:936b).

Scene – “A vague term that describes a unit of narration. In film, it may consist of a series of shots or of a single sequence that was shot in one location” (Cook, 2004:939a).

Sequence – “A unit of film structure made up of one or more scenes or shots that combine to form a larger unit” (Cook, 2004:939b).

Shot – “A continuously exposed, unedited piece of film of any length: the basic signifying unit of film structure” (Cook, 2004:939b).

Social Actors – “Social actors present themselves as they are, not as a director conceives a role” (Nichols, 2010:46).

Still – “A photograph that re-creates a scene from a film for publicity purposes, or a single-frame enlargement from a film that looks like a photograph” (Cook, 2004:940a).

Synchronous sound – “Sound whose source is made clear by the image track” (Cook, 2004:940b).

Voice over – “A voice track laid over the other tracks in a film’s sound mix to comment upon to narrate the action on screen” (Cook, 2004:941b).

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND AND CONTEXTUALISATION

The impact of documentary film on society can be traced back to the invention of modern cinema in the early 1900s. With the advent of motion pictures, a group of filmmakers realised the importance of film as a method for storytelling and its fundamental capability to impact on society (Little, 2007:1). Film is unique in its ability to introduce the viewer to new destinations, to fire the imagination, to awaken the senses, to question beliefs, to educate and to entertain for long stretches of time (Gregg, 2011:37). Film produces meaning, informs about cultural protocols and civic matters, thereby becoming a vital cultural reference point in the present day public arena (ibid.).

The environmental documentary film can play a vital part in the promotion of environmental awareness. Increasingly, documentary film mirrors and encourages environmental debate, making it an important medium for the public's understanding of environmental crises and solutions (Gregg, 2011:37). The environmental documentary film is a method of bringing real-life issues to the public's attention, and it places responsibility on the filmmaker to portray all truths and facts realistically. It has become a significant source of reference for research scholars in communication and media, sociology and pedagogy spheres (ibid.).

According to Ben Lamar (2013:4), a Master of Science student at the University of Otago in Dunedin, New Zealand, there are a variety of ways in which a viewer emotionally reacts to what is portrayed in a film. This may be concerning the musical score, the emotional state of characters in the film, among others. Lamar (2013:5) states that the images used in film have the greatest effect. Relating to the way that viewers respond emotionally to the visuals, Lamar (ibid.) suggests that striking landscapes and the death of an important character are similarly strong as images within a film. According to Bo Bergström (2009:30), author of *Essentials of Visual Communication*, "the basis of all visual communication is that someone has something to say". By using emotional imagery, Lamar (2013:5) suggests that the viewer can be aided to experience a different viewpoint concerning the subject matter. In *Introduction to Documentary*, Bill Nichols (2001:57), film theorist and pioneer of the contemporary study of documentary film, writes: "much of the power of documentary ... [is] in its ability to couple evidence and emotion in the selection and arrangement of its sounds and images".

The visual communication intention of documentary film is not always understood by the viewer, therefore the rate at which documentary films are gaining popularity and reaching extensive audiences warrants the necessity to study the complexities of documentary visual communication (Rosteck & Frentz, 2009 cited in Gregg, 2011:38).

Two environmental documentary films namely, *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand¹ will be analysed to look for differing approaches to visualising environmental awareness issues. This study will not deal with the films' attempts at activism, but will purely focus on analysing their visual representations of environmental awareness issues.

Chasing Ice (2012) follows the work of environmental photographer, James Balog as he strives to record the natural environment of Earth's coldest parts before the glaciers disappear completely due to global warming. This film can be classified as an environmental documentary film due to the fact that Balog's main aim is to inform the public about the Earth's changing climate in order to create change. The use of aesthetically inspiring video recordings of the environment forces the viewer to come face-to-face with the natural habitat that will be lost due to global warming.

Home (2009) is a film that deals with the diversity of life on Earth and how humanity is threatening the natural stability of the planet. The use of gripping images accompanied by disturbing statistics concerning climate change, forces the viewer to address the lack of sustainable behaviour on Earth. By ending the film with instructions on sustainable practices, Arthus-Bertrand educates the viewer to make informed decisions and positions *Home* (2009) as an environmental documentary film.

According to Nichols (2001:99) six modes, or sub-genres, of the documentary film genre itself, can be classified. In *Introduction to Documentary*, Nichols (ibid.) writes that these documentary modes include the poetic, the expository, the observational, the participatory, the reflexive and the performative modes. The modes can overlap and qualities of more than one may be found in a single film (ibid.).

Nichols' (2010) above-mentioned techniques to classify the "sub-genres" of documentary film will be applied to the classification of three *film shorts*² within the documentary video,

¹ From here on referred to as *Chasing Ice* (2012) and *Home* (2009).

² For the purposes of this study, the researcher will focus on three micro themes within the documentary video, *Karoo* (2017). In this dissertation, *film shorts*, or simply *shorts*, refer to short video sections that deal with a specific subject matter within the overall documentary video. Each *short* comprises of shots and/or scenes that aid in the construction of the narrative.

Karoo (2017), to be produced as the practical component of this research project. Classifying the modes will unveil knowledge about the film structure and the director's vision in documentaries, which will aid in the production of *Karoo* (2017). Nichols examines genres, structures and aesthetics when classifying a documentary. Therefore, the documentary modes represented in a documentary film provide future documentarians with knowledge about approaches and techniques available to achieve specific filmic objectives.

Gillian Rose (2016:23) author of the book, *Visual Methodologies: An Introduction to the Interpretation of Visual Materials*, states that meaning through visual imagery is a complex study and therefore, "a critical approach to visual images is...needed". Rose's (2016:24) framework for the interpretation of visual imagery classifies four sites where the meaning of an image is created – namely, the site of *production*, the site of the *image* itself, the site of *circulation* and the site of *audiencing*³. Furthermore, Rose (2016:25-26) suggests that three modalities can be found at each site – namely the *technological*, the *compositional* and the *social* modalities. By utilising this methodology, specific sites and their modalities will be used to position a semiotic reading of the visual communication of imagery in a film.

For the purposes of this study, selected shots and scenes in *Chasing Ice* (2012) and *Home* (2009) will be extracted and positioned according to Bill Nichols' (2010) documentary modes, and interpreted with the application of a basic semiotic analysis situated at Gillian Rose's (2016) *compositional* modality under the site of *production* of the image and the site of the *image* itself. This will inform the cinematic techniques utilised in the films for the visualisation of environmental awareness issues.

By increasingly focusing on environmental issues, documentary film has become an important part of society's understanding of environmental concerns and solutions (Gregg, 2011:38). Documentary films have the ability to mirror and strengthen environmental debate (Rosteck & Frentz, 2009 cited in Gregg, 2011:38), break down societal beliefs (Lindenfeld, 2010 cited in Gregg, 2011:38) and generate different ideas concerning the sustainability of the environment (Monani, 2008 cited in Gregg, 2011:38).

³ For the purposes of the study, two of the sites – namely, the site of the *production* of an image and the site of the *image* itself, and the three modalities within each site (i.e. technological, compositional and social), will be applied as part of the methodology aimed at the visual analysis of *Chasing Ice* (2012) and *Home* (2009).

1.2 THE AIMS AND THE OBJECTIVES OF THE STUDY

This study aims to develop a set of criteria of cinematic techniques for the visual communication of environmental awareness through documentary film. The environmental documentary films, *Chasing Ice* (2012) and *Home* (2009) will be visually analysed with the use of Bill Nichols' (2010) modes. A semiotic interpretation thereof will be situated with the use of Gillian Rose's (2016) *compositional* modality under the site of *production* and the site of the *image* itself in order to understand and develop a framework to be applied to the production of *Karoo* (2017)⁴.

The following objectives have been formulated in support of this aim:

- To define what environmental documentary film is and how such films have previously visually communicated environmental awareness.
- To examine how environmental awareness issues are visually communicated in *Chasing Ice* (2012) by studying the documentary modes represented in the film and the semiotic interpretation thereof.
- To investigate how environmental awareness issues are visually communicated in *Home* (2009) by studying the documentary modes represented in the film and the semiotic interpretation thereof.
- To apply the visual analysis of *Chasing Ice* (2012) and *Home* (2009) in the construction of selected shots and/or scenes in three *shorts* within the documentary video, *Karoo* (2017).

1.3 THE AIM OF THE PRACTICAL COMPONENT

The Africa Earth Observatory Network and the Earth Stewardship Science Research Institute (AEON-ESSRI) of the Nelson Mandela University in Port Elizabeth, South Africa, have conducted a transdisciplinary research study in order to determine by scientific means a basic framework that will serve as a baseline model prior to possible shale gas exploration via hydraulic fracturing methods, in the Karoo Basin.

⁴ Due to the scale of the baseline project undertaken by the AEON group, only three micro themes within the overall programme will be addressed – namely *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*. These will form the three *film shorts* as outlined for the practical component of this study.

Hydraulic fracturing⁵, also known as “fracking”, refers to the process of shale gas extraction, and as stated by authors Jan Glazewski and Surina Esterhuysen (2016:2), it is a controversial topic as it “has triggered a variety of environmental, scientific, technical and social opinions and concerns”. It is a process used to access new or existing cracks in underground rock structures to retrieve the highly sought-after commodities, gas and oil (Donaldson *et al*, 2013:1). These cracks in the rocks act as channels for the gas and oil to flow into the well for production. Horizontal drilling and fracking, as depicted in Figure 1.1, produces considerably more gas than vertical shale wells as the wells, have a much greater contact area with the shale rock (Soeder, 2017:38).

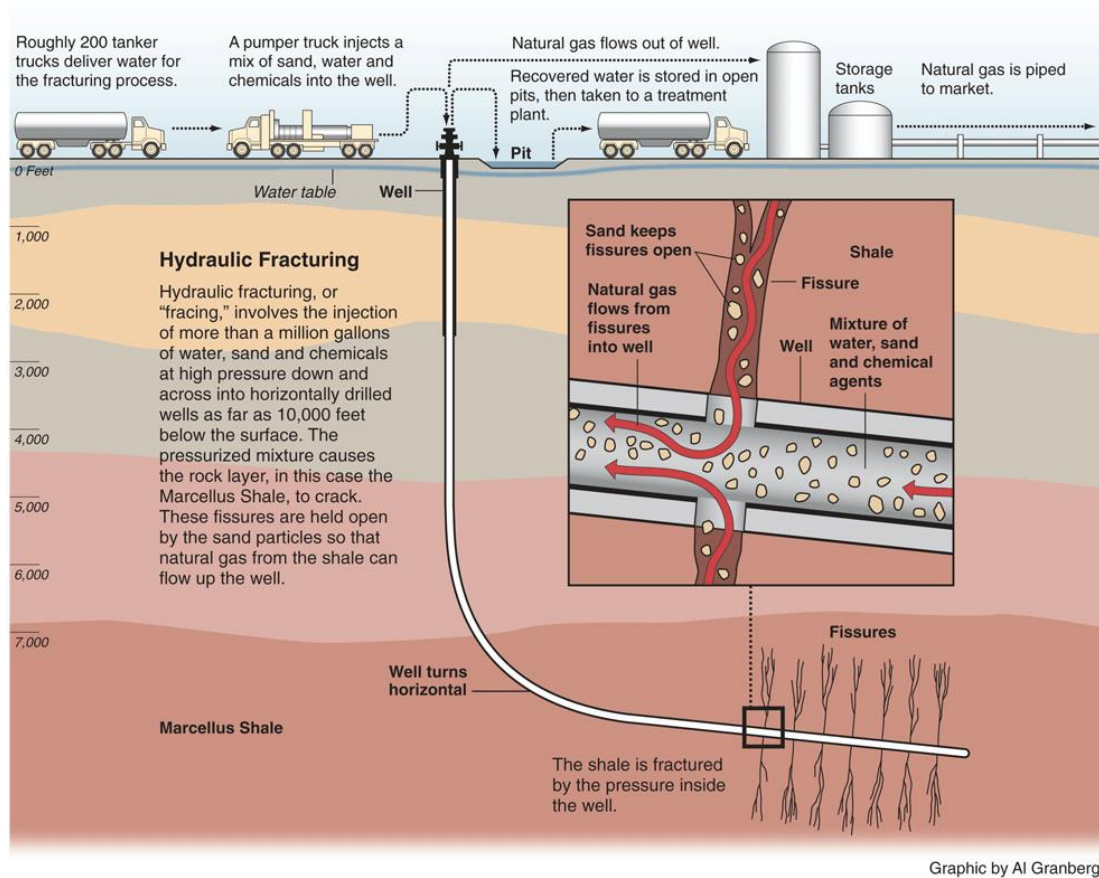


Figure 1.1: *Horizontal Drilling and Hydraulic Fracturing* (Schmidt, 2008)

The establishment of a baseline framework across the Karoo Basin will be of importance where legal action could occur regarding ecosystems deemed to be destroyed or groundwater contaminated. With a thorough knowledge of the geology, hydrogeology and

⁵ This study does not deal with the science behind hydraulic fracturing, it focuses on the techniques for the effective visual communication of environmental awareness issues.

ecosystems, possible contamination or damage as a result of hydraulic fracturing can be scientifically tested and “proven beyond reasonable doubt” (AEON, 2017).

Professor Maarten de Wit, from the Nelson Mandela University’s Geology department, required a video to be produced documenting the Karoo Shale Gas Baseline Research Programme currently being undertaken by the AEON-ESSRI. The following projects are included in the programme: (1) Groundwater Monitoring and Analyses, (2) Micro Earthquake Detection and Deep Imaging of the Karoo, (3) Gas Flow Detection, (4) Surface and Critical Zone changes, and (5) Socio-Economic and Risk Analysis (Morkel, 2015). The projects focus primarily on the generation of a scientific knowledge baseline across the Karoo Basin in the Eastern Cape region of Southern Africa. The researcher has been working as videographer with the AEON group for the past three years, documenting the projects within the baseline study⁶.

For the practical component of this study, the information gathered from the analysis of *Chasing Ice* (2012) and *Home* (2009) will inform the construction of shots and/or scenes for *Karoo* (2017). However, due to the scale of the baseline project undertaken by the AEON group, only three micro themes within the overall programme will be addressed in this dissertation – namely *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*.

1.4 THE SIGNIFICANCE OF THE STUDY

The significance of engaging with literature concerning the visual communication of environmental awareness issues in documentary film will allow for the understanding of cinematic techniques specific to imagery in film. It will also enable the researcher to understand the creation of environmental awareness through visual communication in documentary film. The significance of this imagery as a visual record for future warnings concerning environmental sustainability can be established by examining how people use imagery to create environmental awareness.

This study will engage with the documentary films, *Chasing Ice* (2012) and *Home* (2009) as visual representations of environmental awareness issues and analyse and interpret the cinematic techniques within selected shots and/or scenes in the films. The outcome of the visual analysis of *Chasing Ice* (2012) and *Home* (2009) will act as the basis on which shots

⁶ The researcher has been granted ethics clearance by the Research Ethics Committee: Human (REC-H) of the Nelson Mandela University. The ethics clearance covers the filming of Nelson Mandela University students and consent from the landowners filmed. The ethics clearance reference number is H16-ART-AD-001 (see Addendum A).

and/or scenes for three *shorts* within *Karoo* (2017) will be created and reflected on as environmentally aware imagery.

1.5 METHODOLOGICAL APPROACH AND CHAPTER DIVISION

Using qualitative frame analysis, two environmental documentary films' visual communication techniques concerning the environment will be analysed in terms of their approaches, representation of human participants as well as visual compositions. The study will consider the similarities and differences in the visual codes and conventions used to portray the environment in the two documentary films, namely *Chasing Ice* (2012) and *Home* (2009).

The methodology of this study focuses primarily on literature reviews where information is collected and methodologies from several literature sources are analysed and applied to develop a set of criteria of cinematic techniques for the visual communication of environmental awareness. According to Bill Nichols (2010), there are six documentary modes that can be used to classify documentary film, the use of which allows the researcher to discover "the filmmakers' distinctive voice as well as a film's overall framework" (Natusch & Hawkins, 2014:2). Nichols's model will be used to analyse the films at micro level and in addition examine the separate scenes in detail. As Barry Natusch and Beryl Hawkins (2014:3), authors of the journal article *Mapping Nichols' Modes in Documentary Film: Ai Weiwei: Never Sorry and Helvetica*, state: "the concepts that emerge from each image or scene invariably enable the researcher to gain a more comprehensive understanding of [a] film".

Additionally, Gillian Rose's (2016) methodology will be applied to the analysis of *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand in order to develop a set of codes and conventions for the creation of the environmental documentary, *Karoo* (2017)⁷. For the purposes of this study, only two of the three sites from Rose's (2016) methodology will be used to analyse the above mentioned environmental documentary films namely, the site of *production* and the site of the *image* itself. According to Rose (2001:257), "how an image is made, what the image looks like and how it is seen are the three crucial ways in which a visual image [or visual object] has cultural and other effects". Specifically, the *compositional* modality will be analysed within each site. The "compositional concerns the

⁷ As stated, due to the scale of the baseline project undertaken by the AEON group, only three micro themes within the overall programme will be addressed in this study – namely *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*.

visual construction, qualities and reception of an image” (Rose, 2001: 258). As stated, for the purposes of this study, audience analysis will not be included. Focus will be placed on the reading of the image and the techniques used to create the image. By utilising these specific areas of Rose’s (2016) methodology, the visual communication techniques of specific scenes or images in *Chasing Ice* (2012) and *Home* (2009) can be determined. This, in turn, will be used in the production of three shorts within the documentary video, *Karoo* (2017).

Chapter One introduces the study by discussing the background to the study, the aims and objectives and the methodological approach of the study.

Chapter Two establishes what environmental documentary film is and how such films have previously visually communicated environmental awareness in order to formulate a point of departure for the discussion of the rhetorical objectives necessary for the visual communication of environmental awareness issues in documentary film.

Chapter Three introduces and outlines Bill Nichols’s (2010) mode taxonomy and Gillian Rose’s (2016) sites and modalities as a method of reading documentary film to analyse and compare how Nichols’ documentary modes are representative as a means of visually communicating environmental awareness issues in *Chasing Ice* (2012) and *Home* (2009).

Chapter Four aims to inform the cinematic techniques necessary for the visual communication of environmental awareness issues by extracting shots and/or scenes from *Chasing Ice* (2012) and *Home* (2009) using Bill Nichols’s mode taxonomy and discussing them according to a basic semiotic reading.

Chapter Five synthesises the information in the previous chapter concerning the cinematic techniques for visualising environmental awareness issues in *Chasing Ice* (2012) and *Home* (2009). Furthermore, the shots and scenes in the three *shorts* within *Karoo* (2017) are analysed and discussed according to their construction.

In conclusion, the preceding chapters are summarised, the contribution of the study is reflected on and any suggestions for further research are stated.

CHAPTER 2

CONTEXTUALISATION OF DOCUMENTARY FILM

2.1 INTRODUCTION

This chapter establishes what environmental documentary film is and how such films have previously visually communicated environmental awareness. The discussion on the evolution of documentary film enables the development of different documentary modes, as outlined by Bill Nichols (2010) as a method of characterisation, to be delineated. This will be done in order to formulate a point of departure for the discussion of the rhetorical objectives evident in the visual communication of environmental awareness issues in *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand. The rhetorical objectives for the documentary modes represented in these films will be positioned with the use of Gillian Rose's (2016) selected sites and modalities, which will form the visual analysis framework.

2.2 THE DEVELOPMENT OF DOCUMENTARY FILM

The documentary genre is known for staying clear of adopting a set list of methods or procedures. Documentaries deal with a variety of subject matters in different and innovative ways. The field of documentary film is an ever-changing practice. Constantly filmmakers strive for innovative and unconventional cinematic methods that are then either "adopted or abandoned" (Nichols, 2010:15).

In order to understand the development of documentaries, no matter how realistic or truthful they may be, the history of documentary film and the process of change in the genre must be researched and discussed. By doing so, "generally exemplary qualities or features" can be deduced whilst recognising that not every documentary requires all of them to be labelled as such (ibid.).

2.2.1 *The Birth of Cinema*

In 1872 Leland Stanford (1824 – 1893), an American tycoon, hired English photographer Eadweard Muybridge (1830 – 1904) to produce evidence that racehorses lift all four hooves off the ground at a point in their gallop. In 1877 Muybridge proved this with the use of "twelve electrically operated cameras" (Cook, 2004:3b). Twelve wires were stretched across a racetrack which would trip each shutter of the cameras as the racehorse galloped down the track. This allowed the cameras to photograph the motion of the gallop in continuous

succession and Muybridge was able to prove that a horse did in fact lift all four hooves off the ground at a point in their gallop (Cook, 2004:4a).

In 1879 Muybridge invented the zoopraxiscope, a device that projected images along a circular, rotating disk to display the results of his experiment (ibid.). Muybridge was the first person in history to capture live action by projecting a series of images to create a mimic of the action in motion. He is, however, not regarded as “the man who invented moving pictures” nor the man who started what is known as “cinema” today, since the images were not captured on a single apparatus (ibid.).

Étienne-Jules Marey (1830 – 1904), a French physiologist, was the first to record a sequence of photographs capturing motion on a single device. In 1882, Marey had developed what is known as a “Chronophotographic gun” and used this device to photograph the live action of birds in flight. This rifle-like camera could capture and imprint twelve consecutive images per second on a circular, glass plate (ibid.). Similar to that of most “cinema” contemporaries, Marey’s camera - a portable version of Muybridge’s device, was not intended for cinematography purposes (Cook, 2004:4b). Marey invented this camera purely to record and later dissect live action in nature for his studies (Cook, 2004:4a).

In 1889 American inventor, Thomas Alva Edison (1847 – 1931), appointed William Kennedy Laurie Dickson (1860 – 1935), one of his assistants, to manufacture a motion-picture camera that would visually accompany Edison’s renowned “phonograph” (Cook, 2004:5a). Dickson and his team managed to develop a camera capable of recording intermittent film movement, the kinetograph, recognised as the “first true motion-picture camera” (ibid.). Motion pictures captured by the kinetograph could be observed through a peephole lens at the top of a boxlike projection machine known as the Kinetoscope (Cook, 2004:6b).

David Cook (2004:5b), author of the book, *A History of Narrative Film*, states: “Cinema was born as an independent medium only after the cinema machines had been evolved for other purposes”. The kinetograph was not invented for its own sake, but as a visual addition to the sound device known as the “phonograph” (ibid.). This proves that the creation and development of machines headed the notion of cinema as a documentary and/or narrative outlet. According to Cook (ibid.), this interdependence between cinema and technology has been consistent throughout the birth of cinema. This is due to the fact that film is fundamentally a system dependable on technological advances. Cook (ibid.) describes this relationship: “...technological innovation precedes the aesthetic impulse (i.e., no artist can

express him- or herself in cinema in ways which would exceed the technological capabilities of the machines)".

In 1895 the most substantial growth in the technical capabilities of projection took place when the French brothers, Auguste Lumière (1862 – 1954) and Louis Lumière (1864 – 1948), revolutionised photography and film by perfecting a device capable of serving as a camera, a projector, and a film printer (Marfo, 2007:3; Rabiger, 2015:37). The machine was created after the Lumière brothers studied the intricate workings of the kinetograph (Cook, 2004:10b). The machine was dubbed the cinématographe (see Figure 2.1), "thus coining the term that attaches to the medium to this day" (ibid.).

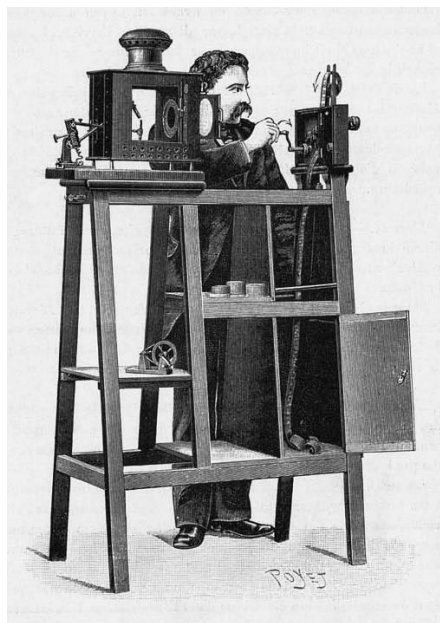


Figure 2.1: *The Lumière Cinématographe in operation, c. 1895* (Cook, 2004:1.13)

The Lumière brothers created short, unedited clips of life around them with their early motion-picture camera (Marfo, 2007:3). Every narrative was based on real or staged events that lasted the span of the film because the Lumières had no notion of the use of camera movements and/or cuts (Rabiger, 2015:37). Since the cinématographe weighed less than the kinetograph, it could be transported and used outdoors with less difficulty. Cook (2004:11a) states that "for this reason the early Lumière films have a much higher documentary content than do Edison's (the Lumières called their films "actualités", or documentary views)". The most famous of their clips includes a train pulling into a station (*L'arrivée d'un train en gare de La Ciotat*, 1895). Their short films included everyday people without featuring any professional actors (Marfo, 2007:3). These moving images astounded viewers, and influenced people in society to aspire to become filmmakers (ibid.). What made the cinématographe so remarkable was that it had perfected the two machines needed for

the birth of cinema and this in turn signified the end of an era of technological observation and exploration which was started by Eadweard Muybridge in 1872 (Cook, 2004:11a).

The earliest viewers of motion pictures perceived the clips as a sequence of intermittent, still photographs of movement which creates the illusion of an “animated photograph” (Cook, 2004:13a). As Michael Rabiger (2015:37), documentary film director and author of the book *Directing the Documentary*, states concerning the Lumière brothers: “By mounting the camera on a tripod and letting the action pass in and out of the frame, their filming technique came direct from still photography”. This is in comparison to how it is regarded today as a series of images that flow uninterruptedly to tell a story. This change in the perception of motion pictures from “animated photographs” to “continuous narratives” occurred around the transition from the 19th century to the 20th century (Cook, 2004:13a).

By the year 1896, the fundamental technical elements for the recording and projection of motion pictures was in place and the basic filming machines were in existence (ibid.). Early film visionaries grasped the technical elements of the machines but lacked the knowledge of how to use them. There was no real insight into the use of the camera as a mode of storytelling. The conventional cinema trend of the 19th century was similar to that of the documentary recordings by Edison and the Lumière brothers where they simply recorded real or staged events occurring in front of the camera as opposed to creating a narrative reality. Therefore, only by the turn of the century “the history of cinema as an art form” began (ibid.).

2.2.2 *Documentary Film*

The term, *documentary*, has been described as “a fuzzy concept” that has been defined in many ways (Brun, 2016:8; Nichols, 2010:14). Michael Rabiger (2015:19) maintains that the documentary form is forever growing and developing. Additionally, Rabiger (ibid.) believes that the documentary approach will always involve “real people doing real things in their real lives”.

Bill Nichols (2010:1) and American filmmaker, Willard Van Dyke (1950:123), both agree that the term *documentary* refers to a film that strives to alter perceptions. Nichols (2010:1) states: “these films challenge assumptions and alter perceptions”.

Rabiger (1992:5) concurs that there have been many different definitions for documentary film throughout the years and defines documentary film as follows:

A documentary film can be either a controlled and premeditated essay or something lyrical and impressionistic. It can articulate its meaning primarily through words,

images, or human behaviour. There seem almost no limits to its possibilities, but at its best, the documentary film reflects a fascination with, and a profound respect for, *actuality*. It is the very opposite of escapist entertainment, being committed to the richness and ambiguity of life as it really is.

Rabiger (*ibid.*) continues by stating: “What distinguishes the modern documentary is that it shows events and authorial reactions *as they happen* so there is the same feeling of spontaneity and adaption that we experience in the heightened moments of our lives”.

Patricia Aufderheide (2007 cited in Rabiger, 2015:10), author of the book, *Documentary Film: A Very Short Introduction*, believes that documentary film concerns aspects of real-life as it can be used as a medium to communicate truths. Aufderheide (*ibid.*) writes, “Documentary is an important reality shaping communication because of its claims to truth. Documentaries are always grounded in real-life, and make a claim to tell us something worth knowing about it”.

The expanding and changing of the documentary genre, according to Nichols (2001 cited in Sapino, 2011:3), makes it “impossible to formulate a definitive set of constraints that a movie has to fit in in order to belong to the genre”. Although the term *documentary* was directed at the filmmaking started by the Lumière brothers with the recording of scenes of everyday life, the genre was still seen as “a practice without boundaries” or as Nichols (2010:14) stated, “a fuzzy concept” (Sapino, 2011:3). The overall concept of the documentary genre develops and fluctuates in time and place in response to the current philosophies of filmmakers and institutions with regards to the works to be produced (*ibid.*).

Therefore, different definitions of the genre, as Roberta Sapino (2011:3), author of the seminar paper *What is a Documentary Film: Discussion of the Genre*, states: “should not be considered as prescriptive rules, but as different poles of attraction in an ongoing dialectic, whose complexity constitutes the richness of documentary as a genre”.

Three common assumptions about documentaries contribute to the discussion aimed at increasing the understanding of documentary filmmaking (Nichols, 2010:7). These include: (1) *documentaries are about reality; they are about something that actually happened*, (2) *documentaries are about real people*, and (3) *documentaries tell stories about what happens in the real world*. Nichols (2010:14) believes that by modifying the definitions for the three common characteristics of a documentary, the following more accurate, overall classification can be formulated:

Documentary film speaks about situations and events involving real people (social actors) who present themselves to us as themselves in stories that convey a plausible proposal about, or perspective on, the lives, situations, and events portrayed. The

distinct point of view of the filmmaker shapes this story into a way of seeing the historical world directly rather than into a fictional allegory.

This overall definition acts as an important starting point for the classification of documentaries, but it creates a grey area open for “creative interpretation” (Nichols, 2010:14). This detailed definition lacks the separation of different styles found within the documentary genre. Documentary films approach the representation of the “historical world” from individual viewpoints and therefore, different “cinematic techniques” are adopted for different films (Nichols, 2010:15). Documentary filmmakers do not have to conform to specific interpretations or regulations concerning their creation. These filmmakers find pleasure in challenging the norm, forcing audiences to question their perspectives, and evoking critical discussion (ibid.). The definitions of what constitute a documentary are therefore unable to keep up with the ever-growing change of forms and reasons for the classification of *documentary films* as such (Nichols, 2010:6).

In 1991, Bill Nichols’s book, *Representing Reality: Issues and Concepts in Documentary*, outlines four *documentary modes of representation*, termed by Nichols as organisational groupings for the documentary films produced in this time, namely, (1) expository, (2) observational, (3) interactive (participatory), and (4) reflexive. The modes arise as new forms of documentary develop in response to the limits imposed by previous forms of the genre (Nichols, 1991:32). Nichols (ibid.) states that the modes also develop throughout history in relation to the credibility of the representation of *reality* in documentary. In support of this, in 2001, in the first edition of Nichols’s *Introduction to Documentary*, there is an emergence of two additional modes. These modes, the poetic and the performative, are further discussed in the second edition of *Introduction to Documentary* in 2010.

As with the other fields in film, the documentary genre goes through different periods and movements. Documentary conventions and techniques differ among countries and varying areas (Nichols, 2010:28). A *period* refers to a continuous length of time throughout which the films in a genre follow and adopt similar traits. The importance of time periods comes to the fore when considering the history of the documentary film genre and when a distinction between documentaries and other types of films must be made (ibid.:29).

The periods and movements in the history of documentary film show that different types of documentary films exist, each with an intention, and a desire to achieve this intention by means of the content and form of the film. Bill Nichols’ (2010) six modes of the documentary film genre itself “represent viable ways of using the resources of the cinema to make

documentary films” (Platinga, 2005:105). The following summarises the key features for each of the modes of documentary film:

- (1) The poetic mode places emphasis on the arrangement of the visuals, the tone and the mood of the documentary to connect with the viewer (Nichols, 2010:31).
- (2) The expository mode strives to construct a specific point-of-view for the viewer by commonly adopting an argumentative approach carried across through verbal commentary. This mode is most generally associated with the documentary genre (ibid.).
- (3) The observational mode emphasises the importance of the portrayal of *actuality* as *truth*. This mode was adopted by the filmmakers of the Direct Cinema movement who believed that the camera should be unobtrusive in the observation of the lives of the subjects (ibid.).
- (4) The participatory mode invites “the interaction between” the subject and the filmmaker. The mode is known for making use of interviews that are “often coupled with archival footage to examine historical issues” (ibid.).
- (5) The reflexive mode strives to make the conventions and techniques used to construct *reality* in the documentary, apparent to the viewer. The film process is revealed to the audience, illustrating the subjective choices made by the filmmaker (ibid.).
- (6) The performative mode favours the use of subjective rather than objective techniques to elicit a response from the viewer (ibid.). Performative documentaries strive to elicit discussion, allowing the audience to derive personal meaning and message from the film (Little, 2007:22).

The different modes can overlap and qualities of more than one may be found in a single film (Nichols, 2001:99). These modes are regarded as “the most influential conceptual mapping” when it comes to categorising documentary types (Platinga, 2005:105). As Nichols (2010:30) states: “Each mode [emphasises] different cinematic resources or techniques”. The modes are similar to the concept of genres, where shared filmmaking characteristics form an overall recognisable identity (Hughes, 2014:9).

As previously discussed, cinema in its origin was not motivated by the spearheading of novel film styles, but filmmakers purely strived to push the boundaries of the cinema of the time by considering new and innovative film practices. A few of these endeavours have helped develop what is known today as *documentary film* (Nichols, 2010:120). These early documentary visionaries believed that they could address social and political issues using both fiction and non-fiction methods in their films. They did this by assuming that, if *actuality*

is represented in their films, then ultimately their production methods used to portray *reality* would not be in question (Little, 2007:2).

Throughout the early stages of documentary filmmaking, few people clarified the difference between fiction and non-fiction (Little, 2007:6). Nichols (2010:121) states that when looking back at the documentary tradition, it can be seen to “[obscure] the blurred boundaries between fiction and nonfiction, narrative and rhetoric, poetry and spectacle, documenting reality and formal experimentation that [fuelled] these early efforts”. There were limited documentarians or documentary works available and it was assumed that viewers simply desired to be entertained (Little, 2007:6). However, as the knowledge about the methods used in the production of documentary films grew, viewers and critics developed critical objectivity to the films as well as to the filmmakers’ subjective approaches (Little, 2007:1). With time, critics developed opposing theories, which included that documentaries must convey the truth to be impacting on society, versus documentaries as simply a construction of reality and, therefore, its realism or truthfulness is of no importance (ibid.). The documentary custom of “experimentation” currently remains with regards to innovate forms and techniques, such as animation and re-enactments (Nichols, 2010:121). This, as stated by Nichols (ibid.), “is what allows documentary itself to remain a lively, vital genre”.

From the years 1895 to 1920 the use of reality footage was prevalent in cinema and was predominantly used to recount the events taking place during the First World War (Rabiger, 2015:40). Rabiger (2015:40) states that “[in] spite of so much actuality in the cinemas, it was not until Robert Flaherty’s *Nanook of the North* (USA, 1922) that audiences saw a nonfiction narrative with a deliberately imposed thematic meaning”.

In the early part of the twentieth century, American explorer-turned-filmmaker, Robert Flaherty (1884 – 1951), pioneered the historical documentary known as the *travelogue*. A travelogue film includes the places visited by or experiences of a traveller. These documentary films intend to transport the viewer to another part of the world, educating viewers about the stories of the cultures and the practices in which they engage (Marfo, 2007:4).

One of Flaherty’s more controversial films, *Nanook of the North*, includes staged scenes believed by Flaherty to increase the entertainment value of the film (Marfo, 2007:4). Flaherty spent his youth living in Northern Canada where he developed respect and love for the indigenous Inuit (Rabiger, 2015:40). In 1915, he started filming *Nanook of the North* to create an “ethnographic record” of a family of Inuit people (ibid.). Flaherty often requested that the family conduct daily activities in specific ways in front of the camera (Rabiger,

2015:41). Therefore, as Rabiger (ibid.) states, "...Flaherty came to shoot a factual film in real surroundings, but acted like a fictional story".

These staged scenes were not intended to distort or fabricate the truth, but were used to place focus on important ideas or events to successfully portray the life of the Inuit family in his film (Marfo, 2007:4). Over the years, critics have debated the ethical legitimacy of Flaherty's filming strategies (Rabiger, 2015:41). Some critics believe that this method in documentary film can have a negative impact as the viewer is deceived into believing that the film is truthful in the portrayal of the culture. Despite this, *Nanook of the North* is believed by others to have a positive influence on society because it created the foundation for future documentary films from which to work (Marfo, 2007:4). As per Rabiger's (2015:42) statement: "Very little in documentary history has gone out of date or been abandoned. Every approach and technique still has its modern application".

Some critics have argued that *Nanook of the North* can be positioned within the observational documentary mode due to Flaherty's determination to capture events unfolding in their own time, albeit his personal involvement in the setting up of certain scenes (Nichols, 2010:154). According to Nichols (2010:149), by directly speaking to the viewer with the use of voice over, the expository documentary mode is the most represented in this documentary film.

In the mid-1920s, a Scottish social scientist, John Grierson (1898 – 1972), introduced the term *documentary* when he remarked that a scene in Robert Flaherty's film *Moana* (1926)⁸ could be thought of as "*documentary* in intention" (Rabiger, 2015:42-43). In Grierson's review of *Moana*, he uses the word *documentary* to describe the genre of the film and defined the term as the "creative treatment of actuality" (Little, 2007:3). Rabiger (2015:19) further explains the meaning of Grierson's definition of the genre as "creatively [organizing] pieces of recorded reality into a narrative".

The arguments concerning Flaherty's assemblage of "his own photogenic families instead of filming authentic ones" raised a variety of questions concerning the essential foundation upon which documentary film is based (Rabiger, 2015:43). Questions such as, "What is documentary truth?", "How objective is the camera?", and "Must one show literal truth or can it be *the spirit of the truth?*" are continually asked to this day (ibid.).

⁸ *Moana* (1926), by Robert Flaherty, is "a visual account of events in the daily life of a Polynesian youth and his family..." (Grierson, 2016:86).

Reality, of one kind or another, was being filmed from the early stages of cinema in the 1890s. This narrative approach to documentary film developed into the orchestrated construction of non-fiction footage when Flaherty, strived to “say something overarching about the human condition” (Rabiger, 2015:19). As Rabiger (ibid.) states: “Others had used reality to tell a narrative, but Flaherty added thematic and socially critical aspects that lifted nonfiction to a new level of significance”.

Following the Russian Revolution in 1917, the newly dominant Bolshevik Party was faced with a federation of nations whose illiterate citizens were unable to read or understand the language of the other (Rabiger, 2015:43). Dziga Vertov (1896 – 1954) was among those who worked for the revolution as a film editor and newsreel director in Russia. Realising how strongly the viewers were affected by the creative camerawork and editing of the newsreels⁹, Vertov developed the “Kino-Eye manifesto” (ibid.). The Kino-Eye theory proposes that the camera is an instrument much like the human eye and suggests that life should be recorded without imposing on it (ibid.).

In 1929, Russian filmmaker, Dziga Vertov made the documentary film *Man with a Movie Camera*. Rabiger (2015:44) suggests that this film is a “silent masterpiece [and] a visual symphony”. The film incorporates different, simultaneous narratives and sequences to create a film that represents a pure cinematic language. Vertov used techniques such as double exposure, extreme close-ups, and quick editing to produce an enthralling view of reality. Vertov believed that by juxtaposing the action and viewpoints of an array of scenes, it would remove all external points of view concerning the meaning of the film, leaving only that of the “all-seeing camera” (ibid.). As stated by Rabiger (2015:45), Vertov “demonstrates how each action, movement, and shot has its own inherent rhythms”. The film, *Man with a Movie Camera*, encompasses film’s significant ability to alter perceptions of time and space (ibid.). This film belongs to the reflexive mode of representation since it focusses on the experimentation and revealing of innovative, underlying conventions of documentary filmmaking (Nichols, 2010:151).

The first twenty-five years of cinema saw it evolve into an “expressive language of action, movement, and imagery” (Rabiger, 2015:45). Viewers were inspired by the storytelling and visual development of ideas found in silent films that were accompanied by live music. With the invention of electrically-driven cameras in the 1920s, filmmakers could move around more freely and become more creative with their filmmaking techniques (ibid.).

⁹ Newsreels refer to “[f]ilmed news reports shown along with the main feature in American theatres in the 1930s, 1940s, and 1950s; eclipsed by television news” (Cook, 2004:937a).

Michael Rabiger (2015:45) believes that the creative progress made in cinema lost its momentum with the arrival of “synchronous sound” in the later part of the 1920s. Cinema, which includes documentary films, started to lean heavily on “narration, music, and sound effects” as a means of communication (ibid.).

Since documentaries rarely had the funds to pay for synchronous sound created in studios, filmmakers proceeded to shoot their films without sound (Rabiger, 2015:46). Film editors produced the sound for the films after filming was completed by making use of “music, effects, and narration” (ibid.). An example of such a film is *Night Mail* (1936) that was produced by the General Post Office (GPO) Film Unit, directed by Harry Watt (1906 – 1987) and Basil Wright (1907 – 1987) and narrated by John Grierson (ibid.). This narration-based documentary embodies one of the most influential practices in the development of documentary film.

The film follows the distribution of post by train in Edinburgh in the 1930s over the route of the mail as it makes its way from Euston station to where it reaches its destination in the city (Rabiger, 2015: 47). The scenes presented in the film, such as the industrial cityscape versus the rural countryside, strive to represent the contrasting aspects of the society where wealth and poverty occur simultaneously (Rabiger, 2015:46). The film was Grierson’s way of persuading society to view the country as a unit during the economic depression of the time. He believed that a documentary film could encourage the otherwise indifferent public to take part in political processes. For him, it was a tool for social reform and education (Little, 2007:3).

Grierson believed that a documentary film was “only an interpretation of reality rather than a direct portrayal of the truth” (Little, 2007:2). The scenes of the postmen sorting the mail had to be shot on a set due to the large size of the camera (Rabiger, 2015:47). The men had to re-enact the work that they do every day in a duplicate carriage that was rocked manually to parallel the movement of the train (ibid.). *Night Mail* was produced with the social purpose to educate and was executed with the use of meticulous aesthetic form. It shows what can be achieved in cinema with a thrilling topic, excellent photography and commentary, and quality music (Rabiger, 2015:48). The “voice-of-God”¹⁰ narration used in the film, positions *Night Mail* within the expository documentary mode. However, by Grierson stressing “visual and

¹⁰ Bill Nichols (2010:67) states: “The voice-of-God tradition fostered the cultivation of the professionally trained, richly toned male voice of commentary that proved a hallmark of the expository mode even though some of the most impressive films chose less-polished voices precisely for the credibility gained by avoiding too much polish.”

acoustic rhythms...and the overall form of the film”, it can also be regarded as being representative of the poetic documentary mode (Nichols, 2010:150).

Flaherty’s passion to make inaccessible cultures and places accessible to society at large, Vertov’s attention to detail concerning his approach to documentary film, and Grierson’s social and political agendas in his films were influential approaches to the successful conveyance of objective messages in a subjective way (Little, 2007:5). As previously stated, Nichols (1991:32) argues that the different *modes of representation* that exist within the documentary genre develop over time and are a method of organising different documentary approaches and conventions into common groups. Robert Flaherty and John Grierson’s films fall under the expository mode. This mode developed in opposition of the entertainment-driven fiction films as a means of representing purely objective messages (ibid.). Dziga Vertov’s work falls under the reflexive documentary mode. The reflexive mode was established when the desire of documentary filmmakers shifted from objective representation to challenging the representation of reality by emphasising the encounter between the filmmaker and viewer (Nichols, 1991:33).

The use of colour film was costly and was therefore only utilised later in the documentary film genre. One of the first films to incorporate black-and-white with colour film, was French film director, Alain Resnais’s *Night and Fog* (1955). This short film depicts the deserted area of what was formerly a Nazi concentration camp whilst the narrator, Jean Cayrol, a holocaust survivor, describes the daily life of a camp prisoner (Rabiger, 2015:48). This powerful film represents an important highpoint in documentary film where the effect of evocative narration accompanied by delicate, atonal music proves to deliver a strong emotional impact (Rabiger, 2015:49).

From the 1950s, innovative technologies allowed the medium to become less restrictive and completely mobile (Rabiger, 2015:50). Portable audio tape recorders and faster film stocks allowed filmmakers to shoot actuality in real time without the need to script narratives that were based on reality. As Rabiger (ibid.) states: “In the documentary, event-driven or character-driven stories practically replaced scripted and narrated subject-driven ones”. This instantaneous way of capturing reality brought about the discussion on the relationship between “the documentary camera and its human subjects” (Rabiger, 2015:51). This resulted in the development of contrasting philosophies concerning the involvement of the filmmaker in the portrayal of *truth* through the medium namely, direct cinema and cinéma vérité (ibid.).

Direct Cinema, known today as observational documentary or the observational mode, emerged as a result of the mobility offered by the advances in film technology (Nichols, 1991:33). This mode was favoured among the distinguished American and Canadian documentary filmmakers of the time. This philosophy idealised *transparent* filmmaking where subjects appear to be unaware of the filmmaker and the camera. These films strive to portray the natural unfolding of events as the filmmaker unobtrusively captures it (Rabiger, 2015:51).

Interactive documentary, referred to today as the participatory mode, developed due to the convenience of the more mobile equipment, similarly to that of direct cinema, but desired an approach aimed at representing the filmmaker's perspective (Nichols, 1991:33).

Cinéma Vérité, seen as a combination of observational and participatory filmmaking, was predominantly adopted by European filmmakers (Rabiger, 2015:52). Filmmakers believed that *truth* could be found by regarding important events, captured either in front of or behind the camera, as crucial subject matters that are necessary to produce a complete documentary record. The French ethnographic filmmaker, Jean Rouch, pioneered the concept of including off-camera relationships in his films in order to represent the entirety of events. An appealing aspect of this participatory approach is the idea that the documentary is a collaboration between the filmmaker and the participants as opposed to simply being an objective documentation. This affords the directors of the films the space to prompt the unfolding of events, and allows them the opportunity to play a part in the search for truth (ibid.).

Media historian and author of the book, *Documentary: A History of the Non-fiction Film*, Eric Barnouw (1974:254-255), successfully encapsulates the key elements of the two philosophies:

The direct cinema documentarist took his camera to a situation of tension and waited hopefully for a crisis; the Rouch version of *cinéma vérité* tried to precipitate one. The direct cinema artist aspired to invisibility; the Rouch *cinéma vérité* artist was often an avowed participant. The direct cinema artist played the role of uninvolved bystander; the *cinéma vérité* artist espoused that of provocateur. Direct cinema found its truth in events available to the camera. *Cinéma vérité* was committed to a paradox: that artificial circumstances could bring hidden truth to the surface.

Contemporary documentarians have the luxury of not committing to either philosophy, and they are free to make use of any method to capture and portray their subject matter (Rabiger, 2015:55).

The observational and participatory documentary both have a disadvantage concerning the large amount of footage captured in comparison to the amount used for the final film (ibid.). Editors were challenged to invent new methods of dealing with the amount of footage covering a substantial number of events important to the overall narrative. This led to the development of innovative methods of “allusion and abbreviation, or ellipsis” to condense the overall time of the source footage (ibid.). Rabiger (ibid.) further comments on this concept:

Building on the legacy of Dziga Vertov, they found freer and more intuitive ways of counterpointing voice and effects tracks, and used impressionistic, even hallucinatory cutting to abridge time and space. In due course these innovations became an accepted part of feature film language.

Due to the increase in the length of documentaries because of the substantial amount of source footage, editors were required to develop film structures that would ensure the captive attention of the audience throughout the entire film (Rabiger, 2015:56). Therefore, “the three-act dramatic structure”, established from the first Greek dramas and already implemented in fiction film, started to materialise in documentary films. This structure acts as a classification system for the different phases in a developing narrative. Act one refers to the establishment of crucial elements of the film, such as characters, events, or questions which the film will strive to answer. Act two deals with the complications and obstacles faced in dealing with the main dilemma. Act three proposes a solution and is regarded as the denouement of the film where a final resolution, positive or negative, occurs (ibid.).

The artistic endeavours of filmmakers continuously evolved concurrently as technological advances in the field were made (McCarthy & Ondaatje, 2002:24). A distinctive characteristic of artists in the media field is the act of adopting the newest forms of technologies that are later used to develop innovative artistic practices (ibid.).

Moving away from the reel-to-reel editing in the 1970s and with the onset of computerised editing in the 1980s, documentarians were free to experiment with different forms of documentary film and found inspiration from other artistic avenues (Rabiger, 2015:57). Documentary filmmakers proceeded to adopt and mix a variety of documentary methods that led to the development of a more eclectic film genre, which can be understood from the discussion on different documentary techniques that follows.

In 1986, English film director, Michael Apted, produced *28 Up*, “the most famous episode in a series of *longitudinal study* films” known as *The Up Series* (Rabiger, 2015:57). The series started in 1964 when a group of fourteen, seven-year-old children were interviewed for the first documentary film in the series, *Seven Up*. The children were specifically selected to

represent different socio-economic classes in order to surmise if this has any influence on their future. Apted returns every seven years to film the children, creating a series that draws from earlier footage shot seven years in advance (ibid.). In 2012, the series reached its eighth episode, *56 Up*, and will aim to complete thirteen episodes in total. The series started as a political documentary, but soon developed into a series of human-interest documentary films. Apted relies heavily on the synchronous sound recorded during on-screen interviews throughout the episodes, but he also utilises voice over narration to communicate with the viewer. The use of interviews and archival footage to convey information is characteristic of the participatory documentary mode of representation (Nichols, 2010:210).

The Thin Blue Line (1989) by Errol Morris follows the trial of Randall Dale Adams who was wrongfully convicted of murder (Rabiger, 2015:59). Adams was accused of shooting and killing a police officer who had pulled over a stolen car that was driving on a freeway in Dallas, Texas without its headlights on. Morris conducts a variety of interviews in the film, including with Adams, the presiding judge, multiple witnesses and the attorneys involved in the trial. The film continuously re-enacts the events of that night from the different viewpoints of the people connected to the case. *The Thin Blue Line* is regarded as the forerunner for the use of crime-scene re-enactments in modern documentary films. By repeatedly analysing and re-enacting the evening of the murder, Morris's documentary shed light on key elements that led to the arrest of the real culprit (ibid.). The use of interviews and archival footage makes this film indicative of the participatory documentary mode of representation.

Agnès Varda, a pioneer of the French New Wave¹¹ film movement, directed and starred in the 2000 social change documentary film, *The Gleaners and I* (Rabiger, 2015:59). Varda journeys through the countryside and cities of France to document the act of gleaning¹². She not only documents the people who collect the produce left behind after the fields have been harvested, but she also films the people who collect discarded items in urban areas, all the while including personal aspects of her own life in the film (ibid.). For this reason, the film can be regarded as a diary and an essay documentary film. By making use of a small hand-

¹¹ According to Richard Neupert (2007: xv), author of the book *A History of the French New Wave Cinema*: "The French New Wave is one of the most significant film movements in the history of the cinema. During the late 1950s and early 1960s, the New Wave rejuvenated France's already prestigious cinema and energis[s]ed the international art cinema as well as film criticism and theory, reminding many contemporary observers of Italian neorealism's impact right after World War II. The New Wave dramatically changed filmmaking inside and outside France by encouraging new styles, themes, and modes of production throughout the world."

¹² Homay King (2007:421), author of the article *Matter, Time, and the Digital: Varda's The Gleaners and I*, describes gleaning as an act carried out by "people who gather the world's leftovers for reasons of survival, ethics, or simply pleasure".

held camera, Varda consciously composes shots using unconventional camera angles and techniques in order to create her own personal voice. By revealing her own experiences in order to emotionally address the audience, Varda produced a film that falls under the performative documentary mode. This film becomes an abstract representation of her role as a gleaner and how “she too will be discarded – by life itself” (Rabiger, 2015:60).

American documentary filmmaker, Michael Moore, produces films renowned for the highly personal standpoint they take (Marfo, 2007:21). Moore makes use of voice over narration to relay his argumentative standpoint to the viewer that is distinctive of the expository documentary mode of representation (Nichols, 2010:31). By Moore, himself, appearing in the film, and with the use of interviews, the film can also be seen to belong to the participatory mode of representation. The controversial techniques applied by Moore in his 1989 exposé *Roger and Me*, put him in the spotlight. The film deals with the negative impact that the General Motors (GM) company has on the American economy. His negative stance concerning American problems has made his films extremely contentious and he has been accused of misrepresenting facts and harassing his subjects, all with the goal of representing his beliefs (ibid.). Despite all the controversy surrounding Moore, his documentary films have an influence on society (Marfo, 2007:23). Particularly with his film *Fahrenheit 9/11*, the filmmaker aims to inspire widespread social change on all levels of society. Moore’s films can be seen as a polemic vehicle or even a form of propaganda where ambush techniques are used in order to achieve advocacy (Marfo, 2007:24).

The American film director, Robert Greenwald, similar to Michael Moore in his techniques, primarily creates documentary films from a personal standpoint. Critics suggest that Greenwald uses a “guerilla method of documentary filmmaking”, when referring to his process of creating “timely political films on short schedules and small budgets and then promoting and selling them on DVD” (Marfo, 2007:25). Greenwald characteristically reaches his target audience by using their own words to tell a story (Marfo, 2007:26). Greenwald includes mostly material from speeches and/or television to support his arguments. This contrasts with Moore, who is central in all his films (ibid.).

In the documentary film, *Phantom Limb* (2005), independent filmmaker, Jay Rosenblatt makes use of archive-based filmmaking to deal with the death of his younger brother (Rabiger, 2015:61). This twelve-chapter film is about pain and loss and the stages of grief that follows. Rosenblatt represents, with the use of found archival footage, the guilt and suffering that his family experienced, but never expressed. This experimental film acts as Rosenblatt’s personal confrontation with a childhood tragedy and forces the viewer to confront the impermanence of life (ibid.). Rosenblatt presents an emotional topic through

innovative methods, where the unrelated images and accompanying music build a pattern to create a sombre mood in the film. These qualities are specific to the poetic documentary mode (Nichols, 2010:210-211).

In the past, documentary was labelled as staid and boring. In recent times, it is the complete opposite – documentary film is considered a trustworthy genre and a source of entertainment to the masses (Marfo, 2007:66). On political, social and emotional levels, the documentary uses novel techniques to challenge the beliefs and actions of the viewer, and has become a prolific and important source of influence and information (Marfo, 2007:67).

Film is no longer only a form of entertainment but contains immense potential for bringing about social change by means of strategic and unique actions. Governments, activists, educators and commerce have become proponents of this medium. Documentary film may use emotional narratives and shocking footage to convey its message to the viewer (Gregg, 2011:37). Documentary has developed into an art form whereby persuasion, perspective, propaganda, art, realism and culture are propagated amongst the masses. It can raise real-life, palpable and personal issues, it can raise awareness by exposing reality, or it can spur individuals and groups in the direction of positive change (Gregg, 2011:38).

As stated by Bill Nichols (2010:40): “Documentaries stimulate epistophilia (a desire to know) in their audiences”. Nichols (ibid.) believes that the highest quality of documentaries can encourage logical thought, stimulate insight with persuasive strategies, and create awareness by means of innovative artistic discourse. Documentaries offer the viewer the promise of gratifying this *desire to know* (Nichols, 2010:40).

Increasingly documentary film mirrors and encourages environmental debate, making it an important medium in manipulating the public’s grasp of environmental crises and solutions. It has become a significant source of reference for research scholars in communication and media, sociology and pedagogy spheres (Gregg, 2011:38).

The continuous development of environmental documentaries can be partly attributed to the ever-growing curiosity concerning the creative potentials possible through documentary films (Hughes, 2014:6). The primary characteristic of environmental documentary is that the environment is the central subject, regardless of how it might be envisaged (Hughes, 2014:5).

To create an environmental documentary film focussed purely on the creation of environmental awareness as opposed to environmental activism, the cinematic structure of the film must be considered. The different techniques used in filmmaking are very important

when considering the impact of a film, as these techniques form the basis for the structure of production. Therefore, an environmental documentary film that strives to create awareness of environmental issues can be considered as a part of the human-interest documentary sphere (Marfo, 2007:16). These films aim to highlight aspects of society that the viewer would not have otherwise been aware of. Some human-interest documentaries are similar to that of the travelogue format, but they also often tend to focus on portraying unfamiliar subcultures (Marfo, 2007:18).

The Plow that Broke the Plains (1936) and *The River* (1937) by Pare Lorentz (1905 – 1992), and *The Land* (1942) by Robert Flaherty are films that are regarded as the forerunners for the environmental documentary field. These films were created during the time when The New Deal programmes¹³ were enacted in the United States to deal with the dire effects on the economy caused by the Great Depression (Hughes, 2014:46).

Lorentz and Flaherty made use of wide angles to showcase not only the landscapes but to create an image of the ecological surroundings. By doing so, the interrelationship between people and nature is conveyed, which, in turn, suggests an ecological consciousness (Dunaway, 2005 cited in Hughes, 2014:35). Their films however, were produced as a means of displaying a more agricultural developed economy as opposed to representing the *ecological sublime* (Hughes, 2014:46). Lorentz and Flaherty make use of emotive narration communicated by a “voice-of-God” narrator that positions the films within the expository documentary mode. However, the combination of this emotive narration, stylistic visual techniques, stunning imagery and the accompanying score is representative of the poetic mode (Nichols, 2010:162).

Finis Dunaway (2005 cited in Hughes, 2014:47), author of the book *Natural Visions: The Power of Images in American Environmental Reform*, suggests that there are certain elements pertaining to the ideology of the ecological sublime. These characteristics include, “the focus on ordinary landscapes, a tendency to look up at rather than down upon, a sense of the beauty of decay as well as growth, the lack of human presence, nature as a place to look but not touch, a place of leisure not labour and the idea that the poet is the true appreciator of nature” (Hughes, 2014:47).

Anja Kollmuss and Julian Agyeman (2002:253), authors of the journal article *Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior*,

¹³ “The [programmes] had laudable goals: raising farm incomes, raising wages, helping the unemployed, stimulating industrial output by raising prices, offering liquidity to housing markets, providing insurance for bank deposits, building social overhead capital—such as dams, roads, sewers, and public buildings—and still more” (Fishback, 2007:385).

define environmental awareness as “knowing of the impact of human [behaviour] on the environment”. Environmental awareness is regarded as the primary stage in the process of public participation concerning environmental issues (Sengupta *et al*, 2012:2).

The term *environment* refers to the physical and biological surroundings, known as ecosystems, that influence the existence of human beings, and other living organisms in an area (see Figure 2.2) (Kaushik & Kaushik, 2007:1). This suggests that in order to create a documentary film concerning the visual communication of environmental awareness issues, the environment itself and information about the environment should be expressed.

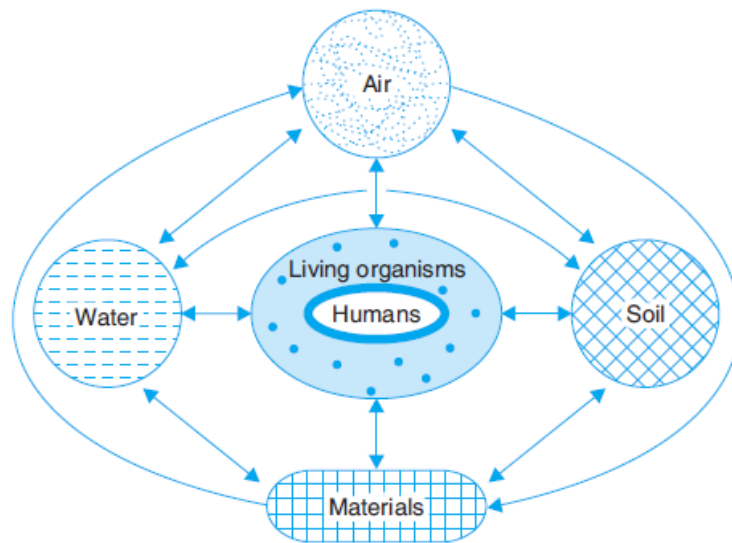


Figure 2.2: *Concept of Environment: air, water, land, living organisms and materials surrounding us and their interactions together constitute environment* (Kaushik & Kaushik, 2007: Fig. 1.1)

Over and above the *documentary modes of representation*, Nichols (2010:68) suggests that there are certain approaches used by documentary filmmakers to express their view of the world that can be termed as the film’s *documentary voice*. The *voice* of the documentary can be attributed to all the methods applied by the filmmaker. These methods essentially refer to the choice and organisation of the sound and images in a logical manner. Nichols (2010:72) suggests six basic decisions that influence the *voice* of the documentary. These include: (1) the editing of the film, (2) the composition of shots (angles, lighting, colour, movement), (3) the recording of sound (synchronous, commentary, music, sound effects), (4) the chronology of the film, (5) the choice of footage, and (6) which documentary mode(s) to depend on for the organisation of the film (Nichols, 2010:72).

For the purposes of this study, two environmental documentary films with a *documentary voice* beneficial to the production of *Karoo* (2017), namely *Chasing Ice* (2012) and *Home*

(2009) will be analysed. These two specific films have also been selected to be analysed due to their differences, as *Chasing Ice* (2012) includes a storyline around a protagonist and *Home* (2009) utilises a “voice-of-God” for narrative purposes.

Chasing Ice (2012) is a documentary film that manages to integrate art and science. Orłowski documents environmental photographer, James Balog’s expedition, the *Extreme Ice Survey (EIS)*, where state-of-the-art time-lapse cameras are installed across the Arctic to capture the effects of climate change on the glaciers. These time-lapse videos serve as a “visual legacy” that creates a baseline for the recording of the effects of climate change on the environment (Balog, 2014 ¶ 2). Three of Nichols’ documentary modes are evident in the film, namely the poetic, the observational and the participatory modes. The poetic mode is evident in the scenes where the time-lapse videos of the melting glaciers stress the visual and the accompanying music that match the flow of the visuals can be classified as acoustic rhythms (Nichols, 2010:150). Balog and his team are regarded as social actors whilst Orłowski records them installing and testing the time-lapse cameras on location. This unobtrusive style of filmmaking is standard of the observational mode of representation (Nichols, 2010:211). The participatory mode is apparent in the use of interviews where the camera is acknowledged by the subjects in the film (Nichols, 2010:189). Orłowski’s environmental documentary film acts as a record of Balog’s process that gives “a visual voice to the changing ecosystems” (Balog, 2014 ¶ 1).

Home (2009) is a documentary film about the human changes to natural systems, where with the use of spectacular imagery, the viewer is given the freedom to comprehend for themselves the effects of modern humanity on the Earth (Jalbert & Lundberg, 2009 ¶ 1). This film is an example of an environmental documentary film that encompasses the ecological sublime. The poetic, expository and observational modes of representation manifest in this documentary film. The entire film consists of aerial footage that is structured as a journey around the world. The poetic mode is deduced from the arrangement of stunning visuals and the accompanying music that sets a mood with which the viewer can connect (Batty *et al*, 2016:32). The “voice-of-God” narration with an “argumentative” viewpoint concerning the negative effect humans have on the planet is typical of the expository mode of representation (Nichols, 2010:169). This is reinforced by the fact that the narrator presents solutions to the viewer at the end of the film. The observational mode of representation is evident as there is no interaction between the filmmaker and the subjects in the film (Nichols, 2010:172). The camera is merely an unobtrusive observer in the lives of the subjects. The informative narration and the strong visuals combine to create a gripping educational film.

Therefore, from a contemporary perspective, four of Bill Nichols' (2010) documentary modes – namely the poetic, the expository, the observational and the participatory modes - will be necessary for the environmental documentary films' analysis. Furthermore, for the purposes of this study, two of Gillian Rose's (2016) sites (as introduced in Chapter One), "at which the meanings of an image are made", namely, *the site of production* and *the site of the image itself* will be used. Rose (2016:25), author of the book *Visual Methodologies: An Introduction to Researching with Visual Materials*, suggests that each site has three different aspects, which she refers to as *modalities*, "that can contribute to a critical understanding of images". The three modalities – namely the *technological*, the *compositional* and the social, are the aspects that will be used to interpret the visuals at each site. Focus will be placed on the *compositional* modality where the content, construction and compositionality of an image will be analysed. These specific sites and modalities will form part of the methodology used to determine the visual communication techniques applied in specific scenes and/or images in *Chasing Ice* (2012) and *Home* (2009).

The analysis of *Chasing Ice* (2012) and *Home* (2009), using Bill Nichols' documentary modes of representation and Gillian Rose's specific sites and modalities, will determine the viable ways of using cinematic resources and techniques and, in turn, will be applied to the production of three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within the environmental documentary video, *Karoo* (2017). The *documentary modes* represented in *Chasing Ice* (2012) and *Home* (2009) encompass the rhetorical objectives that will be strived for in the production of *Karoo* (2017). Gillian Rose's (2016) specific sites and modalities will form the visual analysis framework that will be used for the analysis of *Chasing Ice* (2012) and *Home* (2009) in order to position the above-mentioned rhetorical objectives.

2.3 CHAPTER SUMMARY

The literary survey in this chapter contextualised the documentary film genre by discussing the origins of cinema and how this influenced the development of the documentary film. As discussed, the term *documentary* is regarded as "a fuzzy concept" open to interpretation. Different documentary *voices* are used to give shape to the world. This results in a genre that is dynamic in nature and ever-evolving (Nichols, 2010:143). This said, Bill Nichols (2010) proposes different documentary *modes of representation* that act as a classification system for different formal, cinematic qualities applied in documentary films.

The brief discussion of *Chasing Ice* (2012) and *Home* (2009) attests that most films combine more than one documentary mode (Nichols, 2010:143). The visual communication

techniques in these environmental documentary films create a documentary voice that will be valuable in the production of *Karoo* (2017). Due to the nature of the video to be produced and the length of the study, four of Nichols' modes, the poetic, the expository, the observational and the participatory modes, which are the most represented in *Chasing Ice* (2012) and *Home* (2009), have been selected.

In the next chapter the poetic, expository, observational and participatory modes, as well as the visual analysis framework, will be expanded upon, which will aid in the methodology to produce the three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within *Karoo* (2017). Chapter Four will see the analysis of *Chasing Ice* (2012) and *Home* (2009) with the use of Gillian Rose's (2016) *compositional* modality under the site of *production* and the site of the *image* itself, in order to position the rhetorical objectives that form the basis of Nichols' (2010) specific *documentary modes* represented in the films.

CHAPTER 3

FILM ANALYSIS METHODOLOGY

3.1 INTRODUCTION

This chapter will formulate a method of reading documentary film to analyse and compare how Bill Nichols' (2010) documentary modes are representative as a means of visually communicating environmental awareness issues in the environmental documentary films, *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand. These documentaries are engaged with as visual representations of environmental awareness issues. The interest of this analytical study lies not in justifying these films' attempts at activism, but the manner in which environmental awareness issues are represented and the associated semiotic interpretation thereof.

In Chapter Two, Nichols' (2010) six documentary modes of representation were outlined as an analytical model for documentary films. For the purposes of this study, four of the six documentary modes – namely the poetic, the expository, the observational and the participatory modes, will be used in the analysis of *Chasing Ice* (2012) and *Home* (2009). The aim in analysing *Chasing Ice* (2012) and *Home* (2009) is to position Nichols' documentary modes represented in the films as a means of visually communicating environmental awareness issues, which in turn will encompass the rhetorical objectives that will be strived for in the production of three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within the environmental documentary video, *Karoo* (2017).

Gillian Rose (2016) proposes *sites* and *modalities* for the reading of visual materials. Rose (2016:24) identifies four sites where the meanings of images are created – namely, “the site(s) of the *production* of an image, the site of the *image* itself, the site(s) of its *circulation*, and the site(s) where it is seen by various *audiences*”. Furthermore, within each site Rose (2016:25) identifies three different modalities where meaning is composed. These are the *technological* modality, the *compositional* modality and the *social* modality. For the purposes of this study, two of Rose's sites - namely the site of *production* and the site of the *image* itself, with inclusion of the three modalities within each site, will be used to position these rhetorical objectives. A basic semiotic analysis of the rhetorical objectives, according to a semiological approach to film (Fourie, 1988), will be done at the *compositional* modality within the site of *production* of an image and the site of the *image* itself, to determine the meaning of the visuals in order to further support their efficacy as visual communicators of environmental awareness issues.

This methodology employs Nichols' *documentary modes* as an analytical model and furthermore, a visual semiotic approach to film analysis to be drawn from the books, *Visual Methodologies: An Introduction to Researching with Visual Materials* by Gillian Rose (2016), *The Film Theory Reader: Debates and Arguments* edited by Marc Furstenau (2010) and *Aspects of Film and Television Communication* by Pieter J. Fourie (1988).

3.2 BILL NICHOLS'S ANALYTICAL MODEL

The documentary genre does not adhere to a set of formal elements or distinct characteristics, and similar to Bill Nichols's (2010:14) description of documentary as a "fuzzy concept", Alexandra Juhasz and Alisa Lebow (2015:1), editors of the book, *A Companion to Contemporary Documentary Film*, state that "documentary defies definition". Therefore, each documentary film can be said to have a distinct voice of its own (Batty *et al*, 2016:31) and as Nichols (2010:68) writes: "The voice of documentary is each film's specific way of expressing its way of seeing the world". Nichols (2010) is renowned in the study of documentary film for his development of six *documentary modes* as a means to explore a film's distinctive voice (Batty *et al*, 2016:31).

The documentary modes offer a more "comprehensive mapping of documentary films" in comparison to Paul Rotha's model¹⁴ (Natusch & Hawkins, 2014:2). Nichols' (2010:31) modes offer an analytical model capable of identifying the different cinematic resources and/or techniques applied to the production of a documentary to create a distinctive voice (Nichols, 2010:143) (see Addendum B). According to Nichols (*ibid.*), the majority of documentaries have multiple modes represented in the films that "serve as a skeletal framework that individual filmmakers flesh out according to their own creative disposition". As stated, four of the six modes – namely the poetic, the expository, the observational and the participatory modes, will form a part of the analytical model for the study.

3.2.1 *The Poetic Mode*

The *poetic mode* stems from the rise of poetic experimentation during the early part of the twentieth century when an amalgamation of ideas and techniques between cinema and modernist avant-gardes occurred (Nichols, 2010:129). Filmmakers were inspired to create films as a vehicle for their poetic expression. As Nichols (*ibid.*) states: "The filmmaker's way of seeing things took higher priority than demonstrating the camera's ability to record what it

¹⁴ Paul Rotha (1939:71) stated that "[w]hat we have come to call 'documentary' did not appear as a distinct method of film making at any given moment in the cinema's history". Rotha (1939) proposes four traditions that influenced the evolution of documentary – namely the naturalist (romantic) tradition, the realist (continental) tradition, the news-reel tradition and the propagandist tradition.

saw faithfully and accurately". The poetic documentary voice is therefore indicative of a desire to express the known-world through innovative ways and from fresh perspectives (Nichols, 2010:211).

The poetic mode forgoes the method of continuity editing¹⁵ and makes use of discontinuous time by arranging and juxtaposing visuals in order to create a specific mood or tone (Batty *et al*, 2016:32). Emphasis is placed on "visual and acoustic patterns" and, furthermore, "the overall form of the film" aims at conveying a subliminal message, mood and/or feeling (Natusch & Hawkins, 2014:6; Nichols, 2010:150).

Social actors, similar to the other subject matter selected by the filmmaker, will be arranged "into associations and patterns" to aid in the overall form of the film (Nichols, 2010:162). The individual cinematic form created by the filmmaker aims at challenging the traditional notions of knowledge conveyance (Natusch & Hawkins, 2014:6). As Nichols (2010:162) succinctly states concerning the relatability of the expressive quality of the poetic mode: "We learn in this case by affect or feeling, by gaining a sense of what it feels like to see and experience the world in a particular, poetic way".

3.2.2 *The Expository Mode*

The *expository mode* pieces together aspects of the historical world into a more stylistic, verbal and argumentative style compared to the expressively aesthetic *poetic mode*. The viewer is addressed directly and is confronted with "titles or voices" that suggest a specific viewpoint (Nichols, 2010:167). Voice over commentary is characteristic of the expository mode where an informed standpoint is sought to be translated whilst upholding a seemingly objective conviction (Nichols, 2010:169). The verbal narration acts as a "voice-of-God" capable of commenting on events, giving instructions and relaying information in a detached manner to establish credibility and gain the audience's trust (*ibid.*).

Expository documentaries depend on a narrative that is logically organised and typically communicated to the viewer via spoken word (Natusch & Hawkins, 2014:11; Nichols, 2010:168). The commentary represents the perspective of the film and furthermore aims to organise and construe the accompanying images (Nichols, 2010:168). The visual materials support the narration to compose the evidence that serves the viewpoint of the film (Batty *et al*, 2016:32). Furthermore, the images do not necessarily directly relate to the spoken word

¹⁵ Continuity refers to the way shots go together to create a seamless chain of events. Some strategies already need to be observed during the shooting of footage for good continuity. After recording the raw material, editing techniques provide further means for binding scenes together smoothly (Winkler, 2014:1).

and is frequently from different times and places to illustrate a perspective or argument as a way of informing and/or moving the viewer (Nichols, 2010:211).

3.2.3 *The Observational Mode*

The observational mode removes all poetic or expository elements that a filmmaker might use in the composition, planning or production of a scene. The observational mode aims to simply “observe lived experience spontaneously” (Nichols, 2010:172). Early observational filmmakers chose to stay true to this objective throughout production and post-production, which resulted in films with “no voice over commentary, no supplementary music or sound effects, no intertitles, no historical re-enactments, no behaviour repeated for the camera, and not even any interviews” (ibid.). However, “masked interviews” are frequently used where the filmmaker engages with the subject prior to the interview to “establish the general subject of the scene” (which is characteristic of the participatory mode) before it is filmed in the observational style (Nichols, 2010:177).

An observational documentary filmmaker strives to convey information and impart knowledge by allowing the audience to watch, listen, observe and come to their own conclusions concerning the behaviour of the social actors (Nichols, 2010:211). The viewer is encouraged to decipher the meaning and significance of what is portrayed for themselves (Batty *et al*, 2016:32; Nichols, 2010:174).

The filmmaker is merely an unobtrusive observer of events and is in principle sharing their objective observations with the audience (Natusch & Hawkins, 2014:14). There are, however ethical concerns relating to the passive stance adopted by the filmmaker. Nichols (2010:175) writes the following concerning the responsibility of an observational filmmaker: “Since the observational filmmaker adopts a peculiar mode of presence [‘on the scene’] in which he or she appears to be invisible and [non-participatory], the question also arises of when the filmmaker has a responsibility to intervene?” Therefore, the responsibility of the filmmaker towards their subjects is challenged and the principle of ethical obligation is called into question.

3.2.4 *The Participatory Mode*

Unlike the observational mode, the participatory mode includes interactions between the filmmaker and the social actors. Most documentaries require the filmmaker to “go into the field”, “live [amongst] others” and share experiences with his or her subjects (Nichols, 2010:181). The participatory mode, in comparison to the observational mode, allows the filmmaker and his or her experiences to be acknowledged by the viewer. The filmmaker is an

active participant in the unfolding of the events in front of the camera (Batty *et al*, 2016:32; Nichols, 2010:179).

The perspective of the filmmaker is prevalent in a participatory documentary and constitutes the direction of the film (Natusch & Hawkins, 2014:16-17). "Participatory documentary", as explained by Nichols (2010:181), "gives us a sense of what it is like for the filmmaker to be in a given situation and how that situation alters as a result". The distinctive manner in which a filmmaker incorporates interviews with different subjects with specific supporting footage constitutes the voice of the filmmaker in the participatory mode (Nichols, 2010:190).

According to Nichols (2001:119), the "filmmaker serves as a researcher or investigative reporter" during the making of participatory documentaries and emphasis is placed on the "actual, lived encounter between filmmaker and subject," such as Dziga Vertov's, *Man with a Movie Camera*. The interview is the most prevalent type of interaction between the filmmaker and subject in the participatory mode. The combination of individual voices and opinions, through a variety of interviews, ensures that a credible representation of the filmmaker's desired perspective is produced (Natusch & Hawkins, 2014:16; Nichols, 2010:190). If the filmmaker wishes to offer the viewer a broader perspective than simply focusing on the filmmaker and the subjects, interviews might be supplemented with archival footage to create a documentary film where historical footage is used to accompany the narration of the people "who were there or who know about what happened" (Nichols, 2010:189).

Bill Nichols (2010) believes that the documentary modes act as a classification system and documentaries can be sorted, similar to the concept of genres, into modes. Therefore, the modes most represented in the films suggest common characteristics. This analytical model will be aimed at situating these rhetorical objectives within *Chasing Ice* (2012) and *Home* (2009). This will create a set of documentary codes and conventions related to Nichols' documentary modes that will be applied to the production of three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within the environmental documentary video, *Karoo* (2017).

In addition to the positioning of the four documentary modes – namely the poetic, the expository, the observational and the participatory modes, as rhetorical objectives, a basic semiotic analysis will be applied to determine how *Chasing Ice* (2012) and *Home* (2009) serve as visual communicators of environmental awareness issues. For the purposes of the study, certain shots and/or scenes will be selected as per four of the six documentary modes and will form the focus area(s) for the semiotic analysis. Barry Natusch and Beryl Hawkins (2014:3), authors of the journal article *Mapping Nichols' Modes in Documentary Film: Ai*

Weiwei: Never Sorry and Helvetica, believe that focussing on individual images and/or scenes within a documentary film enables a complete comprehension of the concept and the cinematic value of the film.

The semiological approach in film, according to Pieter Fourie (1988:28), author of the book *Aspects of Film and Television Communication*, considers film as a sign system that communicates “according to a specific set of [‘grammatical’] rules”. The communicative qualities of a film rely on “[the image] as an iconic sign, camera and editing codes, paradigmatic-syntagmatic structures in visual communication, different types of meaning and the way these are portrayed in film and television communication” (Fourie, 1988:28). The semiological approach will therefore be utilised to gain a better understanding of how *Chasing Ice* (2012) and *Home’s* (2009) “film languages”, imagery(s) and organisation contribute to the overall visual communication of environmental awareness issues.

3.3 FILM THEORY

Society is constantly influenced by different visual technologies, such as photography, video and film, that depict a wide range of perspectives to the viewer (Rose, 2016:2). Since these technologies are a “representation” of the world through visual form, they can never be innocent or without meaning. Gillian Rose (2016:2) states that these visual technologies offer the viewer an interpretation of the world which is displayed in a specific manner.

Film, as a visual technology, has been described as a revolutionary amalgamation of “art and technology, illusion and reality” (Furstenau, 2010:2). The term, “film”, is seen to encompass different forms of media, such as “digital video and computer animations”, and represents the overall concept known as “moving images” (Furstenau, 2010:4). Film theory played a vital part in the development of the field and offers different debates and approaches to the theoretical study of film communication (ibid.). As Marc Furstenau (2010:6), editor of the book *The Film Theory Reader*, writes:

The history of film theory is, fundamentally, a continuous history of debates and arguments about what “film” is, what its nature and effects might be, what its broader social and cultural value is. This history has provided us with a store of concepts and ideas that are proving surprisingly useful again in our own era, which is [characterised] by the proliferation of new visual media. As another dramatic technological transformation seems to be underway, as the cinema is “[digitised],” and as the medium of film is again put into question, there is a renewed interest in earlier debates, and contemporary film scholars are returning to the work of previous theorists.

There is, as of yet, no set “theory of film” for film analysis (Furstenau, 2010:3). Film theorists have sought to “[describe] and [explain] film and its effects” by engaging with different

disciplines and schools-of-thought, such as linguistics, semiotics, feminism and/or psychoanalysis, in order to understand the complexities that lie within the medium (Furstenau, 2010:2-7; Metz, 1974:4).

3.4 THE SEMIOLOGICAL APPROACH

The French film theorists, Jean Mitry (1904 – 1988) and Christian Metz (1931 – 1993) both propose semiotics in relation to film and video (Mitry, 2000: ix). David Sless (1986:2 cited in Leeds-Hurwitz, 1993:7), a scholar in the field of visual communication, defines semiotics as “the process of making and using signs”. Therefore, semiotics refers to “the study of signs” and is regarded as an investigation into how meaning is created and how meaning is communicated (Leeds-Hurwitz, 1993:6).

“The semiological approach” to film communication, according to Pieter Fourie (1988: ix), “...considers whether film...could be described as a distinctive [‘language’] with a grammar of its own, how [this medium] convey[s] meaning and what kind of meaning [it] communicate[s]”. There are two schools-of-thought with regards to the classification of the components of a *sign*, which in turn, informs modern semiotics. The central figures behind the two ideologies are the Swiss linguist, Ferdinand De Saussure (1857 – 1913), and the American semiologist, Charles Sanders Peirce (1839 – 1914) (Fourie, 1988:29). Their approaches and concepts with regards to semiotics extend their individual fields of study, and have been adopted by varied disciplines and academic subjects (Yakin & Totu, 2014:5).

Ferdinand De Saussure’s semiological theory concerning the study of signs, termed “semiology”, is regarded as the most influential on the understanding of general linguistics. De Saussure proposes that language can be regarded as a “system of signs”, where each sign expresses a meaning and constitutes the basic unit of the language system (De Saussure, 1959:16; Yakin & Totu, 2014:5). De Saussure’s (1959:16) definition of semiology, as written in *Course in General Linguistics* (1915), a compilation by his students of his lecture transcripts and their class notes between 1907 to 1911, is as follows:

A science that studies the life of signs within society is conceivable; it would be a part of social psychology and consequently of general psychology; I shall call it semiology (from Greek sēmeîon 'sign'). Semiology would show what constitutes signs, what laws govern them. Since the science does not yet exist, no one can say what it would be; but it has a right to existence, a place staked out in advance.

To De Saussure (1959) a sign can be divided into two parts – namely, the *signifier* and the *signified* (Rose, 2016:113). The signifier refers to the physical quality of the sign and is physically observable or in material form, for instance, a pictorial image, a word, or a cross,

smoke and/or clouds. The signified is regarded as a “concept” and refers to the meaning attached to the signifier by the recipient (Fourie, 1988:29; Rose, 2016:113).

Charles S. Peirce, a contemporary of De Saussure, introduced the term “semiotic” when referring to his work on semiology (Wollen, 2010:173; Yakin & Totu, 2014:6). Peirce proposes a three-dimensional system to the theory of signs where a sign consists of three components – namely the *representatum*, the *object* and the *interpretant* (Fourie, 1988:29). The *representatum* is synonymic of De Saussure’s *signifier* and refers to “the sign as a physical entity” (ibid.), however, it need not be “material in nature” (Chandler, 2002 cited in Yakin & Totu, 2014:7). Peirce suggests that there are two components to De Saussure’s *signified* – that is, the *object* and the *interpretant* (Yakin & Totu, 2014:7). The *object* is the actual meaning attached to the *representatum* (signifier) and refers to what is represented by the sign. The *interpretant* is any meaning, cultural or ideological and therefore abstract in nature, that is associated with the *representatum* (signifier) and does not relate to the sign’s literal meaning (Fourie, 1988:29-30). There are different *types of signs* that are established by the relationship between the signifier, the signified and the recipient (the representatum, the object and the interpretant).

De Saussure (1959:69) proposes that the relationship between the signifier and the signified can be classified as *arbitrary* when the meaning attached to the signifier is completely influenced or controlled by the recipient. This suggests that the relationship between the signifier and what is signified is regarded as *arbitrary* in that it is not naturally connected (Wollen, 2010:171). For example, in the English language, the linguistic sign “cat” is written with the three letters C-A-T. The written word “cat” is the signifier and the mental association of a small, typically furry, carnivorous mammal with the scientific name, *Felis catus*, is the signified. There is no natural resemblance between the linguistic sign C-A-T and the object, i.e. the real animal. In isiXhosa, the linguistic sign “ikati”, written with the letters I-K-A-T-I, would become the signifier but the signified would remain the same small, typically furry, carnivorous mammal with the scientific name; *Felis catus*. The users of the English language as a language system have attached a certain meaning to the linguistic sign C-A-T. Similarly, the users of isiXhosa as a language system have attached a certain meaning to the linguistic sign I-K-A-T-I, and coincidentally they match. In other words, the signifier and the signified have no natural resemblance and thus the sign can be classified as *arbitrary* (Fourie, 1988:30).

Peirce believes that there are three classifications that can be made for signs and the relationship between the signifier and what is signified – namely iconic, indexical and symbolic (Rose, 2016:119-120).

Iconic signs are classified as such due to the similarities between the sign and what it represents (Wollen, 2010:173). This type of sign is most commonly associated with visual imagery, such as filmic or photographic images (Rose, 2016:119). As Fourie (1988:30) states: "...the signifier resembles reality in the sense of corresponding with it visually." A video or photographic image of a cat visually resembles the real cat and is thus an iconic sign of that cat. Iconic signs are not regarded as *arbitrary*, as users of different language systems "will attach the same literal meaning to the sign" (ibid.). These signs are often mistaken for reality, and it is therefore understandable why films and videos are regarded as significantly influential and persuasive forms of communication (Fourie, 1988:30).

Indexical signs refer to signs where there is a cause and effect relationship between signifier and reality (Fourie, 1988:31). This inherent relationship and the meaning attached to the sign is commonly culturally-specific (Rose, 2016:120). For example, for Western cultures smoke would indicate fire, whereas for American Indians, smoke signals are a form of communication (Fourie, 1988:31).

Symbolic signs are similar to De Saussure's *arbitrary signs* as there is no natural association between the signifier and the signified (ibid.), thus signifying an *arbitrary* relationship (Rose, 2016:120). Symbolic signs require no visual resemblance or an inherent relationship between the object and what it represents (Wollen, 2010:174). The meaning attached to the symbolic sign is culturally determined, for instance, an image of a crucifix or cross will symbolise the Christian religion to a specific group of people (Fourie, 1988:30).

Film can be described as an iconic sign system where arbitrary, indexical and symbolic signs as well as different film qualities and techniques contribute to the complex communication capabilities of the medium. The following "elaborate technical vocabulary of semiology" will act as a method of clarifying the different ways in which the relationship between the signifier and the signified is formed (Rose, 2016:114):

3.4.1 Codes

As stated by P.J. Fourie (1988:31): "A code is the ['recipe'] or technique according to which signs are combined in order to convey meaning". Therefore, filmic codes can be regarded as a structured arrangement of individual signs as a means of communicating a message. There are two types of codes in film semiotics – namely *codes of content* and *codes of form*.

3.4.1.1 *Codes of Content*

Codes of content are specific to what the viewer perceives in the image. Fourie's (1988:32) framework outlines codes of content such as theme, narrative, lighting, mise-en-scène, acting, sound effects and music for the analysis of a film. Furthermore, a distinction can be made between the various codes of content. Examples of the codes of content include, production codes, thematic codes, narrative codes, lighting codes, codes of the mise-en-scène, and so forth. Due to the fact that these codes have been adopted from other art mediums, such as literature, theatre or painting, they are referred to as *non-filmic* codes (Fourie, 2009:358).

3.4.1.2 *Codes of Form*

Codes of form are specific to the filmic methods utilised by the filmmaker, such as the camera point-of-view and editing techniques, and are consequently known as "*filmic* or *visio-linguistic* codes" (ibid.). The camera can either adopt an active (subjective) or a passive (objective) point-of-view. The *active* camera suggests that the filmmaker has an active role in the representation of the events enacted. These codes are specific to camera distances, the camera angles, the camera shots and movements implemented by the filmmaker. Examples of camera distances and angles include close-ups, long shots, zoom shots, medium shots, wide angles, extreme wide angles, and so forth. Camera movements refer to filmic actions such as tracking, panning, tilting, dolly, as well as lens changes, filters, or camera heights (Fourie, 2001:219). If the camera is utilised as merely an observational tool, camera distances and camera movements will typically be static.

The *optic-acoustic* qualities of a film are another example of a code of form. This refers to the elements that make up the *substance* of the image, i.e. the material of which it is composed, and furthermore how these elements influence the meaning conveyed. Fourie (1988:33) uses black-and-white film as an example to substantiate the influence that the *optic-acoustic* qualities might have on the viewer:

Does the choice of film or video type, the choice between black-and-white or colour film, synchronised or [non-synchronised] sound influence the meaning that the communicator conveys? Could it influence the meaning that viewers will attach to an image and the nature of their aesthetic experience? Why do the makers of documentary films and art photographers often have a predilection for black-and-white film? The reason is probably that it creates an immediate atmosphere of sombreness and sobriety. At all events, black-and-white is always an abstraction of reality.

In film analysis, it is important to acknowledge the impact that different editing techniques can have on the meaning conveyed. For film editing, it is worth mentioning techniques such as “cutting, mixing and fading” (ibid.). These methods are utilised to aid in the construction of the storyline and consequently the overall message of the film.

3.4.2 *Paradigms and Syntagms*

Paradigms and *syntagms* govern how signs relate to each other in order to convey a message. A paradigm refers to the selection of choices available to the filmmaker when constructing a message. The syntagm is the constructed message or the final formulated film (Fourie, 1988:34). The shot is the smallest unit where meaning is created in a film. Different editing techniques are used to combine single shots into scenes, and furthermore scenes into sequences, in order to create an overall narrative (ibid.). Therefore, the shot constitutes merely one component of a series of units that form the meaning of the film. When constructing a shot, a filmmaker has a variety of choices of paradigms at their disposal that will eventually influence what is communicated to the viewer. These choices include the camera distance, the camera movement, filters and/or camera speed (ibid.).

Furthermore, distinction can be made between three *articulations* of meaning where the decisions at each level influences and determines the final meaning conveyed in and by the image. Fourie (1988:35) summarises the articulations as follows:

- (1) First articulation of meaning: the communicator’s choice of what to represent (the eventual *content* of the image)
- (2) Second articulation of meaning: the way the communicator presents or portrays the chosen content (camera point of view as a means of creating form)
- (3) Third articulation of meaning: the way in which the communicator combines single shots into sequences and scenes (editing as a means of creating form).

3.4.3 *Denotations and Connotations*

Denotation refers to the literal meaning attached to an image by the viewer. In contrast to this, connotation is subjective and refers to the individual meaning that the viewer attaches to that image (Fourie, 1988:35). As stated, a film is mostly comprised of iconic images where the denotative meaning is the actual object that is merely represented in the film. In addition to this, each viewer will attach their own connotative meaning to the image, which stems from their personal experiences, their background and knowledge (ibid.).

Furthermore, a distinction can be made between *paradigmatic connotation* and *syntagmatic connotation*. *Paradigmatic connotation* refers to the meaning attached to an image by the

viewer. It is supported by their personal experiences of the objects, and the effects thereof, which are represented in the image. *Syntagmatic connotation* refers to the meaning that arises from the distinctions and connections that can be made from “the *interrelationship* of various shots” (Fourie, 2009:357).

3.4.4 *Levels of Meaning*

Fourie (1988:37) states that there are five different *levels of meaning* that constitute the overall meaning that is conveyed:

- (1) the level of story and subject, which is specifically related to the narrative and subject of the film;
- (2) the level of enactment of the story and subject, is concerned with *non-filmic codes* such as acting, lighting and composition;
- (3) the level of recording (filming) and editing of the story and/or subject, which is concerned with the filmic codes such as the camera point of view and editing;
- (4) the level of sound, commentary and dialogue, where sound effects, narration and the musical score support the overall meaning and;
- (5) the optic-acoustic level, that is related to the substance of the image.

3.4.5 *Communicative Possibilities of Images*

Electronic images have the following three communicative possibilities: “to portray and represent”, “as a means of observation and experience”, and “as a means of expression and visualisation” (Peters, 1974 cited in Fourie, 1988:38).

3.4.6 *Communication Elements in an Image*

In the book *Principes van de beeldcommunicatie*, author J.M. Peters (1974) applied six formal elements, first described by American-Russian linguist, Roman Jakobson, to electronic images. These elements can be used in the analysis of film to analyse and describe images (Fourie, 1988:38). The elements are as follows: referential elements, phatic elements, expressive elements, conative elements, poetic elements and metalinguistic elements (Fourie, 1988:38-39).

A referential element of the message will refer to the subject or theme that is being communicated. As Fourie (1988:39) states regarding referential elements: “They concern the

content or subject matter of the image – people, fauna, flora, objects and the like.” A phatic element aims to capture the attention of the viewer by making use of scale, colour, composition or camera point of view (ibid.). The expressive elements, such as camera work or editing techniques, signify the manner in which the subject matter is formulated in order to express a distinctive message (ibid.). A conative element’s objective is in essence to persuade the viewer to adopt the viewpoint of the filmmaker. These elements, for example, the subject matter, camera work or mise-en-scène, are formulated to make an impression on the recipient (ibid.). The poetic elements refer to the use of the camera and editing techniques in order to make the viewer conscious of the aesthetic formulation of an image (ibid.). Metalinguistic elements are the different sign systems that the filmmaker includes in an image in order to convey the message more intelligibly (ibid.). These six formal elements will always overlap in an image and are only separated for analytical purposes.

The importance of applying a general semiotic analysis is to discern and decipher the different elements involved in the construction of meaning in the selected images and/or scenes. Therefore, in order to comprehend the visual communication of environmental awareness issues in a scene or image, the way in which it was constructed, should be dissected. As Hunter Vaughan (2013:76), author of the book *Where Film Meets Philosophy*, states: “The varied voices of film semiotics tend to agree on one point: there are two aspects of film signification, that which is shown in the image and the way of showing it”.

3.5 PROPOSED FRAMEWORK

In the fourth edition of *Visual Methodologies: An Introduction to Researching with Visual Materials*, author Gillian Rose (2016:23) writes:

Visual imagery is never innocent; it is always constructed through various practices, technologies and knowledges. A critical approach to visual images is therefore needed: one that thinks about the agency of the image, considers the social practices and effects of its circulation and viewing, and reflects on the specificity of that viewing by various audiences, including the academic critic.

Furthermore, Rose (2016:16) states that: “Some social scientists approach images as representational, for example, while others focus more on their affective qualities”. This study will adopt a representational outlook concerning the analysis of the visuals, focusing on the meaning of the visuals as perceived by the researcher, rather than the emotions evoked by the imagery.

Rose (2016:24) proposes four sites as a critical visual methodology for the reading of visual materials, stating:

The framework developed is based on thinking about visual materials in terms of four sites: the site of *production*, which is where an image is made; the site of the *image* itself, which is its visual content; the site(s) of its *circulation*, which is where it travels; and the site where the image encounters its spectators or users or what this book will call its *audiencing*.

Additionally, Rose (2016:25) suggests that there are three different parts under each of the sites, termed *modalities*, that can be conducive to an analytical interpretation of imagery – namely *technological*, *compositional* and *social* (see Figure 3.1).

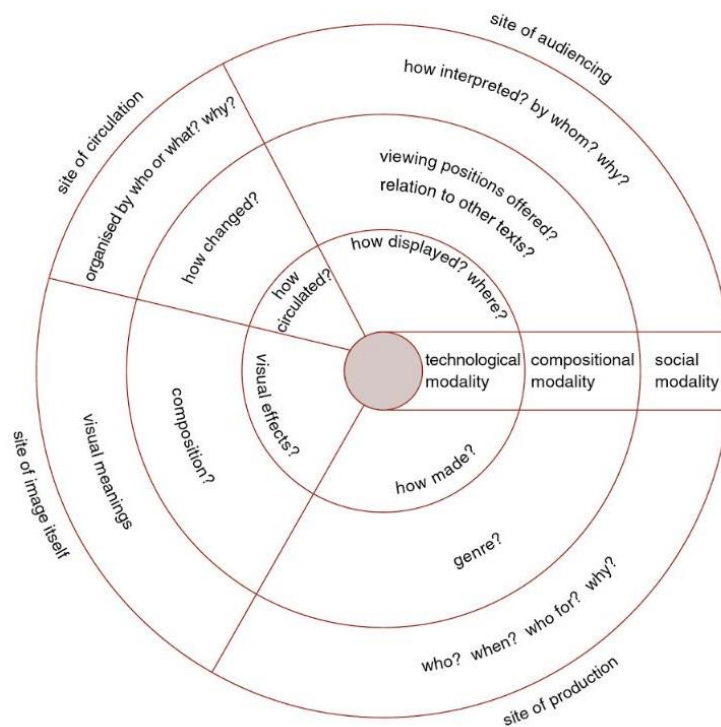


Figure 3.1: *The Sites and Modalities for Interpreting Visual Materials* (Rose, 2016: Figure 2.1)

Rose (2016:25-26) presents the following definitions for the three modalities:

[*Technological modality*]. Mirzoeff (1999:1) defines a visual technology as ‘any form of apparatus designed either to be looked at or to enhance natural vision, from oil paintings to television and the Internet’. A visual technology can thus be relevant to how an image is made but also to how it travels and how it is displayed.

[*Compositional modality*]. Compositionality refers to the specific material qualities of an image or visual object. When an image is made, it draws on a number of formal strategies: content, colour and spatial organisation, for example.

[*Social modality*]. This is very much a shorthand term. What I mean it to refer to is the range of economic, social and political relations, institutions and practices that surround an image and through which it is seen and used.

For the purposes of the study, two of the sites – namely, the site(s) of the *production* of an image (how an image is made) and the site of the *image* itself (what the image looks like), and the three modalities within each site (i.e. technological, compositional and social), will be applied as a part of the methodology aimed at the visual analysis of *Chasing Ice* (2012) and *Home* (2009).

As stated, Rose's selected sites and modalities are applied as a means of informing the analytical model (Nichols' documentary modes) and furthermore the selected film theory (i.e. semiotics). The documentary modes will be deduced by paying close attention to the *site of production* and the *site of the image itself* of the selected scenes and/or visuals.

Furthermore, the *site of production* will be used to contextualise the two environmental documentary films and situate them accordingly to inform the analysis of the visual materials at the *site of the image itself*. An outline of the two selected sites and the three accompanying modalities follows:

The *site of production* is the first of the four sites proposed by Rose (2016). The *technological modality* within this site refers to "the circumstances" under which visual representations are made. The way the visuals are made will therefore be related to what they represent and consequently, the effect they might have (Rose, 2016:27). Writer and media theorist, Friedrich Kittler (1999 cited in Rose, 2016:27) "would argue that the *technologies* used in the *making* of an image determine its form, meaning and effect".

The *site of the image itself* is the second site outlined by Rose (2016) at which the meaning of an image is generated and will be the main area of inquiry for the purposes of this study. A visual image consists out of several formal qualities that establish overall meaning and effect. The *technological modality* refers to "the *technologies* used to make, reproduce or display the image" (Rose, 2016:32). Therefore, in the film, *Chasing Ice* (2012), the high quality time-lapse videos of the glaciers are determined by the image quality of the cameras used and furthermore, the processing of these images. In *Home* (2009), the smooth aerial shots throughout the film were created with the use of specialised high-definition, stabilising cameras attached to the base of a helicopter.

The *compositional modality* is often regarded as the most important concerning how the meaning of an image is read (Rose, 2016:27). The modality may refer to "the conditions of an image's production" (Rose, 2016:28). Rose (ibid.) believes that this line of reasoning is

most applicable concerning the *genre* that specific imagery can be classified under. The two films selected to be analysed for this study – namely *Chasing Ice* (2012) and *Home* (2009), evidently “...share certain features” and “...share a specific set of meaningful objects and ways of showing them”, as both belong to the genre of *documentary film* (Rose, 2016:28). In the case of documentary film, four of Bill Nichols’ documentary modes and their accompanying techniques will be applied to inform this modality. Furthermore, visual communication techniques, and the associated meanings will be analysed with the use of a semiological approach to film communication.

The third and final modality, the *social modality*, is believed by some critics to relate to the different economic processes involved in the cultural production of imagery, which, in layman’s terms, is *the process behind the production of meaning of visual materials* (Rose, 2016). The cultural production of visual materials is influenced by the “cultural field” that is responsible for the positioning of visual materials per “current social conditions of their production” (Bourdieu, 1993:33), and is therefore adaptable according to time and place. In relation to this study, the communication of environmental awareness issues in the 21st century will help to inform this modality. An awareness of the different processes involved in the production of meaning can thus be regarded as “a prerequisite for actively changing the production of meaning in society and giving a voice to new ideas” (Zobl & Klaus, 2012:1).

Rose (2016:374-375) presents questions as a starting point for the analysis of visual materials and, therefore, these are of relevance in the analysis of the two environmental documentary films, *Chasing Ice* (2012) and *Home* (2009). The questions can be used to approach “the complexity and richness of meaning in a visual image” and, for the purposes of the study, the following have been selected:

- When, where and why was it made?
- Who made it?
- What technologies does its production depend on?
- What is being shown? What are the components of the image? How are they arranged?
- What relationships are established between the components of the image visually?
- What is, or are, the genre(s) of the image?
- To what extent does this image draw on the characteristics of its genre?
- Does this image comment critically on the characteristics of its genre?
- What do the different components of the image signify?

As stated, for the purposes of this study, the site(s) of the *production* of an image (how an image is made) and the site of the *image* itself (what the image looks like), and the three modalities within each site (i.e. technological, compositional and social), will be used in the

visual analysis of *Chasing Ice* (2012) and *Home* (2009). The *compositional modality* within each site will be focussed on to allow for a deeper understanding of the visual construction and qualities of visual imagery (Rose, 2001:258). Rose (2001:258) states that the compositional modality furthermore concerns the reception of an image, but for the purposes of this study, audience analysis will not be included. Particular attention will be paid to the reading of the visual materials at the site of the *image* itself, especially concerning the semiotic analysis, as Rose (2016:109) states: "...semiological studies...tend to concentrate on the *image itself* as the most important site of its meaning. Its focus on signs means that semiology always pays very careful attention to the *compositional* modality of that site...".

The application of Rose's (2016) specific *areas where meaning is created* allows for the visual communication techniques of specific scenes and/or images and furthermore, the meaning of these visuals in *Chasing Ice* (2012) and *Home* (2009) to be positioned. This proposed framework will be used to inform the filming techniques necessary for the visual communication of environmental awareness issues in the production of *Karoo* (2017).

3.6 CHAPTER SUMMARY

The aim of this chapter was to explain the methodology that will be utilised in the analysis of the environmental documentary films, *Chasing Ice* (2012) and *Home* (2009). For the purposes of this study, four of Bill Nichols' (2010) documentary modes will be positioned within the films. Beyond the application of Nichols's analytical model and the positioning of the documentary modes, it is imperative to consider the visual communication capabilities of the scenes and/or images in the films. Therefore, the techniques utilised for the visual communication of environmental awareness issues of the positioned documentary modes will be discerned with the application of a general semiotic analysis at Gillian Rose's *compositional* modality within the site(s) of *production* and the site of the *image(s)* itself.

Chapter Four will see the analysis of *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand according to the proposed methodology. This methodology aims to highlight the filmic techniques utilised for the visual communication of environmental awareness issues in the selected documentary films. This in turn, will inform the production of three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within the environmental documentary video, *Karoo* (2017).

CHAPTER 4

ANALYSIS OF *CHASING ICE* (2012) AND *HOME* (2009)

4.1 INTRODUCTION

Chapter Three presented the framework for the methodology that will be applied in this chapter. This study utilises Rose's visual methodology to position selected shots and/or scenes in *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand according to Nichols's typology of documentary modes, by introducing basic semiotic readings.

As stated in Chapter Three, film is a type of visual technology that acts as a "representation" of the "world", thus its visual imageries are never innocent or without meaning (Rose, 2016:2). Consequently, the visual communication intention of documentary film is not always understood by the viewer, therefore the rate at which documentary films are gaining popularity and reaching extensive audiences, warrants the necessity to study the complexities of documentary visual communication (Rosteck & Frenz, 2009 cited in Gregg, 2011:38).

An environmental documentary film is a powerful, audio-visual medium¹⁶ that is characteristically emotive and influential, as in the cases of *Chasing Ice* (2012) and *Home* (2009) (Copp, 2014:1). For this reason, as well as due to their differing narrative structures (discussed in Chapter Two), which supports the visual communication of environmental awareness issues, these films have been selected to be analysed for this study.

Using Bill Nichols's mode taxonomy and with the application of a semiotic reading of *Chasing Ice* (2012) and *Home* (2009), this chapter aims to inform the filmic techniques necessary for the visual communication of environmental awareness issues. The films both have a distinctive documentary voice that visually communicates the splendour of the environments over and above the effects of humanity. The shots and/or scenes that have been selected for the analysis are visual representations of the environments as well as indicative of one of the four documentary modes – namely the poetic, the expository, the observational, or the participatory modes (Nichols, 2010).

In order to understand how a documentary film utilises the documentary modes to "mediate" the viewer's "experience of place", it is important to consider the production codes, the

¹⁶ For the purposes of this study, the audio will not be analysed but mention will be made if and how it supports the visuals.

narrative codes, the codes of the *mise-en-scène*, the filmic codes, such as camera shots, angles, movements, and editing techniques, required for the construction of a shot and/or scene (Ulman, 2016:30). This will be discussed based on considering visual materials in terms of Gillian Rose's (2016) compositional modality under the *site of production* of the image and the *site of the image itself*.

4.2 CHASING ICE (2012)

Chasing Ice (2012), directed by Jeff Orlowski, is a documentary film that follows the members and the processes involved in the long-term photography programme, the Extreme Ice Survey (EIS), focussed on capturing high-definition, time-lapse videos of the melting of glaciers due to the negative effects of climate change. The very title, *Chasing Ice*, encompasses the pursuit to visually capture the ice before it disappears.

James Balog, a scientist, nature photojournalist and founder of the EIS programme, has always believed that “the most powerful issue of our time is the relationship between humans and nature” (*Chasing Ice*, 2012). Balog's intention to showcase the effects that humans have on the environment in a seductive manner is evident in his earlier use of *repeat photography*, also known as *rephotography*, as a method to capture the decay of glaciers over periods of time. This method allowed for tangible, visual evidence that Balog used to compare and track the changes of the environments that he frequented during his fieldwork. Professor Jon H. Rieger (2011:133), “known for having pioneered the development of the visual method for studying social change that emphasise[s] various strategies of repeat photography”, writes:

Perhaps the most reliable way we can use photography to study social change is through the systematic visual measurement technique of ‘repeat photography’ or, simply, ‘rephotography.’ These terms refer to a process by which we create a temporally ordered, that is, *longitudinal*, photographic record of a particular place, social group, or other phenomenon. We then review the photographs for evidence of change.

The EIS team built on Balog's idea of “rephotography” as a method of comparison for *glacier change* “by putting time-lapse cameras near glaciers in Greenland, Iceland, Alaska, and Montana to capture their rapid decay over a period of three years (2007-2010)” (Copp, 2014:2). Balog justifies the reasoning behind the work undertaken by the Extreme Ice Survey (EIS), by stating: “I realised, the public does not want to hear about more statistical studies, more computer models, more projections...what they need is a believable, understandable piece of visual evidence...something that grabs them in the gut” (*Chasing Ice*, 2012). Jeff Orlowski, director of *Chasing Ice* (2012), was appointed by the EIS group as

the videographer to document their project. Orlowski proceeded to convince Balog to be the subject of the film (Peck, 2014:6). The main narrative of the film is concerned with James Balog's quest to visually communicate the severity of the human impact on the environment, specifically on glacial environments, and the difficulties that Balog and his team face and overcome during this process (Copp, 2014:2).

In *Chasing Ice*'s opening, the viewer is introduced to the broad topic at hand, i.e. global warming (also known as climate change), with the use of archival news footage (see Figure 4.1). News presenters relay the information to the viewer with the help of accompanying visuals that portray the negative effects of climate change. Global warming is a highly controversial topic where debates concerning its reality are prevalent (Frick, 2017:5-6). The contrasting sides to the argument are highlighted in this introductory segment of the film where statements for and against the belief in global warming, are put forth (*Chasing Ice*, 2012).



Figure 4.1: Archival footage in *Chasing Ice* (2012) (*Chasing Ice*, 2012)

The film crosses over to James Balog in the field where he is seen photographing the rough ocean and the waves pouring in over the ice broken off glaciers (see Figure 4.2). Balog and his passion for his work is reiterated with the method of interview where his photo assistant offers an oral history concerning Balog and his work ethic. The footage of Balog in the field, persevering regardless of difficult conditions, supports the narrative offered by his photo assistant, Svavar Jónatansson (as discussed in 4.2.3.1 *Participatory Scene One*).



Figure 4.2: James Balog in *Chasing Ice* (2012) (*Chasing Ice*, 2012)

In *Chasing Ice* (2012), artistic imagery becomes visual evidence of climate change. By substituting these images with footage of the personal journey undertaken by Balog and additionally, scientific evidence offered by experts in their respective fields through interviews, the film acts as a poetic visual record for glacial environments impacted by climate change. The film can therefore be regarded as an environmental documentary film, also referred to as an *eco-film* or *eco-doc*, as per David Ingram (2013:44), author of *The Aesthetics and Ethics of Eco-Film Criticism*, in the book *Ecocinema Theory and Practice*,

Some ecocritics tend to define an “eco-film” as a film that has a conceptual content which more or less explicitly promotes ecological ideas, or, more generally, an ecological sensibility. This conceptual content is usually understood to heighten viewers’ awareness of concepts such as ecocentrism and ecological interconnectedness.

The information presented throughout the film is synthesised towards the end of the film, where Balog conducts public forums where he showcases the time-lapse videos as the results of the Extreme Ice Survey (EIS). This is important to consider when reflecting on the film as a tool for activism¹⁷. The dissemination of the findings within the time-lapse videos strengthens the rhetoric of the film by offering the viewer visual evidence of the effects of climate change.






Three of Bill Nichols’ (2010) documentary modes are most represented in this film - namely the poetic, the observational and the participatory modes.

4.2.1 *The Poetic Mode in Chasing Ice (2012)*

Instances of the poetic mode in *Chasing Ice* (2012) are evident in the scenes where *visual patterns* and *acoustic rhythms* are created by the filmmaker (Nichols, 2010:162). The temporal structures of the scenes identified as *poetic*, are governed by the combination of music with tempos that parallel the arrangement of the visuals. The use of discontinuous time and space concerning the visuals, without the full regard for their original proximity, also known as “discontinuous fragmentation”, allows the filmmaker to build a mood or pattern according to their distinctive *documentary voice*. The application of different poetic techniques allows the filmmaker to convey environmental awareness issues from an innovative perspective (Nichols, 2010:210-211). Examples of these instances are listed in Table 4.1.

¹⁷ This will not form a part of the discussion within this dissertation, but it is relevant to mention considering the film’s rhetoric.

Table 4.1: Examples in *Chasing Ice* (2012) identified as poetic mode categories





Poetic Mode Quality	Illustration	Corresponding Frame
Montage sequence	The process of reaching the point-of-installation of the time-lapse camera is depicted through a montage sequence. (00:12:55 – 00:13:29)	
Visual patterns	Dolly and tracking shots to create a visual sequence of camera movements along the ice formations. (00:14:35 – 00:15:00)	
Prolonged use of still images	Use of a still photograph in between moving images for seven seconds with an accompanying emotive score. (00:16:39 – 00:16:46)	
Time-lapse videos	Time-lapse videos of the melting glaciers, cross dissolve into each other, which stresses the visuals. (00:32:40 – 00:33:15)	
Aerial footage	The use of aerial footage shots that follow on each other, accompanied by music and sound bites from interviews. (00:37:54 – 00:38:57)	






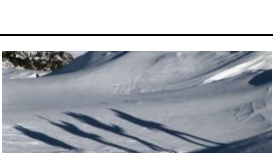
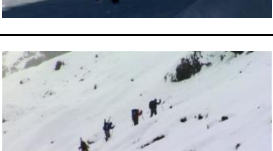
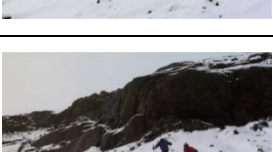
Emerging from shared qualities of the examples depicted in Table 4.1, the following scenes and/or sequences in Jeff Orlowski's *Chasing Ice* (2012), have been identified as poetic mode categories for a semiotic analysis positioned at the *compositional modality* under the *site of the image itself*, addressing the codes of form namely, camera movements, camera point-of-view, camera angles, and editing techniques:

4.2.1.1 Poetic Scene One

A series of fragmentary images occur in the film, as exemplified in the scene where the process of reaching the point-of-installation of the time-lapse camera, is depicted (see Table 4.2). It is poetic in the fact that it focuses on the form of the sequence to create a temporal visual pattern. This is known as a montage, where shots are sequentially arranged to shorten the time of the information being communicated. Rose (2016:76) states: "Montage is another term related to the composition of moving images, and refers to the temporal organisation of a film". A montage sequence is used to depict a lengthy process or to summarise the events that happen over a longer period into one succinct sequence (Bordwell *et al*, 2017:252). Montage is a method utilised by documentarians to overcome the tedium of showcasing the actuality of the time of events, since documentaries are known to have copious amounts of raw footage. At the *compositional* modality under the *site of the production* of the image, this montage sequence draws on the characteristics of its genre, namely documentary film, by creating a visual pattern that is exemplary of the poetic mode of representation, as outlined by Bill Nichols (2010).

Table 4.2: Poetic Scene One in *Chasing Ice* (2012)

Shot	Illustration	Corresponding Frame
Shot 1	Partially framed, close-up shot at eye level of snow boots being tied.	
Shot 2	Close-up shot at eye level of equipment being held.	
Shot 3	Long shot at eye level of Balog and a team member picking up their backpacks.	
Shot 4	Extreme wide shot from a high angle of the team as they are hiking.	

Shot 5	A wide angle shot at eye level of the EIS group as they cross a stream.	
Shot 6	Medium long shot from a low angle of two EIS members hiking up a snow-covered mountain.	
Shot 7	Medium close-up shot from a high angle of Balog's face as he walks up a snow-covered mountain.	
Shot 8	Close-up shot from a high angle of legs and boots in walking in thick snow.	
Shot 9	Close-up shot from a low angle from behind of legs and specialised boots hiking in snow.	
Shot 10	Long shot from a high angle of the shadows of the team members as they walk up a mountain.	
Shot 11	Wide angle shot from a low angle of the EIS team members hiking up a mountain.	
Shot 12	Wide shot from a low angle of two of the members walking up a mountain.	

The syntagmatic connotation refers to the message that is constructed according to the placement and relationship between shots that come directly before and/or after one another (Monaco, 2000:123). The different shots are all related by the fact that they represent aspects of clothing, technology, or the subjects in the environment relating to the installation of time-lapse cameras in a glacial environment (see Table 4.2). The syntagmatic signs, signs

that gain their meaning from signs that “come before or after them sequence in a moving image” (Rose, 2016:120), allows the viewer to establish a psychological logic. The frames have been arranged sequentially to establish a psychological logic. An *intellectual montage* has been created where a series of images are juxta positioned to create an overall abstract idea that is not present in any one image (Bordwell *et al*, 2017: G-3). Therefore, the syntagmatic connotation in the depicted sequence, is the processes involved in the fieldwork conducted by the EIS team concerning the installation of the time-lapse cameras.

The syntagmatic connotation is derived from three articulations of meaning. These decisions influence the eventual meaning conveyed in and by the depicted sequence (Fourie, 1988:35). The first articulation of meaning, under the *compositional modality* at the *site of the image itself*, is related to the content of the images. In this montage sequence Orłowski showcases the team’s work by including footage of their specialised equipment, clothing, and the team members on-location. The second articulation of meaning, which relates to the *technological modality* under the *site of production* of an image, is concerned with how the content is portrayed, such as the choice of the camera point of view and camera angles, which is also known as codes of form (Fourie, 2001:219). The different camera angles create a dynamic montage sequence which highlights the vigorous activities involved in the work that the EIS team has undertaken. Examples include close-up shots of specialised equipment, medium and wide-angle shots of the environment where the team can be seen hiking and close-up shots of the feet and legs of the team members as they are hiking through the snow. The inclusion of the close-up shots of specialised boots in the snow, is indicative of the level of expertise and the activities at ground level (see Shot 1, Shot 8 and Shot 9 in Table 4.2). This meaning is reiterated through the choice to shoot at ground-level instead of from an aerial perspective. The third articulation of meaning, which is again concerned with the *compositional modality* under the *site of the image itself*, is representative through the combination and editing of the different shots into an overall sequence. The montage sequence conveys the meaning of the type of work that the EIS members are doing, the intensity of the work and the unfolding of the work.









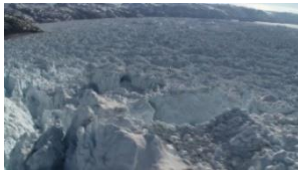
The repetition of the different shots of team members walking in the snow, suggests a sense of urgency that promotes the importance of the EIS. The pace of walking, as the members trudge steadily forward, is matched by the rhythmic tempo of the non-synchronous music. The diagonal force fields in the shots, especially where the team members challenge the up-diagonal (see Shot 6 and Shot 12 in Table 4.2), emphasises the effort and struggle that they are willing to endure. The up-diagonal force fields intensify the meaning that the elements are against them, and demonstrates that they are willing to go to extreme lengths to install

the time-lapse cameras. The montage sequence in Table 4.2, aids in the construction of the message concerning the importance of the EIS and encourages the viewer to develop an emotional connection to the project.

4.2.1.2 Poetic Scene Two

The use of dolly and tracking movements along ice formations, as depicted in Table 4.3, creates a visual rhythm that is evidence of the poetic documentary mode of representation (Nichols, 2010). The camera in its entirety changes position in a tracking and/or dolly shot as the camera travels along the ground in a direction. The camera “tracks” alongside the subject and the camera can “dolly-in” and “dolly-out” towards or away from the subject (Bordwell *et al*, 2017:195).

Table 4.3: Poetic Scene Two in *Chasing Ice* (2012)

Camera Movement	Corresponding Frames		
Dolly-in (00:14:35 – 00:14:42)			
Track to the left (00:14:42 - 00:14:50)			
Track to the left (00:14:50 - 00:15:00)			

The movement of the camera along the glacier, an example of codes of form (Fourie, 2001:219), allows the viewer to grasp the size of the landscape being documented, as per David Bordwell, Kristin Thompson and Jeff Smith, authors of the book, *Film Art: An Introduction*, “A tracking shot gives the objects considerable volume” (Bordwell *et al*, 2017:198). The tracking or dolly movement of the camera enhances the viewer’s perception of depth and consequently highlights the importance of the subject or object being filmed (Monaco, 2000:201). In the instance depicted in Table 4.3, shots of ice formations with



differing camera movements accompanied by music with an optimistic mood, appear in sequence.


The shots depicted in Table 4.3 are indicative of the poetic mode as the rhythm of the musical score is connected to the movement of the visuals to create a formal pattern (Natusch & Hawkins, 2014:7). Sound plays an active role in the shaping of imaging and how the viewer understands the image (Bordwell *et al*, 2017:265) and this accompanying score with a moderate, upbeat tempo, aids in establishing a sense of grandeur. The immense size is mirrored by the camera movement along the glaciers. Bordwell *et al* (2017:198) state: “When the camera moves, we sense our own movement through the space”. The camera movement and the score shape the poetic elements that make the viewer aware of the aesthetic formulation of the visuals (Fourie, 1988:39). This formulation is specifically aimed at portraying the vastness of the ice fields which in turn suggests the considerable amount of glacial formations that will be lost due to climate change.

4.2.1.3 Poetic Scene Three

The poetic mode is known to stress the emotional (Natusch & Hawkins, 2014:1) and this is evident in the scene depicted in Table 4.4. The filmmaker strives to establish an emotional relationship between the viewer and the central character (i.e. James Balog) by highlighting their goals and actions and by utilising filmic codes to achieve certain moods and effects (Ingram, 2013:44).

Table 4.4: Poetic Scene Three in *Chasing Ice* (2012)

Shot	Illustration	Corresponding Frame
Shot 1	Balog is filmed whilst he discovers that the equipment malfunctioned and therefore, no images were recorded on the camera. (00:32:20)	
Shot 2	Balog weeps whilst stating: “It’s so disappointing.” His verbalisation of his distress is emphasised with the use of a subtitle.	

Shot 3	In an interview with Balog's daughter, with tears in her eyes, she states: "It's hard to see somebody that you love chase after something that might not ever happen."	
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Greg Smith (1999:115-116), author of *Local Emotions, Global Moods, and Film Structure*, discusses the methods utilised by filmmakers to relay information and evoke specific emotions in the viewer:

Film structures that attempt to elicit mood can take advantage of the various means of access to the emotion system. Films provide a variety of redundant emotive cues, increasing the chance that differing audience members (with their differing preferences of emotional access) will be nudged toward an appropriate emotional orientation. Redundant cues, including facial expression, narrative situation, music, lighting, and *mise en scène*, all collaborate to indicate to the viewer what emotional mood is called for. The viewer need not focus conscious attention on each of these elements. The associative network of the emotions is activated by some of these cues, and this creates a low level of emotion.

In the depicted scene, Jeff Orlowski repeats the narrative with the use of "character, event, and environment to assure that the viewers will comprehend the necessary story information..." and "gives redundant emotional data to [ensure] that [the viewers] are cued toward the appropriate emotional orientation" (Smith, 1999:116). As Smith (ibid.) states:

A mournful mood can be [signalled] by character dialogue, lighting, music, *mise en scène*, facial expression, and narrative situation, and generally it is cued by some combination of these elements. Just as narrational redundancy exists because viewer attention frequently varies, emotive redundancy exists because the viewer's emotion system can be accessed through a variety of associative channels.

Furthermore, the filmmaker reinforces moods by specifically organising and situating emotional cues throughout the film that are linked to the development of the narrative. Viewers are especially influenced by emotion cues such as significant obstacles faced by the protagonist or hindrances in the progress of the plot (Smith, 1999:116).

Poetic Scene Three (see Table 4.4) appears after the concept behind the Extreme Ice Survey (EIS) program is given, after all the work that goes into it is depicted, and after an array of experts on the topic are interviewed where they discuss the topic of climate change [discussed in 4.2.3 *The Participatory Mode in Chasing Ice (2012)*]. The film loops back to the EIS and showcases the problems that the team encounter with supplementary footage of

interviews conducted with family members where their personal experience is recounted. The use of editing to combine different shots that connect to the viewer on a personal level, in order to elicit an emotional effect, is what makes this scene *poetic*. The shot of Balog with his head in his hands where he realises that the equipment malfunctioned is intercut with the shot where he can be seen, hunched over, brought to tears by the realisation that no photographs were captured on the device. His demeanour, as a visual representation of his emotional distress, is supported by his vocalisation of his disappointment and furthermore emphasised with the use of the subtitle, "It's so disappointing", that echoes his dialogue. The film jump-cuts to an interview with Balog's daughter where, with tears in her eyes, she states: "It's hard to see somebody that you love chase after something that might not ever happen" (*Chasing Ice*, 2012).





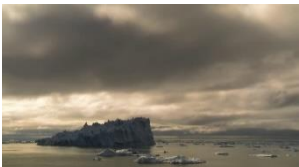
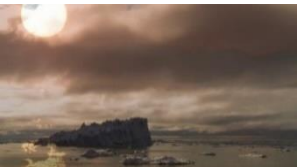






The meaning of this scene can be read by studying its syntagmatic connotation. The placement of Shot 3, where Balog's daughter is seen crying during an interview, directly after Shot 2, where Balog himself is seen crying, was a specific editing choice made by the editor. The connotation, due to the sequential placement of the shots, is that the EIS has become a personal matter for Balog and his family. The matter has become more than science and for this reason, the urgency of the matter is emphasised.

4.2.1.4 *Poetic Scene Four*

The construction of visual acoustic patterns as a means of establishing a specific mood is indicative of the poetic mode of representation (Natusch & Hawkins, 2014:6). Through the positioning of four time-lapse shots that cross-dissolve into each other in one sequence, a visual pattern is formed. The time-lapse shots depicted in Table 4.5 follow directly after *Poetic Scene Three* (refer to Table 4.4) in the film. Sombre music parallels the flow of visual patterns, instilling a sense of despair that echoes the discouraged mood felt by Balog and his daughter in the previous scene. Therefore, the emotional effect of the time-lapse sequence depicted in Table 4.5 is enhanced due to the positioning of the sequence directly after an emotional segment.

The very low shooting speed in time-lapse cinematography is an expressive effect that enhances the viewer's awareness concerning the changes in the environment due to the fact that the process of change can be captured over a long period of time and the entirety of the change can be visually communicated to the viewer in a fragment of the actual time.

Table 4.5: Poetic Scene Four in *Chasing Ice* (2012)

Shot	Corresponding Frames		
Time-lapse 1 Ice floating			
Time-lapse 2 Ice floating			
Time-lapse 3 Sun setting			
Time-lapse 4 Ice floating			





Time-lapse 3 that appears in Table 4.5 allows the viewer to see the full sunset in a matter of seconds, and with the accompanying time-lapse shots, creates a stunning natural choreography (Monaco, 2000:96). This specific time-lapse segment in the sequence of time-lapse shots, relates to the previous scene (*Poetic Scene Three*) with regards to its symbolic meaning. As stated, Balog and his daughter both exhibit signs of despair in the previous scene. The sun setting represents the end of a day and can therefore be read as a sign of “the end”. This symbolism has reference to Balog’s emotional response when the EIS equipment malfunctioned and the progress of the project comes to a halt.

4.2.1.5 *Poetic Scene Five*

With the application of time-lapse photography that spans over a period of months or years, as represented in Table 4.6, the recording and visual communication of extreme changes is made possible. The condensed speed at which these extreme changes are represented in the time-lapse scenes creates visual metaphors for the rapidity at which the glaciers are retreating.

The time-lapse videos that capture the retreat of the glaciers, as depicted in Table 4.6, are ambiguous in nature. The sheer beauty of these landscapes contrasts with the drastic negative changes happening to the environment assumed due to global warming. The videos are strategically positioned near the end of *Chasing Ice*, because at this point in the film, the viewer is forced to deal with the beauty of the visuals after gaining the knowledge that humanity is responsible for the destruction of these environments.

Table 4.6: Poetic Scene Five in *Chasing Ice* (2012)

Scene	Corresponding Frames	
Time-lapse 1 (00:58:50 - 00:59:16)	Time Span: 4 Years 6 Months condensed into 26 Seconds	
	 <p>Solheim Glacier, Iceland Time Span: 4 Years, 6 Months</p>	
Time-lapse 2 (1:00:16 - 1:00:38)	Time Span: 3 Months condensed into 22 Seconds	
	 <p>Columbia Glacier, Alaska Time Span: 3 Months</p>	

James Monaco (2000:94-95), an American film critic and author of the book *How to Read a Film*, states that time-lapse photography, also known as “extreme fast motion”, is especially useful in the natural sciences as it makes events that happen too slowly for humans to perceive, comprehensible. Due to the fact that the described time-lapse shots highlight natural landscapes unbeknown to the majority of humankind, they can be regarded as surreal forms of imagery and therefore, falls under the category of the poetic mode (Natusch & Hawkins, 2014:5). The importance of these time-lapse videos comes to light when the viewer realises that these faraway landscapes would have remained just that, if it was not for the EIS and the documentary film, *Chasing Ice*. By showcasing the splendour of these landscapes in a manner that is beyond the imagination, the filmmaker aims to highlight the enormity of the loss that humanity will suffer without ever being aware of it.

4.2.2 The Observational Mode in *Chasing Ice* (2012)


The observational mode in *Chasing Ice* is apparent in the scenes where the filmmaker is an unobtrusive observer to the unfolding of the events in front of the camera. Nichols (2010:172) states concerning the observational mode that the filmmaker “[chooses] to observe lived experience spontaneously”. “Rushes”, where raw, unedited footage is used, or footage shot with a handheld camera, are examples of the observational mode (Nichols, 2010:176). Examples of the observational mode appear in *Chasing Ice* where Orłowski unobtrusively films the installation of the time-lapse cameras, where aspects of Balog’s character is revealed, and where shaky, hand-held footage of Balog photographing one of his team members down the side of a crevice, is presented (see Table 4.7).


Nichols (2010:174) places himself in the role of an audience member and succinctly describes the observational mode as experienced by the viewer:

We look in on life as it is lived. Social actors engage with one another, ignoring the filmmakers. Often the characters are caught up in pressing demands or a crisis of their own. This requires their attention and draws it away from the presence of filmmakers. The scenes tend, like fiction, to reveal aspects of character and individuality. We make inferences and come to conclusions on the basis of [behaviour] we observe or overhear. The filmmaker’s retirement to the position of observer calls on the viewer to take a more active role in determining the significance of what is said and done.

In the observational mode, the camera becomes the “eyes and ears” for the viewer, allowing the viewer to determine the meaning of what is portrayed in the scene (Natusch & Hawkins, 2014:13).

Table 4.7: Examples in *Chasing Ice* (2012) identified as observational mode categories

Observational Mode Quality	Illustration	Corresponding Frame
Unobtrusive camera	Balog and his team are regarded as social actors whilst Orłowski records them installing and testing the time-lapse cameras on location. (00:13:38 – 00:14:03)	

<p>Duration of actual events as they unfold</p>	<p>The calving of a glacier is recorded for the duration of the event. There is no commentary, music or any sound effects, only the synchronous sound recorded by the camera.</p> <p>(00:17:35 – 00:18:35)</p>	
<p>Handheld footage</p>	<p>Footage of Balog and a team member investigating preserved ice cores.</p> <p>(00:21:42 – 00:21:59)</p>	
<p>“Rushes” Shaky, handheld footage</p>	<p>Orlowski records Balog as he crawls towards the edge of a Moulin to take a photograph.</p> <p>(00:45:47 – 00:46:00)</p>	
<p>Raw footage</p>	<p>Balog and two of his team members sit around a dining table discussing the fact that Balog will not be able to reach the point-of-installation of the camera due to his knee injury.</p> <p>(00:51:07 – 00:51:50)</p>	
<p>Aspects of James Balog’s character revealed</p>	<p>Balog is seen hiking in the icy terrain with the use of crutches after his knee operation, even after his doctor advised him not to.</p> <p>(00:53:31 – 00:53:40)</p>	

The following scenes and/or sequences have been selected as archetypal of the observational mode and will be discussed according to their production codes, narrative codes and codes of the mise-en-scène that are positioned at Rose’s (2016) *compositional modality* under the *site of production* of the image:

4.2.2.1 Observational Scene One

The footage of the installation of the time-lapse camera follows the montage sequence depicted in Table 4.2. Orlowski unobtrusively records the members of the EIS as they install

the first camera that will document the changes occurring in the environment (see Figure 4.3). This observational mode of filming enhances the reliability of what is presented in the image and encourages the viewer to determine the significance of the image (Nichols, 2010:174).

The signifier is the physically observable quality of an image, and for the image depicted in Figure 4.3, it is a digital video recording of Balog and his team (Fourie, 1988:29). The signified range is related to the realisation of the necessity of having an apparatus in place to acquire the visual proof of climate change. The camera depicted within the image becomes a symbolic representation for “eyes” and this idea is echoed by Balog’s statement: “The first eyeballs on the glacier... finally. Let's uh, see what a couple years brings to us” (*Chasing Ice*, 2012).



Figure 4.3: *Observational Scene One* (*Chasing Ice*, 2012)





The importance of creating a visual record of the landscapes is substantiated by including not only the final time-lapse videos, but also the recordings of the actual installation of the cameras and the journey the EIS undertook. The showcasing of the measures taken to collect the time-lapse videos of the landscapes legitimises the visual proof of climate change and gives credibility to the Extreme Ice Survey. Here, the camera is doubled as a symbol for “seeing”, which reiterates the importance of visual communication concerning environmental awareness issues.

4.2.2.2 *Observational Scene Two*

The sequence depicted in Table 4.8 consists of four shaky, handheld shots indicative of the observational mode (Natusch & Hawkins, 2014:14). The denotation of the sequence is that preserved ice cores offer an extensive record of ice sampled in the past (*Chasing Ice*, 2012). This is indicated by the vast amount of ice cores visible in Shot 1 (see Table 4.8). Monaco (2000:166) discusses the use of a thermometer as an indexical sign, stating: “How can we convey the idea of hotness cinematically, for instance? In written language it's very easy, but

on film? The image of a thermometer quickly comes to mind. Clearly that is an index of temperature”. In this instance (see Shot 2 in Table 4.8) the thermometer indicates a temperature of -40°C . This extremely low temperature highlights the fact that ice is being stored. Shot 3 is a panning shot across one of the ice cores. The camera movement is a method of repeating the extensive influence that Balog attaches to the cores. The footage of them looking at the ice cores (see Shot 4 in Table 4.8) is supplemented with snippets of audio taken from interviews where Balog explains the importance of the ice records. As Balog narrates: “And then I learned about the record that’s in the ice cores. The history of ancient climate that was embedded in those cores. And the story that the glaciers were telling” (*Chasing Ice*, 2012).

Table 4.8: Observational Scene Two in *Chasing Ice* (2012)

Shot	Illustration	Corresponding Frame
Shot 1	Shaky, handheld, medium-long shot at eye level following Balog and a team member as they walk between rows of ice cores. (00:21:42 – 00:21:47)	
Shot 2	Handheld footage shot at eye level of a thermometer. (00:21:48 – 00:21:50)	
Shot 3	Handheld, panning shot along one of the tubes that contain the preserved ice. (00:21:50 – 00:21:55)	
Shot 4	Handheld footage of Balog and a team member studying the ice cores. (00:21:55 – 00:21:59)	

The preserved ice cores are in fact, a method of recording the climate and can thus be used to monitor climate change. The connotation is that they are going to use this as a means of monitoring the effects of global warming on the glaciers.

4.2.2.3 *Observational Scene Three*

Figure 4.4 is a depiction of an observational mode scene in *Chasing Ice* (2012) where Orłowski makes use of handheld, shaky “rushes” in order to capture Balog as he leans over the side of a moulin to capture a photograph. Orłowski’s shaky, rushed footage expresses the nervousness felt by the videographer as he unobtrusively captures Balog in this uncontrolled situation. The accompanying music helps to create a suspenseful mood that reiterates the dangers involved in the actions carried out by Balog in the image. The choice of narration, “It’s all calculated risks. It’s not like we’re just going out there and playing Russian Roulette”, accompanied with this footage, is a metalinguistic element that supports the narrative of the scene (Fourie, 1988:39).



Figure 4.4: *Observational Scene Three* (*Chasing Ice*, 2012)

Furthermore, the observational mode is represented using synchronous sound where Balog verbalises his actions unaware of the fact that he is being filmed: “I’m going out here on this broken fin. Okay? And I don’t, I assume it won’t collapse. Okay. All done! Oh, thank God! Fantastic!” (*Chasing Ice*, 2012).

The cracks in the ice symbolise the fragility of the landscape. In this scene (see Figure 4.4), the danger attached to the fragility of the landscape is communicated. The different elements in the scene, generates a feeling of unease in the viewer. The risks involved in the EIS is linked to the safety of Balog’s life which forces the viewer to consider whether Balog would place himself in these positions if the urgency for the awareness of the effects of climate change was not of utmost importance.

4.2.2.4 Observational Scene Four

In Figure 4.5, James Balog can be seen hiking in the snow whilst on crutches. Orłowski uses this scene to visually communicate aspects of Balog's character. The connotation attached to use of crutches is that Balog is in pain, which is supported by scenes in the film where Balog's need for knee surgery is discussed, as well as footage in the hospital and his rehabilitation, is included (*Chasing Ice*, 2012). This image (Figure 4.5) communicates Balog's commitment to the Extreme Ice Survey. Even though Balog is struggling, he endures the obstacles that he faces which shows that he is motivated to finish what he started. This commitment highlights the urgency and magnitude of the matter and the importance of the work that Balog and the EIS are doing.



Figure 4.5: *Observational Scene Four (Chasing Ice, 2012)*

Balog and the glaciers can be related in the sense that both require support. As Balog's knee requires support against the harsh conditions, the glaciers require support against climate change. This idea can also be regarded as ambiguous in nature due to the fact that climate change is destroying the glaciers and the glaciers are actually destroying Balog's knees.






4.2.3 *The Participatory Mode in Chasing Ice (2012)*


The participatory mode in *Chasing Ice* is apparent where interviews are used as the foundation for the oral communication of the film's subject (Natusch & Hawkins, 2014:15).

There are different types of interviews, each with an individual function, in support of the communication of environmental awareness issues. Examples include interviews that "represent broad social and historical perspectives" (Nichols, 2010:187), interviews that offer an oral history concerning the main character and the subject matter, and interviews where personal viewpoints and experiences are recounted (see Table 4.9). The inclusion of a variety of voices and opinions from multiple individuals "enhance[s] our belief in the film's

credibility” and the grain of individual voices enriches the commentary (Natusch & Hawkins, 2014:15).

Table 4.9: Examples in *Chasing Ice* (2012) identified as participatory mode categories

Participatory Mode Quality	Illustration	Corresponding Frame
Interviews: Oral history	Interview with Balog’s assistant offers insight into Balog’s work ethic.	
Interviews: Oral history and personal viewpoint	Balog discusses the EIS and what the work represents to him.	
Interviews: Personal viewpoint	Balog’s wife, Suzanne Balog, offers her personal viewpoint by reflecting on her personal experiences concerning Balog and the importance of the EIS.	
Interviews: Presents broad social issues and historical perspective	Expert in glaciology and offers information about the ice cores and the importance thereof as records of climate change.	
Interviews: Personal viewpoint	Simone Balog, Balog’s daughter, offers her personal viewpoint concerning the EIS and discusses her father’s motivation for the project and the importance of what he is doing for climate change.	

<p>Filmmaker and subject respond to each other.</p>	<p>Filmmaker directly addresses the subject by asking him the question: “Adam, have you ever done something like this before?”. The filmmaker’s role is engaging and collaborative.</p>	
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The interviews that follow have been identified as participatory mode categories for an analysis positioned at the *compositional modality* under the *site of production* of an image looking at the codes of content of the scenes:

4.2.3.1 Participatory Scene One

An interview with Balog’s photo assistant, as depicted in Figure 4.6, offers an oral history concerning Balog’s work ethic and motivation for the Extreme Ice Survey. The viewer is given background information into Balog’s character which supports the footage of Balog in the field determined to overcome any obstacles to complete the project (*Chasing Ice*, 2012).



Figure 4.6: *Participatory Scene One* (*Chasing Ice*, 2012)

The code of shot distance in this image allows for the subject and the environment to be included in the image (Monaco, 2000:198). The medium close-up shot of Svavar Jónatansson, is the iconic sign in this image as the signifier (the video footage) resembles the signified (Balog’s photo assistant, Svavar Jónatansson) directly. As per Monaco (2000:177): “In the iconic image, signifier is identical with signified”.

The iconic sign is substantiated with an arbitrary sign that acts as a metalinguistic element. The arbitrary sign is the lower-third title where the words, “Svavar Jónatansson, Photo Assistant”, are written. It is regarded as an arbitrary sign because the relationship between the signifier and the signified is unnatural and the meaning is controlled by the recipient (Wollen, 2010:171). This acts as a metalinguistic element in the image because it helps to

convey the message, that the subject is important to include concerning the narrative, more intelligibly (Fourie, 1988:39).

The on-location interview further legitimises the credibility of the subject's voice, as the recipient can interpret that the subject has first-hand experience in the field due to the glacial environment being signified. The snow in the background becomes the indexical sign which signifies the icy conditions under which they work. The artefacts in the image, such as the specialised jacket and the beanie on the subject's head, substantiates the indexical sign because it represents clothing that would be needed in icy conditions.

In this interview, Jónatansson, admires and praises Balog (*Chasing Ice*, 2012). The viewer is met with an individual whose opinion is reliable concerning Balog's character, which increases the reliability of the work being done by the EIS and in turn strengthens the overall narrative of the film.

4.2.3.2 Participatory Scene Two

In Figure 4.7, James Balog is depicted as an icon for the profession of photography, as written in the lower third title in the image (*Chasing Ice*, 2012). This establishing shot, where Balog's entire body is placed within the environment, is in intercut with visuals that offer more information concerning Balog whilst the sound recorded during the interview, continues.

The lower third is an arbitrary sign that serves a metalinguistic function. The sign intends to explain and emphasise the subject matter being communicated. The title, "James Balog, Photographer", informs the recipient of the name of the individual represented in the image as well as their profession (see Figure 4.7).



Figure 4.7: *Participatory Scene Two* (*Chasing Ice*, 2012)

Balog is depicted in Figure 4.7 sitting cross-legged on the edge of a mountain (*Chasing Ice*, 2012). The placement of the subject in the specific environment visually communicates the

areas of concern and furthermore corroborates the dialogue earlier in the film where Balog describes himself as a mountaineer: “As a guy who's been mountaineering for basically my whole adult life...someone who's trained in the earth sciences, I never imagined that you could see features this big disappearing in such a short period of time” (ibid.).

Alanna Myers (2013:263) author of “*Skeptics*” and “*Believers*”: *The Anti-Elite Rhetoric of Climate Change Skepticism in the Media* in the book *Environmental Conflict and the Media*, believes that the issue of climate change is best communicated with the use of experts that the viewer can trust. Therefore, the translation of Balog’s character is vital in the overall persuasiveness of the film and furthermore, the validity of the effects of climate change on glaciers. As Alex Copp (2014:3), author of the paper, *The Mass Mediation of the Eco-documentary: A Comprehensive Analysis of the Rhetoric and Reception of An Inconvenient Truth and Chasing Ice*, writes concerning Balog’s role in the persuasiveness of the film: “...personable presence is as important to the persuasiveness of [the] given [film] as the content is itself”.

4.2.3.3 Participatory Scene Three

James Balog introduces Dr Tad Pfeffer in the film where he states: “Tad's a glaciologist, he's really the grandfather, the Godfather the knowledge base about those glaciers in Alaska” (*Chasing Ice*, 2012). The iconic image of Dr Pfeffer (see Figure 4.8) is shot at a medium close-up distance where his head and shoulders are visible. The lower third title, Dr. Tad Pfeffer, Glaciologist, University of Colorado”, is an arbitrary sign with a metalinguistic function to convey to the viewer that the iconic sign in the image is the glaciologist from the University of Colorado, Dr Tad Pfeffer. The arbitrary sign reinforces Pfeffer’s credibility as an expert on the topic, and communicates to the viewer that the information and opinions offered by the icon, can be trusted.



Figure 4.8: Participatory Scene Three (*Chasing Ice*, 2012)

Dr Pfeffer offers the viewer insight into the importance of the ice cores as a record of climate change (as discussed in 4.2.2.2 *Observational Scene Two*). Thereafter graphs are used to depict the drilling of the ice cores. This interview is supplemented with motion graphics that depict the process of obtaining the ice cores. These graphics are metalinguistic elements that serve to make the communicative process between the filmmaker and the viewer, more intelligible (Fourie, 1988:39). Awareness of the topic at hand is thus created with the use of scientific information communicated through various filmic methods.

4.2.3.4 *Participatory Scene Four*

Simone Balog, James Balog's daughter, is depicted in Figure 4.9 as shot from a close-up camera distance. This iconic image includes an arbitrary sign that serves a metalinguistic function. The arbitrary sign is the text "Simone Balog, James's Daughter" that appears as a lower third title in the image.



Figure 4.9: *Participatory Scene Four* (*Chasing Ice*, 2012)

The close-up shot forces the viewer to focus on the subject's face and thus the viewer is more inclined to focus on nonverbal cues offered by the subject. Simone Balog discusses the personal impact that EIS project has had on her and her father and at a stage begins to cry during the interview (refer to Shot 3 in Table 4.4). The portrayal of emotions can provoke a range of responses (Smith, 1999:107) and in the instance of this personal voice; the viewer is encouraged to empathise with Balog. The importance of Simone Balog's interview voice is echoed by Alex Copp (2014:4-5):

Balog...is a family man, and interviews with Balog's wife and daughters show how much they support their father through this project even though they miss him dearly. Once again, these portions of the film do not address the issue of global warming at all, but are rather rhetorical tools to help [legitimise] the messenger in a debate where the appearance of legitimacy is all that matters for those who cannot comprehend the science behind the debate itself.

Balog's daughter can be regarded as a symbol of youth where her inclusion in the film represents the importance that Balog continuously places on the preservation of the environment for the future (*Chasing Ice*, 2012). This idea is most evident in the closing scene of the film where Balog's narration adds a philosophical aspect to the film:

When my daughters, Simone and Emily, look at me 25 or 30 years from now and say, what were you doing when, when... global warming was happening and you guys knew what was coming down the road. I want to be able to say, guys, I was doing everything I knew how to do.

4.3 HOME (2009)

Home (2009) directed by the French photographer, Yann Arthus-Bertrand, covers the origin of life on Earth, the development of nature, agriculture and the resulting impact of modern humanity. Arthus-Bertrand created a film that depicts a visual journey across the world with the use of “Earth from above” footage. The sole use of aerial footage throughout the entire film might suggest a bird’s eye view where an objective view supports the off-camera commentary and in turn, builds a sense of credibility (Nichols, 2010:169). The depiction of the *ecological sublime* (discussed in Chapter 2) is elevated with a graceful, “voice-of-God” narration by American actress, Glenn Close (*Home*, 2009). The presence of a female voice can be linked to the idea of “the giver of life” and reinforces the personification of nature as “Mother Nature”, which reinforces the narrative of the film. The title of the film encourages the viewer to acknowledge the importance of the film’s message as this is the “home” of all of humanity.

The opening scene of the film, as depicted in Figure 4.10, enthrals the viewer as a satellite image of the Earth slowly emerges out of complete darkness (*Home*, 2009). The inclusion of this scene where the entire globe is revealed, establishes the Earth as the overall narrative of the film, and is supported by commentary that introduces the story of life on Earth:

Listen to me, please. You're like me, a homo sapiens...a wise human. Life, a miracle in the universe, appeared around 4 billion years ago. And we humans, only 200,000 years ago. Yet we have succeeded in disrupting the balance that is so essential to life. Listen carefully to this extraordinary story, which is yours, and decide what you want to do with it (*Home*, 2009).



Figure 4.10: *Opening Scene in Home (2009)* (*Home*, 2009)

The opening scene concludes with a gradual fade to black that fades into an aerial shot over the *Oi Doinyo Lengai* volcano in Kenya (see Figure 4.11). This shot lasts for one minute and five seconds until it cuts to another prolonged aerial shot of the *Lakagigar* volcanic system in

Iceland, as depicted in Figure 4.12 (Arthus-Bertrand, 2015). The volcanic systems are related to the Earth's structure at its origin. As per Glenn Close's narration during these fly over shots: "And even today, new volcanoes continue to sculpt our landscapes. They offer a glimpse of what our Earth was like at its birth, molten rock surging from the depths, solidifying, cracking, blistering or spreading in a thin crust, before falling dormant for a time" (Home, 2009).



Figure 4.11: *Ol Doinyo Lengai volcano* (Arthus-Bertrand, 2015)



Figure 4.12: *Lakagigar volcanic system, Iceland (64°07'N - 18°14'W)* (Arthus-Bertrand, 2015)

The film continues by looking at water and its impact on the development of life on earth (Home, 2009). Shots along rivers and channels cross dissolve into the next, creating a flow of graphic patterns (refer to Figure 4.13). The different channels are compared to the veins in a human body, where the narrator states: "The water cut channels. They are like the veins of a body, the branches of a tree, the vessels of the sap that the water gave to the Earth" (Home, 2009). This suggests that just as blood circulates through the human body, so does water circulate the Earth and furthermore, just as the human body is dependent on blood, so is the Earth dependent on water.



Figure 4.13: *Tungnaa River, north-east of Landmannalaugar* (Arthus-Bertrand, 2015)

The narration of the film continues by addressing aspects such as the development of natural energy, the processes involved in agricultural development and the rise of modern cities, and how this has affected life on Earth (*Home*, 2009).



Figure 4.14: *Lagos, Nigeria* (*Home*, 2009)

Humanity is depleting the Earth's resources, which leads to migratory phenomena as depicted by the masses of people who have travelled to live and work in *Lagos* in Figure 4.14. The "voice-of-God" in *Home* (2009) guides the visuals by stating:

Lagos is one of the fastest growing megalopolises in the world. The new arrivals are mostly farmers forced off the land for economic or demographic reasons, or because of diminishing resources. This is a radically new type of urban growth, driven by the urge to survive rather than to prosper. Every week, over a million people swell the populations of the world's cities.

The negative effects of the extreme depletion of resources might lead to the development of modern cities but in contrast to that, people living in rural areas are left to struggle for survival. The narrator informs the viewer that the eventual outcome of humanity's behaviour will have dire consequences that links to all spheres of life. The effects are listed with the use of titles where statistics concerning resource consumption appear. These include

statistics regarding access to safe drinking water, the rate of deforestation, the rise in species extinctions and the degree of global warming. These statistics are alternated on-screen with visuals that further support the information offered (*Home*, 2009).

The local and global issues represented in the film are shown to be interconnected, focusing on guiding the viewer to acknowledge their role in protecting the Earth's resources through sustainable behaviour. At the end of *Home* (2009), the "voice-of-God" offers the viewer "solutions", supported by the visuals, to the various problems depicted throughout the film. The viewer is encouraged to be positive concerning the future of the planet as different "solutions" already in place across the world, is recounted. The narrator leaves the viewer with the following final words: "We know that the solutions are there today. We all have the power to change. So, what are we waiting for?" (*Home*, 2009).

The documentary modes most represented in the film are the poetic, the expository and the observational modes (Nichols, 2010).







4.3.1 *The Poetic Mode in Home (2009)*

When referring to the poetic mode, Bill Nichols (2010:129) states that "the filmmaker's way of seeing things took higher priority than demonstrating the camera's ability to record what it saw faithfully and accurately". Therefore, the unique "film form" of *Home* (2009), where the filmmaker relies solely on aerial footage, is suggestive of the poetic documentary mode of representation. The prolonged time of the aerial shots, as depicted in the first image in Table 4.10, is an example where the visuals are stressed and the viewer is forced to consider what is represented in the image.

The pace of editing varies according to the narration of the film, as can be seen in the slow rhythm of the "birth of the Earth" with fly over footage over volcanic formations, versus the faster rhythm where the narration deals with the development of modern cities. The decisions concerning the rhythm of the different sections in the film, is again indicative of the poetic mode, as the filmmaker consciously constructs the "film form" (*Home*, 2009).

Metaphorical images come to life in this mode (Natusch & Hawkins, 2014:6), for example, when the concept of migration is related amongst animals and humans with visuals of the movement of a herd of Caribou and the movement of people in a modern city (see Table 4.10).

Table 4.10: Examples in *Home* (2009) identified as poetic mode categories













Poetic Mode Quality	Illustration	Corresponding Frame(s)
Prolonged aerial footage stresses the visuals	Prolonged aerial footage as the camera moves over volcanic systems. (00:02:04 – 00:04:12)	
Visual patterns	Shots of clouds and water, whose compositional elements match, that cross dissolve into each other. (00:09:30 – 00:10:06)	
Montage sequence that creates a visual pattern	Montage sequence where shots of different animals form a visual pattern. (00:13:40 – 00:15:40)	
Montage sequence	The process of the collection of grain is depicted through a montage sequence. (00:25:59 – 00:26:45)	
Metaphorical images	The concept of the migration of humans is visually related to that of animals. (1:03:56 – 1:04:41)	
	The concept of the migration of humans is visually related to that of animals. (1:10:09 – 1:10:49)	

The following scenes and/or sequences in *Home* (2009) have been selected for a basic semiotic analysis considering their codes of form, namely the camera movements, the camera point-of-view, the camera angles and editing techniques:

4.3.1.1 Poetic Scene One

The extended visuals that flow along the Earth's natural formations hold the viewer's attention and according to Scott MacDonald (2013:21), author of *The Ecocinema Experience*, instills the belief that the depicted environments are worthy of sustained attention. An example of two aerial shots with extended durations appears in the poetic sequence depicted in Table 4.11. The first shot of the *Oi Doinyo Lengai* volcano in Kenya (refer to Shot 1 in Table 4.11) sees the fly-over movement of the camera where it records and tilts down as the helicopter flies over the volcano (*Home*, 2009). The second shot in the sequence is another prolonged aerial shot drifting over the *Lakagigar volcanic system* in Iceland (see Shot 2 in Table 4.11). The shot lasts for one minute and four seconds where the image and music not only maintains the flow along the volcanic system, but also the viewer's attention (MacDonald, 2013:21).

Table 4.11: Poetic Scene One in *Home* (2009)










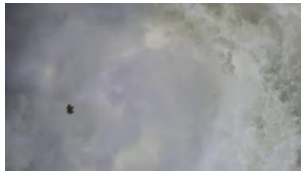


Shot	Corresponding Frames		
Shot 1 (00:02:04 – 00:03:07)			
			
Shot 2 (00:03:08 – 00:04:12)			
			

The placement of two aerial shots where the visuals are recorded as the camera flies over the landscapes in order to create the sense of flow, in sequence, accentuates the overall flow of the film. The viewer is drawn in by the flow along the organic patterns of the volcanic structures (*Home*, 2009).

4.3.1.2 Poetic Scene Two

The shots depicted in Table 4.12 form visual patterns as the organic movements within the shots link. The movement of flowing is intensified as the shots cross dissolve each other. The iconic images of clouds (Shot 1 and Shot 2) and water (Shot 3 and Shot 4) can be read as stages in the water cycle. The clouds represent water in its gas form and the waterfalls represent water in its liquid form. Therefore, the syntagmatic connotation formed by the placement of the visuals directly after each other in the film, is that the images represent the link between the different forms of water (Bordwell *et al*, 2017:381-382). This connotation is supported by the narration where the “voice-of-God” states, “The engine of life is linkage. Everything is linked” and, “Nothing is self-sufficient. Water and air are inseparable, united in life and for our life on Earth. Sharing is everything” (*Home*, 2009).






Table 4.12: Poetic Scene Two in *Home* (2009)






Shot	Corresponding Frames		
Shot 1 (00:09:31 – 00:09:39)			
Shot 2 (00:09:40 – 00:09:51)			
Shot 3 (00:09:52 – 00:09:59)			
Shot 4 (00:09:59 – 00:10:06)			

4.3.1.3 Poetic Scene Three

The montage sequence depicted in Table 4.13 comprises out of a series of fragmentary aerial images of different types of animals (*Home*, 2009). This scene concentrates on conveying information about species but it also exploits colours and shapes “to add abstract visual interest” (Bordwell *et al*, 2017:356). It is poetic in the fact that the shots were arranged sequentially to form a visual pattern (Nichols, 2010:162). As stated in Chapter Three, syntagmatic connotation refers to the meaning that arises from the relationship of shots arranged in a specific order (Fourie, 2009:357). The syntagmatic connotation in the depicted montage sequence is the interrelationship between different animal species on the planet, where each is as important as the next.

Table 4.13: Poetic Scene Three in *Home* (2009)

Shot	Illustration	Corresponding Frame
Shot 1	Wide, lateral aerial shot of a herd of buck as they walk in a line across a field of grass.	
Shot 2	Wide, tilted look-down shot of a cheetah and four cubs.	
Shot 3	Wide, tilted look-down shot of a herd of elephants as they walk through a wetland.	
Shot 4	Extreme wide, tilted look-down shot of a herd of elephants in a wetland.	
Shot 5	High angle, aerial shot, zooming in from an extreme wide to a wide shot of a giraffe eating the leaves from the top of a tree.	

Shot 6	Aerial, tracking shot moving laterally of a bald eagle sitting in a tree.	
Shot 7	Wide, tilted look-down shot of a pod of hippopotamuses.	
Shot 8	Wide, aerial shot of a flock of flamingos in flight.	
Shot 9	Extreme wide, tilted look-down shot of a herd of buffalo as they run along a wetland.	
Shot 10	Extreme wide, tilted look-down shot of a large herd of buffalo.	







The syntagmatic connotation is derived from three articulations of meaning that influence the constructed message (Fourie, 1988:35). The first articulation of meaning refers to the content in the visuals. In the images depicted in Table 4.13, the content follows the theme of visually representing different types of animals in their natural habitats (*Home*, 2009). The second articulation of meaning concerns the codes of form of the visuals. The use of aerial footage disconnects the viewer from the animals depicted in the images. This offers an objective view concerning every species depicted in the sequence, thus representing them as equal in importance. This is supported by the consistent use of extreme wide or wide camera shots. The lack of camera movements within the shots creates a montage sequence where the images easily flow. The third articulation of meaning involves the editing of the shots that results in meaning being derived from the interrelationship of the various shots (Fourie, 2009:357). The combination of visuals of animals shot at similar distances with similar camera movements, creates a sequence of balanced organic forms. The syntagmatic connotation of *Poetic Scene Three* is supported by the narration during this sequence where the “voice-of-God” states: “In the great adventure of life on Earth, every species has a role to

play, every species has its place. None is futile or harmful. They all balance out” (*Home*, 2009).

4.3.1.4 Poetic Scene(s) Four

Throughout *Home* (2009), the narrator makes reference to the migratory nature of both animals and human beings. In the first instance, as depicted in Scene 1 in Table 4.14, the narrator introduces the scene by discussing the prevalence of extreme poverty amongst humans. The “voice-of-God” states the following concerning the disparities between the rich and the poor, “They are the cause of population movements whose scale we have yet to fully realise” (*Home*, 2009). This scene is a visual representation, that consists out of extreme wide, aerial shots, of the population surge in Lagos, Nigeria (refer to the discussion on Figure 4.14).

Table 4.14: Poetic Scene(s) Four in *Home* (2009)

Scene	Corresponding Frames	
Scene 1 (00:57:09 – 00:57:39)		
Scene 2 (01:03:56 – 01:04:40)		
Scene 3 (01:10:09 – 01:10:49)		

The caribou herd depicted in Scene 2 in Table 4.14 acts as a visual link between the migratory traditions of animals and humans. The herd is seen running across a shallow body of water as they move diagonally across the frame. The diagonal movement is mirrored in Scene 3 as masses of people in Japan walk across an intersection. Scene 3 in Table 4.14 is visually tied to the voice over comment, “Migratory phenomena are inevitable. The only


uncertainty concerns their scale” (*Home*, 2009). The details within the shots become motifs for the representation of migratory occurrences.





The visual representations of these phenomena become metaphorical images of one another in the film. According to Gillian Rose (2016:120): “certain signs in a film may gain extra meaning because they have occurred in a previous scene”, and therefore, these signs are important when considering how meaning is created in a film. These scenes are representative of the poetic mode as Bordwell *et al* (2017:380) state: “shot-by-shot connections are linked by principles of analogy, metaphor, and implication, the sort of principles we find in poetry”.


4.3.2 The Expository Mode in *Home* (2009)

The use of voice over commentary to speak directly to the viewer in *Home* (2009), is the main feature that situates this film as representative of the expository mode (Nichols, 2010:149). Nichols (2010:167) states: “The expository mode addresses the viewer directly, with titles or voices that propose a perspective or advance an argument”. The “voice-of-God” commentary, where the speaker is heard but never seen, is supported by the visuals to guide and inform the viewer (*ibid.*). This emphasises the impression of objectivity as the narrator is placed “above” what is depicted in the images (Nichols, 2010:169). Examples of the expository mode in *Home* (2009) are depicted in Table 4.15.

Table 4.15: Examples in *Home* (2009) identified as expository mode categories

Expository Mode Quality	Narration	Corresponding Frame
<p>“Voice-of-God” narration offers an authoritative tone</p>	<p>“Listen to me, please. You are like me, a homo sapiens, a wise human. Life, a miracle in the universe, appeared around 4 billion years ago. And we humans only 200,000 years ago. Yet, we have succeeded in disrupting the balance so essential to life. Listen carefully to this extraordinary story, which is yours, and decide what you want to do with it” (<i>Home</i>, 2009). (00:01:29 – 00:02:01)</p>	

<p>Image supports basic claims</p>	<p>“But toxic pesticides seeped into the air, soil, plants, animals, rivers and oceans. They penetrated the heart of cells similar to the mother cell shared by all forms of life. Are they harmful to the humans they released from hunger? These farmers in their yellow protective suits probably have a good idea” (<i>Home</i>, 2009).</p> <p>(00:27:35 – 00:28:05)</p>	
<p>Argument proposed</p>	<p>“We have not understood that we're depleting what nature provides” (<i>Home</i>, 2009).</p> <p>(00:36:41 – 00:37:44)</p>	
<p>Argument advanced</p>	<p>“We have created phenomena we cannot control. Since our origins, water, air and forms of life are intimately linked. But recently we have broken those links. Let's face the facts. We must believe what we know. All we have just seen is a reflection of human behaviour. We have shaped the Earth in our image” (<i>Home</i>, 2009).</p> <p>(01:16:00 – 01:16:33)</p>	
<p>Image gives further support to the commentary</p>	<p>“Trees breathe groundwater into the atmosphere as light mist. They form a canopy that alleviates the impact of heavy rains. The forests provide the humidity that is necessary for life” (<i>Home</i>, 2009).</p> <p>(00:47:26 – 00:47:39)</p>	



Use of titles	Title reads: “20% of the world’s population consumes 80% of its resources” (<i>Home</i> , 2009). (01:16:54 – 01:20:42)	
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Selected from the examples depicted in Table 4.15, the following scenes have been selected for the analysis positioned at the *compositional modality* under the *site of the image itself* (Rose, 2016), examining the codes of content by specifically looking at the visuals’ relationship to the narrative codes:

4.3.2.1 Expository Scene One

The scene depicted in Table 4.16 visually communicates the processes involved in the application of pesticides to crops (*Home*, 2009). The yellow colour palette within the shots positions them as the representation of one location (Bordwell *et al*, 2017:305). Arthus-Bertrand creates graphic matches on movement, colour and position within the shots (Bordwell *et al*, 2017:254). These graphic patterns generate visual interest, and the arrangement of shots where the patterns match, sustains the viewer’s attention (Bordwell *et al*, 2017:356).

Table 4.16: Expository Scene One in *Home* (2009)

Shot	Illustration	Corresponding Frame
Shot 1	Extreme wide, direct look-down shot where the force field within the image challenges the up-diagonal.	
Shot 2	Wide, titled look-down shot where the force field within the image challenges the up-diagonal.	

Shot 3	Medium, tilted look-down shot where the force field within the image challenges the up-diagonal.	
Shot 4	Wide, tilted look-down shot where the force field within the image represents the up-diagonal.	

The scene is expository in nature since the visuals support the basic claims put forth by the narrator (Natusch & Hawkins, 2014:10). The “voice-of-God” in *Expository Scene One* in *Home* (2009), states:




But toxic pesticides seeped into the air, soil, plants, animals, rivers and oceans. They penetrated the heart of cells similar to the mother cell shared by all forms of life. Are they harmful to the humans they released from hunger? These farmers in their yellow protective suits probably have a good idea.

As stated by the narrator, the protective suits, as artefacts in the images, suggest that the subjects are involved in dangerous activities from which they need protection (*Home*, 2009). The fast rhythm of the accompanying music creates a feeling of urgency within the viewer which is supported by the forcefields within the images that emphasise power and effort, thus maintaining the gravity of the work depicted in the scene.

4.3.2.2 *Expository Scene Two*

The following scene in *Home* (2009) advances the argument that everything on Earth is inherently linked, proposed by the narrator at the beginning of the film. The aerial, tracking shot that flows along a mass of water where images of clouds are thrown back on the surface of the water (see Table 4.17), visually represents the narrative, “Since our origins, water, air and forms of life are intimately linked”. The narrator states, “All we have just seen is a reflection of human behaviour” which ties the narration to the visuals where clouds are reflected in the water. The shapes found within the image support the narration, “We have shaped the Earth in our image” (*Home*, 2009).

Table 4.17: Expository Scene Two in *Home* (2009)

Shot	Corresponding Frames		
Shot 1 (01:16:00 – 01:16:33)			







This scene is indicative of the expository mode as the filmmaker seeks to inform and move the audience via the narration and accompanying images (Nichols, 2010:211).









4.3.2.3 Expository Scene Three


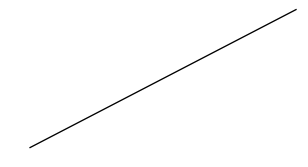
This section of the film (see Table 4.18), where twelve text frames are separated by visuals that aim to support the written text, lasts for a total of three minutes and forty-eight seconds (*Home*, 2009). The white text on a black background offer simple factual messages that lend a sense of authenticity to the film’s structure, which makes it indicative of the expository mode (Natusch & Hawkins, 2014:10).

The written words in the frames depicted in Table 4.18 are arbitrary signs that offer the viewer statistics concerning the human impact on the planet. The signs serve metalinguistic functions in the images, as they assist in conveying the intended message more intelligibly (Fourie, 1988:39).

Table 4.18: Expository Scene Three in *Home* (2009)

Frame	Text	Corresponding Frame	Alternated Visual
Frame 1	“20% of the world’s population consumes 80% of its resources” (<i>Home</i> , 2009).		
Frame 2	“The world spends 12 times more on military expenditures than on aid to developing countries” (<i>Home</i> , 2009).		
Frame 3	“5,000 people a day die because of dirty drinking water. 1 billion people have no access to safe drinking water.”		

	access to safe drinking water” (<i>Home</i> , 2009).		
Frame 4	“Nearly 1 billion people are going hungry” (<i>Home</i> , 2009).	Nearly 1 billion people are going hungry	
Frame 5	“Over 50% of grain traded around the world is used for animal feed or biofuels” (<i>Home</i> , 2009).	Over 50% of grain traded around the world is used for animal feed or biofuels	
Frame 6	“40% of arable land has suffered long-term damage” (<i>Home</i> , 2009).	40% of arable land has suffered long-term damage	
Frame 7	“Every year, 13 millions hectares of forest disappear” (<i>Home</i> , 2009).	Every year, 13 millions hectares of forest disappear	
Frame 8	“One mammal in 4, one bird in 8, one amphibian in 3 are threatened with extinction. Species are dying out at a rhythm 1,000 times faster than the natural rate” (<i>Home</i> , 2009).	One mammal in 4, one bird in 8, one amphibian in 3 are threatened with extinction Species are dying out at a rhythm 1,000 times faster than the natural rate	
Frame 9	“Three quarters of fishing grounds are exhausted, depleted or in dangerous decline” (<i>Home</i> , 2009).	Three quarters of fishing grounds are exhausted, depleted or in dangerous decline	
Frame 10	“The average temperature of the last 15 years have been the highest ever recorded” (<i>Home</i> , 2009).	The average temperature of the last 15 years have been the highest ever recorded	
Frame 11	“The ice cap is 40% thinner than 40 years ago” (<i>Home</i> , 2009).	The ice cap is 40% thinner than 40 years ago	

Frame 12	“There may be at least 200 million climate refugees by 2050” (<i>Home</i> , 2009).		
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Every text frame dissolves to black prior to the accompanying visual dissolving from the complete black frame to support the information offered in the previous text frame. However, the last text frame in the section has a longer duration and ends the section without an accompanying visual by dissolving to a black frame (*Home*, 2009).



4.3.3 *The Observational Mode in Home (2009)*

The observational mode is known to include footage where the filmmaker observes what happens in front of the camera without overt intervention (Nichols, 2010:172). As stated in Chapter Three, *Home* (2009) consists out of aerial footage captured from the base of a helicopter. Therefore, the filmmaker had no contact with the social actors in the film and maintains the role of unobtrusive observer of the events unfolding in front of the camera.

Instances in *Home* (2009) that represent the observational mode, include footage where the naturalness of the action depicted, is evident. Examples of these shots are depicted in Table 4.19.

Table 4.19: Examples in *Home* (2009) identified as observational mode categories

Observational Mode Quality	Illustration	Corresponding Frame
Unobtrusive camera where the viewer is not guided by the “voice-of-God” narration	Sequence of shots of people involved in manual labour where there is no guiding voice over. (00:18:36 – 00:19:16)	
Unobtrusive camera with no accompanying music	Pumpjacks extracting oil from an oil well. (00:30:22 – 00:31:14)	



Unobtrusive camera with no accompanying music or narration	Shot of a flock of birds as they gather around a fishing boat. (00:37:46 – 00:37:53)	
Unobtrusive camera with no accompanying music	Sequence of shots displaying the processes and effects of excessive mining. (00:33:36 – 00:34:25)	





The following scenes have been selected for an analysis based on looking at the codes of theme, codes of narrative, and the codes of the *mise-en-scène*, positioned at Rose’s (2016) *compositional modality* under the *site of production*, as derived from the overarching elements of the examples depicted in Table 4.19:

4.3.3.1 Observational Scene One

A sequence of shots of people working is shown after the narrator states: “Across the planet, one person in four lives as humankind did 6,000 years ago, their only energy that which nature provides season after season. It's the way of life of 1.5 billion people, more than the combined population of all the wealthy nations” (*Home*, 2009). There is no narration within the sequence, which gives the viewer the opportunity to discern for themselves the message in and of the visuals (Nichols, 2010:174). The depiction of people working manual labour in environments that are bare and derelict suggests that their working conditions and life conditions are tough.


Table 4.20: Observational Scene One in *Home* (2009)




Shot	Illustration	Corresponding Frame
Shot 1	Wide, aerial shot of two men carrying sand across a shore.	
Shot 2	Wide, aerial shot looking down at the boats docked at shore.	

Shot 3	Extreme wide, aerial shot of wooden boats.	
Shot 4	Extreme wide, aerial shot of huts.	
Shot 5	Wide, aerial shot of people manually grinding maize.	
Shot 6	Aerial shot flowing backwards revealing the cliff on the left of the image.	

The observation made by the viewer is supported by the sequence of shots in Table 4.21 that follows the observational sequence depicted in Table 4.20. The film cuts to a shot of people walking in an arid environment followed by three more shots of people in their daily lives in the same dry setting (Table 4.21). The narrator states: “But life expectancy is short and hard labour takes its toll. The uncertainties of nature weigh on daily life. Education is a rare privilege. Children are a family’s only asset as long as every extra pair of hands is a necessary contribution to its subsistence” (*Home*, 2009).

Table 4.21: Post Observational Scene One in *Home* (2009)

Shot	Illustration	Corresponding Frame
Shot 1	Extreme wide, tracking shot of people walking in an arid environment.	

Shot 2	Aerial, follow shot looking down at four people walking in an arid environment whilst carrying water in baskets on their heads.	
Shot 3	Wide, aerial shot of a group of people manually grinding maize.	
Shot 4	Wide, tilted look-down shot of a group of people manually grinding maize.	

4.3.3.2 Observational Scene Two

In Figure 4.15, the up-and-down movements of pumpjacks as they extract oil from a well, are depicted. The movement and resulting sound of the pumpjacks within the image, establishes a temporal rhythm. For this reason, the pumpjacks become visual metaphors for metronomes, and this is supported since they are visually tied to the narrative code:

Our agriculture has become oil-powered. It feeds twice as many humans on Earth, but has replaced diversity with standardisation. It has offered many of us comforts we could only dream of, but it makes our way of life totally dependent on oil. This is the new measure of time. Our world's clock now beats to the rhythm of indefatigable machines tapping into the pocket of sunlight. The whole planet is attentive to these metronomes of our hopes and illusions. The same hopes and illusions that proliferate along with our needs, increasingly insatiable desires and profligacy. We know that the end of cheap oil is imminent, but we refuse to believe it (*Home*, 2009).

The up-and-down movement of the pumpjacks further represents the positive and negative points stated in the narration. The positive aspect of oil is that agriculture is now able to “[feed] twice as many humans on Earth”, but in contrast to that “the end of cheap oil”, and the advantages that come with it, “is imminent” (*Home*, 2009). The imagery invokes the sense that time is running out and that the technology responsible for the splendours in the world, can destroy it (Bordwell *et al*, 2017:382).



Figure 4.15: *Observational Scene Two (Home, 2009)*

4.4 CHAPTER SUMMARY

This study has engaged with *Chasing Ice* (2012) and *Home* (2009) as visual representations of environmental awareness issues in an attempt to analyse the meanings communicated. This, in turn, presented a broader understanding of the visual communication of environmental awareness issues. It was found that the desired meanings were established through different and complex representations of environmental awareness issues (Batty *et al*, 2016:12). Therefore, the visual communication intention of environmental documentary film warrants critical analysis if the discourse concerning the communication possibilities of the genre, is to be advanced.

The scenes and/or sequences from Jeff Orlowski's *Chasing Ice* (2012) and Yann Arthus-Bertrand's *Home* (2009) analysed in this chapter, have been selected as rhetorical objectives for the visual communication of environmental awareness issues. These environmental documentary films aim to communicate environmental issues and as David Ingram (2013:43) states: "An important aim of eco-film criticism has been to promote a better and more urgent understanding of environmental issues in the culture of the arts and humanities."

In the following chapter, the information obtained through the analysis of *Chasing Ice* (2012) and *Home* (2009) will be synthesised according to the similarities and differences in techniques concerning the visualisation of environmental awareness issues. These techniques will be applied to the production of three shorts – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within *Karoo* (2017), a documentary video that will strive to act as a visual environmental record prior to possible shale gas exploration in the Karoo Basin in the Eastern Cape of South Africa.

CHAPTER 5

ANALYSIS OF *KAROO* (2017)

5.1 INTRODUCTION

In the previous chapter, images in *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand were extracted with the use of Bill Nichols's (2010) taxonomy of documentary modes and analysed by considering the cinematic techniques utilised in the production of the shots and/or scenes. In this chapter, the important cinematic techniques for the visual communication of environmental awareness issues implemented in *Chasing Ice* (2012) and *Home* (2009) will be synthesised by drawing on their similarities and differences.

These techniques will inform the production of an environmental documentary video by the researcher, entitled *Karoo* (2017) that explores the Karoo Shale Gas Baseline Research Programme currently being undertaken by the Africa Earth Observatory Network and the Earth Stewardship Science Research Institute (AEON-ESSRI) of the Nelson Mandela University. As stated in Chapter One, due to the scale of the baseline project undertaken by the AEON group, only three micro themes within the overall project will be addressed – namely *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*¹⁸.

The above-mentioned themes will constitute the three areas that will be addressed in the overarching theme of the Karoo and the AEON baseline study and will guide the production of three *film shorts* that will each function as a “unit of techniques”. The researcher's practical component will be discussed per shot and/or scene and their construction according to the cinematic techniques synthesised from the analyses in Chapter Four. This contrasts with the discussion of *Chasing Ice* (2012) and *Home* (2009) in the fact that shots and scenes were extracted from the whole for the analysis whereas for this study, shots and scenes were constructed using the information from the previous chapters. Therefore, the discussion of *Karoo* (2017) focuses on the implementation of cinematic techniques in the construction of shots and/or scenes in the three particular *shorts*.

5.2 SYNTHESIS OF *CHASING ICE* (2012) AND *HOME* (2009)

Chasing Ice (2012) and *Home* (2009) have been engaged with as visual representations of environmental awareness issues. The main difference between *Chasing Ice* (2012) and *Home* (2009) is the techniques utilised to present their narratives and furthermore, to make

¹⁸ A further two *shorts* - namely *Seismic Mapping* and *UAV Monitoring*, were produced for the documentary video *Karoo* (2017), but were not analysed for this study (see Addendum D and Addendum E).

them compelling and establish credibility (Nichols, 2010:255). *Chasing Ice* (2012) embodies the narrative film form with the use of a protagonist whereas *Home* (2009) relies on a “voice-of-God” to present the film’s rhetoric.

As stated in Chapter Four, the inclusion of interviews with experts in the field offers a variety of voices and opinions in *Chasing Ice* (2012), which “enhance[s] [the viewer’s] belief in the film’s credibility (Natusch & Hawkins, 2014:15). Interviews, as prime example of the participatory mode (Nichols, 2010:151), are used to present a fair and balanced perspective of the melting glaciers as an environmental awareness issue. *Home* (2009) utilises “voice-of-God” narration that is accompanied by footage that supports the information offered through the commentary. This expository mode quality, as stated by Nichols (2010:169), “emphasi[s]es the impression of objectivity and a well-supported perspective”.

In *Chasing Ice* (2012) and *Home* (2009), differing methods of “extending the visuals” are utilised. Examples include the time-lapse videos depicted in Table 4.5 and the prolonged aerial footage depicted in Table 4.11. As stated in Chapter Four, time-lapse cinematography offers the filmmaker the means to showcase the process of change over a long period of time, within a fragment of the time. The extended visuals allow the filmmaker to showcase the effects of climate change on the environment in a fraction of the actual time (Balog, 2014 ¶ 2). The prolonged aerial footage in *Home* (2009) not only maintains the flow of the landscapes depicted but also maintains the viewer’s attention. This cinematic technique enables the visualisation of environments that are worthy of sustained attention (MacDonald, 2013:21).

When considering the camera movements, camera angles and editing techniques discussed in Chapter Four under the poetic mode examples for *Chasing Ice* (2012) and *Home* (2009), it is evident that the construction of the “film form” is the primary objective in the scenes (Nichols, 2010:162). In both films, related images, as depicted in Table 4.2 and Table 4.13 in the previous chapter, are edited together into montage sequences to convey specific messages concerning environmental awareness issues. In *Chasing Ice* (2012) the processes involved in the installation of the time-lapse cameras that will capture the visual evidence of the melting of the glaciers, is depicted (see Table 4.2). In *Home* (2009) the montage sequence visually communicates environmental awareness by depicting different animal species that inhabit the environment (see Table 4.13).

The organic forms that match across the shots create the visual patterns present in the scenes represented in Table 4.3 and Table 4.12 in Chapter Four. The filmmakers intentionally edit shots with similar visual structures into a sequence by focusing on the

movement of the camera, as depicted in Table 4.3: Poetic Scene Two in *Chasing Ice* (2012), and focusing on the movement of the organic elements within the shots, as depicted in Table 4.12: Poetic Scene Two in *Home* (2009). The movement of flowing is created in *Chasing Ice* (2012) by sequentially arranging different shots where the camera moves along glacial formations. It is created in *Home* (2009) with the cross dissolving of shots with similar visual structures and organic movements. In both instances, the poetic elements emphasises the aesthetic formulation of the visuals (Fourie, 1988:39).

The observational mode overlaps concerning the unobtrusive role of the filmmaker where the naturalness of the action depicted, is evident (Nichols, 2010:172). The differences in the films concerning the observational mode is evident by comparing the scenes in *Chasing Ice* (2012) where shaky handheld footage is used (refer to 4.2.2.2 and 4.2.2.3), to the stable aerial footage in *Home* (2009) (refer to 4.3.3.1 and 4.3.3.2).

The observational scenes in the films include the synchronous sound of the recorded footage but the use of supplementary music amongst the scenes, varies. *Chasing Ice* (2012) and *Home* (2009) both have instances where the observational scenes are accompanied by music and scenes where the scenes simply include the synchronous sound¹⁹ of the raw footage.

Evident from the shots and/or scenes analysed in Chapter Four, *Chasing Ice* (2012) and *Home* (2009) incorporate different documentary modes as a means of constructing their individual rhetorics. As stated in Chapter Three, the majority of documentaries have multiple modes represented in the films that “serve as a skeletal framework that individual filmmakers flesh out according to their own creative disposition” (Nichols, 2010:143). The variety of modes apparent in *Chasing Ice* (2012) and *Home* (2009) support the research problem concerning the need to study the complexities of visual communication within the documentary film genre. The documentary modes offer an analytical model capable of identifying the different cinematic resources and/or techniques applied to the production of a documentary to create a distinctive voice (Nichols, 2010:31). Therefore, the cinematic techniques utilised for the construction of the shots and/or scenes most representative of the documentary modes, enable the filmmakers to visually communicate environmental awareness issues.

¹⁹ Synchronous sound refers to “sound whose source is made clear by the image track” (Cook, 2004:940b) and therefore, the sound matches what is depicted in the film.

5.3 PRACTICAL METHOD

This study consists of two components, namely the theoretical dissertation and the three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within *Karoo* (2017), produced for the practical component of this study. The cinematic techniques utilised in the different documentary mode shots and/or scenes in *Chasing Ice* (2012) and *Home* (2009) have been synthesised according to their differences and similarities. The information outlined in the synthesis will govern the construction of specific shots and/or scenes in the individual *shorts*.

Due to the nature of the images and topics depicted in the *shorts*, they will speak to the Karoo as well as the baseline studies within the AEON transdisciplinary research programme. However, different individuals might have more interest in a certain project within the overall baseline study and therefore the researcher will make it available as *shorts* as well as a continuous flowing video for assessment of the study.

The main difference between *Karoo* (2017) and the two environmental documentary films analysed for this study – namely, *Chasing Ice* (2012) and *Home* (2009), is that the films create visual awareness of change, whereas *Karoo* (2017) can be utilised for the visual awareness of change as well as the *measuring* of change. This is due to the scientific practices undertaken by the AEON transdisciplinary group and the scientific results to be included in the video²⁰.

The production of *Karoo* (2017), and consequently the production of the *shorts* for this study, made use of digital video technologies, Unmanned Aerial Vehicle (UAV) technology and video editing software. The footage was captured in colour, on a DSLR at a resolution of 1920 x 1080 at 25 fps (frames per second), on a DJI Phantom 3 drone at a resolution of 2.7k at 25 fps and on a GoPro Hero5 Black at a resolution of 2.7k at 60 fps. The aesthetics and overall appearance of the footage was enhanced and the final video was cut together in Adobe Premiere Pro CC.

The following section of this chapter presents a discussion of the construction of the shots and/or scenes within the *shorts* that supports a specific topic as well the overall theme of the Karoo. The aim is to create environmental visual records by applying the techniques analysed from *Chasing Ice* (2012) and *Home* (2009). This baseline approach will strive to

²⁰ However, for the purposes of this study, the researcher only focuses on the visualisation of environmental awareness issues, and not the scientific measurement of change.

create environmental awareness through methodical choice of imagery and the representation of factual evidence.

5.4 INTRODUCTION TO THE KAROO

This short introduces the Karoo by showcasing the different elements that constitute the place. As discussed in Chapter Two, the term, environment, literally means to surround and therefore, “All the biological and non-biological entities surrounding us are included in environment” (Kaushik & Kaushik, 2007:1). *Chasing Ice* (2012) includes non-biological and biological entities surrounding the glacial environments in the film. This is especially evident in *Poetic Scene Four* where the surrounding air, land and water is depicted in the time-lapse images (see Table 4.5); and *Observational Scene One*, depicted in Figure 4.3, where biological and non-biological entities are present. The most prominent examples of visuals that showcase the environment in *Home* (2009) include the living organisms as depicted in images of different types of animals in the montage sequence discussed in 4.3.1.3 (see Table 4.13); *Poetic Scene One*, depicted in Table 4.11, where the air and land of the environment are showcased; and *Observational Scene One* where the inhabitants are depicted as they interact with and within the environment (see Table 4.20). Therefore, in order to visually communicate the Karoo environment, the air, water, land, living organisms and materials and their interactions, should be included in the video (refer to Figure 2.2).

The visual imagery of the different elements within the Karoo environment in the video are classified as iconic signs as “the signifier[s] [resemble] reality in the sense of corresponding with it visually” (Fourie, 1988:30). The images are iconic signs of the depicted environment or the elements within the area. Thus, the visuals become iconic images of the current Karoo environment prior to possible shale gas exploration in the future.




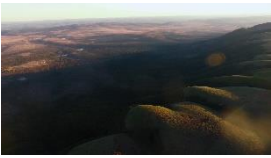



5.4.1 Scene One











This scene is comprised of aerial footage shot across the Karoo in the Eastern Cape of South Africa (see Table 5.1). The “voice-of-God” acts as a referential element in this scene as it introduces and guides the narrative of the short by stating:






The Karoo...a semi-arid environment in Southern Africa which dates back millions of years. Here, battling the elements for survival is a daily occurrence...and yet, a sense of spiritual peace pervades. The arid area houses a diversity of animal and plant species that have adapted to the harsh conditions. The fluctuation between extreme heat and cold establishes this environment as unforgiving. It is miraculous to think that this area is home to such a biodiversity of fauna and flora.

The “voice-of-God” in *Home* (2009) is used to guide the narrative of the film, whereas *Chasing Ice* (2012) uses interviews and observational footage of the work involved in the Extreme Ice Survey (EIS). Therefore, the use of narration to introduce the Karoo in this scene was appropriated from *Home* (2009). This cinematic technique is evidence of the expository mode as the commentary speaks directly to the viewer (Nichols, 2010:149).

Table 5.1: Scene One in *Introduction to the Karoo*

Shot	Illustration	Corresponding Frame
Shot 1	Extended aerial shot that flows along an escarpment outside Adelaide.	
Shot 2	Wide, aerial shot moving forwards over an escarpment outside Adelaide.	
Shot 3	Aerial, look-down shot moving forwards over the edge of an escarpment outside Adelaide.	
Shot 4	Extreme wide, aerial, tracking shot to the right depicting the edge of an escarpment outside Adelaide.	
Shot 5	Aerial, pedestal shot rising over Graaff-Reinet.	
Shot 6	Aerial shot tracking to the right over Cradock.	
Shot 7	Aerial shot panning to the right over Cradock.	

Shot 8	Aerial shot moving forwards towards the Nqweba Dam over the Valley of Desolation in Graaff-Reinet.	
Shot 9	Aerial shot of the Nqweba Dam, Graaff-Reinet.	
Shot 10	Aerial shot of the Nqweba Dam wall.	
Shot 11	Aerial shot of the Nqweba Dam and Graaff-Reinet.	
Shot 12	Aerial, pedestal shot rising over the Nqweba Dam and Graaff-Reinet.	
Shot 13	Aerial, pedestal shot rising over the Valley of Desolation in Graaff-Reinet.	
Shot 14	Aerial shot moving forwards through the Valley of Desolation.	
Shot 15	Aerial shot flying forwards whilst displaying the mountains behind the Valley of Desolation in Graaff-Reinet.	
Shot 16	Aerial shot where the camera in its entirety descends towards the N9 in Graaff-Reinet.	
Shot 17	Wide, aerial shot descending towards Cradock.	

Shot 18	Aerial shot tracking to the right over Cradock.	
Shot 19	Aerial, pedestal shot rising whilst depicting the mountain range outside Cradock.	
Shot 20	Wide, aerial shot moving backwards over farmlands in Adelaide.	
Shot 21	Aerial shot descending towards an escarpment outside Adelaide.	
Shot 22	Aerial shot flying towards the edge of an escarpment outside Adelaide.	


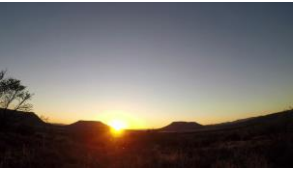

The use of aerial footage in this scene is indicative of the poetic mode as the researcher's primary focus was on the construction of the "film form" (Nichols, 2010:129). The aerial shots include footage of towns in the Karoo in the Eastern Cape, namely, Cradock, Graaff-Reinet and Adelaide, that could be affected by shale gas exploration.

This scene ends with a dip to black that fades into the time-lapse video discussed in Scene Two (see 5.4.2).

5.4.2 Scene Two

The thirteen second, time-lapse video of the sun rising is evidence of the poetic mode as appropriated from *Chasing Ice* (2012) (refer to 4.2.1.4). This cinematic technique depicted in Table 5.2 enables the visual communication of an event that normally spans over an hour into a fragment of the actual time.

Table 5.2: Scene Two in *Introduction to the Karoo*



Shot	Corresponding Frames		
Time-lapse 1 Sun rising			








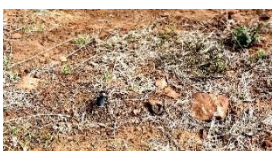


This time-lapse relates to the following scene where a montage sequence depicts different elements found within the Karoo environment (see Table 5.3). The sun rising represents the start of a day where the light illuminates the environment. This symbolism relates to *Scene Three* as light is shed on the elements within the environment that might be overlooked in daily life or is inaccessible to people living outside of the Karoo area.











5.4.3 Scene Three











The montage sequence of landscapes, animals and plants, as depicted in Table 5.3, is indicative of the poetic mode as the shots are arranged sequentially to form a visual pattern (Nichols, 2010:162). This has been drawn from the montage sequence in *Home* (2009) as depicted in Table 4.13. As with the sequence in Table 4.13, this sequence exploits colours and shapes “to add visual interest” (Bordwell *et al*, 2017:356). The shots are arranged in the sequence to represent the Karoo, literally and figuratively, “from the ground up”. Furthermore, the images link according to their colour palettes. The colours flow from orange to green, to blue, representing the sky, the water, the land and the ground in the Karoo. This colour palette is indicative of the colours found in the Karoo.






Table 5.3: Scene Three in *Introduction to the Karoo*

Shot	Illustration	Corresponding Frame
Shot 1	Shot of dew on a blade of grass as the sun is rising on a farm outside Cradock.	
Shot 2	Shot of grass gently moving in the wind as the sun is rising on a farm outside Cradock.	

Shot 3	Shot of grass gently moving in the wind as the sun is rising on a farm outside Cradock.	
Shot 4	Close-up shot of spider webs between blades of grass at sunrise on a farm outside Cradock.	
Shot 5	Close-up shot of the dew on the grass at sunrise on a farm outside Cradock.	
Shot 6	Close-up shot of a centipede as it walks across the ground on a farm outside Cradock	
Shot 7	Close-up shot of ants moving on the ground on a farm outside Cradock.	
Shot 8	Close-up shot of spider webs on the ground at sunrise on a farm outside Cradock.	
Shot 9	Close-up shot of termites as they collect twigs for the construction of their mound on a farm outside Cradock.	
Shot 10	Shot of a beetle as it moves along the ground on a farm outside Cradock.	
Shot 11	Close-up shot of grass on a farm outside Tarkastad.	
Shot 12	Medium shot of grass on a farm outside Tarkastad.	

Shot 13	Close-up shot of grass moving in the wind on a farm outside Tarkastad.	
Shot 14	Medium shot of the sap on the stem of thorn bush on a farm outside Cradock.	
Shot 15	Shot of the thorns and leaves on a thorn bush on a farm in Tarkastad.	
Shot 16	Shot of a tortoise as it rests in the shade under a thorn bush outside Jansenville.	
Shot 17	Shot of a blue lizard on a rock on a farm outside Graaff-Reinet.	
Shot 18	Medium shot of a bee as it pollinates the flower of an aloe on a farm outside Jansenville.	
Shot 19	Close-up shot with a shallow depth of field of a bee as it pollinates the flower of an aloe on a farm outside Jansenville.	
Shot 20	Medium close-up shot of a bee as it flies to pollinate the flower of on a prickly pear plant on a farm outside Graaff-Reinet.	
Shot 21	Medium shot of a cement dam and weaver nests on a farm outside Cradock.	
Shot 22	Close-up shot of the water in a catchment tank on a farm outside Cradock.	

Shot 23	Medium-wide shot of ducks in the rain on a farm dam outside Cradock.	
Shot 24	Medium-wide shot of water of a river along the road outside Graaff-Reinet.	
Shot 25	Wide shot of three tortoises next to a water catchment area on a farm outside Graaff-Reinet.	
Shot 26	Wide shot of a herd of cattle on a farm outside Graaff-Reinet.	
Shot 27	Medium-wide shot of cattle herded on a farm outside Tarkastad by a cattle herder.	
Shot 28	Medium shot of a centre-pivot irrigation system on a farm outside Tarkastad.	
Shot 29	Slow motion shot moving through the reeds on a farm outside Cradock.	
Shot 30	Slow motion shot of reeds with a windmill on a farm outside Cradock.	
Shot 31	Shot of a windmill on a farm outside Tarkastad.	
Shot 32	Aerial shot moving forwards whilst rising over a farm outside Adelaide.	

Shot 33	Aerial, look-down shot of a herd of cattle on a farm in Cradock.	
Shot 34	Medium shot of a herd of cattle on a farm in Tarkastad.	
Shot 35	Slow motion shot of a herd of goats on a farm outside Cradock.	
Shot 36	Wide, look-down aerial shot of a flock of sheep on a farm in Adelaide as they run vertically up the frame.	
Shot 37	Wide, aerial shot of a house on a farm outside Cradock.	

As stated in Chapter Three, the syntagmatic connotation in this sequence is derived from three articulations of meaning where the decisions at each level influence the final message conveyed in and by the images (Fourie, 1988:35). The first articulation of meaning is related to the content of the images and, in this case, the researcher's choice of what to represent in the shots (*ibid.*). The images within this montage sequence portray different elements found within the Karoo environment. This relates to the landscapes, the fauna, the flora and certain visuals that are most representative of the Karoo.


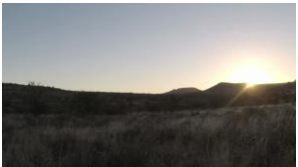
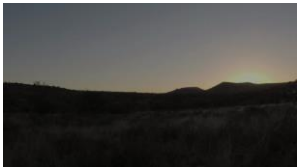
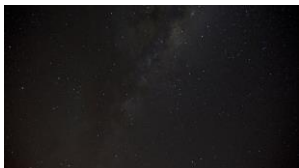


The second articulation of meaning concerns the filmic methods utilised by the researcher (*ibid.*). The images in this sequence were filmed with the intent of showcasing the beauty of the different elements within the Karoo. The camera distances differ according to the content of the images. The elements found closer to the ground are represented by close-up shots in order to capture the intricate details of the content. As the sequence develops, the content of the images moves from the micro level of the Karoo, to the more macro level concerning elements found at eye level. As the content moves to include a broader view of the Karoo, similarly to the camera distance, the viewer is offered a wider view of the area.

The third articulation of meaning refers to the way in which the researcher combined the shots as a means of creating form (ibid.). This montage sequence visually communicates the Karoo environment due to the fact that it includes visuals of the different elements that “constitute environment”, as stated in Chapter Two, “Air, water, land, living organisms and materials surrounding us and their interactions together constitute environment” (Kaushik & Kaushik, 2007:1). The images have been arranged to flow from the ground up, which visually communicates the different elements at different levels that inhabit and furthermore, make up the Karoo.

5.4.4 Scene Four

The positioning of time-lapse shots that flow into each other was constructed by drawing from the film, *Chasing Ice* (2012). *Poetic Scene Four* depicted in Table 4.5 illustrates the visual pattern that occurs when time-lapse shots are sequentially arranged and edited to cross-dissolve into each other. In *Scene Four*, as depicted in Table 5.4, two time-lapse videos have been positioned alongside one another to exemplify the poetic documentary mode by forming a visual pattern (Nichols, 2010:162).

Table 5.4: Scene Four in *Introduction to the Karoo*

Shot	Corresponding Frames		
Time-lapse 1 Sun setting			
Time-lapse 2 Night sky			

Time-lapse 1 showcases the sun setting in the span of seconds. This setting of the sun represents the end of a day and, therefore, similarly to the time-lapse in *Chasing Ice* (2012) (refer to Time-lapse 3 in Table 4.5), it suggests “the end”, but in this instance, the end of the montage sequence. The time-lapse dissolves into a second time-lapse visualising the stars in the Karoo night sky.

5.5 GROUNDWATER MONITORING

The groundwater monitoring project within the AEON baseline programme is focused on determining the natural variability of the water quality (the chemical, physical, biological, and radiological characteristics of water) of boreholes across the Karoo Basin (Morkel, 2015).







The role of groundwater project in the baseline study of the Karoo is succinctly stated in the journal article, *The Complexity of Baseline Monitoring in Unconventional Gas Projects*: “A comprehensive understanding of the groundwater conditions, prior to any activities commencing, is required to interpret the results of sampling over time, and to distinguish the source of any changes in the groundwater” (O’Brien *et al*, 2013:1). Therefore, the water quality is monitored to see if there are any drastic changes over time.




5.5.1 Scene One

The sequence of shots depicted in Table 5.5 and Table 5.6 have been constructed from *Observational Scene One* and *Post Observational Scene One* in *Home* (2009) (see Table 4.20 and Table 4.21). The AEON team is unobtrusively recorded with the use of aerial footage to represent a broad view of the fieldwork within the Karoo environment. The sequential editing of the images allows for the translation of the process involved in reaching the water catchment tank connected to a windmill. This has reference to Poetic Scene One in *Chasing Ice* (2012) (refer to Table 4.2), in the fact that the process of reaching a desired location in the field, is depicted. However, Scene One in *Groundwater Monitoring* was shot with aerial footage that includes the team members in their entirety and a wide view of the actual location [as in the cases of *Observational Scene One* and *Post Observational Scene One* in *Home* (2009)].

Shot 1 in the sequence depicted in Table 5.5 serves to introduce the viewer to the place. The shot opens with a view of the Karoo landscape, and as the camera moves downwards, the AEON team members in the field are revealed. The lower-third title where the words, “Cradock, Karoo, Eastern Cape, RSA” are written is an arbitrary sign that acts as a metalinguistic element within the image. This sign communicates to the viewer that the footage was shot in Cradock in the Eastern Cape of South Africa.



Table 5.5: Scene One in *Groundwater Monitoring*



Shot	Illustration	Corresponding Frame(s)
Shot 1	Wide, aerial shot where the camera in its entirety descends to reveal the AEON team members standing by a windmill on a farm in Cradock.	
Shot 2	Aerial shot as the camera flies towards the subject, in this case, the team members as they make their way to the water catchment tank connected to the windmill in Shot 1.	
Shot 3	Extreme wide, aerial shot of the AEON members walking from their vehicles towards the water catchment tank.	
Shot 4	Wide, aerial shot of the AEON team members walking away from their vehicles to the water catchment tank.	
Shot 5	Wide, aerial shot of the AEON members walking through shrubs to reach the water catchment tank.	
Shot 6	Wide, aerial shot of the AEON members at the water catchment tank.	

Shot 7	Wide, aerial look-down shot of the AEON members at the water catchment tank.	
Shot 8	Medium, tilted look-down shot of the AEON members taking a water sample at the water catchment tank.	
Shot 9	Extreme wide, aerial shot of the AEON members as they walk back to their vehicles.	

The visuals were sequentially arranged to depict the process involved in the sampling of borehole water in the Karoo. The windmill serves as a pumping system for water from the subsurface through a borehole (Hamrick & Rose, 1979:1b). Table 5.5 showcases a borehole site where the water from the subsurface is pumped into a catchment tank that is placed a large distance from the windmill. The camera movement in Shot 2 consists of the camera moving in its entirety towards the AEON vehicles and team members in the field. The placement of this shot directly after the establishing shot depicted in Shot 1, visually portrays the distance between the windmill and the water catchment tank.

Table 5.6: Post Scene One in *Groundwater Monitoring*

Shot	Illustration	Corresponding Frame
Shot 1	Extreme wide, aerial shot of a farm outside of Cradock where the AEON team members are conducting a hydro census.	
Shot 2	Extreme wide, look-down shot where the camera in its entirety moves down towards the ground, depicting the AEON team members standing by a windmill and its water catchment tank.	

Shot 3	Extreme wide, tilted look-down shot of the AEON team members conducting a hydro census at a windmill on a farm outside Cradock.	
Shot 4	Wide, tilted look-down shot of the AEON team members conducting a hydro census at a windmill on a farm outside Cradock.	

The sequence showcased in Table 5.6 legitimises the AEON fieldwork visualised in Table 5.5, as it depicts similar fieldwork involved in a hydro census conducted by the AEON team at a different location. The sequences depict two different scenarios experienced by the AEON team, one where the water catchment tank is situated a far distance from the windmill and one where it is directly next to the windmill. The inclusion of both the scenarios within this *film short* where the exact same fieldwork is conducted, reiterates the consistency required for objective scientific research.

5.5.2 Scene Two

The participatory mode examples in *Groundwater Monitoring* encompass techniques adopted from the analysis of *Chasing Ice* (2012). The interviews included in this short, showcase two different voices within the transdisciplinary research programme, which adds credibility to the information presented in the video footage (Natusch & Hawkins, 2014:15).

Nyaradzo Dhlwayo, depicted in Figure 5.1, presents information on her study, *Capacity Building Framework as a Tool to Develop and Engage Local Communities in Scientific Research – Case of the Karoo Shale Gas Project*. The project focuses on the training of local community members to monitor and sample the Karoo ground water. The code of shot distance in this image allows the subject and the environment to be included in the image. The medium-long shot of the PhD student, Nyaradzo Dhlwayo (the signified), is an iconic sign in this image, as the signifier, the video footage, resembles the signified directly (Monaco, 2000:177).

The lower-third title where the words “Nyaradzo Dhlwayo, PhD Social Sciences, AEON, Nelson Mandela University” are written, is an arbitrary sign that acts as a metalinguistic element within the image. This arbitrary sign substantiates Dhlwayo as an icon sign by

offering the viewer additional information to convey the meaning of the sign more intelligibly (Fourie, 1988:39).

The windmill that can be seen in the background of the image supports the narration offered by Dhlwayo where she discusses her project pertaining to ground water monitoring in the Karoo²¹.



Figure 5.1: *Nyaradzo Dhlwayo in Groundwater Monitoring (Karoo, 2017)*

In Figure 5.2, an interview with the AEON PhD student, Divan Stroebel, is depicted. Stroebel briefly introduces his project, *Baseline Groundwater Hydrochemistry and Aquifer Connectivity of Selected Areas in the Eastern Cape Karoo Prior to Anticipated Hydraulic Fracturing of Shale Gas*, and continues by discussing the important role of ground water monitoring within the Cradock community.



Figure 5.2: *Divan Stroebel in Groundwater Monitoring (Karoo, 2017)*

²¹ As stated, a windmill serves as a pumping system for water from the subsurface, i.e. ground water, through a borehole into a catchment tank (Hamrick & Rose, 1979:1b).




The medium shot of Stroebel, serves as an iconic sign. The words “Divan Stroebel, PhD Geosciences, AEON, Nelson Mandela University” in the lower-third title serves a metalinguistic function within the image, similar to the lower-third title in Figure 5.1.





As represented in the *Participatory Scene One* and *Participatory Scene Two* in *Chasing Ice* (2012) (see Figure 4.6 and Figure 4.7), the on-location interviews with the AEON team members depicted in Figure 5.1 and Figure 5.2, further legitimises the credibility of the subjects’ voices. The windmill and the mountains in the background of the images are iconic signs of the actual windmill and the mountains within the Cradock area and visually position the interviews within the Karoo where there is the potential for shale gas exploration.

5.5.3 Scene Three

The montage sequence depicted in Table 5.7 showcases the elements linked to the pumping of groundwater in the Karoo. This includes the actual apparatus that retrieves the water from underground aquifers, as well as the animals that depend on the water for survival. Therefore, the sequence of images visually represents the stages connected to the flow of ground water in the Karoo area.

Table 5.7: Scene Three in *Groundwater Monitoring*

Shot	Illustration	Corresponding Frame
Shot 1	Low angle, medium slow motion shot of the windmill blades as they rotate.	
Shot 2	Close-up, slow motion shot at eye level of the water being pumped by the windmill into the catchment tank.	
Shot 3	Wide, slow motion shot of the water in the catchment tank.	




Shot 4	Wide, slow motion shot of cattle near the water trough.	
Shot 5	Wide, slow motion shot of cattle near the water trough.	
Shot 6	Wide, slow motion shot of a group of cattle close to the water trough.	
Shot 7	Medium, slow motion shot of a cow as it drinks from the water trough.	

This scene has been appropriated from *Chasing Ice* (2012) and *Home* (2009) concerning the codes of form, i.e. the editing of the images into a montage sequence to relay a specific message. This scene is evidence of the poetic documentary mode, similar to that of Poetic Scene One in *Chasing Ice* (2012) (see Table 4.2) and Poetic Scene Three in *Home* (2009) (see Table 4.13), because the researcher’s way of seeing and portraying the elements within the images “took higher priority than demonstrating the camera’s ability to record what it saw faithfully and accurately” (Nichols, 2010:129).

5.5.4 Scene Four

The individual shots of the windmills depicted in Table 5.8 are observational in nature but the researcher’s conscious decision to include similar images throughout the short, is indicative of the poetic documentary mode, as they are connected by metaphor and implication (Bordwell *et al*, 2017:380). The images cultivate a visual link and as stated in Chapter Four, “certain signs in a film may gain extra meaning because they have occurred in a previous scene” (Rose, 2016:120). This is similar in Arthus-Bertrand’s approach, as depicted in Table 4.14, as metaphorical images are used to reiterate a specific message.

Table 5.8: Scene Four in *Groundwater Monitoring*

Shot	Illustration	Corresponding Frame
Shot 1	Low angle, medium slow motion shot of windmill blades as they rotate on a farm in the Cradock area.	
Shot 2	Wide shot at eye-level of cattle by a windmill and the water catchment tank on a farm in the Cradock area.	
Shot 3	Slow motion shot through the tall grass with a windmill in the background of the image on a farm in Cradock.	

The windmills in the Karoo area can be seen as metaphors for the extraction and pumping of groundwater as, “Windmills have been used traditionally for pumping water directly from wells to livestock watering troughs...” (Hamrick & Rose, 1979:4a). Therefore, the image of a windmill implies that there *should* be water present, which is of vital importance in a semi-arid environment such as the Karoo.

5.6 SURFACE MONITORING

This project deals with the monitoring of ecosystem changes through ground mapping and aerial surveys. Critical zone refers to the earths near surface environment and, Sive Mngcele’s study, *Spatial Distribution Patterns of Termite Mounds in the Karoo* concerns the mapping of termite mounds that occupy the near surface and the surface areas in the Karoo (Morkel, 2015).



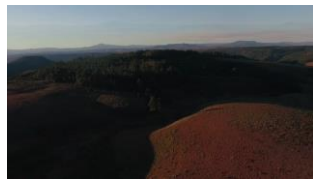



The importance of Mngcele’s study comes into play considering that termites provide a wide range of ecosystem services. Termites, as stated in a journal article by Pascal Jouquet, Saran Traoré, Chutinan Choosai, Christian Hartmann and David Bignell, “...influence the distribution of natural resources such as water and nutrients in the landscape and consequently the diversity of soil microbes, plants and animals” (Jouquet *et al*, 2011:215). Therefore, termites have an important and beneficial influence on how ecosystems function.

5.6.1 Scene One

The use of prolonged aerial footage in the scene depicted in Table 5.9, supports the technique that emerged from *Home* (2009) (refer to Table 4.11 in Chapter Four). The visuals flow along an escarpment in Adelaide in the Eastern Cape, South Africa. The extended duration of the visuals encourages the viewer to maintain attention and furthermore, instill the belief that the depicted environments are worthy of sustained attention (MacDonald, 2013:21).

According to Jim Leach (2016:360), author of *The Poetics of Propaganda: Humphrey Jennings and Listen to Britain*, aerial shots and panoramic views “evoke what Michel de Certeau has called the ‘totali[s]ing eye’”. The totalising eye refers to being placed at a distance, “looking down like a god” (de Certeau, 1984:92). De Certeau (ibid.) continues by stating that it refers to “seeing the whole”. Therefore, the use of aerial footage encompasses a broader view of the environment, allowing the viewer to see the whole from a distance.

Table 5.9: Scene One in *Surface Monitoring*

Shot	Corresponding Frames		
Shot 1			
Shot 2			

The lower-third title where the words, “Adelaide, Karoo, Eastern Cape, RSA” are written is an arbitrary sign that has a metalinguistic function within the image. This sign communicates to the viewer that the footage was shot in Adelaide in the Eastern Cape of South Africa.

5.6.2 Scene Two

The interviews in *Chasing Ice* (2012) are indicative of Nichols’s (2010:189) participatory mode. Due to the fact that there were no interviews or interaction between the filmmaker and the subjects in *Home* (2009), the participatory documentary mode was not evident in the film. The incorporation of the interview with Master’s student, Sive Mngcele (see Figure 5.3), is an example of the participatory mode adopted from *Chasing Ice* (2012), and allows for a

baseline to be provided through the documentation of termite mound distributions in the Karoo area prior to shale gas exploration.



Figure 5.3: *Sive Mngcele in Surface Monitoring (Karoo, 2017)*

The placement of the subject in the specific environment visually communicates the area that his fieldwork is conducted in. The termite mounds in the background of the image corroborate Mngcele's statement: "My current study is on spatial distribution patterns of termite mounds in the Karoo". The medium shot of Sive Mngcele serves as an iconic sign in this image, as the signifier directly resembles the signified (Monaco, 2000:177).

The lower-third title where the words "Sive Mngcele, MSc Geostatistics, AEON, Nelson Mandela University" are written, is an arbitrary sign that serves a metalinguistic function in support of the iconic sign in the image. The information presented in the title and in his interview where he states: "My name is Sive Mngcele, I am a master's student at Nelson Mandela University. I am currently working with AEON, the research institute, doing a Karoo baseline study", speaks to his level of expertise. As stated in Chapter Four in the analysis of the interview with James Balog in *Chasing Ice* (2012) (see Figure 4.7), establishing the credibility of the subject is important concerning the communication of environmental awareness issues.

Mngcele offers information²² concerning his study by discussing the role of termites in an ecosystem and the importance of his project for the baseline study of the Karoo, by stating:

²² The content concerning the shale gas research projects in the discussions by the scientists about their practices and their perspectives, have not been dictated by the researcher but by the Nelson Mandela University and the Africa Earth Observatory Network's (AEON) Karoo Shale Gas Research team and their management.




Now the reason we are studying termite mounds distribution around the Karoo is because they are what we call 'ecosystem engineers. Termite mounds are one of the first organisms that actually detect a change in the environment. The reason they are able to detect a change in the environment is because as much as they stay on the surface they also go on the subsurface. With termite mounds, they look at the chemistry of the soil, so if the chemistry of the soil changes, it does affect their distributions. Or, if the water becomes less, in terms of the water tables, or, the water content changes, or, there is a contamination in the water, it does affect the distribution of termite mounds.



If the distribution patterns deviate from the model that we are going to predict, or that we are going to come up with, then perhaps that could be a signal as to that there is something that has changed in the environment which is why now the termite mound distributions are deviating from the pattern that we have predicted.

5.6.3 Scene Three

The examples of the observational mode, as depicted in Table 5.10, encompass techniques adopted from the analysis of *Chasing Ice* (2012). Sive Mngcele and fellow AEON team members, Dr Bastien Linol and Okuhle Poto, are unobtrusively recorded as they measure and map out termite mounds on a farm in Adelaide in the Eastern Cape.

Table 5.10: Scene Three in *Surface Monitoring*

Shot	Illustration	Corresponding Frame
Shot 1	Wide shot of Dr Bastien Linol and Okuhle Poto measuring the parameters of the area.	
Shot 2	Dr Bastien Linol, Sive Mngcele and Okuhle Poto plotting the parameters of the study area.	
Shot 3	Wide shot of Dr Bastien Linol and Sive Mngcele measuring out the parameters of the area wherein the distribution of termite mounds will be recorded.	


Shot 4	Sive Mngcele and Okuhle Poto measuring the circumference of a termite mound and noting it on the distribution map.	
Shot 5	Sive Mngcele and Okuhle Poto capturing the GPS coordinates of the termite mound.	




The camera is utilised as an observational tool and therefore, the camera distances and camera movements are static (Fourie, 2001:219). However, the editing of the shots into a montage sequence is representative of the poetic mode, implemented from *Poetic Scene One* in *Chasing Ice* (2012) (see Table 4.2). The digital video recordings depicted in Table 5.10 are the signifiers of the sign as they encompass the physically observable quality of the sign (Fourie, 1988:29; Rose, 2016:113). The practical fieldwork involved in Mngcele’s study is what is signified. The shots are arranged and edited together to depict the lengthy fieldwork involved in the study, in a shorter time (Bordwell *et al*, 2017:252).

5.6.4 Scene Four

The montage sequence of images of the work involved in the *Spatial Distribution Patterns of Termite Mounds in the Karoo* project, supports the effective aerial montage sequence in *Home* (2009), as depicted in Table 4.19. This sequence visually communicates the processes involved in Mngcele’s study. The use of aerial footage in the sequence in Table 5.11, allows for a wider view of the environment wherein the project is situated.

Table 5.11: Scene Four in *Surface Monitoring*

Shot	Illustration	Corresponding Frame
Shot 1	Static, aerial shot at eye level of Sive Mngcele, Dr Bastien Linol and Okuhle Poto conducting fieldwork.	

Shot 2	Aerial tracking shot around the AEON team members as they work.	
Shot 3	Look-down, pedestal shot moving down towards the team members.	
Shot 4	Fly-over shot of the team members towards the open landscape behind them.	

As discussed in Chapter Two, Lorentz and Flaherty made use of wide angles to showcase not only the landscapes in their films, but to create an image of the ecological surroundings. Therefore, the use of aerial footage in the shots depicted in Table 5.11 showcase the interrelationship between people and nature, which, in turn, advocates an ecological consciousness (Dunaway, 2005 cited in Hughes, 2014:35).

5.7 CHAPTER SUMMARY

This chapter discussed the appropriation of cinematic techniques employed by Jeff Orlowski in *Chasing Ice* (2012) and Yann Arthus-Bertrand in *Home* (2009), in three *shorts* within the environment documentary video, *Karoo* (2017). Firstly, the information collected through the analysis of *Chasing Ice* (2012) and *Home* (2009) in Chapter Four, was synthesised. It was found that the following qualities overlapped in the films: (1) the construction of montage sequences to represent events or actions in a fraction of the time, (2) or to create visual patterns, which are both evidence of the poetic mode and, (3) the unobtrusive recording of events unfolding in front of the camera, as classified under the observational mode.

As stated, the “voice-of-God” in *Home* (2009) is used to guide the narrative of the film, whereas *Chasing Ice* (2012) uses interviews and observational footage of the work involved in the Extreme Ice Survey (EIS). Therefore, the use of narration to introduce the Karoo area was appropriated from *Home* (2009), and the interviews within *Chasing Ice* (2012) were

appropriated considering the interviews with the scientists involved in the Karoo baseline study. Furthermore, the aerial shots within *Home* (2009) were used in the *shorts* to introduce the Karoo environment and to offer a wider view of the work involved in the different studies.

As stated, this was applied in the construction of shots and/or scenes for three *shorts* – namely, *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, within the environmental documentary video, *Karoo* (2017). The scenes and their construction were discussed in this chapter, addressing how they were appropriated from *Chasing Ice* (2012) and *Home* (2009) according to their cinematic techniques, i.e. *codes of form* and *codes of content*.

CHAPTER 6

CONCLUSION

6.1 SUMMARY OF PRECEDING CHAPTERS

The main aim of this study was to determine how the positioning of Bill Nichols' (2010) documentary modes, with specific reference to the films, *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand, would reveal important cinematic techniques for the visual communication of environmental awareness issues to be applied to the short film, *Karoo* (2017). The following objectives were formulated in support of this study:

- To define what environmental documentary film is and how such films have previously visually communicated environmental awareness.
- To examine how environmental awareness issues are visually communicated in *Chasing Ice* (2012) by studying the documentary modes most represented in the film and the semiotic interpretation thereof.
- To investigate how environmental awareness issues are visually communicated in *Home* (2009) by studying the documentary modes most represented in the film and the semiotic interpretation thereof.
- To apply the visual analysis of *Chasing Ice* (2012) and *Home* (2009) in the construction of selected shots and/or scenes in three *shorts* within the documentary video, *Karoo* (2017).

The practical component consists of three shorts – namely *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*, that each act as a “unit of techniques” concerning the visual communication of environmental awareness issues.

The theoretical component of this study was divided into five chapters followed by the final concluding chapter. A historical contextualisation of the development of documentary film was presented in Chapter Two. The discussion on the periods and movements in the history of documentary film revealed that different types of documentary films exist, each with an intention, and a desire to achieve this intention, by means of the content and form of the film. Bill Nichols (2010) proposes different documentary modes, or “sub-genres”, that arise as new forms of documentary film develop in response to the limits imposed by previous forms of the genre (Nichols, 1991:32). Therefore, it was established that the six modes of the documentary film genre itself - namely, the poetic, the expository, the observational, the participatory, the reflexive and the performative modes, developed throughout history in relation to the credibility of the representation of *reality* in documentary film and the modes

“represent viable ways of using the resources of the cinema to make documentary films” (Platinga, 2005:105). The films selected for the analysis in Chapter Four, namely, *Chasing Ice* (2012) and *Home* (2009), were briefly discussed and the modes most represented in the films were outlined, i.e. the poetic, the expository, the observational, and the participatory modes. These constitute the four of the six modes that were selected for the methodology. The four modes established the criteria for the extraction of specific shots and/or scenes from *Chasing Ice* (2012) and *Home* (2009). The shots and/or scenes most representative of the modes were semiotically read to analyse and determine the meanings communicated by and within the visuals.

Chapter Three introduced and outlined Nichols’s (2010:143) mode taxonomy which offers an analytical model capable of identifying the different cinematic resources and/or techniques applied to the production of a documentary to create a distinctive voice. The semiological approach to film communication was discussed and the “elaborate technical vocabulary of semiology” was defined. Gillian Rose’s (2016) sites and modalities were introduced and discussed as the semiotic framework for the reading of the visual materials in this study. This methodology was employed in Chapter Four to analyse how the shots and/or scenes positioned according to Nichols’ modes within *Chasing Ice* (2012) and *Home* (2009) utilise important cinematic techniques to visually communicate environmental awareness issues. Furthermore, the visual analysis methodology was applied in Chapter Five to analyse the construction of shots and/or scenes within the researcher’s practical component.

Chapter Four engaged with *Chasing Ice* (2012) and *Home* (2009) as visual representations of environmental awareness to analyse the meanings communicated in the films. *Chasing Ice* (2012) documents the journey undertaken by scientist and photographer, James Balog and his team, the Extreme Ice Survey (EIS), as they strive to document the effects of climate change on the glacial ice with the use of time-lapse photography. *Home* (2009) is constructed as a visual journey around the earth, illustrating its great diversity whilst highlighting the negative effects of humanity on natural resources. Selected shots and scenes were extracted from *Chasing Ice* (2012) and *Home* (2009) and positioned using Bill Nichols’s mode taxonomy. The visual communication intentions of the images were analysed with the application of a basic semiotic reading aimed at informing the cinematic techniques necessary for the visualisation of environmental awareness issues.

Chapter Five presented a synthesis of the information obtained through the analysis of *Chasing Ice* (2012) and *Home* (2009) in Chapter Four. It was found that the main difference between the films were the filmmakers’ approaches to constructing their narratives. *Chasing Ice* (2012) situated its narrative around a protagonist whilst *Home* (2009) implemented a

“voice-of-God”, as an expository mode quality, to guide the film’s rhetoric. In addition, *Chasing Ice* (2012) utilised interviews as a participatory mode technique to support the narrative of the film.

The films apply different techniques for “extending visuals” to maintain the viewer’s attention. *Chasing Ice* (2012) uses time-lapse cinematography to showcase the effects of climate change on the environment in a fraction of the actual time (Balog, 2014 ¶ 2). The prolonged aerial footage in *Home* (2009) not only maintains the flow of the landscapes depicted but also maintains the viewer’s attention and is a cinematic technique that visualises environments that are worthy of sustained attention (MacDonald, 2013:21).

In *Chasing Ice* (2012) and *Home* (2009) images are edited together to form montage sequences to shorten the time of the information being communicated. As stated in Chapter Four, documentaries are known to have copious amounts of raw footage, and montage is a method employed by the filmmakers to overcome the tedium of showcasing the actual time of events (Bordwell *et al*, 2017:252). Furthermore, montage sequences are utilised within the films to construct visual patterns of colours and shapes, which adds “abstract visual interest” in the films (ibid.:356).

Chasing Ice (2012) and *Home* (2009) both contain observational mode qualities concerning the shots and/or scenes where an unobtrusive camera documents the unfolding of events in front of the camera. The difference, however, relates to the camera point-of-view within the images. *Chasing Ice* (2012) documents the events on the ground whilst *Home* (2009) showcases the events from an aerial perspective.

The synthesis in Chapter Five, showcased the similarities and differences within *Chasing Ice* (2012) and *Home* (2009) concerning Nichols’s mode taxonomy and the semiotic interpretation thereof. Additionally, this chapter provided an analysis of three shorts within the environmental documentary video, *Karoo* (2017) – namely *Introduction to the Karoo*, *Groundwater Monitoring* and *Surface Monitoring*. The construction of the three shorts, specifically looking at the content and the form of the visuals to communicate environmental awareness issues, can be summarised as follows:

(1) *Introduction to the Karoo*

Introduction to the Karoo introduced the environment where the AEON Karoo Shale Gas Baseline Study is situated, to the viewer. The aerial footage in the short offers the viewer a bird’s eye view of the Karoo, which is a unique perspective of an environment that provides a “sensational optic onto the world” (Klinger, 2016:992). The accompanying “voice-of-God”

narration serves a metalinguistic function as it offers more information concerning the Karoo as appropriated from the expository mode examples in *Home* (2009). The time-lapse videos in *Introduction to the Karoo* enable the researcher to showcase events in the Karoo in a fraction of the original time. This is representative of the poetic mode as adopted from the cinematic techniques utilised in *Chasing Ice* (2012). The montage sequence in this short depicts different aspects within the Karoo environment from the ground up. The sequential editing of the visuals was implemented from the film, *Home* (2009). The sequence forms a visual pattern within the short similarly to that of *Poetic Scene Three* in *Home* (2009).

(2) *Groundwater Monitoring*

This short communicates the processes involved in the *Groundwater Monitoring* project within the AEON baseline study. The aerial footage, edited together to form a montage sequence, presents a broad view of the project as it unfolds within the environment. This observational montage was constructed by drawing from the scenes in *Home* (2009) depicted in Table 4.20 and Table 4.21. The interviews are examples of the participatory mode as appropriated from the variety of interview examples in *Chasing Ice* (2012). The information offered by the AEON team members in the interviews further substantiates the legitimacy of the project. The images that depict the elements pertaining to a specific borehole on a farm in Cradock have been edited to form a poetic montage sequence embraced from *Chasing Ice* (2012) and *Home* (2009). The visuals of windmills throughout the short act as metaphorical imagery, a quality of the poetic mode that has been acquired from *Home* (2009).

(3) *Surface Monitoring*

The short, *Surface Monitoring*, concerns the spatial distribution patterns of termite mounds in the Karoo environment. The cinematic technique of utilising prolonged aerial footage in *Home* (2009) to instil the belief that the depicted environments are worthy of sustained attention, as depicted in Table 4.11, was applied in *Scene One* within this short (see Table 5.8). The information offered in the interview, as discussed in 5.6.2 *Scene Two*, guides the narrative of this short. This cinematic technique has been embraced from the participatory mode examples in *Chasing Ice* (2012). The scene depicted in Table 5.9 was constructed by the sequential arrangement of visuals to communicate the practical fieldwork involved in the recording of the spatial distribution of termite mounds. The montage of the observational fragmentary images is indicative of the poetic mode, as adopted from *Chasing Ice* (2012). The use of aerial footage in *Scene Four* in *Surface Monitoring*, offers the viewer a wide,

completely unobtrusive view of the AEON team members in the field (see Table 5.10). The sole use of aerial footage within this scene was influenced by the film, *Home* (2009).

The theoretical investigation into the development of the documentary film genre in Chapter Two revealed Bill Nichols' (2010) documentary modes as a taxonomy for documentary film and, semiotics as an approach to film communication, which in turn, originated the study's methodology. The analysis of *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand according to the methodology outlined in Chapter Three, allowed the researcher to discover that certain non-filmic (codes of content) and filmic codes (codes of form) in film semiotics are important regarding visual communication in film. Therefore, the analysis of the shots and/or scenes for the three *shorts* within the scientific based environmental documentary video, *Karoo* (2017) in Chapter Five, revealed the following codes for the construction of visuals to communicate environmental awareness issues: narrative codes, codes of theme, codes of the mise-en-scène, production codes, codes of shot distance, codes of camera movement, codes of camera angle and codes of editing.

6.2 CONTRIBUTION OF THE STUDY

The primary concern of this study was to analyse Jeff Orlowski and Yann Arthus-Bertrand's cinematographic application that would enable the construction of three shorts to utilise and re-appropriate the techniques in order to visualise the Karoo environment prior to possible shale gas exploration.

Firstly, the study engaged with literature concerning the visualising of environmental awareness issues in documentary film in order to understand the filmic techniques specific to imagery in film. Secondly, the study has engaged with *Chasing Ice* (2012) and *Home* (2009) as visual representations of environmental awareness issues in an attempt to analyse the meanings communicated. Therefore, theoretically and methodologically, this study offers documentarians the means of constructing shots and/or scenes according to four of Bill Nichols' documentary modes by utilising certain cinematic techniques to visually communicate environmental awareness issues.

The researcher was able to develop a point of departure for the experimentation of cinematic techniques in the visual communication of environmental awareness issues by engaging with relevant literature and with the analysis of two environmental documentary films. As a result, the researcher's own understanding of documentary film was expanded, and aided in the construction of shots and/or scenes aimed at visualising environmental awareness issues.

Additionally, this study allowed the researcher to adopt and apply the findings of the study as a visualising tool in the production of a short film that was screened at the launch of the Nelson Mandela University's Ocean Sciences Campus on the 22nd of September 2017 (refer to Addendum C).

6.3 SUGGESTIONS FOR FURTHER RESEARCH

This study offers information concerning the visual documentation of contemporary environment through the medium of film and has set the foundations by developing a framework for an analysis based on Bill Nichols's mode taxonomy enabling the researcher to appropriate specific cinematic techniques for the visual communication of environmental awareness issues. The practical component of this study focused on the Karoo Basin in the Eastern Cape of South Africa prior to possible shale gas exploration, and therefore it acts as a baseline visual record of the area.

Further research can focus on documentary film as a tool for activism. If shale gas exploration does occur in the Karoo Basin, the environment during and after the processes can be recorded and captured and the visuals can be compared to those constructed for the practical component of this study.

The recording and capturing of an area on film creates a document of contemporary environment. Therefore, the visual evidence collected in the Karoo can contribute to a wide variety of topics, such as urban expansion, natural disasters, etc. Due to the fact that it represents a specific view at a specific time, the contemporary imagery can be returned to for a number of reasons pertaining to the development or exploration of the Karoo environment.

A further direction for future research, over and above the visuals of the Karoo as a record of contemporary environment, can be aimed at the science and scientific practices included in the video as a concrete baseline for the *measurement* of change.

6.4 CLOSING COMMENTS

This study focused on achieving a broader understanding of the visual communication of environmental awareness issues by considering the cinematic techniques utilised within selected shots and scenes in *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand. The shots and/or scenes were positioned according to four of Bill Nichols' (2010) documentary modes. The research into this particular study yielded insight into the

complexity of not only the theoretical aspects but also the methodology utilised to practically construct imagery that visualise environmental awareness issues.

Chasing Ice (2012) and *Home* (2009), that semiotically read according to Nichols' (2010) documentary modes, provided the opportunity to study the filmmakers' approaches and, advanced the understanding of the construction of imagery that communicate environmental awareness issues. The knowledge and insight obtained through the theoretical investigation in this study was utilised by the researcher to reflect on the practical component, which, in turn, developed a unique approach to constructing documentary imagery that visualise the current environment of the Karoo Basin prior to the possibility of shale gas exploration.

The literature survey and the analysis of *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand in this study, proved that the desired rhetoric of an environmental documentary film is established through different and complex representations of environmental awareness issues (Batty *et al*, 2016:12). The critical analysis in this study advanced the discourse concerning the communicative possibilities of the documentary film genre.

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ADDENDA

ADDENDUM A: REC-H Approval Letter [H16-ART-AD-001]



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Chairperson: Research Ethics Committee (Human)
Tel: +27 (0)41 504-2235

Ref: [H16-ART-AD-001/Approval]

Contact person: Mrs U Spies

15 November 2016

Mr G Meyer
Faculty: Arts
North Campus

Dear Mr Meyer

AN INVESTIGATION INTO THE VISUAL COMMUNICATION OF ENVIRONMENTAL AWARENESS ISSUES THROUGH THE ENVIRONMENTAL DOCUMENTARY FILMS, *CHASING ICE* (2012) BY JEFF ORLOWSKI AND *HOME* (2009) BY YANN ARTHUS-BETRAND

PRP: Mr G Meyer
PI: Ms N van der Walt

Your above-entitled application served at Research Ethics Committee (Human) for approval.

The ethics clearance reference number is **H16-ART-AD-001** and is valid for three years. Please inform the REC-H, via your faculty representative, if any changes (particularly in the methodology) occur during this time. An annual affirmation to the effect that the protocols in use are still those for which approval was granted, will be required from you. You will be reminded timeously of this responsibility, and will receive the necessary documentation well in advance of any deadline.

We wish you well with the project. Please inform your co-investigators of the outcome, and convey our best wishes.

Yours sincerely

A handwritten signature in black ink, appearing to read "C Cilliers".

Prof C Cilliers
Chairperson: Research Ethics Committee (Human)

cc: Department of Research Capacity Development
Faculty Officer: Arts

ADDENDUM B: *Some Specific Qualities of Documentary Modes* (adapted from Nichols, 2010: Table 7.1.)

Quality	Expository	Poetic	Observational	Participatory
An Alternative To	Fiction/avant-garde	Fiction/exposition	Classic oration	Passive observation and classic oration
Limited By	Didacticism	Formal abstractions that lose touch with historical reality	What occurs in front of the camera (hard to represent historical events)	May cede control and point of view to others, lose independence of judgment
Treats Knowledge As	Disembodied or abstract ideas, concepts, or perspectives	Affective, a new way to see and comprehend the world; see the familiar in fresh way	Tacit sense of what we learn by watching, listening, observing, and making inferences about the conduct of others	What we learn from personal interactions, what people say and do when confronted or engaged by others, what can be conveyed by interviews and other forms of encounter
Sound	Expressive and cognitive, fully under the control of the filmmaker; no indexical link to the image it supports; often in a voice-over form	Expressive, used for pattern and rhythm but with filmmaker holding a high degree of control as in the expository mode	Tied to the image by the indexical link of synchronous recording. Filmmaker gives up full control of sound to record what is said in a given situation; refrains from voice over	Stress the speech between filmmaker and subject, especially in interviews. Heavy reliance on sync sound but may also utilise voice over, filmmaker retains only partial creative control of sound
Time and Space	Discontinuous. Uses images from many different times and places to illustrate a perspective or argument	Discontinuous. Uses images that build mood or pattern without full regard for their proximity	Continuous. Strong sense of continuity that links the words and actions of subjects from shot to shot	Continuous. May interconnect a present tense time and space with a past tense (historical time and space)
Ethical Concerns	Historical accuracy and verifiability; fair representation of others, avoid making people into helpless victims, develop the viewer's trust	Use of actual people, places, and things without regard for their individual identity; may distort or exaggerate for aesthetic effect	Passive observation of dangerous, harmful, or illegal activity can lead to serious difficulties for subjects. Questions of responsibility toward subjects can become acute	Manipulate or goad others into confessions or actions they may regret; a strong responsibility to respect the rights and dignity of subjects. Questions of manipulation and distortion arise
A Voice Characterised By	Classic oration in pursuit of the truth and seeing to inform and move an audience	An expressive desire to give new forms and fresh perspectives to the world represented	Patience, modesty, self-effacing. Willingness to let audience decide for itself about what it sees and hears	Engagement, strong investment in the encounter with others or in presenting a historical perspective

ADDENDUM C: *Mandela Talks: Ocean Sciences* (2017) by Nadia van der Walt

This video deals with aspects pertaining to the Indian Ocean and was constructed by drawing from the information gathered in the analysis of *Chasing Ice* (2012) by Jeff Orlowski and *Home* (2009) by Yann Arthus-Bertrand, in Chapter Four. The video was produced for Professor Maarten de Wit from the Nelson Mandela University and was screened at the opening of the university's Ocean Sciences Campus on the 22nd of September 2017.

(1) *Opening*

The opening of the video sees a title frame, as depicted in Figure 1, that is indicative of the expository documentary mode, as adopted from *Home* (2009). In the frame, the following quote by Nelson Mandela, is written: "...two concerns most dear to me – the children of today's world and the children of tomorrow's world". This supports the *Mandela Talks* title of the video as well as the overall theme concerning the transdisciplinary approaches to education offered to the students at the Nelson Mandela University.

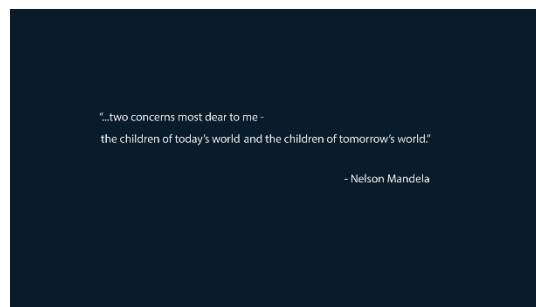


Figure 1: *Title Frame* by Nadia van der Walt

The opening serves to introduce the viewer to the topic of the video, and this is communicated via an expository "voice-of-God". The narrator states: "Many students that come to Port Elizabeth see the ocean for the first time...What follows are examples of transdisciplinary approaches to understanding the ocean that students will explore at Nelson Mandela University." The shot depicted in Figure 2 is the first in a sequence of images showcasing the route travelled along the beachfront in Port Elizabeth up to the Nelson Mandela University depicted in Figure 3. This montage sequence has been appropriated from *Chasing Ice* (2012).

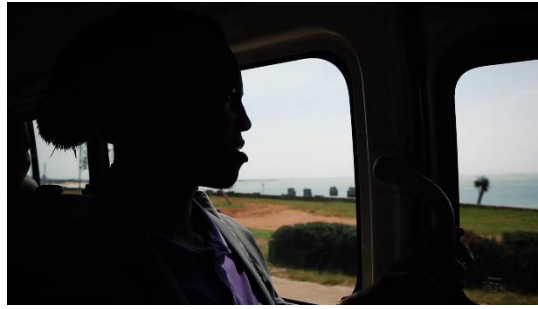


Figure 2: *Student en route to the Nelson Mandela University* by Nadia van der Walt



Figure 3: *Student arriving at the Nelson Mandela University* by Nadia van der Walt

The opening of the video ends with aerial footage of the Nelson Mandela University (see Figure 4) and with the use of Google Maps, the viewer is transported to the Sundays River Mouth in Colchester.



Figure 4: *The Nelson Mandela University* by Nadia van der Walt

(2) *Fossilised Oysters*

The aerial footage of Sundays River Mouth, depicted in Figure 5, is poetic in nature, as adopted from *Home* (2009). The viewer is introduced to a new location in the video.



Figure 5: *Sundays River Mouth* by Nadia van der Walt



Figure 6: *Oysters at Sundays River Beach* by Nadia van der Walt

The observational footage of Dr Bastien Linol holding an oyster at the Sundays River Beach aims to situate the viewer concerning modern oysters versus the fossilised oysters found at Grassridge. This part of the video deals with the fossilised oyster bed at Grassridge which is 240 metres above sea level (see Figure 7), indicating that sea level was at that location at some point in the past.



Figure 7: *Fossilised Oyster Bed at Grassridge* by Nadia van der Walt

An interview with Dr Bastien Linol guides the rhetoric of this section of the video, which is indicative of the participatory mode evident in *Chasing Ice* (2012) (see Figure 8). Dr Linol discusses the questions pertaining to the fossilised oyster bed, such as, “How did sea level reach this elevation? Was the sea level at this elevation? Or was the land uplifted?” The interview is supplemented with footage of the fossilised oyster bed (see Figure 9), as well as

the specialised machinery used for the analysis of the oysters to determine their age (see Figure 10).



Figure 8: *Interview with Dr Bastien Linol* by Nadia van der Walt



Figure 9: *Slow motion shot of the fossilised oysters* by Nadia van der Walt



Figure 10: *Specialised SIMS machine* by Nadia van der Walt

This section of the video ends with Dr Bastien Linol (refer to Figure 11) stating that the results obtained through the analysis of the fossilised oysters date the oysters at 400 million years, and that proves that sea level was 240 metres above present sea level at Grassridge, 400 million years ago.



Figure 11: *Dr Bastien Linol* by Nadia van der Walt

(3) *Ancient Fish Traps*

The aerial footage as the camera flies towards the Cape Recife lighthouse is poetic in nature as appropriated from *Home* (2009). This shot, depicted in Figure 12, establishes the location for the shots and/or scenes that follow.



Figure 12: *Cape Recife Nature Reserve* by Nadia van der Walt

The narrative of this section of the video is supplied through the participatory method of interview with Dr Magda Minguzzi (see Figure 13). Dr Minguzzi discusses the ancient hand-made fish traps found along the coast, especially in Port Elizabeth. The interview is supplemented with observational footage of the fish trap, showcasing different camera angles and distances to offer the viewer a complete view of the structure (an example is depicted in Figure 14).



Figure 13: *Dr Magda Minguzzi* by Nadia van der Walt



Figure 14: *Fish Trap* by Nadia van der Walt

Dr Minguzzi continues by discussing the international art project, *The Way of Water*, which is focussed on the conservation of the ocean. Port Elizabeth took part in this art project, as depicted in Figure 15, to demonstrate the importance of the preservation of the waters of Algoa Bay.



Figure 15: *Spirit of Water* art project by Nadia van der Walt

This section of the video ends with a montage sequence of aerial shots that depict the environment surrounding the fish trap found at Cape Recife (see Figure 16).



Figure 16: *Aerial shot of the Fish Trap* by Nadia van der Walt

(4) Oceanhealth

The aerial shot of the St Croix Island in Algoa Bay, as depicted in Figure 17, serves to position the next section of the video. The aerial footage offers the viewer a broad view of the environment, adopted from similar examples in *Home* (2009).







Figure 17: *St Croix Island Marine Reserve* by Nadia van der Walt

An interview with marine biologist, Dr Stephanie Plön (see Figure 18), introduces and guides the narrative of this section. Dr Plön states: “The waters of South Africa are known to be a global biodiversity hotspot. So, we have a very high diversity of species in our waters and that includes Eastern Cape waters. But, we currently know very little about what is going on in the Eastern Cape waters, and in the face of this increasing development we really needing to find out what is going on and how does this change potentially impact on our diversity.” This narration offered by Dr Plön is supplemented with footage pertaining to the information stated. Examples are depicted in Table 1.



Figure 18: *Dr Stephanie Plön* by Nadia van der Walt

Table 1: Examples of observational footage

Shot	Illustration	Corresponding Frame
Shot 1	Aerial shot of penguins in Algoa Bay.	
Shot 2	Aerial, look-down shot of dolphins swimming in Algoa Bay.	
Shot 3	Aerial shot of whales in Algoa Bay.	
Shot 4	Shot of the development in the Port Elizabeth harbour.	

Dr Plön continues by discussing the role of whales and dolphins as indicators of ocean health, and comments on the combination of the data available in the marine-mammal research collection at the Bayworld Museum in Port Elizabeth, with the research currently looking at the Eastern Cape waters.

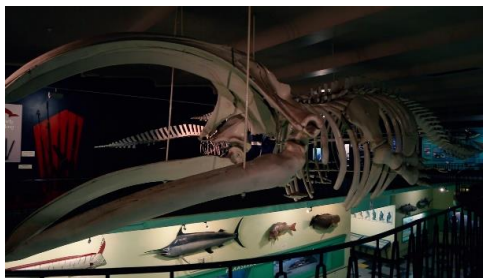


Figure 19: *The Bayworld Museum* by Nadia van der Walt

This section pertaining to the health of the ocean ends with Dr Plön commenting on the importance of a transdisciplinary approach to finding a way forward that will ensure continuous biodiversity and healthy ecosystems and therefore, healthy oceans, in the face of human development.



Figure 20: *The waters of Algoa Bay* by Nadia van der Walt

(5) *Ending*

The aerial shot depicted in Figure 21 leads the viewer back to the coast of Algoa Bay.



Figure 21: *Aerial shot towards the coast of Port Elizabeth* by Nadia van der Walt

The shot depicted in Figure 22 showcases the student introduced at the beginning of the video. The student is now seen on the beach in Port Elizabeth, after being given the information concerning the ocean in the video. The “voice-of-God” from the opening of the video states: “These transdisciplinary approaches encourage the students to think and dream about the world in a new way.”



Figure 22: *Students walking on the beach in Port Elizabeth* by Nadia van der Walt

ADDENDUM D: *Seismic Mapping* by Nadia van der Walt

The opening time-lapse video of *Seismic Mapping*, as depicted in Figure 1, is evidence of Nichols's poetic mode of representation as appropriated from *Chasing Ice* (2012). This cinematic technique enables the visualisation of the movement of clouds on a farm outside Tarkastad into a fragment of the actual time.



Figure 1: *Tarkastad Time-lapse* by Nadia van der Walt

The narrative of the video is supplied through the participatory method of interview with Lucian Bezuidenhout (see Figure 2). As stated in the lower-third title, Bezuidenhout is a Geophysics student currently completing his PhD with the AEON group at the Nelson Mandela University. The interview is supplemented with observational footage (see Table 1), displaying different camera angles and distances to offer the viewer a complete view of the fieldwork undertaken by Bezuidenhout.



Figure 2: *Lucian Bezuidenhout* by Nadia van der Walt

The examples of the observational mode, as depicted in Table 1, encompass techniques adopted from the analysis of *Chasing Ice* (2012). Lucian Bezuidenhout, is unobtrusively recorded as he installs a seismic station on a farm outside Tarkastad in the Eastern Cape. However, the editing of the shots into a montage sequence is representative of the poetic mode, implemented from *Chasing Ice* (2012). The practical fieldwork involved in Bezuidenhout's study is what is signified. The shots are arranged and edited together to

depict the lengthy fieldwork involved in the study, in a shorter time (Bordwell *et al*, 2017:252).

Table 1: Examples of observational footage in *Seismic Mapping*

Shot	Illustration	Corresponding Frame
Shot 1	Medium shot of Lucian Bezuidenhout digging the hole for the installation of a seismic station.	
Shot 2	Medium-close shot of Bezuidenhout preparing the equipment in the field.	
Shot 3	Medium-close shot of Bezuidenhout installing the GPS component of a seismic station.	
Shot 4	Medium shot of the components that included in a seismic station.	
Shot 5	Medium-close shot with a shallow depth of field depicting grass in the foreground and Bezuidenhout installing a seismic station in the background.	
Shot 6	Medium shot with a shallow depth of field depicting grass in the foreground and Bezuidenhout installing a seismic station in the background.	
Shot 7	Medium-close shot of Bezuidenhout covering the recently buried seismic station.	
Shot 8	Close-up shot with a shallow depth of field depicting grass in the foreground and the seismic station being covered in the background.	

ADDENDUM E: *UAV Monitoring* by Nadia van der Walt

The opening scene of *UAV Monitoring* consists of a time-lapse video depicting the movement of clouds outside Jansenville. This scene, as depicted in Figure 1, is evidence of the poetic mode as appropriated from *Chasing Ice* (2012).



Figure 1: *Jansenville Time-lapse* by Nadia van der Walt









The narrative of the video is supplied through an interview with Martin Bentley (see Figure 2). This is indicative of the participatory documentary mode (Nichols, 2010:31) and was appropriated from *Chasing Ice* (2012). The lower-third title is an arbitrary sign that serves a metalinguistic function. The sign intends to explain and emphasise the subject matter being communicated. The title, “Martin Bentley, MSc Geophysics, AEON, Nelson Mandela University”, informs the recipient of the name of the individual represented in the image as well as their study area.



Figure 2: *Martin Bentley* by Nadia van der Walt

The examples of the observational mode, as depicted in Table 1, encompass techniques adopted from the analysis of *Chasing Ice* (2012). Martin Bentley, is unobtrusively recorded as he uses an Unmanned Aerial Vehicle (UAV) to monitor an empty river outside Jansenville in the Eastern Cape.

Table 1: Examples of observational footage in *UAV Monitoring*

Shot	Illustration	Corresponding Frame
Shot 1	Wide shot of Martin Bentley setting up the UAV outside Jansenville.	
Shot 2	Wide shot with the sun rising of Bentley setting up the UAV outside Jansenville.	
Shot 3	Medium shot of Bentley and Dyllan van den Neever setting up the GPS coordinates for the UAV.	
Shot 4	Medium-close shot of Bentley and van den Neever setting up the GPS coordinates for the UAV.	
Shot 5	Medium shot of Bentley and van den Neever overseeing the flight of the UAV.	
Shot 6	Wide shot of the UAV lifting off outside Jansenville.	
Shot 7	Wide shot of Bentley manning the UAV.	
Shot 8	Close-up shot of Bentley holding the remote for the UAV.	
Shot 9	Extreme wide shot of the UAV in the air outside of Jansenville.	