

The framing of climate change in three daily newspapers in the Western Cape Province of South Africa

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I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

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Abstract

Scientists predict that the Western Cape region of South Africa is likely to be one of the regions most affected by climate change. Though the effects on the Cape Floral Kingdom are a huge concern in terms of biodiversity, the effects of climate change are predicted to be far broader than the natural environment. Agriculture, industry, the health sector, politics and the socio-economic sectors among others are all likely to be significantly impacted by climate change in the coming years. The underlying theoretical assumption of the study is that understanding how the climate question has been *understood* and *framed* is of vital importance for how the general public will be able to respond to lifestyle changes in aid of climate protection. This study examines the media coverage of climate change over the period of one year in the Western Cape media context, specifically the *Cape Times*, the *Cape Argus* and *Die Burger*.

Using a quantitative framing analysis as the central methodology, the study focused on six core frames in analysing all articles relating to climate change. In addition, journalists at the respective newspapers were interviewed to complement the textual analysis. Finally, climate change scientists were interviewed in order to gain their perspectives of the reporting.

The study found that the environmental frame was the dominant frame chosen. The political and scientific frames were the next two most prominent frames. It is argued that the dominance of these frames and the comparative lack of reports featuring the human impact frame is problematic as the environment, science and politics are all fairly abstract to the general public.

Opsomming

Wetenskaplikes voorspel dat die Wes-Kaap in Suid-Afrika heel moontlik een van die areas is wat die meeste deur klimaatsverandering geaffekteer sal word. Alhoewel die impak van klimaatsverandering op die Kaapse flora-koninkryk 'n groot bekommernis is met betrekking tot biodiversiteit, word daar voorspel dat die impak van klimaatsverandering wyer strek as slegs ons natuurlike omgewing. In die nabye toekoms, sal klimaatsverandering ook 'n groot impak op die landbou-, gesondheidssektore, asook op politieke en sosio-ekonomiese vlakke hê. Die onderliggende teoretiese aanname van die studie is dat 'n begrip hoe die klimaatskwessie begryp en geformuleer is, van kardinale belang is in die publiek se reaksie deur lewenstylaanpassings ter bevordering van klimaatsbeskerming. Die studie bestudeer mediadekking rondom klimaatsverandering, oor 'n periode van een jaar in die Wes-Kaap, spesifiek gefokus op die *Cape Times*, die *Cape Argus* en *Die Burger*.

Met die gebruik van 'n kwantatiewe beramingsanalise as die sentrale metodologie, het die studie gefokus op ses kern raamwerke om die artikels te analiseer. Daar is ook onderhoude met die joernaliste van die bepaalde koerante gevoer, om die tekstuele analise te sterk. Om die studie af te rond, is daar ook onderhoude met klimaatsverandering-wetenskaplikes gevoer, om hul perspektief te gee oor die verslaggewing.

Die studie het bevind dat die omgewingsraamwerk as die dominante raamwerk verkies is.

Die politieke- en wetenskaplike raamwerke was volgens die studie die twee mees prominente raamwerke. Daar is bevind dat die dominansie van hierdie raamwerke en die gebrek aan vergelykbare raamwerke wat op die menslike impak fokus, as problematies beskou word, omdat die omgewing, politiek en wetenskap as abstrak deur die publiek gesien word.

Table of Contents

Acknowledgements

Abstract

Opsomming

Chapter One: Introduction 6

1.1 Aim of the study 6

1.2 Background 8

1.2.1 Global Climate Change

1.2.2 Coverage of climate change in the media

1.2.3 Relevance of the study and impact on the South
African media

1.3 Preliminary literature study / theoretical framework 13

1.4 Research problems and objectives 13

1.5 Research design and methodology 13

1.6 Outline of remainder of thesis 14

Chapter Two: The environmental beat in today's newsroom 15

2.1 The emergence of the environment as a news topic 15

2.2 Environmental media: where are we now? 16

2.3 The environmental beat: The journalist's dilemma 17

2.3.1 The intangibility of science

2.3.2 The environment as event-centred news rather than
chronic news

2.4 The urgency of accurate climate change reporting 18

2.4.1 The state of climate change reporting

2.4.2 The intrinsic difficulty of reporting on a gradual news
event

2.5 Summary of Chapter	22
Chapter Three: Theoretical framework	23
3.1 Introduction	23
3.2 Agenda-setting theory	23
3.2.1 Roles of the media	
3.2.2 The influence of the media	
3.2.3 The power of the media versus public rationality	
3.3 Framing – an extension of Agenda-Setting	26
3.3.1(a) <i>Unintentional and implicit frames</i>	
3.3.1(b) <i>The active selection of frames</i>	
3.3.2 Prospect theory and the positivity bias	
3.3.3 Reframing	
3.3.4 Other frames	
3.4 Framing Theory	30
3.5 Framing analysis	32
3.6 Framing of Environmental issues	33
3.7 Summary of Chapter	35
Chapter Four: Research Design and Methodology	36
4.1 Introduction	36
4.1.1 Research methodology and approach	
4.1.2 Quantitative v Qualitative methodologies	
4.1.3 Triangulation of research with in-depth interviews	

4.2 Subject selection	39
4.2.1 Selection of media	
4.2.1(a) <i>Cape Times</i>	
4.2.1(b) <i>Cape Argus</i>	
4.2.1(c) <i>Die Burger</i>	
4.2.2 Selection of study period	
4.2.3 Selection of frames	
4.3 Data Collection	42
4.4 Data Analysis	43
4.4.1 Proximity	
4.4.2 Framing	
4.4.2(a) <i>The environmental frame</i>	
4.4.2(b) <i>The scientific frame</i>	
4.4.2(c) <i>The political frame</i>	
4.4.2(d) <i>Economic consequences frame.</i>	
4.4.2(e) <i>The Human Interest frame</i>	
4.4.2(f) <i>Other miscellaneous frames</i>	
4.4.3 Sources consulted	
4.4.4 Reason for article	
4.4.5 Mention of sceptics	
4.5 Research questions	56
4.6 Summary of Chapter	56

Chapter Five: Summary of findings	57
5.1 What was covered?	57
5.2 Dominant frames	58
5.2.1 <i>Cape Argus</i>	
5.2.2 <i>Cape Times</i>	
5.2.3 <i>Die Burger</i>	
5.3. Proximity	63
5.3.1 <i>Cape Argus</i>	
5.3.2 <i>Cape Times</i>	
5.3.3 <i>Die Burger</i>	
5.4 Sources consulted	67
5.4.1 <i>Cape Argus</i>	
5.4.2 <i>Cape Times</i>	
5.4.3 <i>Die Burger</i>	
5.5 Opinion and editorial coverage	70
5.6 Mention of climate change scepticism	71
5.7 Journalists on the framing of climate change	71
5.7.1 <i>Cape Argus</i> : John Yeld	
5.7.2 <i>Cape Times</i> : Melanie Gosling	
5.7.3 <i>Die Burger</i> – Jorisna Bonthuys	
5.8 Interviews with climate change scientists	84
5.8.1 Dr Guy Midgley	
5.8.2 Prof Bruce Hewitson	
5.9 Interview with climate change sceptic: Andrew Kenny	87

5.10 Summary of Chapter	89
Chapter Six: Discussion and conclusions	90
6.1 Introduction	90
6.2 Event-centred coverage	90
6.3 Dominant frame: Environment	91
6.4 Environmental reporting: A lack of resources	92
6.5 Climate change: the local perspective	93
6.6 The media's role in changing behaviour	94
6.7 Journalists and scientists: a difficult dialogue	94
6.8 Media and sceptics	95
6.9 Conclusion	96
6.9.1 Overall summary	
6.9.2 Conclusion of research findings and arguments	
6.9.3 Future Research	
6.9.3(a) <i>Increased study period</i>	
6.9.3(b) <i>Emotive media, a broader look</i>	
6.9.3(c) <i>Editorial and advertorial integrity</i>	
7 References	102
8. Appendices	112
8.1 Sample of questionnaire for journalists	112
8.2 Sample of questionnaire for scientists	114
8.3 Sample of questionnaire for climate change sceptic	115

Chapter One

Introduction

“The crucial point about the risk society... is that modern society has brought forth a new category of risk... namely, risks which cannot be controlled. We are no longer talking about comets crashing to earth or accidents with a greater or lesser degree of probability of occurring. Rather, what is at issue are rapid advances in modernization that are successful in terms of their degree of impact and range of consequences... but which generate radical uncertainty because no-one is able to assess their consequences.”

Ulrich Beck

"To a patient scientist, the unfolding greenhouse mystery is far more exciting than the plot of the best mystery novel. But it is slow reading, with new clues sometimes not appearing for several years. Impatience increases when one realizes that it is not the fate of some fictional character, but of our planet and species, which hangs in the balance as the great carbon mystery unfolds at a seemingly glacial pace."

David Schindler

1.1 Aim of the study

According to De Wit and Stankiewicz (2006:1917) “future climate change poses one of the greatest threats to poverty eradication (in Africa)”. The growing problem of climate change is no longer merely an environmental issue, but rather it is an issue which is beginning to affect most humans, a large majority of industries and plant and animal species to some degree. Climate change is now a political, a socio-economic, an agricultural, health, a global and a local issue.

Although environmental risks abound in contemporary society, they generally lie dormant in terms of public acknowledgement until some event drives them onto the public agenda.

At the core of this study is the question of how the media places news value on a relatively slow-moving global problem. The underlying theoretical assumption is that understanding how

the climate question has been *understood* and *framed* is of vital importance for how the general public will be able to respond to lifestyle changes in aid of climate protection. The terms of debate, the allocation of resources and political courses of action depends on the context into which the climate question is put in the media (Lindseth, 2003).

The aim of the study was to assess the coverage of issues related to climate change by the media in the Western Cape of South Africa, a region which has been identified to be particularly susceptible to the impacts of climate change.

More specifically, the *Cape Times*, *Die Burger* and the *Cape Argus* were reviewed. 2005 was a particularly significant year in terms of climate change media coverage as the then Prime Minister of the United Kingdom and leader of the G8, Tony Blair, had promised to address issues relating to climate change at the G8 summit of 2005. Already in September of 2004, Blair had pledged to pressure Washington to rejoin the international negotiations to curb emissions of greenhouse gases in order to reduce the speed at which the Earth's climate is changing (Lobe, 2004). 2005 was also the year that the historic Kyoto Protocol went into effect.

This study investigates what dominant themes emerged within the three Western Cape daily newspapers mentioned above during 2005. This study sought to establish what frames were used in interpreting the ongoing change in the global climate.

It was assumed that because climate change is what is termed a “slow moving environmental disaster” (K. Esler, personal communication, 10 September 2005), articles on this topic are more likely to focus on the politics surrounding the issue than the issue itself. The aim of the study was therefore to question whether this has, in fact, been the case, bearing in mind that journalists do not report environmental risk; they report news (Sachsman, 1993).

Environmental risk alone does not possess any news value. Rather it enters news by association of newsworthy events (Miller & Reichert, 2000). It can be argued that it is for this reason that climate change is found presented within a certain frame. This study seeks to establish what frames were used in interpreting the ongoing change in global climate. This study also investigated what dominant themes emerged within the media during 2005. What were most of the articles written about?

Following an analysis of articles from the three newspapers, journalists at the newspapers were interviewed in order to try to assess why certain angles or frames on climate change are more likely to be used than others. Climate change scientists were also interviewed in order to gain some understanding of their view on the reporting on climate change. Finally, a climate change sceptic was interviewed in order to gain understanding of the sceptics' stance on climate change reporting.

1.2 Background

1.2.1 Global Climate Change

Global climate change must certainly be one of the most pressing concerns of the 21st century. Climate change basically consists of the warming climate as a result of the Greenhouse effect. This has led to warmer temperatures, changing rainfall patterns, rise in sea level and an increase in extreme weather events. The World Bank has cautioned that future climate change poses one of the greatest threats to poverty eradication on the African continent. Flowering and fruiting cycles are shifting, glaciers are retreating and people are dying. In 2000 alone, climate change killed 150 000 people, a death toll which could double in the next 30 years if current trends are not reversed (Bhattacharya, 2003).

As Trumbo (1996) points out, however, climate change, along with other environmental topics like ozone depletion and loss of biodiversity, all lack tangibility for the common person.

During the past century, global temperatures soared by about 0.6°C, which is the largest increase in at least one thousand years. To put this in perspective; during the most recent ice age, the average world temperature was approximately 5° less than what it is today (A Climate Change Primer, n.d.).

The world's primary fuel sources are coal, oil and gas which are burnt to produce energy. With this burning, so-called greenhouse gases are released. These gases get trapped in the earth's atmosphere to form an insulating layer which in turn traps heat.

It is worth noting that climate change per se is not in dispute. No one denies that temperature readings across the globe have recorded a steady increase in average temperatures. What is disputed is the cause of this temperature increase. A number of politicians and some

scientists believe that climate change is not a result of increased greenhouse gas emissions, but rather is merely part of a climate cycle (Lindzen, 2006). In January 2005 Senator James Inhofe, speaking on the Senate floor, condemned the concept of global warming as the “greatest hoax ever perpetrated on the American people” (Inhofe, 2005).

The eight largest conservation organizations - Birdlife International, Conservation International, Flora and Fauna International, IUCN, The Nature Conservancy, Wetlands International, the World Conservation Society, World Resources Institute and the World Wide Fund for Nature - all agree that a 2°C warming above pre-industrial levels is the absolute threshold for dangerous climate change (Joint Statement, 2004).

The best-case scenario for the increase in carbon dioxide emissions predicts that the concentration of carbon dioxide in the atmosphere will reach double the level of before the Industrial Revolution, in 2100. The worst-case scenario brings this doubling forward to 2045. The Third Assessment Report of the UN's Intergovernmental Panel on Climate Change (IPCC) predicts global temperature rises by the end of the century of between 1.4°C and 5.8°C (IPCC Third Assessment Report , 2001).

In 1997 more than 160 nations met in Kyoto, Japan, to negotiate binding limitations on greenhouse gases for the developed nations. The outcome of this meeting was the Kyoto Protocol, signatories of which agreed to limit greenhouse gas emissions relative to levels emitted in 1990. In 2001 then president of the United States, President George W Bush withdrew from Kyoto Protocol negotiations. In 2001, President George W. Bush withdrew the U.S., which is the world's largest greenhouse gas polluter, from the Protocol . Bush described the treaty as "fatally flawed" and argued that it would have a profoundly detrimental effect on the U.S. economy. Bush also criticised Kyoto for not binding developing nations such as China, which is currently the world's second largest greenhouse gas emitter, into a formal agreement for pollution cuts (Sussman, 2007).

In 2007 the Nobel Peace Prize was jointly awarded to Al Gore and the IPCC for "their efforts to build up and disseminate knowledge about man-made climate change" (Gore and UN Panel, 2007).

1.2.2 Coverage of climate change in the media

According to NASA, Swedish scientist Svante Arrhenius was “the first person to investigate the effect that doubling atmospheric carbon dioxide would have on the global climate”. Arrhenius believed that a slight increase in anthropogenic emissions of carbon dioxide would be beneficial in making the Earth’s climates more “equable”, stimulating plant growth and food production (History of Climate Change, 1995).

Nevertheless, until about 1960 most scientists deemed it unthinkable that humans could actually affect average global temperatures.

During the 1950’s a geophysicist, Roger Revelle, along with Hans Suess, a German atomic expert, demonstrated that carbon dioxide levels in the air had increased as a result of fossil fuel usage.

In 1965 Revelle, serving on the US President’s Science Advisory Committee Panel on Environmental Pollution, helped publish the first high-level government mention of global warming (Weart, 2006).

In 1977 Revelle chaired the National Academy panel which found that approximately 40% of anthropogenic carbon dioxide has remained in the atmosphere. Two thirds of this originated from the burning of fossil fuels and one third from the clearing of forests. (It is now known that carbon dioxide is one of the primary greenhouse gases contributing to global warming and that it remains in the atmosphere for a century).

During the 1980’s Representative Al Gore who had been a student of Revelle, co-sponsored the first congressional hearing to study the implications of global warming and to encourage the development of environmental technologies to combat it.

In 1982 Revelle published a widely read article in *Scientific American* addressing the rise in global sea level and the “relative role played by the melting of glaciers and ice sheets versus the thermal expansion of the warming surface waters”.

The following year the Environmental Protection Agency released a report detailing some of the possible threats of the anthropogenic emission of carbon dioxide (Weart, 2006).

In 1988 NASA climate scientist, James Hansen, and his team reported to Congress on global warming, cautioning that “greenhouse warming should be clearly identifiable in the 1990’s” and that “temperature changes are sufficiently large to have major impacts on people and other parts of the biosphere, as shown by computed changes in the frequency of extreme events and comparison with previous climate trends” (Timeline: Climate Change, 2006).

The Intergovernmental Panel on Climate Change (IPCC) was established to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation.

By the nineties children were being educated on global warming in schools.

In 1997, nine years after the formation of the IPCC, the Kyoto Protocol was formed.

2004 was the year in which a deal was struck regarding the Protocol. President Vladimir Putin of Russia announced that his country would back the protocol and the EU announced its support of Russia’s membership of the World Trade Organization. Also in 2004 a major motion picture, *The Day after Tomorrow*, depicted disastrous and sudden calamities resulting from climate change.

2005 was the second warmest year on record up until that time. A record US hurricane season was linked to warming, as was the accelerated melting of the Arctic ice sea and Siberian permafrost. The Kyoto Protocol came into force and Kyoto signatories agreed to discuss emissions targets for a second compliance period beyond 2012. The US and China along with other countries without targets agreed to a non-binding dialogue on their future roles in this matter (Timeline: Climate Change, 2006). In April 2005 Climate Change was the cover story of *Time Magazine*.

In October 2006 the story of Al Gore’s efforts in the struggle to publicise and remedy global warming was aired in the documentary *An Inconvenient Truth* and in 2007 climate change was the cover story of a broad spectrum of magazines from *Africa Geographic* and *Time* to *Sports Illustrated*.

1.2.3 Relevance of the study and impact on the South African media

South Africa and more specifically, the Western Cape province is a region which scientists agree is likely to suffer dire consequences of climate change.

The Western Cape province of South Africa is recognised as a biodiversity hotspot as it houses the greater proportion of one the world's six floral kingdoms; the Cape Floral Kingdom.

Recent model projections suggest that the Western Cape will become warmer and that rain may increase in summer and mountainous regions

At a conference on climate change planning for the Western Cape, some of these consequences were discussed. These included; imminent drought and increased water restrictions (with a scrambling for water resources between the urban and agricultural sectors) which contribute to a higher likelihood (a 2 to 3 times increase) of runaway fires (this would increase the extinction risk of slow growing plants and put populations in danger as only seedling would be present leading to less soil stability and hence an increased risk of plants dying out), a greater need for alternative farming practices and a likelihood of job loss in the agricultural sector. There is also the threat of rising sea levels which could potentially wreak havoc to coastal tourism and the fishing industry. A spread of suitable habitat (namely an increase in humidity) could result in disease causing organisms spreading and could potentially turn the Western Cape into a malaria area. Biodiversity would probably be the first thing affected with the fauna-rich fynbos biome suffering under heat stress, increased fire regimes and greater wind speeds and, as a result, being outcompeted by more hardy and drought resistant plant species (Midgley, 2006; Asmal, 2006; Bond, 2006).

The very nature of the Western Cape as a biodiversity hotspot means that there are a high number of plant species in a relatively small area. A great percentage of these plants have a very limited range size with several of them being found only in the Western Cape of South Africa. These rare plants would be at the greatest risk of extinction as a result of climate change (Esler, 2005).

Because climate change is likely to affect everyone in this region to a greater or lesser degree, it is imperative that it is reported on sufficiently and responsibly.

According to Miller and Riechart (2000) the context in which issues are placed plays a vital role in shaping public opinion and therefore the policy-making processes.

1.3 Preliminary literature study / theoretical framework

The basis of framing theory is that the media focuses attention on certain events and then places them within a field of meaning. The media draws the public attention to certain topics, it influences what people think about. This is the original agenda setting ‘thought’ which is discussed in Chapter Three in more detail.

According to Robert Entman (1993), a seminal scholar in the field of media framing, to frame is to select certain aspects of a situation and highlight them in the media in a way that promotes a specific definition, interpretation evaluation of recommendation.

Not only do the media influence the perception of what topics are seen to be important by the public, but they also influence public opinion by presenting such topics within a certain frame. A frame refers to the way media and media gatekeepers organise and present the events and issues they cover, and the way audiences interpret what they are provided. Frames are abstract notions that serve to organise or structure social meanings. Frames influence the perception of the news of the audience, this form of agenda-setting not only tells what to think about, but also how to think about it (McCombs & Shaw, 1993).

Miller & Riechart (2000) point out that by framing issues in a particular way, journalists can focus on facts while shaping discourse, be it consciously or unconsciously.

The type of framing that the author expected to find in the analysis of coverage of climate change related topics include the politicising of climate change, a focus on the so-called climate change dissidents and a focus on the shortcomings of Kyoto.

1.4 Research problems and objectives

The primary research objective of this study was to assess reporting on climate change in the Western Cape and attempt to identify patterns and frames within this reporting. Conclusions were then drawn.

1.5 Research design and methodology

“Framing-mapping analysis” makes it possible to investigate the framing process in a method which is both thorough and convenient. In particular, suggestions concerning the strategies and circumstances that cause one frame to dominate the discourse warrant investigation. (Miller & Riechart, 2000)

A qualitative content analysis was conducted using the approach of framing analysis. The 2005 editions of the *Cape Times*, *Die Burger* and the *Cape Argus* were studied and articles relating to climate change were analysed in terms of a number of potential frames. Following this, observations were described and a questionnaire for the interviewing of journalists and scientists was compiled based on the findings of the analysis.

This questionnaire was conducted in the form of interviews with relevant reporters and climate change scientists to gain a qualitative perspective of climate change reporting in South Africa.

1.6 Outline of remainder of thesis

Now that the aim of this thesis has been described (namely to review the journalism pertaining to climate change and related topics particularly in Western Cape daily newspapers) the chapters to follow will delve deeper into the theories and particulars surrounding this aim.

Chapter Two includes a literature study. Relevant literature pertaining to the media's conflict in reporting on environmental issues is discussed with a specific focus on the reporting of climate change and the intrinsic difficulty of reporting on a gradual news event.

Chapter Three includes a more indepth look at framing as a mass media theory.

Chapter Four describes the research design and methodology of the study. The precise duties and subjects of examination are described in finer detail. Types of frames and selection criteria thereof are explained. These include the environmental frame, the scientific frame, the political frame, the economic consequences frame and the human interest frame.

Chapter five provides a summary of the findings of the study. The results of the review of newspaper articles is presented graphically and discussed. The in-depth interviews with reporters from *Cape Times*, *Die Burger* and *The Cape Argus* are presented. The recommendations from climate change scientists are also described with regard to the results of the framing analysis.

The sixth and final chapter discussed the findings of the study and recommendations for future research.

Transcripts of sample questions posed to journalists as well as the questions posed to climate change scientists and the climate change sceptic have been included in the appendices.

Chapter Two

The environmental beat in today's newsroom

2.1 The emergence of the environment as a news topic

The face of reporting changed in 1969, the year that iconic images of planet Earth were relayed from the moon. As Schoenfeld, Meier & Griffin (1979:6) put it, “By conquering the frontier of outer space, Americans seemingly discovered another frontier, the search for a state of harmony between humankind and the only earth we have; and reporters and editors watched – and responded.”

By August of that same year *Time* magazine had introduced an environment section.

Little more than a decade later, in the early nineties media attention given to environmental issues had levelled off. Some noted a scepticism from the media and the public regarding what were seen to have been exaggerated doomsday-type environmental claims in the 1980's (McComas & Shanahan, 1999).

The environmental story is one of the most complex and urgent stories of our time. It affects everyone and everything. As Stocking & Leonard (1990:206) point out, environmental reporting involves “probabilistic science, labyrinthine laws, grandstanding politicians, speculative economics, and the complex interplay of individuals and societies”.

The public understanding of science is vital for a society which is increasingly affected by not only scientific development, but also by policies which are influenced by scientific expertise (Miller, 1986). For most people, scientific knowledge is gained largely through mass media, as opposed to scientific publications, direct experience or past education. It is therefore vital that the filter of journalistic language and imagery is an accurate one (Corbett, Durfee, Gunn, Krakowjak, & Neller-moe, 2002).

Even if there has been a certain amount of direct experience, for example living through the “hottest summer on record”, it is the media who must attempt to shape opinion and understanding by connecting the event to scientific evidence (Corbett et al., 2002).

It therefore became necessary for journalists to develop the sufficient understanding and vocabulary required to interpret and communicate environmental news to anxious and interested audiences (Allan, Adam & Carter, 2000)

Bell (1994) found that the media were the sole source of information on climate change for New Zealanders and Wilson (1995) reported that the media (particularly television) were the primary information source in the U.S.

2.2 Environmental media: where are we now?

The amount of coverage given to an environmental risk topic relies on traditional news values rather than the seriousness of the risk itself (Sandman, Sachsman, Greenberg & Gochfeld, 1987). While this frustrates scientists and environmentalists greatly, reporters are in the news business and not in the business of education or conservation.

Consequence is only one of many traditional news values used by the media to select and frame stories. Others like timeliness, proximity, drama, visual appeal, et cetera make something newsworthy even if it is not a serious threat and even if it lacks significant consequences (Heibert, Ungurait & Bohn, 1991).

According to Sandman et al. (1987) technical content is particularly lacking in environmental reporting. The risk information it provides is more likely to come from opinions than evidence. He cites the relative inaccessibility of technical sources and the technophobia of many reporters and much of the audience as potential reasons. For the average reporter it is easier and perhaps more successful to favour stories which deal with environmental politics over those involving environmental risk.

Sandman et al. (1987) have identified four biases in environmental reporting and the reception thereof. These are that alarm prevails over reassurance, that extremes are favoured over the middle ground, that opinions are more popular than data and that outrage prevails over hazard.

Allan et al. (2000) emphasise that media attention is a key determinant in the legitimisation of the environment as a major political issue, because of this and because of the magnitude of the consequences of environmental problems, this beat needs “careful, longer than bite-sized reporting and analysis, now.” (Stocking & Leonard, 1990:42).

According to Ader (1995), the media have played a strong agenda-setting role by increasing public awareness of issues like waste and pollution, by serving as a watchdog of the dominant institutions (Corbett et al., 2002), through highlighting the dangers and consequences of global

warming and through framing environmental issues for the public. Corbett et al. (2002) have found that the media uses a utilitarian frame to report environmental issues in rural areas and a stewardship frame in urban areas.

2.3 The environmental beat: The journalist's dilemma

2.3.1 The intangibility of science

Science is difficult to channel into an interesting, readable story. How does a reporter succeed in enthralling readers with “more research is necessary?”

Maintaining public interest in environmental issues is vital in ensuring that solutions are found and implemented (McComas & Shanahan, 1999). However, attention to environmental issues is challenged by many other issues. According to McComas and Shanahan (1999), in the United States, tolerance for discussion of specific environmental problems is found to be relatively low and perhaps as a consequence, the mass media attention given to such issues is also low.

As Schoenfeld (quoted in Schoenfeld et al.1979:54) despairs “Do you give readers what they should know or something they will read? The challenge of the environmental beat is to convey a sense of immediacy and pertinence, usually by telling the story in human terms. ... I try to find the human element while writing about an increasingly complex world of bewildering facts and figures. Every beat needs that, but this beat demands it.”

This challenge is further complicated in that many environmental issues lack tangibility to the common person. Societies are now required to acknowledge problems that are more or less invisible, yet have to be acted on to avoid global consequences in the future (Trumbo, 1996).

2.3.2 The environment as event-centred news rather than chronic news

The media favour reporting of natural disasters like earthquakes, tsunamis and hurricanes over the everyday hazards like pollution caused by insecticides, smog caused by factories, et cetera. According to Greenberg, Sandman, Sachsman & Salomone (1989) this disproportionate coverage (at least from a scientific perspective) probably reinforces the public's tendency to

overestimate risks which are violent or unexpected and to underestimate those which are slow moving or chronic.

The greater the apparent threat from visible forms of environmental degradation, and the more vividly this can be dramatized, the more public support and public interest the environment will receive. Ironically, the cause of environmentalists would benefit from an environmental disaster like “killer smog” choking thousands to death (Peterson, 2006).

It has been well documented that the news media tend to report on environmental crises in terms of “event-orientated catastrophes” (Allan et al., 2000). The tendency of environmental reporting is that it is event centred rather than issue sensitive and results in these events not being presented in the broader context.”

2.4 The urgency of accurate climate change reporting

The media have become the public’s primary source of scientific information. Wilson (1995) identified the media as the primary source of climate change knowledge. Both scientists and journalists agree that adequately communicating science to the public, particularly the science of climate change, is critical.

While science coverage tends to emphasise discoveries and firsts, what is commonly lacking in scientific stories is the context. McComas & Shanahan (1999) found that media narratives on climate change were driven by dramatic considerations.

2.4.1 The state of climate change reporting

Nissani (2004) found that the media played a decisive role in American politics, but that the media coverage of environmental issues was both shallow and carried a pro-corporate bias.

Quite simply, climate change does not fit into the norms of journalism. The amount of uncertainty and calls by scientists for further research are not definitive enough to make a good lead. The media are more likely to jump at a new finding or a “front page thought” which would appear to minimise the uncertainties in the broader story (Peterson, 2006).

An examination by Hilgartner and Bosk (1988) found that audiences were unlikely to pay much attention to scientists' claims about climate change until they had themselves experienced something of the reality of the phenomenon. The heat and drought of 1988 provided a kind of reality check which served to accelerate the demands in the political arena.

Various studies have found the level of reporting on climate change varied around the globe. Bell (1994) found in a six month study of climate change news coverage in New Zealand that reporting on basic scientific facts was incredibly accurate. However, one in six stories contained significant misreporting. Some stories over emphasized the advance of climate change or worse, confused ozone depletion with the greenhouse effect.

Fortner, Lee, Corney, Romanello, Bonnell, Luthy, Figuerdo & Ntsiko (2000) found that in the 10 weeks preceding the historic Kyoto conference in 1997 media reports were both scarce and uncertain. The economic impacts were reported on with the most certainty.

Where is the creative literature on climate change? If climate change is indeed "the most severe problem we are facing today," as Sir David King, the UK Government's chief scientific adviser famously stated (Global warming 'biggest threat', 2004), then one would expect that there would be significantly more literature on it. Compare climate change literature to the other great eschatological crisis of the last 50 years, the nuclear threat, and a vast deficit is discovered. There are more than 3000 items included in British and American nuclear threat literature, some of which include Ian McEwan's *Or shall we die* and J.G. Ballard's *The terminal beach*. Such works served not only to interpret the politics of the nuclear debate, but also to shape it.

The climate change issue has certainly not enjoyed anywhere near this amount of prominence and is only in recent years emerging from the specialist journals, reports and studies into mass media. Climate change exists as a paper trail and in journalism and conversation. But it does not yet, with very few exceptions, one being Roland Emmerich's film *The Day after Tomorrow*, and another, the animated film *Happy Feet*, exist as art (Peterson, 2006).

2006 did bring an emergence of some mainstream infotainment media on climate change. The release of Al Gore's film, *An Inconvenient Truth*, received excellent reviews, won two academy awards and brought climate change to a new level of visibility.

In October 2006 a weekly series premiered on American cable television as part of the Weather Channel's Climate Watch Initiative. *The Climate Code* examined the climate change issue in an engaging way. Series host, Heidi Cullen, has a doctorate in climatology and ocean-atmosphere dynamics.

In March 2007 *The Great Global Warming Swindle*, first screened on BBC's Channel 4, claimed that the human-caused climate change theory was a hoax. Much controversy followed the screening of the documentary with the credibility of the quoted scientists being questioned.

In July 2007 Live Earth music concerts, with the aim of raising awareness about climate change, were held in 8 countries over 24 hours, bringing together an estimated global audience of over 2 billion people through television and the internet.

2.4.2 The intrinsic difficulty of reporting on a gradual news event

Peterson (2006) identifies one of the difficulties of climate change reporting to be the fact that journalists are not used to events on this timescale and with this level of uncertainty. This can partly be attributed to our short term political systems, short term business cycles and rapid changes in technology and entertainment.

Climate change is happening in an incremental fashion, and incremental is unlikely to make the front page. Even though climate change has potentially apocalyptic consequences, these can not be seen as yet. In contrast, climate change is discrete and gradual.

Considering the imperative role of media attention in the mobilization of action to solve social problems (McComas & Shanahan, 1999), a lack of sustained media interest is problematic.

Down's (1972) issue-attention cycle theory may serve to further explain the relative disinterest in the environmental issues and particularly the lack of media interest afforded to climate change relative to the potential impacts thereof. According to this theory, issues like the environment typically pass through five stages. These are; a pre-problem stage, a period of alarmed discovery, which is typically accompanied by enthusiastic optimism for the timely solving of the problem, a third stage in which the public is made aware and realizes the cost of making significant progress, this is followed by a gradual decline in public interest, which is

followed finally by a post-problem stage in which attention toward the issue has settled down, although it may still be subject to “spasmodic recurrences of public interest”.

Downs (1972) has identified three primary traits typical of environmental issues which make them particularly susceptible to the issue-attention cycle. According to Downs, problems relating to the issue are experienced unequally and not enough people are directly affected to maintain attention to the issue. In the case of climate change, this is true at present, however, as the problem escalates more and more people will be affected. Furthermore; according to Downs (1972) such problems are generated by social arrangements which provide significant benefits to a majority or powerful minority. Calls for reductions in greenhouse gas emissions have been refused by the United States government because they believed them to be unfair and detrimental to them, whilst benefiting the economies of other countries, most notably China and India. Finally, according to Downs (1972), the problems themselves have no intrinsically exciting qualities.

Downs (1972) also argues that the manner in which the mass media covers environmental issues tends to reinforce these cyclical patterns of attention. While dramatic media portrayals of the issue may capture the attention of the public, after a while it may serve to threaten, bore or desensitize the public to the issue.

According to Trumbo (1996) the course of media attention given to climate change can be fitted into Down’s theory:

Pre-problem: Prior to 1988 climate change was primarily a concern of scientists and top policy makers. While there was a large amount of scientific research, the story seldom featured in the media and public awareness remained low. Climate change had also not yet become politicized in the United States, which was a further reason for the lack of publicity it received.

Alarmed discovery, euphoric enthusiasm: Upon the backdrop of the severe drought of 1988, Dr James Hansen gave his congressional testimony in which he announced the manifestation of climate change. An alarmed reaction was soon followed by President Bush’s promise to counter the greenhouse effect with ‘the White House Effect’ (Trumbo, 1996).

Realising the cost: a realization of the real cost that was to be involved gradually replaced the alarm and the optimism. According to Trumbo this change was brought about through

political actions. A fear of the economic costs of stunting climate change motivated Bush to non-action.

Gradual decline of interest: With the realization of the cost, the issue became a less vocal one from the government's side. In addition, other American issues like Operation Desert Storm and the then upcoming presidential election began to gain prominence.

Post-problem: While climate change did gain some prominence in mid-1992 coinciding with the Earth Summit, attention to the issue remained cursory until the Kyoto Conference in 1997 since which it has undergone rises and falls. In the face of global terrorism; nuclear threats and Football World Cups, the media seem to fit global warming issues in where they can and when they have significant (usually event-driven) reason to.

In the decade following Trumbo's study, however, this gradual decline of interest has certainly changed course. Today a cursory glance at any newspaper or magazine reveals climate change stories.

2.5 Summary of Chapter

The urgency and difficulty of reporting on climate change was discussed and Down's issue-attention cycle theory was explained. According to Trumbo (1996) we were then in the *post-problem phase* of the Down's cycle. This would mean that climate change would receive only rare surges of interest by the media. This is clearly not the case as reporting on climate change has escalated greatly since the start of this study.

Chapter Three

Theoretical framework

3.1 Introduction

Within the formal study of the media there are theoretical models which aim to explain and understand the behaviour of the producers and consumers of the media. The agenda-setting theory argues that producers of media set the public agenda.

3.2 Agenda-setting theory

Public opinion – surely one of the most prized treasures of a democracy – relies largely on the mass media for its information. Democratic societies are dependent upon the process of public deliberation (Pan & Kosicki, 2001) and citizens thus participate in the governance of society (Habermas, 1989). The media are the primary framing institution of our time and dramatically influence the way we view current issues.

While Aristotle is regarded as the father of narrative analysis, it was Walter Lippmann (1922) who argued that news audiences carried pictures in their heads that often differ considerably from the real world. Lippmann also argued that in order to attract a person's attention a news story must provoke emotion, 'inducing him to feel a sense of personal identification' (Lippmann 1922:10). In order to feel part of the news in the way that one feels part of a drama in say a movie or a novel, the audience must be able to somehow identify with the story. One way of doing this would be to frame a complex, multi-faceted story in a specific and relevant way.

Walter Lippmann stated that people are unable to effectively deal with the diversity and subtlety of their environments (Baran & Davis, 1995:232). According to Lippmann, the average person had to be protected from these environments by the elites. The elites (or media representatives) had the work of interpreting the truth behind political motives. The so-called elites are the people who devote the majority of their attention to politics or public affairs and are the people "on whom we depend, directly or indirectly, for information about the world" (Zaller, 1992:6). The communication that comes from politicians, government officials, interest group activists and journalists is considered to be elite discourse

3.2.1 Roles of the media

Several roles that emerge from literature on the media (or these elites) include the media as (1) a powerful entity that tries to control the conflict; (2) as a biased participant who either defends or attacks the status quo; (3) as a third party “watchdog” who provides feedback to the public on local problems; (4) as a gatekeeper who sets agendas, filters issues, and accentuates other positions to maintain a balance of views; (5) as a mediator who celebrates conflicts and benefits through increased sales in covering conflicts (Putnam, 2002).

“The entire study of mass communication,” McQuail (2005:327) writes, “is based on the premise that the media have significant effects”.

Following from Lippmann, Cohen stated in his 1963 work that “The press is significantly more than a purveyor of information and opinion. It may not be successful much of the time in telling people what to think, but it is stunningly successful in telling readers what to think about” (Cohen, 1963: 232-233). It was these findings which provided the basis for the agenda-setting theory.

3.2.2 The influence of the media

McCombs & Shaw (1972) developed on Cohen’s work in presenting a definitive study in which they interviewed voters during the 1968 presidential election to establish the opinions of the most important issues of the day. They then conducted a content analysis of several types of news media and discovered a direct correlation between the amount of news coverage of a particular issue and the amount of importance placed on that issue by the public (Baran & Davis, 1972:232-233). This study differed from prior studies in that it concentrated more on information transmission – what people learn from news stories – as opposed to attitude change, which had been the focus of earlier studies. The 1972 study introduced the agenda-setting theory as a concept of mass communication theory,

McCombs and Shaw published their findings, one of the first media effects studies, in the *Public Opinion Quarterly* in 1972.

Theodore White (1972) puts it more dramatically: “The power of the press in America is a primordial one. It sets the agenda of public discussion; and this sweeping political power is unrestrained by any law. It determines what people will talk and think about – an authority that in other nations is reserved for tyrants, priests, parties and mandarins.”

Following on from this, McCombs and Shaw conducted a second study in 1977, *The Emergence of American Political Issues*, in which they identified the most important effect of the mass media to be “its ability to mentally order and organize our world for us.”

3.2.3 The power of the media versus public rationality

Jurgen Habermas can be credited with inspiring many contemporary scholars to view public discourse by principles of communicative rationality as much as by the forces of economic and political power. While scholars acknowledge that causal influences such as economic and political power can be seen to limit deliberation, they view the prospects for deliberation with more optimism in that they give more weight to communicative rationality.

One of the limitations identified in the agenda-setting theory was that researchers questioned its usefulness as a theory as it seemed limited to news and campaigns. It also failed to address the relationship between the news and the audience.

Simon and Xenos (2000) argue that the exchange of perspectives of politicians in the mass media leads to real outcomes which have substantial consequences in the real world.

Three dimensions of news processing have been identified (Kosicki & McLeod, 1990). **Active processing** refers to an individual seeking out additional sources based on the assumption that mass-mediated information is in general incomplete, slanted, or in other ways coloured by the intentions of the communicator. **Reflective integrators** ponder or think about information they gather from mass media, or they talk to others about what they have learned. Finally **selective scanners** use mass media only to seek information relevant to them. They skim over or ignore irrelevant or uninteresting content. In sum, according to a constructivist media effects model, audiences rely on a “version of reality built from personal experience, interaction with peers and interpreted selections from the mass media” (Neuman, Just & Crigler, 1992:120).

As Chong (1996:222) explains, “Models of information transmission (i.e. framing models) imply that the ideological faction that expends sufficient resources on propaganda and manipulation and that sends sufficiently loud signals can *always* prevail in defining the terms of debate... such models need to be balanced with further specification about what frames of reference the public is inclined or willing to accept”.

3.3 Framing – an extension of Agenda-Setting

McCombs, Shaw & Weaver (1997) suggested that not only are agenda-setting and framing effects related; framing is in fact an extension of agenda-setting. They used the term “second-level agenda-setting” to describe the impact of the salience of characteristics of media coverage on audiences’ interpretation of these news stories.

Framing is one of the most important concepts in the study of public opinion. Data from experiments, surveys, and political campaigns suggest that public opinion is often dependent on the frames which the elites choose to use.

The most well-known social science definition is that a framing effect occurs when two logically equivalent (but not *transparently* equivalent) statements of a problem lead decision makers to choose different options (Sher & McKenzie, 2006:3).

A framing effect occurs when the emphasis of a description of an event or issue is on a subset of considerations which causes society to focus on these considerations when constructing their opinions.

Framing analysis first appeared in Goffman’s (1974) seminal work. He said that the manner in which a message is organised affects the thoughts and actions which follow. According to Goffman (1974:21) “we actively classify and organize our life experiences to make sense of them.” The ‘schemata of interpretation’ are called frames and enable us to ‘locate, perceive, identify and label.’”

Initially Goffman (1974:10) defined frames as follows: “I assume that definitions of a situation are built up in accordance with principals of organization which govern events ... and our subjective involvement in them; frame is the word I use to refer to such of these basic elements as I am able to identify”.

3.3.1(a) Unintentional and implicit frames

There remains disunity among scholars as to whether frames are intentionally imposed units of selection or whether they are simply implicit and inevitable.

Frames are “basic cognitive structures which guide the perception and representation of reality” (König, 2004). According to König, frames are not consciously manufactured, but are “unconsciously adopted” in the course of communication. Frames determine which parts of reality are noticed.

“Frames are principles of selection, emphasis and presentation composed of little tacit theories about what exists, what happens, and what matters” (Gitlin, 1980:6).

According to William Gamson, “News frames are almost entirely implicit and taken for granted. They do not appear to either journalists or audiences as social constructions but as primary attributes of events that reporters are merely reflecting. News frames make the world look natural. They determine what is selected, what is excluded, what is emphasized. In short, news presents a packaged world” (Ryan, 1990:54).

The frames for a particular story are seldom intentionally chosen, but can rather be seen to represent the effort of the journalist to convey the story in a relevant way. News frames are therefore frequently used to identify cultural narratives and social themes.

3.3.1(b) The active selection of frames

Entman’s (1993:52) well-known definition of frames has been attributed with leading the way in shifting perceptions towards an active selection of frames: “to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation.”

A frame is a central organizing idea for making sense of relevant events and suggesting what is at issue. According to London (1993) “news and information has no intrinsic value unless embedded in a meaningful context which organizes and lends it coherence.”

According to James Britton (1970:26), “Experience is kaleidoscopic: the experience of every moment is unique and unrepeatable. Until we can group items in it on the basis of their similarity we can set up no expectations, make no predictions: lacking these we can make nothing of the present moment”. D’Angelo (2002: 873) supports the idea of frames as intentionally pitched cues. Reese (2001:7) takes the idea further by suggesting that framing *always* implies an active process and that analysts should demand to know how much framing is going on.

Within this shift it seems that frames have taken on a negative connotation, while Goffman, Gitlin, Gans, London and Britton all viewed frames as vital for communications and the framework for credible journalism.

News frames represent choices made by reporters and editors about what parts of a story to emphasize or minimize. Palmeri (2004) deems it impossible to expect total objectivity from reporters and editors, but does reason that we can expect fairness.

A frame can then be called a “psychological device that offers a perspective and manipulates significance in order to influence subsequent judgement” (Cialdini & Rhoads, 1997). In offering perspective it manages the viewer’s position in relation to the issue. In manipulating significance it directs the viewer to give weight to certain aspects and ignore others. And in influencing the subsequent judgement it serves to influence the manner in which the information is organised and resized after the story has been received. The frame limits and focuses to help create a specific picture of understanding (Holladay, Knight, Paige & Quiñones, 2002).

The profound outcomes of this manipulation of significance are made clearer when considering the prospect theory and positivity bias.

3.3.2 Prospect theory and the positivity bias

Kahneman and Tversky (1979) were interested in understanding the conditions under which people made conservative or risky judgements. They found evidence to support their “prospect theory” by which the prospect of a loss has a greater impact on decision making than the prospect of an equivalent gain.

This prospect theory gives valuable insight into human nature. The instinct to gain is secondary to the instinct to not lose. Therefore, framing a decision in terms of possible loss should motivate a person more than framing the same decision in terms of the possible gains.

Iyengar (1987) corroborates this theory; “The invoking of different reference points triggers completely different strategies of choice or judgement”.

Humans have an inherent positivity bias by which they disproportionately expect good things to happen. They are therefore disproportionately jolted by negative information (Kahneman and Tversky, 1972).

A choice between two risky prospects can be hugely altered by simply changing the description of the alternatives. Framing prospects in terms of potential loss, for example, is likely to encourage risk seeking behaviour, while framing in terms of potential gains would encourage risk avoidance behaviour.

3.3.3 Reframing

“Different frames ... highlight different aspects of the options and bring forth different reasons and considerations that influence decision” (Shafir, Simonson & Tversky, 1993:34).

A reframe in which the decision at hand is changed is the least detectable and most powerful sort of frame.

Krosnick and Brannon (1993) used national survey data to try to conclude what may have caused the defeat of President George Bush (senior) in the 1992 presidential election. Twelve months before this election, after a successful gulf war, Bush had enjoyed an approval rating of 90% - the highest in American history. With no scandal or publicised blunder it dumbfounded many that he could have lost. The study identified the reason... the media had refocused its attentions away from the war to the national economy.

In essence, the media had focused on a declining economy which had jolted the public to what may be considered to be risk seeking behaviour; the election of a different president. According to Krosnick and Brannon (1993), this refocusing on the national economy cost Bush his continued presidency.

3.3.4 Other frames

A focus frame brings attention to a specific aspect of an issue (Levin and Gaeth, 1988). According to Pratkanis and Aronson (1992) journalists can obtain agreement without appearing persuasive if they cleverly establish the core definition of an issue.

A contrast frame is one in which the cost of the issue may be trivialised or exaggerated by comparison with something else.

Entman (1993) says that journalists can convey a dominant frame, disabling audiences to make a balanced assessment even while following all the rules for objective reporting.

According to Iyengar (1987:828) viewers are “sensitive to contextual cues when they reason about national affairs. Their explanations of issues like terrorism or poverty are critically dependent upon the particular reference points furnished in media representations.”

Scholars like Entman (1993:55) view the frames, or political claims and counter claims which dominate the media as an “imprint of power”. This view point suggests that only those with significant political power would be able to leave their imprint on public discussion.

This raises certain questions, however. Can renegade director Michael Moore be considered to have left his imprint? And from the environmental perspective then, what of Greenpeace? Perhaps their impact can be attributed to communicative competence.

Simon and Xenos (2000) believe that such theoretical viewpoints limit the expectations of effective public discourse in that they suggest that such discourse is dependent on power and communicative competence.

3.4 Framing Theory

The framing theory purports that the media focuses the attention of the audience on particular news events and then places them within a specific field of meaning (Entman, 1993; Scheufele, 1999).

Framing is therefore the way that the media organizes and presents events and issues to the audience and the way that the audience in turn interprets what they receive from the media in the form of social meanings. Frames influence the perception of news in the way that as a form of

agenda-setting it does not only tell one what to think about, but also how to think about it. So framing then leads to a situation whereby the audience accepts one meaning over another.

Framing analysis serves four main purposes within the context of media research, namely to define problems, to diagnose courses, to make moral judgements and to suggest remedies.

A common problem arises in social research in that responses from interviews are often different from the reality. Perhaps a better option would be participant observation.

According to Tuchman (1978:192) 'much of what happens and what is said in the world will remain mere talk and incomprehensible sounds'.

Gitlin (1980:7) explained that the generally unobservable frames help organise the world not only for audiences who wish to understand stories within the context of the time, but also for journalists by enabling them to process large amounts of information and package it in a manner which is relevant to the audience. Contextualising the world by the choice of stories and angles of the stories as well as highlighting the important or interesting or dramatic information while negating or under-emphasising the unimportant or uninteresting information is inherent to the journalistic profession (Gans, 1979:199-201)

In more recent years, Entman (1993:52) argued that framing is the selection of some aspects of a perceived reality making them more salient in an article "in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described."

One of the elementary findings of cognitive science is that people process information in terms of frames and metaphors. The frames are in the synapses of our brains and are physically present in the neural circuitry. As a result of this physical imprinting of frames in our brains, once frames are entrenched they are difficult to dispel. When the facts don't fit the frame, the frames are kept and the facts ignored (Butler, 2003).

Framing has to do with how an issue is composed: the messengers, visuals and metaphors that are used to convey an idea. The cues that framing provides directs people in their reasoning regarding issues.

Personal stories can be used to emotionally impact audiences with the intent of prompting policy change.

Allen, O'Loughlin, Jasperson, & Sullivan (1994) say that in priming and framing people unwittingly refer to judgements that they may not even realise they had formed.

“The more clear-cut the majority and the minority are in the climate of opinion, the more it may be assumed that this will influence the willingness to speak out or keep silent in public” (Noelle-Neumann, 1991:262).

Public opinion is susceptible “to social, political and media manipulations and as a social phenomenon in which social pressures and conformity are major driving forces” (Shamir, 1995: 15). According to Shamir, people seem to rely on mass media for substantive information about political developments and events. However, this is not always the case.

“The more ambiguous [the] situation, the easier it is to interpret stimuli in a number of ways; the more people tend to interpret it in ways consistent with their world views, expectations, goals and needs; and the more leeway there is for social political and media manipulations” (Shamir, 1995:17).

3.5 Framing analysis

In 1974 Irving Goffman established frame analysis. Framing analysis has become popular (Meyer, 1999:85). Over the past decade the *Social Citation Index* counts 1805 references for Goffman's 1974 methodological foundation (König, 2004).

The most important factor for the success of Goffman's frame analysis, according to König (2004), is its unconventional application. Today frame analysis may be only loosely connected to the original formulation. Today's frame analysis spans a number of varied approaches, some of which are not even necessarily compatible with each other.

“Frames are principles of selection, emphasis and presentation composed of little tacit theories about what exists, what happens, and what matters” (Gitlin, 1980:6).

While Gitlin's definition is theoretically sound, the difficulty comes in when one tries to identify and measure frames, precisely because they are tacit and not explicit (Maher, 2001:84).

The inherent difficulty in measuring these tacit frames may account for the gradual theoretical shift toward viewing frames as in fact being actively manufactured and implemented. In media studies it has become common to view framing as deliberate (König, 2004).

A study conducted by The Project for Excellence in Journalism (in the USA) found that straight news accounts (i.e. the inverted pyramid) accounted for a mere 16% of front page news stories. This may suggest an increasing trend toward thematic and interpretative presentation of the news (Framing the News, n.d.).

Three narrative frames, namely conflict, winners and losers and revealing wrongdoing accounted for 30% of all reports. This was double the number of straight news accounts.

Explanatory frames which explain and interpret and provide broader context accounted for a mere 12% of all stories. This may imply that journalists or editors don't prioritise policy or its impact. Policy stories accounted for only 8% of front page stories.

Thirteen possible frames were identified for the purposes of this particular study, these were:

The straight news account, conflict stories, consensus stories, conjecture stories, process stories, historical outlooks, process stories, conjecture stories, horse race stories (winners and losers), trend stories, policy explored, reaction stories, reality check, wrongdoing exposed and personality profile.

Local publications were twice as likely to run straight news accounts as national papers, 21% as opposed to 11%. Local journalists were also twice as likely to explain how something works (5% versus 2%).

3.6 Framing of Environmental issues

If over 75% of the American public claim to support environmentally friendly practices, then how is it that despite countless facts about declining air quality, melting ice caps and so on, anti-environmental legislation with Orwellian titles like the Healthy Forests Restoration Act and Clear Skies Initiative has advanced?

According to George Lakoff, a specialist in Framing who teaches linguistics at the University of California in Berkeley, the problem and the solution are to be found in language.

Lakoff believes that phrases like “protecting the environment” are counter-productive. “The image that you get is of the environment as something separate from you. It sounds as if there were this helpless environment out there and you were the big protector. There’s no notion that we owe our very existence to the environment and that we are threatening what gives us life. It assumes that there’s an external threat. It doesn’t say that the threat is us” (Butler, 2003).

Lakoff says that environmentalists have adopted a set of frames which fail to reflect the imperative role of the environment to everything on earth. Even the term “the environment” suggests an area of life separate from other areas such as the economy or health or foreign policy or politics. By failing to link the environment to everyday issues, it becomes a separate category, or worse; a luxury in difficult times.

A better option would be to frame environmental issues in terms of health and security, which are already accepted as vital and by no means luxuries. When polluted air is causing asthma it is a health issue and the development of alternative energy is not only an environmental issue but also a foreign policy issue, a political issue and a third world development issue.

According to Lakoff (Butler, 2003), “most environmentalists believe that the truth will make you free, so they tell people the raw facts. But frames trump the facts. Raw facts won’t help, except to further persuade the people who already agree with you.”

Frank Luntz is a conservative pollster. He is described as “the Republicans’ language man”. He trains influential conservatives in language use. In a discussion on global warming, Luntz said that Republicans are losing on the science. “The science is coming out, showing that there really is global warming. But”, he says, “we can reclaim victory through language”. Luntz said that when you are talking to environmentalists, you simply need to use the words environmentalists like. “Healthy”, “clean”, and “safe”. He trains them to use Orwellian language, language that means the opposite of what it says.

Lakoff cautions that “Global warming” is the wrong term: “‘Warm’ seems nice. So people think ‘Gee, I like global warming. Pittsburgh will be warmer.’ ‘Climate change’ is the attempt to be scientific and neutral. “Climate crisis” would be a more effective term. Climate collapse.

Carbon dioxide strangulation. Suffocation of the earth. But it's not easy to change these things once they get into the vocabulary" (Butler, 2003).

3.7 Summary of chapter

The goal of Chapter Three was to provide a comprehensive literature review and thorough theoretical framework. The literature study first described the agenda-setting theory. The roles, influence and power of the media was discussed in terms of this theory. Thereafter framing was discussed as an extension of the agenda-setting theory. Unintentional and implicit frames were described in contrast with the active selection of frames. The prospect theory and positivity bias were explained as well as reframing. Framing analysis was explained.

Chapter Four

Research Design and Methodology

4.1 Introduction

This chapter describes the research design in detail. Sections addressed include the research methodology, subject selection and description, data collection and analysis and the identified limitations and strengths of the research methodology. The results are discussed further in Chapter five.

4.1.1 Research methodology and approach

This study is primarily focused on an analysis of texts, better known as a quantitative content analysis. This research aims to gain knowledge based on representativeness and generalisability of data. A framing analysis approach will be used. As discussed in chapter three, framing analysis serves four main purposes within the context of media research, namely to define problems, to diagnose courses, to make value judgements and to suggest remedies. Goffman (1974:10-11) borrowed the term *frame* from Bateson and made it his own. He assumed that definitions of a situation are “built up in accordance with principles of organization which govern events – at least social ones – and our subjective involvement in them.”

Following this, interviews were conducted with the relevant journalist at each newspaper who had the most bylines for stories referring to climate change to discuss the patterns which emerged from the framing analysis.

The chosen methodology is relevant to the study in that one of the goals of the study is to observe and evaluate patterns in coverage of climate change. The framing analysis serves to ascertain the dominant discourses and the interviews serve to discuss and theorise the basis for the choice of frames.

4.1.2 Quantitative v Qualitative methodologies

Quantitative studies are aimed at numerical results like percentages. Quantitative study is associated with a small margin of error in highlighting dominant themes within a text, however it offers little context or interpretation of results.

Quantitative research and qualitative research are sometimes referred to as distinct paradigms and hence as incompatible. However, most researchers acknowledge that much can be gained by combining the strengths of both methods.

The approach of this study is to combine a quantitative content analysis with qualitative interviews, thus seeking to gain better understanding of the results of the analysis through interpretative interviews.

Fowler (1991) defined news not as a reflection of reality, but rather as a product shaped by political, economic and cultural influences. The advantage to qualitative research is that it “provides descriptive insight into the concrete processes of discursive practices as they are likely to transform into social action in any given context” (Jenson, 1997).

Qualitative research offers the opportunity of providing insight into an individual’s actions, beliefs, thoughts and perceptions that quantitative methods alone cannot (McMillan & Schumacher, 2001). This type of research has been particularly suited to understanding the “how” and “why” questions with the goal of attaining an insider’s view of the group under study. Qualitative methods are orientated towards discovery and process; illustrate a high validity and are more interested in obtaining a deeper meaning of the research problem in its unique context (Ulin, Robinson & Tolley, 2005).

The primary purpose of a descriptive study is the acquisition of comprehensive and exact information about a particular topic, in light of providing new information on that specific event or incident (Giacomini and Cook, 2000; Neuman, 1999).

4.1.3 Triangulation of research with in-depth interviews

While Jenson (1997:38) argues that the importance of mass media research lies not in the meaning of the media texts, nor the institutional conditions under which the media operate, but rather in the “social and cultural practices that constitute production, transmission and reception [of media discourse]”, it remains imperative that the media texts and the institutional conditions are clearly understood.

Multimethod research involves the application of two or more research methods or data sources to investigate a research question. According to Bryman (1994), the rationale for multimethod research is that the majority of social research is based on findings which have been derived from a single research method and for this reason is vulnerable. In such cases it could be argued that the findings could result in incorrect conclusions if there was any error in the research. Due to the fact that it is seldom possible to accurately estimate the amount of measurement error and its impact on a set of findings, monomethod research is generally considered suspect in this regard.

The greatest advantage of multimethod or triangulation of research is that it increases confidence in findings.

Denzin (1970) first introduced the term “triangulation” to the social sciences. It has since become ubiquitous and its precise meaning has been lost somewhat over time. Udo Kelle (2001) provides three models of triangulation:

- 1) Triangulation as the mutual validation of results obtained via different methods (the validity model)
- 2) Triangulation as a means toward obtaining a larger, more complete picture of the phenomenon under study (the complementarity model), and
- 3) Triangulation in the original trigonometrical sense, indicating that a combination of methods is necessary in order to gain any (not necessarily a fuller) picture of the relevant phenomenon at all (the trigonometry model).

This study makes use of the complementarity model.

In addition to the framing analysis, the findings from the study are further investigated with a number of in-depth interviews with the journalist at the three publications who had the most bylines for climate change articles respectively. Interviews were also conducted with two climate change scientists and a climate change sceptic. These interviews serve to answer a number of questions from the source of the story to the influence of deadline constraints.

Qualitative interviews provide the journalists with the opportunity to describe their experiences in detail and to give their perspectives and interpretations of these experiences (Holloway, 2005). A semi-structured interview was used to collect similar types of data from all the informants in addition to allowing for the exploration of the participants’ feelings, thoughts and perceptions. Such interviews establish an exchange between the interviewer and respondent whereby a structure, without compromising the open exchange, is created (Ulin et al., 2005). Furthermore it allows for control over the interview so that the purpose of the study can be achieved and the research topic explored (Holloway & Wheeler, 1996).

Key areas which are interrogated in the interviews with the journalists include:

Sources: - What are some of the most valuable sources used by the newspaper? What are some of the difficulties in accessing scientific information? Does wire copy play a role in framing the story?

Editorial discretion: - What are some of the difficulties in reporting on environmental issues, particularly a “relatively slow moving disaster” like climate change? Has climate change been boxed as an environmental issue to be covered by environmental journalists?

South African perspectives: - What are the journalists’ views of environmental reporting in South Africa and climate change reporting in particular in comparison with the rest of the world? Does the issue receive enough media attention? Is a local perspective necessary?

Frames: - Are there efforts to select specific frames? Is there a tendency to rely on the environmental frame and so box climate change into merely an environmental issue?

Journalistic responsibility: - What is the media’s role in educating the public in terms of climate change? What are the ethics of giving coverage to climate change “sceptics?”

4.2 Subject selection

4.2.1 Selection of media

As mentioned in previous chapters, the newspapers selected were the *Cape Times*, the *Cape Argus* and *Die Burger*. These three daily newspapers based in the Western Cape of South Africa were selected as they would give an overview of the climate change messaging that the average Western Cape based newspaper reading person would read. The Western Cape of South Africa is expected to face particularly dire consequences of climate change in the coming years including drought, crop failure and increased temperatures.

4.2.1(a) *Cape Times*

The *Cape Times* is an English daily newspaper which is published weekday mornings.

- It has a circulation of 49 647 (ABC Oct – Dec 2006) and a readership of 245 000 (AMPS 2006).
- 29% of *Cape Times* readers are in LSM 7 & 8. 46% of readers are in the 9 and 10 LSM groups.
- Readership is 63% male, 37% female.
- Readership is 40% Coloured, 39% White, 19% Black and 2% Indian.
- 39% of readers are between ages 35 – 49, 30% are 50+, 24% are 25 – 34 and 7% are 16 – 24.
- 55% of readers work full-time, 12% work part-time, 12% are retired, 10% are housewives, 7% are unemployed and 4% are students

4.2.1(b) *Cape Argus*

The *Cape Argus* is an English daily newspaper which is published in the afternoons from Monday to Saturday.

- It has a circulation of 73 414 (ABC Oct – Dec 2006) and a readership of 374 000 (AMPS 2006).
- 37% of *Cape Argus* readers are in LSM 7 & 8. 40% of readers are in the 9 and 10 LSM groups.
- Readership is 61% male, 39% female.
- Readership is 58% Coloured, 27% White, 12% Black and 3% Indian.
- 35% of readers are between ages 35 – 49, 28% are 50+, 26% are 25 – 34 and 11% are 16 – 24.
- 51% of readers work full-time, 12% work part-time, 11% are retired, 10% are housewives, 10% are unemployed and 6% are students

4.2.1(c) *Die Burger*

Die Burger is an Afrikaans daily newspaper which is published mornings from Monday to Saturday.

- It has a circulation of 72 356 (ABC Dec – Oct 2006) and a readership of 388 127 (AMPS 2006).
- 24% of *Die Burger* readers are LSM 5 & 6, 23% are LSM 7 & 8. 52% of readers are in the 9 & 10 LSM groups.
- Readership is 57% male, 43% female.
- Readership is 52% Coloured, 47% White, 6% Black and <1% Indian.
- 33% of readers are between ages 35 – 49, 29% are 50+, 22% are 25 – 34 and 16% are 16 – 24.

4.2.2 Selection of study period

The period that was studied was 1 January 2005 to 31 December 2005. The extensive period of study allows for a broader overview of the reporting on climate change. The larger sample size of articles to be analyzed allows for more accurate conclusions to be drawn with regard to dominant frames used.

The year 2005 in particular was selected for a number of reasons. In terms of the history of climate change, 2005 was a significant one as it was the year that the Kyoto Protocol came into effect. 2005 was also the first year that the G8 presidency committed to focusing on climate change. 2005 was the hottest year on record (this has since been overtaken by 2006 which was warmer still).

As discussed in chapter 1, the motivation of this study is to assess how the media place news value on a relatively slow-moving global problem. The underlying theoretical assumption is that understanding how the climate question has been *understood* and *framed* is of vital importance for how the general public will be able to respond to lifestyle changes in aid of climate protection. The terms of debate, the allocation of resources and political courses of action depends on the context the media use to explain climate question (Lindseth, 2003).

The aim of the proposed study is to assess the coverage of issues related to climate change by the media in the Western Cape of South Africa, a region which has been identified to be particularly susceptible to the impacts of climate change. The manner of the investigation will consist of a framing analysis, as discussed above. This analysis will be conducted on three local Western Cape daily newspapers; the *Cape Times*, the *Cape Argus* and *Die Burger*.

This media form was chosen because unlike television news reports which are brief, at best, newspapers offer a forum for news analysis and coverage. While the radio and internet also provide excellent platforms, newspapers were chosen as they are more localised for the context of the Western Cape in particular. While a number of local weekly community newspapers exist in the province, these rarely feature indepth news and are more likely to focus on very specific local news.

These newspapers in particular were chosen as they are the only local daily newspapers in the province. It can therefore be assumed that the coverage can be said to be extensively representative of the news that the newspaper purchasing population would read.

4.2.3 Selection of frames

According to Kahneman & Tversky (1979), frames determine what most people take note of and how they understand and remember issues. They also determine how people evaluate and decide to act in terms of that problem or issue. They further found that the omitting to cover certain aspects or frames is as significant as emphasising others.

Common frames identified in previous framing analyses include the conflict frame; attribution of responsibility frame; economic consequences; human impact and morality frames (Patterson, 1993; Iyengar, 1991; Neumann et al., 1992). Of these, it was decided to make use of those most relevant to the issue of climate change, namely economic consequences and human impact frames. The approach in deciding on the other frames used was taken from the perspective of the reader. How would the reader be likely to box a story written in a particular way? Would the story result in them concluding that climate change is an environmental issue? A political issue? A scientific issue? A health issue? It is, of course, all of these.

A brief pilot study looked at ten randomly selected articles from each of the three newspapers. Following the results of this pilot study, the primary frames investigated were the environmental, scientific, political, economic consequences, and human interest frames. A miscellaneous frame was also noted which incorporated such frames as curiosity, catastrophe, health, lifestyle, weather, et cetera.

4.3 Data Collection

The archive sections of the websites of the three newspapers were used in finding articles. Keywords including “climate change”, “global warming”, “aardsverhitting” “aard verhitting” and “globale verwarming” were used to search for the articles.

False positives such as articles which included the words “climate” and “change” but did not discuss climate change, as well as those which only included an extremely cursory reference to climate change were picked up during analysis of the articles and deleted.

There are several problems associated with this method of data collection. The websites may not have accurate archives. Furthermore, the selection of articles from the website means that the context of the article within the newspaper is lost as websites don’t necessarily mention page numbers, layout or accompanying images, thus making a comprehensive discourse analysis impossible. However, it was decided that the benefits of this method of data collection outweighed the problems. The sheer volume of climate change articles (512 in total) meant that other methods of data collection would not have been possible in the time frame of this research and the volume of articles was seen as a priority.

4.4 Data Analysis

Content analysis was used to organize the data collected from the newspapers in a manner that facilitated the identification of emerging concepts and themes.

Data analysis facilitates the process of bringing order, structure and interpretation to the mass of collected information (Rossouw, 2003; Holloway & Wheeler, 1996). Breaking the material down into manageable sections allowed for the constant comparing and contrasting of categories to identify patterns of meaning (Holloway, 1997).

The articles of the three newspapers were analysed individually. Categories of analysis included proximity, frame used (environmental, scientific, political, etc), sources consulted and reason for article.

4.4.1 Proximity

Proximity is one of the primary news values. Although alone it does not automatically make a story newsworthy, in combination with other news values it can increase newsworthiness (Leiter, Harriss & Johnson, 2000). It was determined for each study whether any African, South African or Western Cape perspective was provided. African context was determined as reference made to the African continent as a whole, or particular African regions, countries or people. South African context refers to mention made of South Africa, South African people, or specific South African places or institutions excluding the Western Cape. Western Cape context refers to mention made of the Western Cape as a province, Western Cape flora or fauna, institutions or local people. If none of these contexts were found, the article was classified as having “no African context”.

4.4.2 Framing

The most obvious frame in the article was decided upon and if there was more than one obvious frame, both would be included for the purposes of the analysis.

4.4.2(a) The environmental frame

Groenewald (2007), environmental journalist at the *Mail & Guardian*, says that environmental journalism is the reporting of events, trends, issues and people that influence the natural world around us. This kind of journalism focuses on so-called green issues (the natural environment around us, mainly concerning biodiversity). The environmental frame was defined as articles whose primary focus is on the environment or on environmental impacts such as those to flora and fauna.

Example:

Cape Times

Global warming threat to fynbos

4 February 2005

Michael McCarthy

Primary frame: Environmental frame

This article looks at the predicted effect of climate change on the fynbos in the Western Cape. It mentions the predicted effect climate change is likely to have on several other regions. Other environmental impacts are mentioned such as the loss of Arctic sea ice and the bleaching of coral due to climate change.

Secondary Frame: Human impact frame

Later on in the article there is mention of the effect climate change will have on food production and water shortages and how this will affect people.

Proximity

The article mentions the Western Cape fynbos, as well as the Karoo and Africa as a continent, therefore in terms of proximity it has African, South African and Western Cape context.

Reason for article

Paper presented at international conference on climate change

Sources

The paper and the author of the paper, Bill Hare, of the Potsdam Institute for Climate Impact Research

Cape Times

Global warming threat to fynbos

February 04, 2005 *Edition -1*

Michael McCarthy

London: An anticipated rise of 1°C in average temperatures in the next 25 years would have serious effects on the Karoo and a rise of 2°C would begin to destroy the Western Cape's fynbos. The two are among the world's most specialised ecological regions.

This emerged from a detailed timetable, unveiled yesterday, of the destruction and distress global warming is likely to cause. It pulls together for the first time the projected effects of rises in temperature expected in the next 100 years.

It gives the most comprehensive picture yet of the bewildering array of destructive effects that climate change is expected to have on differing regions, from the Amazon rainforests to coral reefs of the tropics.

Arrived at through a synthesis of recent academic studies, it was presented as a paper yesterday to the international conference on climate change that is under way at the UK Met Office in Exeter by the author, Bill Hare of the Potsdam Institute for Climate Impact Research, Germany's leading global warming research institute.

The conference has been called by Prime Minister Tony Blair as part of Britain's efforts to move climate change up the agenda while the UK holds the presidencies of the G8 and the European Union.

It has heard disturbing warnings based on the latest climate research findings.

Hare's timetable shows the impacts of climate change multiplying rapidly as the average global temperature rises to 1°C above levels before the industrial revolution, then to 2°C, and then 3°C.

World temperatures are 0.7°C higher than the pre-industrial level, which means the process is well under way.

In the next 25 years - as the temperature climbs to the 1°C mark, some specialised ecosystems will begin to feel stress, such as the tropical highlands forests of Queensland, which contain a large number of Australia's endemic plant species, and the Karoo's succulent plant region.

In some developing countries, food production will begin to decline, water shortage problems will worsen and there will be losses in gross domestic product.

It is when the temperature moves up to 2°C above the pre-industrial level, expected in the middle of the coming century, that serious effects will begin to occur thick and fast, many studies suggest.

Substantial losses of arctic sea ice will threaten species such as polar bears and walruses, while in tropical regions "bleaching" of coral reefs will become more frequent - when the animal that lives in the coral is forced out by high temperatures and the reef may die.

Mediterranean regions will be hit by more forest fires and more insect pests, while in parts of the US like the Rockies, some rivers may become too warm for trout and salmon.

In South Africa the fynbos, the world's most remarkable floral kingdom with more than 8 000 endemic wild flowers, will start to lose species, as will alpine areas, from Europe to Australia; the broad-leaved forests of China will begin to die.

The number of people at risk from hunger will increase markedly, another 1.5 billion souls will face water shortages and GDP losses, especially in Africa, will become significant.

When the temperature moves up to the 3°C level, expected in the early part of the second half of the century, these effects will become critical. There is likely to be irreversible damage to the Amazon rainforests, leading to their collapse, and widespread destruction of coral reefs.

The succulents of the Karoo will be destroyed, the Western Cape's fynbos will be hugely damaged, and the alpine flora of Europe, Australia and New Zealand will probably vanish.

There will be a rapid increase in populations exposed to hunger, with up to 5.5 billion people living in regions with large crop losses and three billion more having an increased risk of water shortages.

Above the 3°C level, which may be some time after 2070, the effects would be catastrophic.

The Arctic sea ice will disappear and species such as polar bears and walruses may vanish with it, while the collared lemming - main prey of Arctic carnivores such as wolves and Arctic foxes - will have gone from 80% of its range, critically endangering its predators.

For humans there is likely to be catastrophe, too, with heightened water stress for billions of people and regions becoming unsuitable for producing food.

4.4.2(b) The scientific frame

Khan (2007), science and health editor at *Business Day*, believes that to a large extent, science journalism is no different than other beats – “it's about being inquisitive, sceptical, and reporting fairly on a mixture of issues - some humdrum, some fascinating, others wildly controversial or just plain weird.” According to Khan, where it differs is that science is such a broad and rapidly evolving field that the job more often than not involves interviewing experts on sometimes unfamiliar and highly technical subjects. So in addition to the usual challenges of producing relevant, accurate and interesting stories on deadline, there is “this extra little twist of needing to get a handle on the methods scientists employ and the basic building blocks of the field they are working in.” For the purposes of this study, the science frame was defined as stories which focus on scientific research, technical data and methodology

Cape Argus

Ice cores show carbon dioxide levels soaring

25 November 2005

SAPA - AFP

Primary frame: Scientific frame

The article refers to research on carbon dioxide levels. It focuses on and details research conducted in East Antarctica.

Proximity

No African, South African or Western Cape context was found in this article

Reason for the article

A study was published.

Sources

The study and the study's lead author Professor Thomas Stocker of the University of Bern's Physics Institute in Switzerland

Ice cores show carbon dioxide levels soaring

November 25, 2005

Levels of carbon dioxide, the principal gas that drives global warming, are now 27% higher than at any point in the last 650 000 years, according to research into Antarctic ice cores.

The study, published yesterday, adds powerfully to evidence of human interference in the climate system and appeared in the run-up to a key conference on global warming which opens in Montreal next Monday.

The evidence comes from the world's deepest ice core, drilled at a site called Dome Concordia (Dome C) in East Antarctica by European scientists who battled blizzards and an average year-round temperature of $-54\frac{1}{4}^{\circ}\text{C}$.

The core, extracted using a 10cm-wide drill bit in three-metre sections, brought up ice that was deposited up to 650 000 years ago, as determined by estimated layers of annual snowfall.

Analysis of carbon dioxide trapped in tiny bubbles in the ancient ice showed that at no point during this time frame did levels get anywhere close to today's CO₂ concentrations of about 380 parts per million (380 ppm).

CO₂ levels began to rise with the Industrial Revolution, when coal began to be burned in large quantities, and have surged in recent decades. Billions of tons of CO₂ are now being released into the air each year from fossil fuels. In pre-industrial times, the CO₂ concentration was just 278 ppm.

Today's CO₂ concentrations are 27% higher than at the highest level seen over the 650 000-year time scale, according to the study in the US journal *Science*.

The Dome C core, extracted by the 10-country European Project for Ice Coring in Antarctica, outstrips by 210 000 years the previous record-holder, from an Antarctic site at Vostok.

"We have added information showing that the time scales on which humans have changed the composition of the atmosphere are extremely short compared to the natural time cycles of the climate system," said lead author Professor Thomas Stocker of the University of Bern's Physics Institute in Switzerland.

Sceptics about man-made global warming point out that Earth has been through many periods of higher and lower temperatures in its history as a result of natural processes.

But over the past decade, a mountain of scientific evidence has accumulated about man's impact on temperatures through the burning of fossil fuels.

The 12-day Montreal talks, gathering members of the UN Framework Convention on Climate Change, will focus on the future of the Kyoto Protocol on curbing pollution, which runs out in 2012. - Sapa-AFP

4.4.2(c) The political frame

The political beat looks at the political aspects of government and the political side of any issue involving politicians. According to Tabane (2007), political journalist at the *Mail&Guardian*, “political journalism is journalism that reports on and monitors political developments and dynamics as they unfold in the country and internationally. It should give a reader a sense (through reported information and analysis) of what is happening politically in their part of the world at a particular time.”

Die Burger

21 October 2005

SA want to lead in terms of climate

Jorisna Bonthuys

Primary frame: Political frame

This article discusses South Africa’s role and responsibility to fight climate change and to hold first world countries accountable. It discusses the (then) forthcoming UN talks on climate change and mentions that South Africa has a key role to play in these talks.

Proximity

The article mentions the Midrand conference on climate change and thus has South African context.

Reason for article

Talk at Midrand conference on climate change

Sources

Deputy Minister of Foreign Affairs, Sue van der Merwe

SA can lead in the climate issue

Jorisna Bonthuys

MIDRAND. – South Africa has a responsibility to help reduce the impacts of climate change and to hold wealthy nations accountable for the carbon footprints.

This was the message of Sue van der Merwe, Deputy Minister of Foreign Affairs, at a national climate change conference which came to an end yesterday. About 600 delegates (including business leaders and scientists) met this week to formulate the Midrand Action Plan on Climate Change.

Van der Merwe informed the meeting on the stance that South Africa would take in the new round of negotiations on climate change policy. Discussions begin in December in Montreal (Canada) with a look at the post-Kyoto period (after 2012). South Africa, who chaired the G77+China last year, will play a key role in discussions to influence people on the course of action for dealing with climate change. South Africa will especially endeavour itself in attempts to reduce the impact of global warming in vulnerable countries. It plans to side itself with other developing countries, especially in Africa. The negotiation team will further oppose attempts to water down existing Kyoto-objectives. South Africa will also ensure that if objectives regarding greenhouse gas reduction are set for developing countries (as analysts predict), these should not undermine development objectives.

“Industrial countries must change their practise and realise that the economic, political and social relationship which they have forced on the rest of the world and the trade relations which they have supported have simply deepened the inequality between developed and developing countries. It has affected people’s ability to live in harmony with nature,” she said.

Van der Merwe regards it as an urgent priority to involve all countries – especially the rich countries – in multilateral talks to halt the trend of climate change, as well as the affects thereof on vulnerable countries.

“For too long Africa has been forced to produce what it does not consume and to consume what it does not produce. This is not sustainable and results in a dependency on others – even for the most basic needs. Our environment is being used in a manner that is not to our benefit.”

In apparent reference to America she said that those who ignore the warnings regarding global warming would lead mankind to “the devastation of nature and self-destruction of humanity”.

“This is not progress. This is a lack of respect for the present and the future”.

America and Australia – together responsible for approximately 30% of manmade emissions in the atmosphere – are currently the only two developed countries that do not endorse Kyoto. Their greenhouse gas emissions are therefore not regulated by the Protocol.

This is also the case with the emissions of developing countries such as China, Brazil, India and South Africa, who still do not have to adhere to any binding objectives in this regard.

Researchers predict that this reprieve will no longer be extended to South Africa after 2012. According to expectations, international pressure will increase, which could have extensive effects on local industries. The vast majority of the country's electricity is from coal sources, which contribute to extensive air pollution.

4.4.2(d) Economic consequences frame

This frame refers to issues, events or problems in context of the economic consequences it will have on a country, a region, an institution, business or industry, or an individual. According to Graber (1993), the wide impact of an event is an important news value, and economic consequences can be considerable, particularly in terms of climate change. Economic consequences need not only be negative as climate change can also present business opportunities particularly for the environmental goods and services sector. For the purposes of this study, the economic effects of climate change on industry (be they direct or indirect) were viewed as part of the economic consequences frame.

Cape Times

18 October 2005

Big business signs accord on need to give accurate figures on emissions

Own Correspondent

Primary frame: Economic Consequences

This article discusses big business's agreement to provide accurate estimates of greenhouse gas emissions. The article mentions that "Business Unity South Africa would not mortgage our future for short-term profit."

Proximity

The article mentions the Midrand conference on climate change and South African big business and thus has South African context.

Reason for article

Signing of a Memorandum of Understanding at the Midrand conference on climate change

Sources

Patrice Motsepe, president of Business Unity SA (Busa)

Cape Times

Big business signs accord on need to give accurate figures on emissions

October 18, 2005 *Edition 1*

Midrand: A climate change agreement has been reached with big business that is to enable the government to gain more accurate estimates of the quantity of greenhouse gases being pumped out by industries.

The memorandum of understanding was signed by Patrice Motsepe, president of Business Unity SA (Busa), and Marthinus van Schalkwyk, Minister of Environmental Affairs and Tourism. The agreement took more than a year to reach. Under the Kyoto Protocol, South Africa is obliged to draw up an inventory of greenhouse gases.

Motsepe acknowledged industry had not done well in providing accurate records, but said Busa would not "mortgage our future for ... short-term profit".

- Own Correspondent

4.4.2(e) The Human Interest frame

This frame includes the news reports which attempt to bring a human face or an emotional angle to the presentation of an event, issue or problem. Neuman et al. (1992) described this as the “human impact” frame. This frame refers to an effort to personalise the news. (What is the effect of this event on people?) In terms of environmental reporting such examples of issues pertaining to this frame may include access to sanitation and water and food production.

Cape Argus

18 June 2005

‘50 million to go hungry by 2050’

Reuters

Primary frame: Human Interest

This article discusses the predicted increase in hunger due to climate change. It refers to scientists’ predictions of an additional 50 million people who will be at risk of hunger by 2050 due to climate change resulting in reduced crop yields. According to this article about three quarters of this number will be Africans. This adds to the 500 million people worldwide already facing hunger.

Secondary frame: Politics

The article discusses the refusal of the US to sign the Kyoto Protocol and its criticism thereof.

Proximity

The article mentions the effect of this on Africa and therefore has African context.

Reason for article

A talk at the British Association science conference.

Sources

Professor Martin Parry of the Hadley Centre of the United Kingdom Meteorological Office

'50 million to go hungry by 2050'

September 06, 2005 *Edition 1*

About 50 million more people could be at risk of hunger by 2050 due to climate change and reduced crop yields, scientists have predicted.

About 500 million people worldwide already face hunger but rising greenhouse gas levels could worsen the problem.

"We expect climate change to aggravate current problems of the number of millions of people at risk of hunger, probably to the tune of 50 million," Professor Martin Parry of the Hadley Centre of the United Kingdom Meteorological Office said in Dublin yesterday.

"About three-quarters of that number will be in Africa."

Parry told the British Association science conference that it would take huge cuts in greenhouse gas emissions - about 20 times those required by the Kyoto Protocol - to avoid the extra hunger risk.

The 1997 protocol demands cuts in greenhouse emissions by 5.2% below 1990 levels by 2008 to 2012.

The US, the world's biggest polluter, has refused to back the protocol, saying it would hurt its economy.

It believes the pact is flawed because it omits rapidly industrialising emerging economies such as India and China. - Reuters

4.4.2(f) Other miscellaneous frames

Other miscellaneous frames included weather, health, catastrophe and conflict.

4.4.3 Sources consulted

The sources quoted or referred to in the article were noted.

4.4.4 Reason for article

Why was the article written? Was a study published? Was there a conference?

4.4.5 Mention of sceptics

Note was made of all articles that made mention of climate change sceptics.

4.5 Research questions

The investigation of the articles found in the three newspapers in the time period from 1 January 2005 to 31 December 2005 is aimed primarily at answering the following three research questions:

RQ 1: Which frames were used in the articles reporting on climate change?

RQ 2: What were the primary sources used?

RQ 3: How much local context was given in the reports?

The aim of the triangulation of research, which in the case of this study consists of indepth interviews, is to understand and explain the choice of frames used during the time period of the study and thus to achieve maximum reliability and validity of the data.

4.6 Summary of Chapter

Chapter Four dealt with the research methodologies employed for this study – both the quantitative frame analysis, together with the structure of the qualitative in-depth interviews. The chapter starts with an overview of the difference in structure and benefits of quantitative and qualitative research methodologies.

The rest of the chapter deals more intensively with the choice of demarcated newspapers used for this study, the motivation behind the particular study period.

The final part of Chapter Four deals with detailed examples of the types of frames employed for the study – environmental, scientific, political, human interest, economic consequences and miscellaneous.

Chapter Five

Summary of findings

5.1 What was covered?

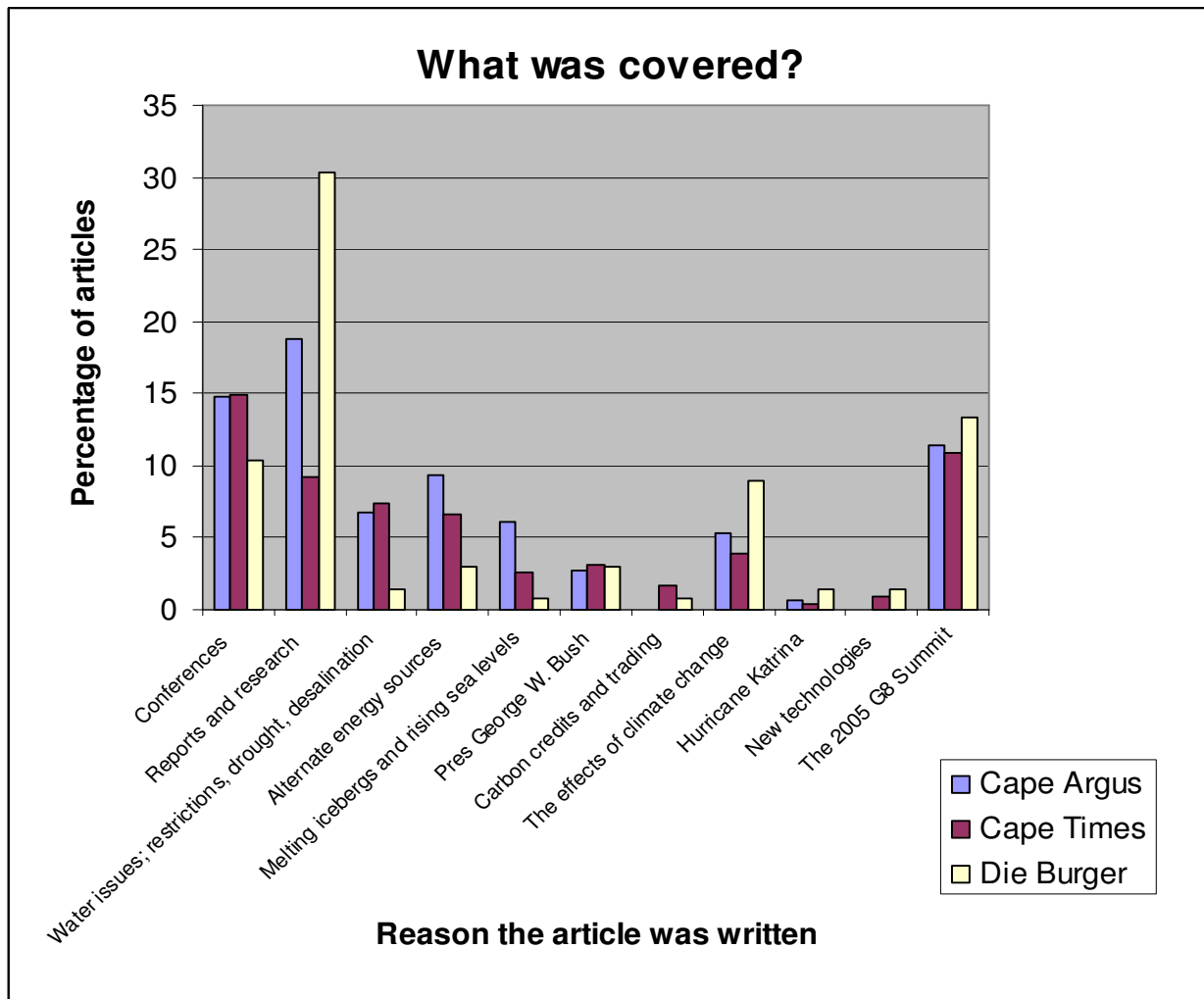
The study examined the coverage of climate change over the period from 1 January 2005 to 31 December 2005. The motivation for this particular period has been discussed in previous chapters. The reason for such an extensive study period is to gain a broad overview of the coverage of climate change in the Western Cape, as opposed to gaining an overview for the coverage of just one event, for example the 2005 G8 summit within the year of study.

The total number of articles analysed in the three newspapers over this period was 513. The *Cape Times* had close on double the number of articles that the other two papers had. The *Cape Times* had 229 articles mentioning climate change during this period while the *Cape Argus* and *Die Burger* had 148 and 135 respectively. The *Cape Times* also had significantly more opinion pieces, editorials, columns and letters mentioning climate change than the other newspapers. Three main “spikes” of coverage occur within the study period. These occur in January/February, June and October and correlate with the effects of the preceding summer (droughts, water shortages, etc), the G8 Summit and the National Climate Change Conference in Midrand respectively.

Conferences, scientific reports and research and the G8 summit resulted in the most articles in all three newspapers. *Die Burger* had a significantly greater percentage of articles on reports and research than the other two newspapers (better relationship with scientists? Or more interest in it?). Other common story sources included the general effects of climate change, the effects (more specifically) on water supply (which resulted in articles on drought, water restrictions and the potential of desalination. Rising sea levels and melting ice caps received coverage. The coverage of the G8 summit was more or less the same across the newspapers, owing probably to the fact that most of these stories would have been received from the wire. Alternate energy sources such as wind farms and nuclear power enjoyed much debate, particularly in *Cape Argus* where many letters covered these topics. U.S. President George W. Bush was covered in many of the articles, particularly in connection with the Kyoto Protocol, again, as with other international content, the amount of coverage of such stories was more or less equal across all three newspapers. Carbon credits and the issue of carbon trading received some coverage, along with

new technologies and the aftermath of Hurricane Katrina which was retrospectively potentially linked to climate change.

Figure 1: What was covered in the three newspapers

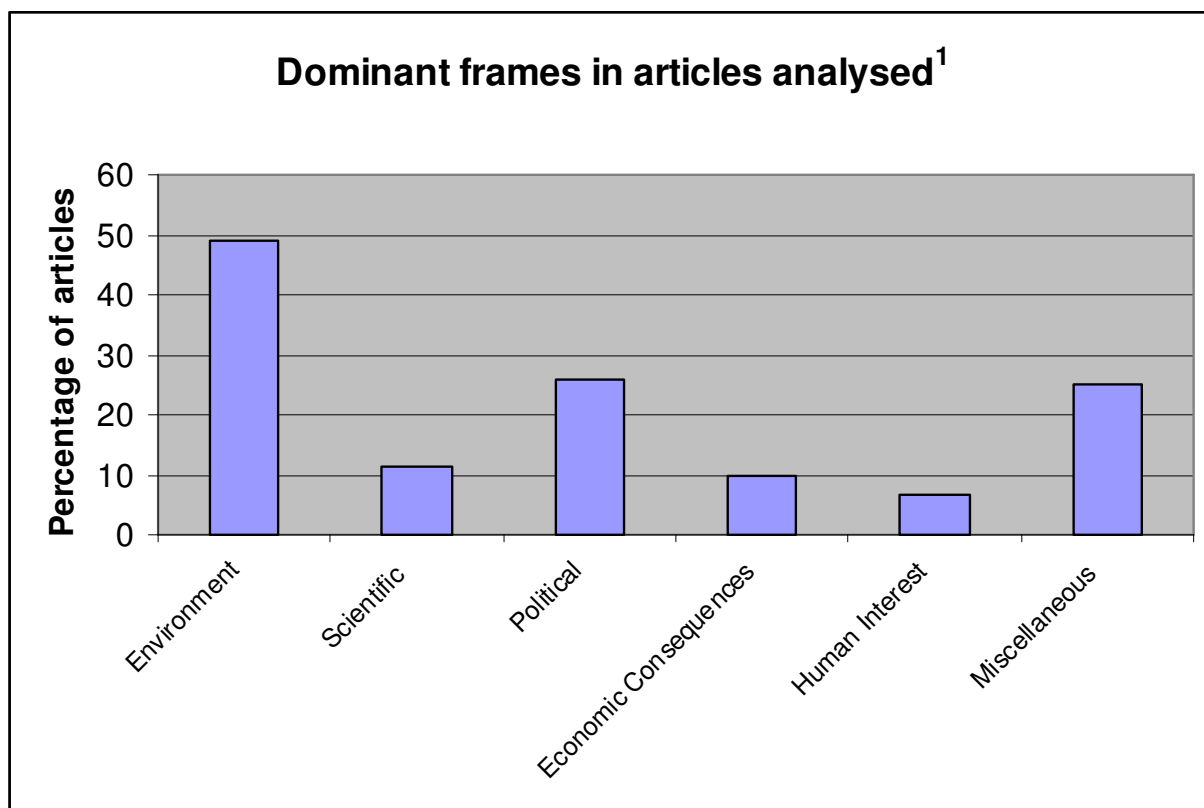


5.2 Dominant frames

All three newspapers framed climate change stories in terms of the effects it is likely to have on the physical environment most often. Such stories discussed the effects of climate change on flora and fauna, the melting of ice caps and the rising of sea levels. The political frame was also widely used, such stories included the G8 summit and the various expectations on politicians to commit to climate change mitigation policies. The miscellaneous frame, which incorporated all

other frames was third most common. Of these, human health stories were very scarce (health was mentioned 20 times in total for all three newspapers). Some of the more interesting and unlikely stories included a fashion story (where corporate fashions are expected to change to accommodate for warmer temperatures) and a court case (in which the Inuit indigenous peoples formally accused the U.S. government of violating their human rights by failing to do enough to fight a thaw of Arctic ice and thereby undermining their hunting culture)

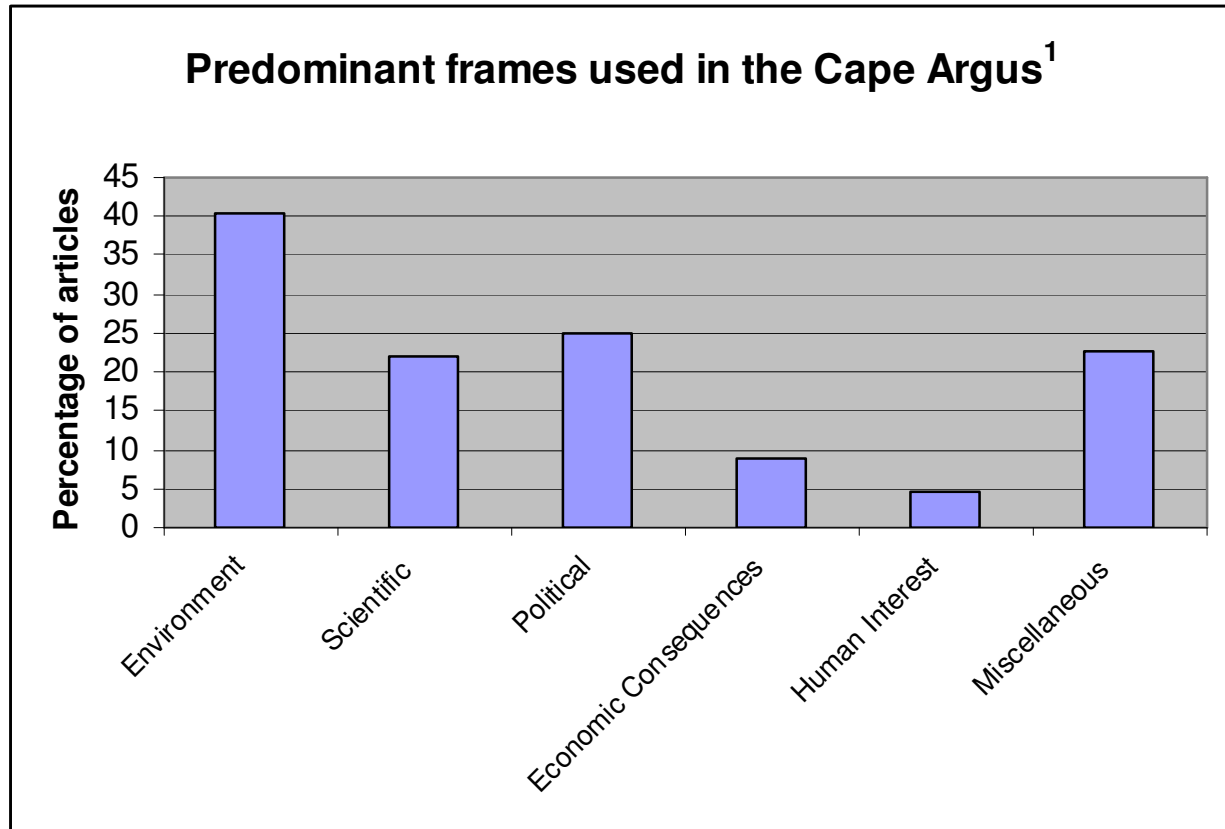
Figure 2: Dominant frames in articles analysed



1. Some articles were designated as having more than one frame and so the percentages of this graph total more than 100%.

5.2.1 Cape Argus

Figure 3: Predominant frames used in *Cape Argus*

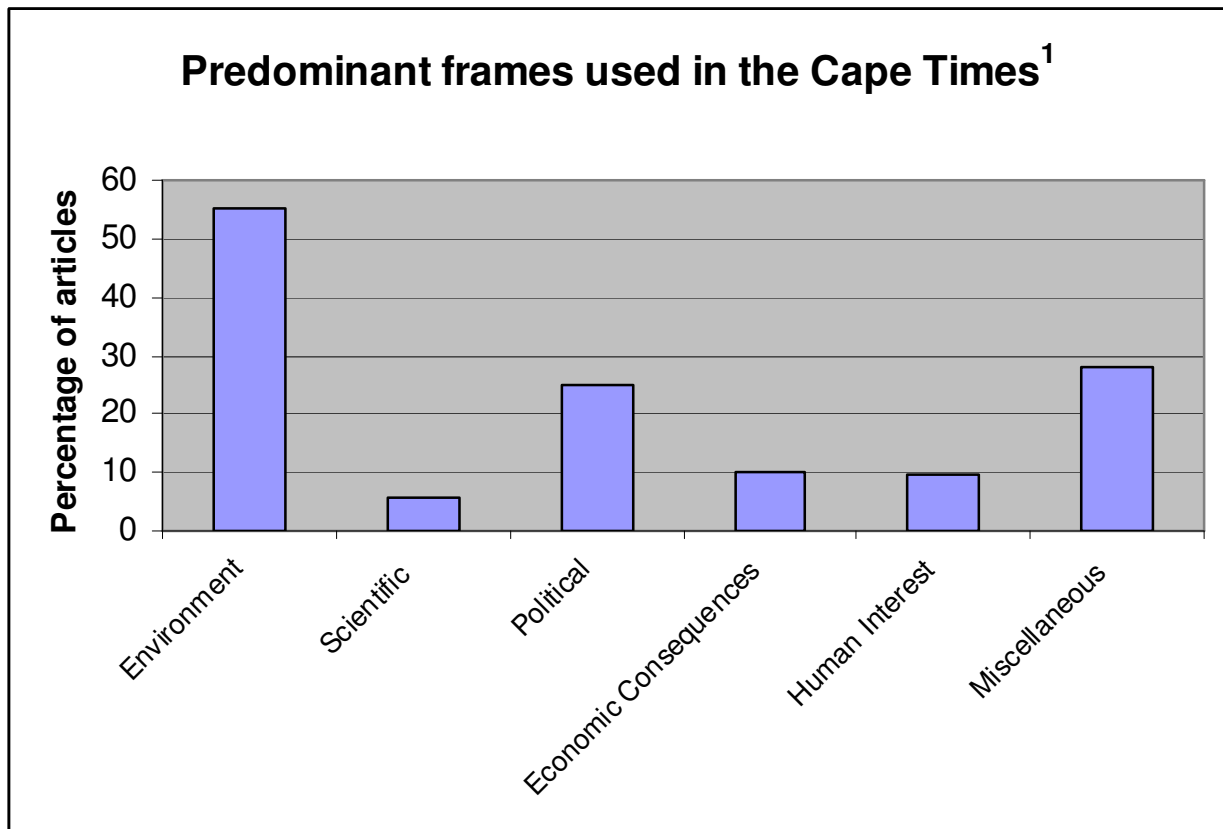


Articles in *Cape Argus* were predominantly portrayed in terms of the environment – 40% - and the effects that climate change would be likely to have on the fauna and flora of, for example, the fynbos region. Thereafter the most prominent frame was the political frame (25% of articles) which was closely linked with (non-violent) conflict between various governments with regard to the way forward in terms of climate change. The scientific and miscellaneous frames were each found in 22% of the articles while the economic consequences and human interest frames received relatively little coverage (9% and 5% respectively).

1. Some articles were designated as having more than one frame and so the percentages of this graph total more than 100%.

5.2.2 Cape Times

Figure 4: Predominant frames used in *Cape Times*

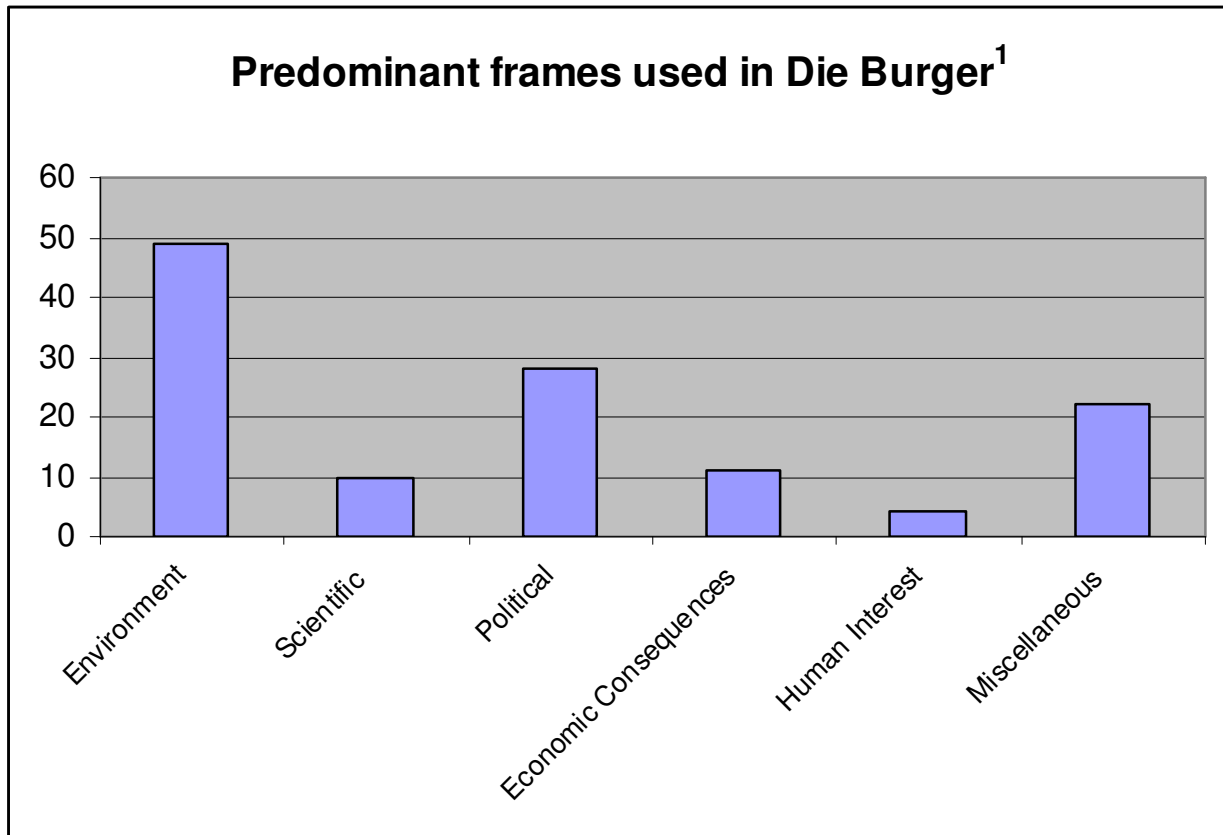


Over 55% of articles in *Cape Times* were framed in terms of the environment; thereafter the miscellaneous and political frames were most prominent at 27% and 24% respectively. Economic consequences and human interest frames were less prominent at 10% each and the scientific frame was significantly minimal at about 6% of coverage.

1. Some articles were designated as having more than one frame and so the percentages of this graph total more than 100%.

5.2.3 Die Burger

Figure 5: Predominant frames used in *Die Burger*

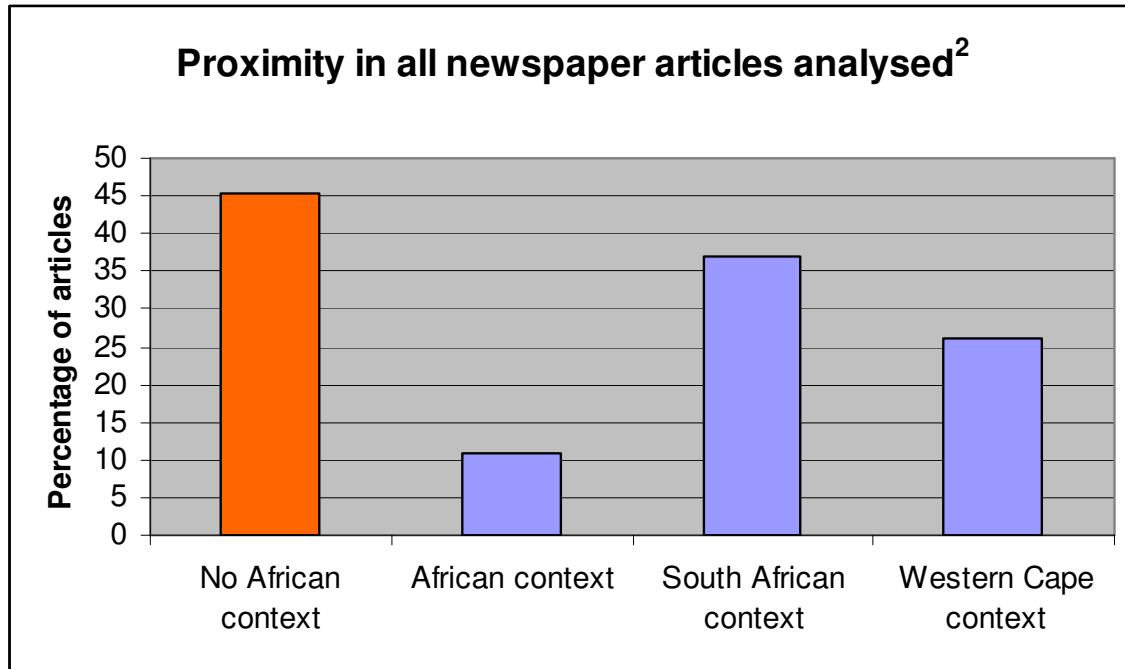


As in the other two newspapers, the environmental frame was most prominent at about 49% of coverage. The political frame received about 28% of coverage while the miscellaneous frame was found in 22% of articles. Economic consequences frame and the scientific frame had 11% and 10% of coverage respectively. Human interest frame was significantly minimal at 4% of articles.

2. Articles classified as having “No African context” had no African, South African or Western Cape context. However, an article could have both African and South African context et cetera. Thus total percentages of this graph equal to more than 100%.

5.3. Proximity

Figure 6: Proximity in all newspaper articles analysed

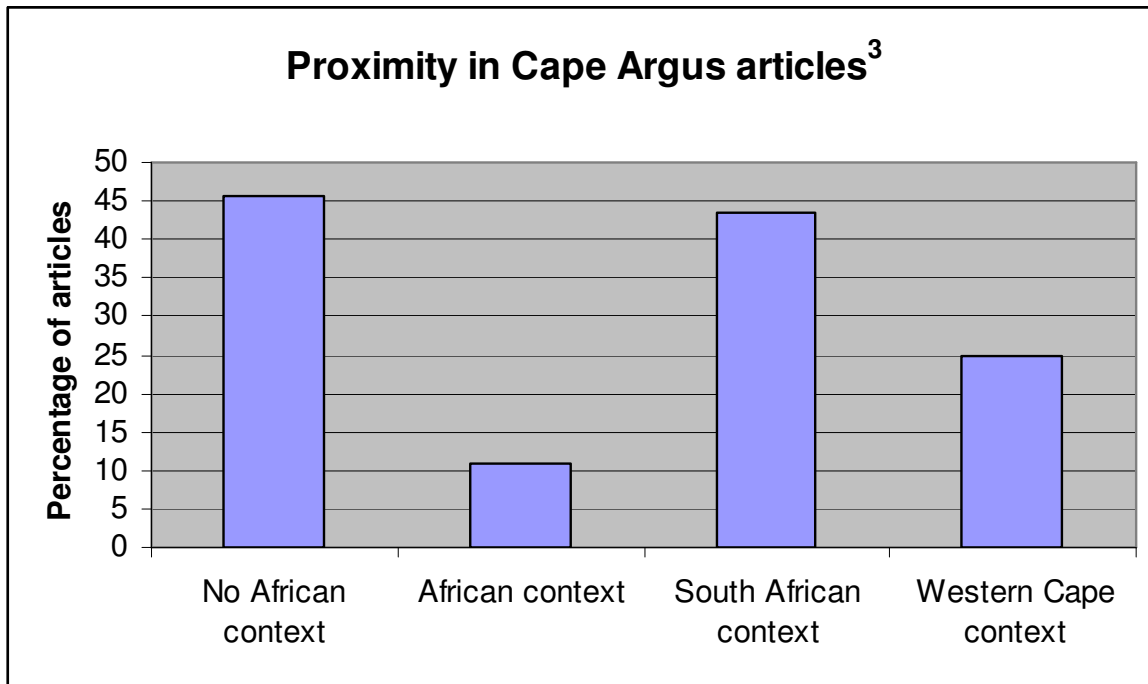


Nearly half of all articles had no African, South African or Western Cape context at all (45% of all articles analysed). Just over 10% gave some African context. This context could include references to Africa as a continent (e.g. Africa set to be hardest hit by climate change) or could refer to specific African countries, regions or leaders. More than 35% of articles had South African context and a little over 25% of articles had localised Western Cape context.

2. Articles classified as having “No African context” had no African, South African or Western Cape context. However, an article could have both African and South African context et cetera. Thus total percentages of this graph equal to more than 100%.

5.3.1 Cape Argus

Figure 7: Proximity in *Cape Argus* articles

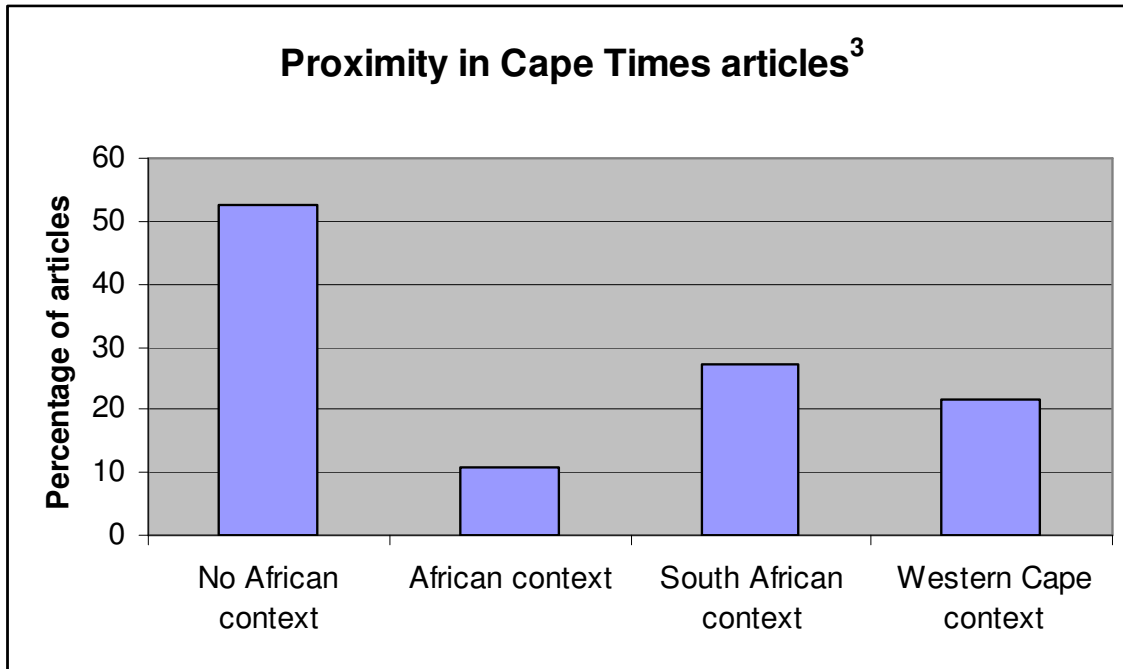


Over 45% of articles in *Cape Argus* had no African, South African or Western Cape context. Nearly 45% of articles had some South African context and 25% had Western Cape context. Little over 10% had African context.

3. Articles classified as having “No African context” had no African, South African or Western Cape context. However, an article could have both African and South African context et cetera. Thus total percentages of this graph equal to more than 100%.

5.3.2 Cape Times

Figure 8: Proximity in *Cape Times* articles

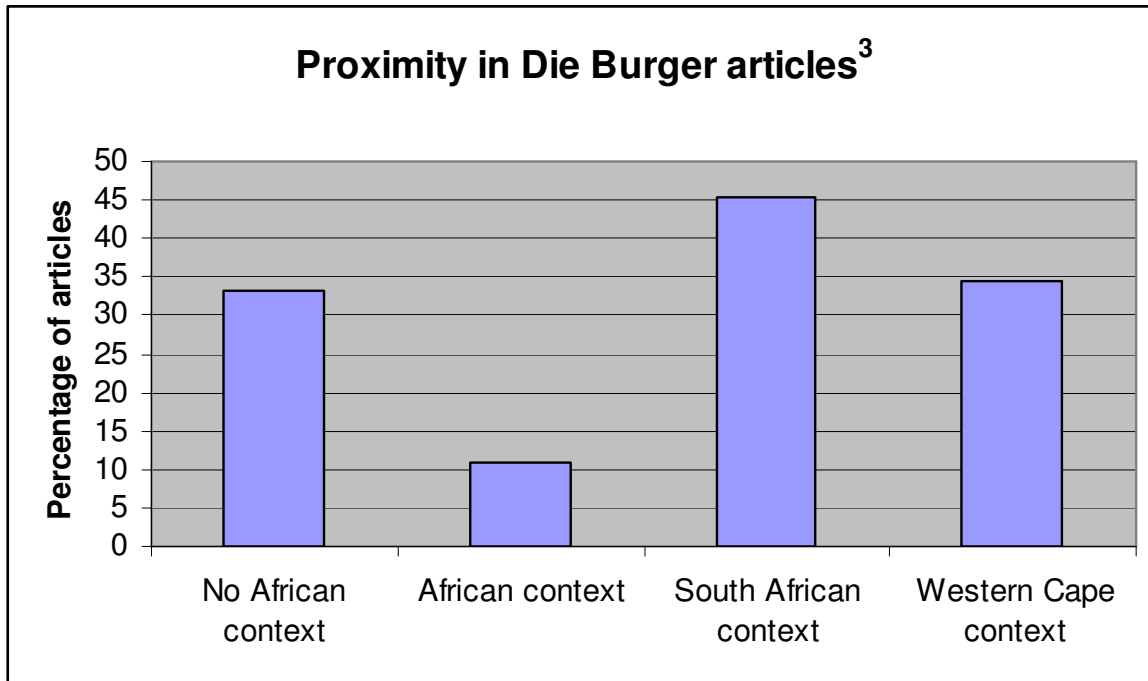


More than half of the *Cape Times* articles had no African, South African or Western Cape context at all. This is the highest of the three newspapers. Little over 10% of articles gave African context. Over 25% of articles provided South African context and little over 20% of articles gave Western Cape context.

3. Articles classified as having “No African context” had no African, South African or Western Cape context. However, an article could have both African and South African context et cetera. Thus total percentages of this graph equal to more than 100%.

5.3.3 *Die Burger*

Figure 9: Proximity in *Die Burger* articles

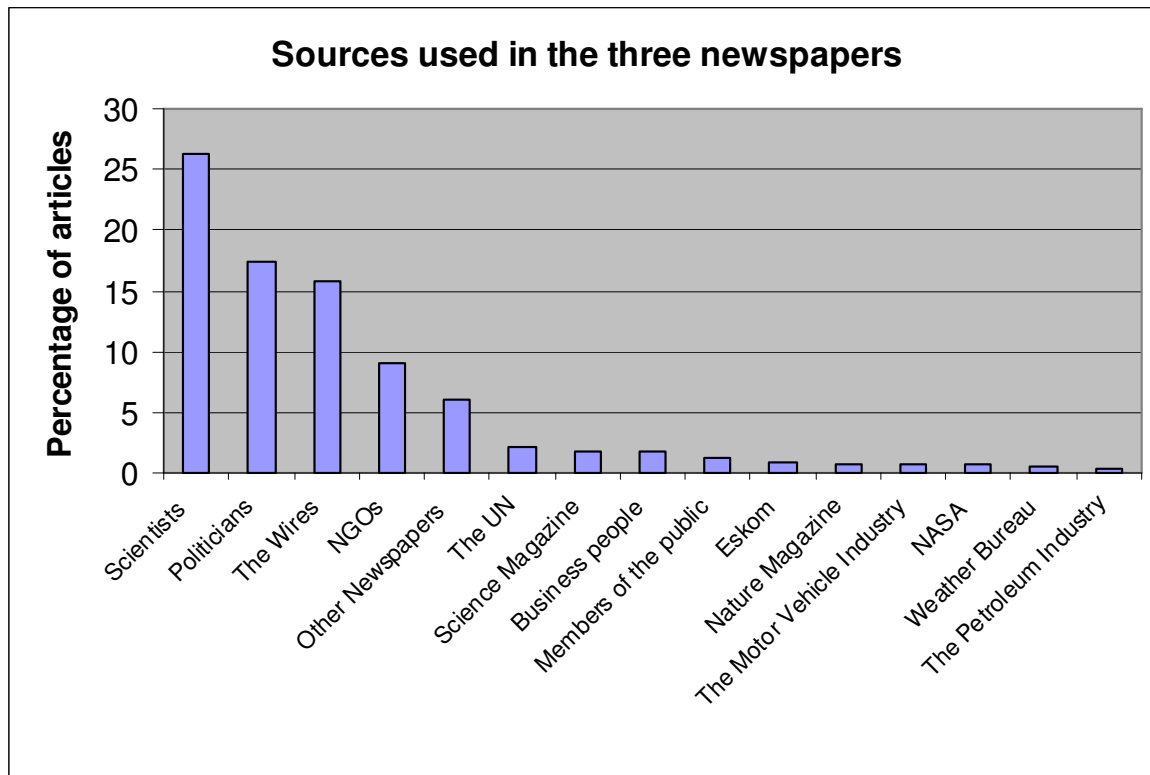


More than 65% of articles in *Die Burger* had some African, South African or Western Cape context. The African context was on par with the other two newspapers at just over 10%. More than 45% of articles gave South African context and close on 35% of articles gave Western Cape perspective. *Die Burger* had the highest proportion of Western Cape context articles of the three newspapers.

3. Articles classified as having “No African context” had no African, South African or Western Cape context. However, an article could have both African and South African context et cetera. Thus total percentages of this graph equal to more than 100%.

5.4 Sources consulted

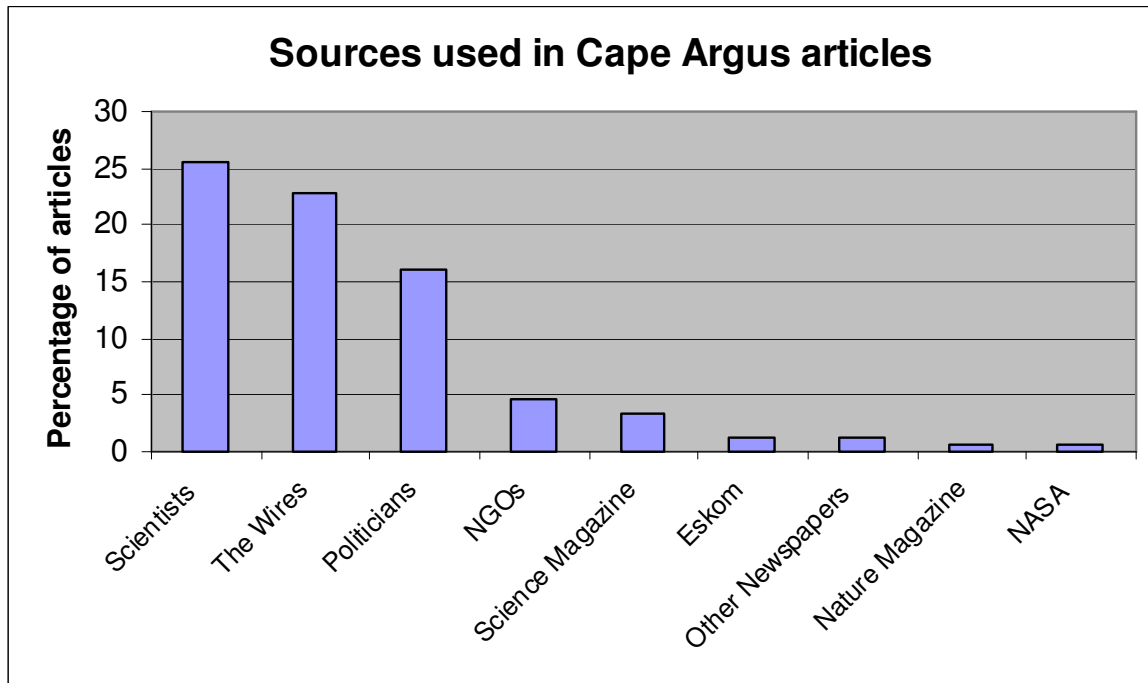
Figure 10: Sources used in all articles analysed



The most common source of information in all the articles analysed were scientists, scientific reports and research. One in every four articles on average made reference to a scientist. Politicians were quoted in 17% of all articles. Wire copy was used for little over 15% of articles and other newspapers were quoted in 6% of articles. Less than 10% of articles made use of NGOs as a source. Other sources used to a lesser extent included the UN, *Science* and *Nature* magazines, business spokespeople, members of the public, Eskom, NASA, the weather bureau and industries.

5.4.1 *Cape Argus*

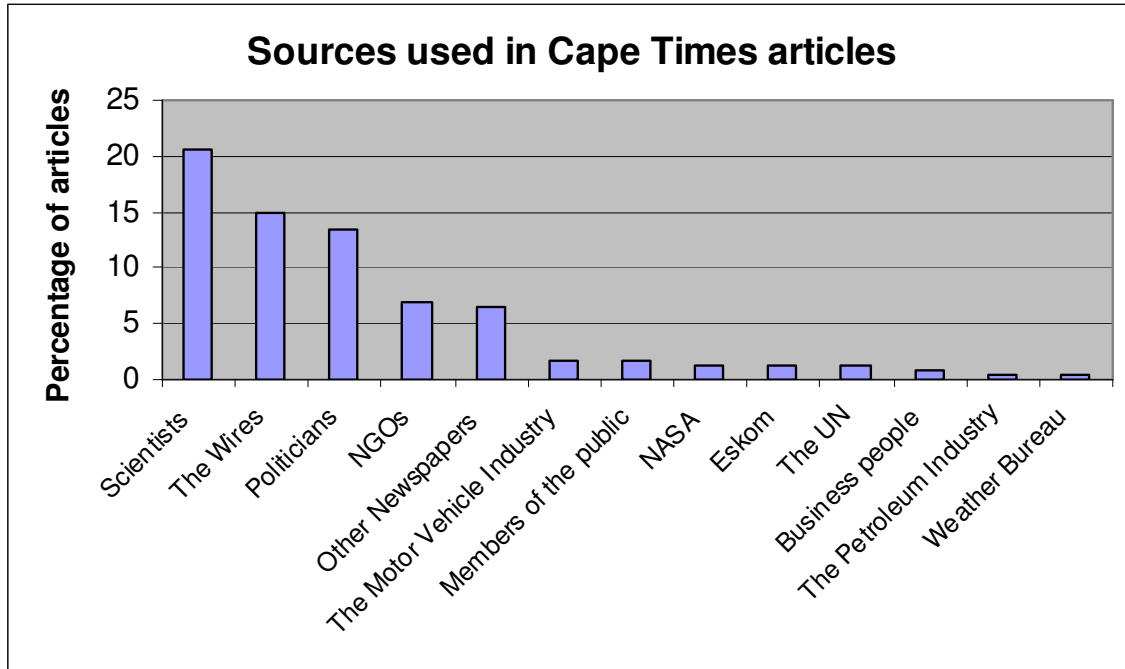
Figure 11: Sources used in *Cape Argus* articles



More than 25% of *Cape Argus* articles used scientists as a source. Wire copy accounted for 23% of articles. Politicians were referenced in 16% of articles and NGOs in less than 5%.

5.4.2 Cape Times

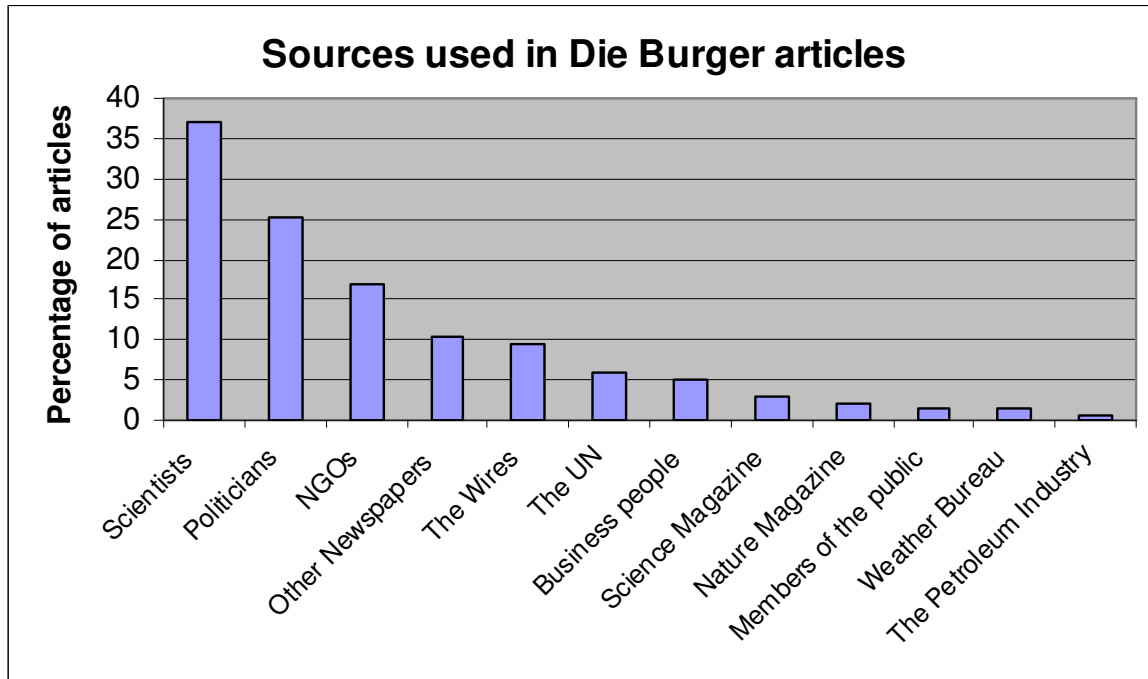
Figure 12: Sources used in *Cape Times* articles



Cape Times had the greatest diversity of sources. Over 20% of articles referred to scientists. 15% contained wire copy. Nearly 14% of articles referred to politicians and 7% of articles made reference to NGOs.

5.4.3 *Die Burger*

Figure 13: Sources used in *Die Burger* articles



More than 35% of *Die Burger* articles quoted or referenced scientists. 25% of articles referenced politicians. More than 15% of articles quoted NGOs.

5.5 Opinion and editorial coverage

Opinion and editorial coverage includes opinion pieces, editorials, letters and columns and is indicative to some extent of the focus of the newspaper and of the focus of the reading public at a particular time.

Within the study period, *Cape Times* had over 82 opinion pieces, editorials, letters and columns referring in some way to climate change. This was significantly more than the other two newspapers.

5.6 Mention of climate change scepticism

Some mention of climate change scepticism was made in 8% of all articles analysed. Of the newspapers, *Cape Argus* had the largest amount of sceptic mentions at 14%. Sceptics were mentioned in 7% of *Cape Times*' articles and in only 2% of *Die Burger*'s articles.

5.7 Journalists on the framing of climate change

The following sub-section of chapter 5 fulfils the second criterion of methodology as described in the previous chapter. Interviews were conducted upon completion of the framing analysis and journalists were presented with the findings of the analysis.

The three journalists interviewed were the journalists with the most by-lines for climate change articles in the newspapers. All three of these journalists are the designated environmental journalists at the newspapers. They are all highly regarded journalists and have all won the SAB Environmental Journalist of the Year Award for print journalism; John Yeld of the *Cape Argus* in 1995, Melanie Gosling of *Cape Times* in 1997, Jorisna Bonthuys of *Die Burger* in 2002 and 2003. John Yeld won the Nick Steele Memorial Award in 2002 and Melanie Gosling won it in 2003.

5.7.1 *Cape Argus*: John Yeld

John Yeld began his journalistic career as a press photographer at *Cape Argus*. In 1984 he became a reporter and soon started reporting in the environment beat. He has won numerous awards for his reporting.

Date and place of interview: 7 September 2007, Cape Town

Environmental reporting in general, in terms of resources and the importance placed on it by the editor

I think the standard is good. Very good information is presented and the proportion of space that is afforded to the environmental beat is good. Generally I would say that the level of environmental reporters in South Africa is good to very good. I think the amount of space we get is fair for a daily. We couldn't ask for more. Some weekend papers overdo it and have too much space dedicated to the environmental beat, others have hardly anything so in terms of weekend papers it is a mixed bag.

The editor (Chris Whitfield) takes the environmental beat very seriously and respects my views. Most of my editors, certainly the last three, have taken it seriously. I think a bit of a problem comes in that generally the environment is not considered to be a high news priority. There is an arbitrary assignment of news value to environmental stories, unlike politics and crime which regularly make the front page.

It would certainly be nice to have a bit more space and more resources – I would like to be able to cover issues more broadly and I'd like to be able to attend international events and out of town conferences.

The difficulties of reporting on environmental issues like climate change

The media is about news; what's happening right now. With climate change it is difficult to convince people of the seriousness and largeness of the issue. It is becoming easier now as the first real signs of climate change are appearing, but even then climate change is not an event. You can't really say that this drought or this hurricane is caused by climate change. You can only look at changing trends over the long term and say that increased droughts or increased hurricanes, for example, are likely to be a result of climate change.

The use of wire copy

In terms of my own writing, I focus on what is important and mostly cover Cape Town and Western Cape issues. The wire is important as it gives a broader context. The copytaster must decide on the most important stories from the wire and then the editor will get the final say as to what goes in the paper.

The importance of a local portrayal of climate change

It's vital. I'm surprised to hear how many non-African stories you found. I suppose that many of the international stories were probably feature style articles which we got in through the wire. Certainly my own writing would basically always bring in at least South Africa and usually the Western Cape perspective.

Finding sources for climate change stories

It is so difficult to link a specific environmental event to climate change. Because, as I said, a drought may or may not be linked to climate change. It is difficult to link. Rooibos tea crops failing is hard to link to climate change. It is difficult to make the call.

Climate change being typecast as an “environmental issue”

Initially yes, it was, but that seems to be changing now. We are gaining a greater understanding of the socio economic impacts of climate change like the increasing spread of malaria and the effects of rainfall pattern change on small scale farming as well on people in the Western Cape in general as the changing weather affects water supply and economic growth. Now more people are starting to write about climate change from other angles.

The ethics of covering climate change scepticism

Recently there has been much debate about this. What is the media’s responsibility in reflecting conflicting views? Newspapers have a responsibility to record facts and it is a fact that there are still sceptics. That being said, I would be inclined to give less space to the science of these sceptics. The media must interrogate everything. Propaganda is a powerful tool and one that is difficult to refute. The media has a role to tackle these things as they come up.

The media’s role in invoking personal change

Education is a critical part of the media’s function. To educate and delight, these are our functions. It is difficult to find the balance. People often do not buy a newspaper to be educated. How often should we do it? We don’t want to be repetitive. It is difficult to find the right context, but it is our function.

Do you believe the articles on climate change are indepth enough?

I think that they are, yes. From our side we are constantly doing market research. We know that if an article is too long it won't be read. 80% of readers won't read more than five paragraphs. I think we get it about right.

Scientists and the media

I know that some scientists like Prof Bruce Hewitson, for example, are quite critical of media coverage of climate change. The responsibility lies on both sides. Scientists know full well that they are generally poor communicators and they need to improve on this. That being said, journalists in general need to always do background reading and know the basics of a topic before talking to someone about it. Most environmental journalists are fairly good at this I think.

5.7.2 Cape Times: Melanie Gosling

Melanie Gosling has been a journalist for almost 30 years. After studying a BA in English, she continued with a post graduate degree in Journalism. She began her reporting career at The Natal Mercury in Durban, after which she worked at the Sunday Express, the Sunday Star and The Star, where she was first a news reporter and then night news editor for 2 years. After completing a MA in Environmental Studies she took up a news reporting job at the *Cape Times* in 1994. In 1997 she became the paper's resident environmental reporter. She has won numerous awards including the SAB Environmental Journalist of the Year; the Nick Steele Award for environmental journalism; Vodacom Journalist of the Year award for specialist category. Melanie is currently based at Harvard University where she has been awarded the Nieman Fellowship to Harvard for 2007/08 - one of 15 international journalist to get the award this year.

Date of interview: 13 September 2007, via email

Environmental reporting in general, in terms of resources and the importance placed on it by the editor

I can speak really only for newspapers, as I don't follow radio and TV much. Coverage on newspapers is generally quite good in the Western Cape and in Natal, where there are environmental reporters who have been in the beat for many years. It is good in terms of constancy, in that there is always something about the environment, but coverage tends to be ad hoc. Coverage happens depending on whatever crops up, rather than on the systematic writing of serious backgrounders. This is the result of media company decisions, which have slashed staff numbers and where taking even one day off the daily diary to do research for an article is often just not possible. It is a crying shame what Independent Newspapers has done to staffing.

The coverage tends to reflect the interests of individual environmental reporters, for example John Yeld is particularly interested in biodiversity, while I am particularly interested in energy and the effects of the global economy.

Currently, the *Cape Times* editor and news editor regard the environmental beat in a very favourable light, as was the case with my previous editor as well. This makes an enormous difference to how environmental stories are placed, what prominence et cetera these stories get. An editor who does not think it important – and I have worked with some who don't – mean that environmental stories take a backseat, unless they are “crisis” story like oilspills.

I would like to come off the daily news diary, to which I am bound and which means I have to write 2 or sometimes 3 stories a day. This means that I can write only very superficial stories, which I find very unrewarding, and which don't give readers what they have a right to expect – an informed read.

The difficulties of reporting on environmental issues like climate change

Our biggest issue is the lack of time. We don't just don't get time, because of the staff cuts, minute newsroom staff, filled often with juniors, and the reality of empty pages

to fill daily. If I had time, 2 or 3 days to write a story, I don't think I would have many problems. But South African newspapers are going downhill fast in that respect. It's just "who,what,where,when" and on to the next. Regarding things like climate change, the major difficulty, apart from time, is space. One needs space to do it justice and again, South African newspapers don't really give space. Also with climate change, the problem is boredom. We have said it so many times, it become a bit of a yawn with readers and with the staff.

The use of wire copy

I have no say over the content of the newspaper at all, wire copy or local, and neither does any reporter have a say. The editor, news editor and top-table subs decide that. I don't even see what wire copy is being used until I get my paper on the doorstep the next day. I sometimes alert the copy taster to a story I have seen on the wires, but that I as much as I can do. It is up to them to decide. Generally the copy is good quality, but the drawback is that it is usually very European orientated.

The importance of a local portrayal of climate change

I don't think it is a problem to have less local coverage, as this is a global problem and the big picture is what matters. But people love to hear about what will happen to them. There is, however, a limit to the number of times one can say the Western Cape is likely to get hotter and drier, except in the mountains, and that this will affect the natural vegetation and agriculture. The problem is that we talk about predictions only and they do not have the impact of telling a story about what has happened. For this reason, I have tried to insert a sentence or two into other stories, not specifically about climate change, to make the link. So a story about a huge flood in the southern Cape or Natal, for instance, I would run by a scientist like Bruce Hewitson, and ask if this event is consistent with the trend of climate change, and if he says yes, I put that in. Or if it is a story about biofuels, which are water intensive, I will add in a sentence about this industry starting up in what will become a drier region with even scarcer water resources. There are many ways to get a couple of sentences in, without writing what you would

regard as “a story on climate change” as such. I believe this is a powerful way of communicating the message.

Finding sources for climate change stories

The problem is that climate change is a TREND, not one event. So it is difficult to say “this chap is a victim of climate change”, as you would be able to say of a fire, for instance, or a government policy.

On the *Cape Times* comparatively larger amount of opinion pieces, letters and editorials discussing climate change and on having more climate change articles in general

This editor and the previous editor have both frequently asked me to write environmental editorials, and in fact just about all of them that have been published on environmental issues from around 2002 would have been written by me. The reason they ask me is that first, they are stretched and under pressure (we have lost a managing editor post and three assistant editor posts, all of whom used to help with the writing of leaders), so contributions from the newsroom are always helpful, and second, they say I am closer to the subject than they are. Also, I often suggest that a certain event, policy or whatever, warrants a leader, and they usually agree. Leaders give readers insight into the newspaper’s position, and because we carry a fair number of environmental leaders, those interested in the subject respond with editorial contributions and letters. Also, I think I cover fairly controversial environmental issues, such as nuclear power, GMOs etc, on which many readers have very definite views.

The only reason that *Cape Times* would have had more articles on climate change is my personal interest. I first became aware that climate change was a reality when I was doing my masters degree at UCT in environmental studies in 1991. It startled me to hear the professors say it was for real, and the first time I read the IPCC reports. I think it is true to say that the environmental coverage of any of our newspapers is reflected by the personal interests of the reporter concerned. So John (Yeld) writes a lot about fynbos, for

instance. This is not ideal, as it makes for spotty coverage, but perhaps this is made up for by the passion that personal interest carries.

Climate change typecast as an “environmental issue”

I think it is purely an accident of the newsroom make-up at the *Cape Times*. I am in the beat, and I am the one who is most interested in the topic, so my stories tend to come from an environmental perspective.

Coverage of climate change scepticism

I certainly would not go out of my way to give space to sceptics because by now there is no one that seriously doubts climate change. The IPCC, made up of thousands of scientists, reached consensus years ago on the issue. To give sceptics space does nothing for the public interest, which is what newspapers are about. There might have been a time in the late 80s when there was some doubt and when sceptics would have been part of the public discourse, but now they are simply uninformed, or have an agenda to push, like the oil lobby. There was a time when newspapers quoted people who were against women getting the vote. Who would do that now? Or more recently, when people were quoted supporting apartheid.

The media’s role in invoking personal change

I know it is important to educate practically, but quite frankly, it has become so tedious writing these “tips” year after year after year – I think I started in the early 1980s during the big drought when I worked on the Mercury in Durban. Call it reporter-fatigue. How many times can you say fit a grey water system, fix leaks, put a brick in your cistern, change to low energy bulbs, fit a geyser blanket and geyser time switch, year after year? Perhaps it is something that should be done by the “special projects” team, in occasional supplements.

Scientists and the media

Relations between journalists and scientists depend entirely on the personality of the scientist. If he or she is outgoing, interested in public issues, and importantly, has the time, patience and ability to communicate often complicated issues in a simplified manner, then that scientist gets coverage. Generally I would say it is the task of the journalist to find things out, but that can be simply impossible for scientific information. The area is so vast, and changing so quickly, we cannot hope to keep up with what's going on. I think institutions should take on the task of sending out press releases more regularly. They make the mistake of thinking they have to be long and detailed. They don't. Just an alert would get us to contact the scientist and do our own stories.

5.7.3 *Die Burger* : Jorisna Bonthuys

Jorisna Bonthuys studied the BPhil (Journalism) course at the University of Stellenbosch. She has worked at *Die Burger* for eight years. Since she started working on the environment beat she has won the SAB Environmental Journalist of the Year Award twice. In 2005 she was named Media24's Reporter of the Year.

Date and place of interview: 14 September 2007, Stellenbosch

Environmental reporting in general, in terms of resources and the importance placed on it by the editor

It's difficult to compare South African environmental media with other media. For example, in a big glossy magazine in the US environmental writers may have five researchers at their disposal and they may be able to focus on one story for a year. It will be an extensive feature with 6 links on the internet.

Most South African desks have one environmental reporter, if they have any at all. There are very good quality individuals in South Africa. In terms of interest, I think there is more interest in the Western Cape. Most environmental journalists have been doing it for ages. That being said, I think there is a need for environmental education for journalists, especially those in broadcast media. As an environmental journalist, you need

a good understanding of the subject, but you also need to be able to explain it in the simplest terms

Obviously I would say that there is too little space afforded to the environmental beat. However, I don't think we get less space or resources than other beats. There is a need for more dedicated environmental journalists. There's enough work for three environmental journalists at *Die Burger*. However, we are not an environmental publication. All our environmental stories need to compete with all other stories on newsworthiness and on how they are written. There must be a balance in the mix. With more resources, however, we could spend more time on a particular story.

The editorial view has changed a lot. When I first started with environmental beat five years ago there was very little understanding or interest. The stuff that excited editors at that stage was the cuddly stories – animals and their rights. Since then our current editor has made it a very important part of the newspaper. This is seen in how much space it gets. The environment has become a more political issue. No longer is it only environmental journalists who write about it. You see it all over the business pages as well.

I think there is much more room for investigative journalism. I don't have the time or resources to do the stories I would love to do. The interesting stories are those happening in the veld, like the weather's impact on the rooibos farmers or new farming methods. There are not enough resources for really good indepth features, but *Die Burger* is a newspaper and not a magazine.

The difficulties of reporting on environmental issues like climate change

Firstly, it is very difficult to get access to scientists and to get them to communicate in a way that you can understand. Secondly people often expect you to fulfil the role of activist, for example with animal rights type stories. People can get very emotional about certain topics and as a journalist you have to maintain objectivity even though you are very interested in the topic and become personally involved. I constantly have to remind myself to remain distant. The moment a journalist becomes emotionally involved it begins to show in their work and that doesn't help the cause at all. A basic journalistic

principle is objectivity and this must be maintained. Thirdly, it is a challenge to find new angles and ways to tell a story as opposed to following the same formula. It's difficult to report on climate change in that it is a pattern and not a single event. Finally I find it very difficult to know how much context to give with every new story. Do you explain the basics again and again? You can't necessarily expect that readers have kept up with recent stories.

The use of wire copy

The only way I would have over wire copy is if I see something interesting and want to follow it up, but other than that it is usually selected at 18:00 in the evening when they do the international pages. The use of wire copy is vital as we don't have access to international events.

The importance of a local portrayal of climate change

You can never have too much local context – it gives people an understanding of how climate change impacts them personally. For your normal reader in the Platteland or Mitchell's Plain it means nothing if the polar bear goes extinct. It doesn't affect them. As the models become more advanced with greater relevance to South Africa, we are finding more local stories.

Finding sources for climate change stories

It is very difficult to find these stories. To give a story a human face you need to find someone and be able to show that the changes or impacts they are experiencing are actually a result of climate change. Very few scientists will commit to that kind of detail which makes it difficult to find examples so it takes creativity and time to get that one right. But with limited resources as a constant issue, NGOs and scientists are important sources as they disseminate the information.

Climate change typecast as an “environmental issue”

From 2005 until now that has already changed a lot and climate change is really now seen as a development issue. As my own understanding of climate change has improved, my angles have changed. I think climate change can and should be covered in every section of the newspaper. For example climate change will have a big impact on the insurance industry and this is something that an economic writer would be far better equipped to write about than me. I'm now seeing a lot of interest in climate change especially on the economic desk. I expect that this year the business section of the paper probably covers more climate change stories than the news section. The political desk also covers it comprehensively now.

Coverage of climate change scepticism

I've read most of the sceptic literature and thought about this a lot. There have always been sceptics but they've always been on the fringe. I think as a journalist you need to give exposure to the fact that sceptics exist, but you need to decipher it for the reader. Sceptism in itself should not be considered a news value. One has to be careful.

The Petroleum industry in America put so much money into the sceptic message that it got more coverage than the scientists and now many Americans don't believe that climate change is happening. So it would be very irresponsible to overemphasise that school of thought. On the other hand, now that there is an established group, the IPCC, we mustn't get so focused on the IPCC that we close off to other scientists asking other poignant questions like the effect of solar changes on climate change.

The media's role in invoking personal change

The media has a very important role to play. We would do a big disservice to our readers if we weren't educating. I think education is one of the big responsibilities of a newspaper and I see it as the poor man's university. I think as our understanding improves we are fulfilling this role more and more.

Do you believe the articles on climate change are indepth enough?

Never, but the more simply you explain something, the better it will be understood.

Scientists and the media

Scientists can be inaccessible and they are not very good at making their information available. It seems that they are only interested in publishing in scientific journals. But I think scientists have a real responsibility to get this message across. Even if scientists don't trust journalists or don't like the medium they must find a way to speak to South Africans through mass media. People need to plan for floods, changing crops and droughts. If there is going to be any change from government or industry, it requires the lobbying of the public. But I also think it has to do with personalities. It's a personal relationship between a specific journalist and a specific scientist. Both parties have a great responsibility in this as it is in both of their interests to get the message across. If I, as a journalist, get the story wrong I will lost my contacts. I make a point of keeping up to speed with what the scientists are doing and I ask for their input on international studies. I think in general scientists can do much more. I pursue the scientists as they forget about us.

The media's role in sustainability

Die Burger is currently exploring becoming a more sustainable enterprise in terms of reducing our environmental impact. That being said, newspapers need to make money. There is conflict between what advertisers want and what editorial wants. Editorial integrity must be guarded 100%. That being said I doubt we would turn away adverts that weren't "sustainable". I think that perhaps if you had a very strong and developed sustainability policy then perhaps it could impact on the kind of advertising that is placed in a publication.

5.8 Interviews with climate change scientists

Interviews were conducted with two prominent South African climate change scientists, both of whom are based in the Western Cape. Interviews were conducted telephonically and via email as both scientists were extremely busy and unable to commit to a face to face interview.

5.8.1 Dr Guy Midgley

17 September 2007, email and telephonic interview

Dr Midgley is the Chief Specialist Scientist of the Global Change Research Group at Sanbi (the South African National Biodiversity Institute). He is also co-ordinating lead author of the IPCC Chapter 4: Ecosystems, their properties, goods and services.

The quality and quantity of environmental reporting in South Africa

Generally it is quite good to excellent in the band of “regulars”, but with the occasional tendency to hype findings and over-simplify. Non-regulars, such as Carte Blanche, especially seem prone to the hype. The international context on the relative uniqueness of the SA environment is often lacking. I would prefer to see more focused environmental reporting associated with business reporting, but other than this, the environment seems to feature regularly enough.

In terms of climate change reporting more specifically I think there is an even greater tendency to hype stories.

Do journalists get the science right?

Scientists don’t even get the science right pretty often. Journalists do okay, but tend to “sound bite” and rely on “stock” people and positions too much, as well as follow the international opinions rather than forge a local perspective. The treatment of risk and uncertainty is poor.

We could do with more coverage of the issue of climate change adaptation and how we should be dealing with it.

The dialogue between scientists and journalists

Scientists need to be less evasive and bet-hedging, while journalists could spend a bit more time doing background reading in a wider array of topics to give their questions more originality.

Coverage of climate change skeptics

Fair enough, scepticism deserves attention, but should not be treated as a 50:50 balance. Rather it must be portrayed as a fringe position and interrogated as such.

5.8.2 Prof Bruce Hewitson

25 September 2007, email and telephonic interview

Prof Hewitson is a currently engaged with the Climate Systems Analysis Group in the Environmental and Geographical Sciences faculty of the University of Cape Town.

The quality and quantity of environmental reporting in South Africa

The quality is a complete mixed bag. In the one end of the spectrum are the few journalists who take the time to understand because they are genuinely concerned. In the middle are those who put a bit of effort in because they “have to” for the sake of the story. And then there are those who simply cherry pick the headline statements for effect.

The quantity is encouraging. It’s becoming mainstream. However, it needs to consider sustainability ... i.e. regular columns so people have the expectation of continuation. At the moment it’s too much of the form of “special features”. I think the same as for question 1. In terms of climate change more specifically, there is even more

of a need to regulate the reporting in terms of updating the evolving story. Hmmm ... it's more a case of over-reporting on the same-old same-old. In general I would love to see more nuanced reporting on secondary issues. Climate change is simple – we change the chemistry of the atmosphere and we change the global climate. But the regional expression is very, very complex.

Do journalists get the science right?

Easy answer: most times, no! But not always because they're being dumb. Sometimes there's complexity that the space or time available in the media for the story doesn't allow for. Consequently what is conveyed is missing the context and allows for misunderstanding or leads to miss-communication. It's quite a challenge.

The dialogue between scientists and journalists

How do we foster a dialogue in the face of limited resources, a finite community, and a time imperative of science and action? How do the scientists access the rhetoric of government policy statement and realize this as actionable resource? These are two of the biggest challenges facing SA today.

At one level it's a problem of time. We are so inundated with media requests that we don't have the time to give each the full due attention. I believe there is a desperate need for interface structures. A good (although not directly importable) model is the UK-CIP activity. We need dedicated liaison channels between science and society when it comes to climate change.

Coverage of climate change skeptics

Good. It depends though on what you mean by "making mention". More often than not it means in practice that they set up opposing camps to promote controversy. That is irresponsible and reprehensible. There are questions to be asked. But they are question of the nuances expression of climate change, not questions of is it real. So there are real

valid queries to be posed around appropriate societal response, how to act in the face of incomplete knowledge, the relative investment by society in mitigation versus adaptation, the role and responsibilities of government versus industry versus the general public, etc. In other words, questions of intellectual value that it behooves society to get to grips with.

5.9 Interview with climate change sceptic: Andrew Kenny,

18 September 2007, email and telephonic interview

Andrew Kenny is a energy consultant by profession who submit numerous letters to the various newspapers within the study period advocating nuclear power and questioning the reality of climate change.

Over the last two years Kenny has earned most of his income from nuclear power and this is likely to continue. He argues that over the full energy cycle (including fuel processing et cetera) nuclear power releases fewer greenhouse emissions than other energy sources making it what he calls “the leading technology for combatting the threat of man-made climate change”. He therefore argues that it would be in his interest to promote “climate alarm”, however he sees no good evidence that mankind is changing the climate in a dangerous way, and does not believe there is a threat.

Environmental reporting in South Africa

I think science reporting is usually very poor but often environmental reporting is rather good on such subjects as wildlife and indigenous plants.

Climate change reporting

It is abysmal. It consists of little other than parroting the hysteria of the climate alarmists. There seems to be no understanding of the science of climate change. There is no questioning, no scientific analysis and only a sort of blind belief in a religion of doom.

Topics that require more coverage

The basic science of climate change. A deeper understanding of the climate, which can only be gained by looking over longer time spans. The all important influence of solar variations, especially in charged particles (mainly protons, “the solar wind”). The huge effects that climate change in the past had on human history (for example the great advances in northern Europe with the Mediaeval Warm Period). The fact that Greenland was warmer than now in 1940. The fact that most of the Antarctic is getting colder. The fact that unusual cold does more harm than unusual warmth. The fact that carbon dioxide levels are now extremely low in the history of our planet. The “consensus” of scientists in the 1970s that global cooling posed the greatest ever threat to the human race and that we were about to plunge into another ice age. The fact that the IPCC is in practice an interested advocacy group rather than a disinterested scientific institution.

Is the lack of coverage on certain topics is intentional?

Yes but not in the sense of a conspiracy. Unusual warm events make headlines; unusual cold events are ignored (there was record cold in the USA and other parts of the world two years ago; do you remember any headlines on it?). We are forever seeing photographs of polar bears sweltering and glaciers melting but we never see photographs showing that most of the Antarctic (the most part that is on land rather than the west ice shelf), which has 90% of the planet’s ice, getting colder. When scientists said that 1998 was the hottest year ever recorded in the USA, this was headlines. When it was discovered they had made a mistake and that 1934 was actually the hottest year, it made no headlines at all. I saw not one mention of it in any SA newspaper. We are forever told that CO₂ levels are now the highest in 650,000 years (actually they are the highest in about 10 million years) but we are never told that they are extremely low in the whole period since the Cambrian. We are not told that water vapour is a far more important greenhouse gas than CO₂. Al Gore shows us a good correlation between CO₂ and temperatures during the ice ages but forgets to tell us that temperatures lead and CO₂ follows with an 800 year lag. Somehow all the newspapers also forget to tell us this.

This is part of a fashion rather than a conspiracy. It is fashionable to believe that mankind is causing dangerous global warming, and the fashion suits the ideology and the vested interests of a powerful international lobby.

5.10 Summary of Chapter

Chapter 5 gives an account of the findings of the framing analysis, together with the answers from the interviews conducted with the various journalists, scientists and a climate change sceptic.

Chapter Six

Discussion and conclusions

6.1 Introduction

This final chapter discusses the results of the research. Final arguments are drawn and related back to the research questions. The event centred nature of climate change reporting is discussed as well as the dominance of the environmental frame. The gap between journalists and scientists is explored and the issue of climate change scepticism is discussed. Finally further research opportunities are described.

At the core of this study is the question of how the media place news value on a relatively slow-moving global problem. The underlying theoretical assumption as explained in previous chapters is that understanding how the climate question has been *understood* and *framed* is of vital importance for how the general public will be able to respond to lifestyle changes in aid of climate protection.

6.2 Event-centred coverage

The analysis of over 500 articles delivered results that lend themselves to various interpretations. Climate change receives a significant amount of coverage in the Western Cape media with the *Cape Times* averaging more than one mention of climate change per day. While this coverage is significant, is it sufficiently extensive in terms of the multifaceted issue of climate change, an issue which many are calling the greatest threat now facing mankind?

Hewitson found the sheer volume of articles on climate change encouraging, however, he argued that consistency in reporting is lacking. He pointed out the need for comprehensive updates of the evolving story of climate change. Midgley said there is a tendency for reporters to hype findings and over-simplify the issue.

Climate change coverage was found to be almost exclusively event driven with hardly any investigative or indepth pieces, with the possible exception of some columns in the *Cape Times*. The types of events that garnered coverage were mostly associated with conferences and scientific reports. Stories with a human face, the stories that are

most likely to invoke a reaction were notably scarce. All of the journalists mentioned the difficulty in finding such stories, particularly as climate change is a trend rather than an event. However, it was noted that since the study period, more and more signs of climate change have started appearing in South Africa resulting in “fresh” stories based on actual situations, rather than on predictions.

6.3 Dominant frame: Environment

The dominant frame used in all three newspapers was the environmental frame, followed by the political and miscellaneous frames. In other words, within the study period, climate change was depicted very clearly as primarily being an environmental issue and then secondarily as a political issue. The potential danger of such depictions lies in the lack of importance placed on the environment and even international politics by the average person.

The environment is still largely viewed as a lower priority issue. “In South Africa, the conservation is seen as something which conflicts with economic development and is not as important as poverty alleviation and the HIV/Aids epidemic. In reality, the environment is our oxygen and our water and without sufficient conservation measures our country will be severely impacted economically and also in terms of health. They are all very closely connected and dependent on our environment” (Taylor, 2007). International politics can easily be dismissed as it is far off and intangible and even seemingly inconsequential for average South Africans.

According to Bonthuys, the editorial view of the environmental beat has changed substantially in the past 5 years. Whereas in the past, the environment was seen as a “soft” beat, it is now an important part of *Die Burger*. It is now broadly reported on in terms of politics and business. Bonthuys also believed that the angle taken on climate change had changed. At *DieBurger* it was now seen as a developmental issue rather than an environmental one and since 2005, coverage had broadened significantly with it now featuring in most sections of the paper at some time. According to Gosling, the fact that climate change had been “typecast” as an environmental issue at *Cape Times* was possibly due to her interest in climate change. As a result of her writing the stories, they

are taken from the environmental perspective. Yeld too said that this was changing as people gained a greater understanding of the socio-economic impacts of climate change.

The human interest frame was surprisingly under-utilised considering that climate change is expected to have significant effects on people, particularly in Southern Africa. Dr Sue Taylor (2007), Climate Change Programme Manager at WWF South Africa, says that the impacts of climate change are already affecting people and are likely to result in mass migrations of people into less water scarce countries.

The journalists interviewed attributed this lack of the human interest frame to a lack of the resources required to find such stories. There were also very few articles on the health issues (such as the predicted spread of malaria zones into South Africa) associated with climate change. This was particularly surprising as it is an issue which will be very tangible to South Africans.

6.4 Environmental reporting: A lack of resources

The journalists attributed the lack of in-depth articles and the low percentage of human interest stories to the lack of resources available to the environmental beat, and in fact to newspaper reporting in general. While Gosling and Bonthuys acknowledge there is a need for investigative features, they lack the time and resources necessary for such stories. Yeld disagreed that the articles were not indepth enough, he believed climate change articles included enough detail and context for the *Cape Argus* readership.

With the exception for articles covering the Midrand Conference, all three newspapers were dependent on wire copy for coverage of climate change conferences. This too is can be attributed to a lack of resources and Yeld pointed out that he would like to be able to attend international conferences, as this would allow him to gain a first-hand account of developments.

According to the journalists, another result of the shortage of resources is that coverage of environmental issues including climate change is ad hoc, reflecting the interests of the individual reporters.

Gosling said that being on the daily news diary greatly restricted her as it meant she must write up to three stories a day, leaving little time to write thorough environmental pieces. The lack of time available to journalists working to a daily deadline has been compounded by staff cuts in the case of *Cape Times*.

According to Gosling, In terms of an issue as complex and ever-changing as climate change, sufficient space is required to sufficiently communicate the issue.

Another problem encountered by the journalists is reader fatigue. Climate change is not newsworthy in the traditional sense, because it is slow moving and for now, the signs are relatively inconspicuous. Without the climate change link, many of the so-called South African first signs of climate change would not even make the news. Climate change is a trend and not an event and this makes it something which can only truly be seen retrospectively. Current environmental events can not easily be definitively linked to climate change. However, in ten years time, looking back we will be able to say that the increased amount of droughts, fires, floods and so on are due to climate change.

Aside from resources, space and time, journalists agreed that the difficulty in accessing scientists makes the South African contextualising of climate change difficult.

6.5 Climate change: the local perspective

Local coverage of climate change varied between the three newspapers. Yeld and Bonthuys agreed that local context was vital in giving people an understanding on how climate change will impact them personally. Gosling disagreed, as she pointed out that climate change is a global problem.

According to the journalists, the difficulty in finding local angles (aside to the lack of resources and time, as has already been discussed) is that repeated predictions make for a weak news angle and, as also already discussed, climate change is a trend rather than an event, which means that giving a human face to a story about climate change becomes incredibly difficult. Gosling counters this challenge by adding climate change angles to other stories.

6.6 The media's role in changing behaviour

There were virtually no articles detailing the adjustments that the public can and must make to reduce carbon emissions. However, all three journalists believe such education to be part of the media's function.

Yeld argued that people don't generally buy a newspaper to be educated and that journalists needed to find a way to achieve this in the right context without being repetitive. Gosling attributed the lack to "reporter-fatigue" saying that it becomes tedious to repeat the same tips year after year. Bonthuys acknowledged that journalists do their readers a disservice if they fail to educate them in this way, saying that "the newspaper is the poor man's university".

As all journalists agreed that such practical "tips" do form part of the media's role, but may be out of their scope, this is something that could possibly be covered in supplements. Alternatively it is up to scientists or NGOs to submit opinion pieces or letters to the newspapers detailing such tips.

6.7 Journalists and scientists: a difficult dialogue

The dialogue between scientists and journalists is one that is notoriously difficult. While scientists, by profession, can spend many months or even years on one article, journalists produce articles daily. Where scientists verify their research and tend to be very conservative, avoiding sensationalism, journalists are bound by news values and newspaper sales and must present their stories as current, relevant and interesting. Scientists deal with complex research which is often incomprehensible to the common man, journalists must present their articles simply enough for the average reader to fully understand. All that being said, in terms of the environment, and more specifically climate change, cooperation is in the best interests of both journalists and scientists as it is imperative that the public gains a solid understanding of these issues in order to enable them to change their own behaviour and also to enable them to lobby for changes at the policy level and to use their consumer power to drive change.

From the journalists' perspective, scientists need to work on improving their communications with the media. Academic institutions could put mechanisms in place to ensure that releases or updates are regularly sent to the media. Scientists need to also make a point of being more accessible with themselves and their research. Hewitson puts this down largely to a problem of time and suggests that there is a need for interface structures to help scientists communicate with the public; "dedicated liaison channels between science and society when it comes to climate change".

From the scientist's perspective, journalists need to ensure that they are well informed on the background information of a topic before interviewing scientists. Midgley pointed out that the journalists have a tendency to ask the same kinds of questions every time and suggests that they do more background reading in a wider array of topics in order to give more originality to their questions. Journalists also need to be responsible in terms of quoting scientists as a misquote would not only give an inaccurate account to the public, but it would potentially impact the scientist's reputation and would also create mistrust between the journalist and the scientist.

6.8 Media and sceptics

The issue of climate change sceptics or denialists is an evocative one. An article by Jules and Maxwell Boykoff (2004) argues that in terms of climate change, telling "both" sides of the story can actually be a form of informational bias. They argue that a "He said/she said" form of reporting has allowed a small group of global warming sceptics to have their views greatly amplified." In such cases sceptics are consulted and quoted in news reports in the name of balanced reporting. They argue that many such sceptics are funded by carbon-based industry experts and are thus themselves biased.

It was expected that climate change scepticism would have been widely reported for the sensationalism value. However, there was a surprisingly low amount of coverage of climate sceptics and, of this, hardly any gave room for the sceptics to explain their scepticism.

Kenny, the sceptic interviewed, argued that journalists “parrot the hysteria of climate alarmists” and have little understanding of climate change. He argued that hot weather makes headlines and that journalists only report on stories or events that compound the climate change “theory” and ignore those which cast doubt.

What is the media’s responsibility in reflecting conflicting views? While scepticism in itself must not be seen as a news value, Yeld argues that the media has a responsibility to record facts and it is a fact that there are sceptics. Gosling disagrees arguing that sceptics are no longer part of the public discourse (as they may have been twenty years ago) and that today sceptics are either uninformed or have an agenda to push. Bonthuys believes that the journalists’ role is to acknowledge that sceptics exist, but to disseminate this for the reader as “propaganda can be a powerful and dangerous tool.”

While the journalists and scientists interviewed agreed that the reasoning of climate change sceptics should not be given publicity, those that have valid questions and arguments pertaining

to valid queries around grey areas should not be ignored.

6.9 Conclusion

6.9.1 Overall summary

The inspiration for this study was borne from the researcher’s passion for the environment and hence conservation. As the issue of climate change became increasingly prominent in the media, it became an obvious focus for study.

Chapter One of this study, an introductory chapter, discussed the aim, motivation, background and rationale of the study. Included is the relevance of the proposed research – more directly, why is climate change of public interest to South Africans, the question of how climate change is framed in the media and the difficulties of reporting on a slow moving environmental disaster. A brief summary of climate change was given followed by a history of climate change in the media.

The research problems and objectives were detailed followed by an explanation of the research design and methodology.

Chapter Two looked at environmental reporting in general and climate change reporting more specifically. The emergence of the environmental beat was discussed. The importance and relevance of this beat was explained that for most people scientific (and indeed environmental) knowledge is gained through the mass media rather than through scientific publications, direct experience or past education. Therefore the role of environmental journalists is an imperative one. Some of the difficulties and shortfalls of present day environmental reporting were discussed, some of these included the intangibility of science and the event-centred nature of reporting.

The urgency and difficulty of reporting on climate change was discussed and Down's issue-attention cycle theory was explained. According to Trumbo (1996) we were then in the *post-problem phase* of the Down's cycle. This would mean that climate change would receive only rare surges of interest by the media. This is clearly not the case as reporting on climate change has escalated greatly since the start of this study.

The goal of Chapter Three was to provide a comprehensive literature review and thorough theoretical framework. The literature study first described the agenda-setting theory. The roles, influence and power of the media was discussed in terms of this theory. Thereafter framing was discussed as an extension of the agenda-setting theory. Unintentional and implicit frames were described in contrast with the active selection of frames. The prospect theory and positivity bias were explained as well as reframing. Framing analysis was explained.

Chapter 4 detailed the research design and methodology of the study. Quantitative and qualitative research were discussed. The chosen methodology was a triangulation of research with indepth interviews. The motivation was given for the selection of the particular study period and the chosen newspapers and the newspapers were described.

The methods of data collection and data analysis were given followed by the selection of frames. Thereafter examples were given of each frame. Finally the research questions were discussed.

Chapter 5 outlines the findings of the triangulated research. The first half of the chapter details the results of the framing analysis through graphical representation.

Results are provided in terms of what was covered, dominant frames overall and dominant frames for each newspaper.

Proximity provided in articles was portrayed. Sources consulted in articles were also graphically depicted. The second half of the chapter portrays the findings of the interviews with journalists, scientists and a climate change sceptic. These interviews were related to the results of the framing analysis.

The results of the study are discussed in the final chapter. It is argued that climate change reporting is event-centred with a notable shortage of indepth and investigative pieces on the topic. The dominant frame is the environmental frame and the human interest frame is very seldom used. It is argued that this is a skewed representation and even a minimisation of the issue of climate change as it is one which will greatly affect South Africans. The journalists attribute the lack of indepth reporting on climate change and also the relative lack of local context to articles to a lack of resources. It is further argued that the media have a role to play in educating the public on personal changes which will decrease carbon emissions and that it is a role which they are currently not playing.

The difficult dialogue between journalists and scientists is described and suggestions are provided for both scientists and journalists to better this communication. Finally, the issue of climate change scepticism and the media's role therein is described. It is concluded that while the media have a responsibility to record the fact that scepticism exists on the fringes, unbalanced coverage of climate change scepticism would be irresponsible.

6.9.2 Conclusion of research findings and arguments

The goal of this study was most broadly to examine and describe the reporting of climate change in the Western Cape media. This was achieved through a frame analysis on three Western Cape daily newspapers. This analysis further looked at the reports in terms of the root or reason for the report, proximity in the report and the mention of climate change sceptics. A secondary objective was to triangulate the research with

indepth interviews. These interviews were conducted with the journalist at each newspaper who had the most stories mentioning climate change within the study period (all three of these were the resident environmental journalists of each newspaper). Indepth interviews were also conducted with two climate change scientists as well as with a climate sceptic. The purpose of these interviews was to try to understand the findings of the analysis – the dominant frames, the proximity provided and the nature of the articles in general, and secondly, to gauge an understanding of the challenges facing the journalists in reporting on climate change. The research questions which looked at dominant frames, primary sources and local context, were thus answered and explained.

In concluding, climate change can and should no longer be boxed into the environmental frame. Scientific research has portrayed the broadness and urgency of this threat to the world at large, but more specifically to South Africa and the Western Cape. While the environment may be viewed as a softer beat which is relevant to many only in terms of emotion or sentimentality, climate change is an issue which goes far beyond degraded ecosystems and endangered species. Water shortages, crop failures and changing weather patterns are issues which will affect all South Africans in the near future. Climate change is broader than the environment, politics and science. It is very much an economic issue, but above all, in a country where poverty is rife, climate change is a human interest issue and it is the duty of the media to portray it as such.

6.9.3 Future Research

6.9.3(a) Increased study period

While this study looked at a study period of one year, it would be interesting to study climate change coverage over a broader period and look at the changes in reporting as the effects of climate change become apparent in South Africa. Bonthuys argued that already a similar study would garner different results with climate change now being seen as a developmental issue rather than an environmental one.

6.9.3(b) Emotive media, a broader look

Since the turn of the century there have been an increasing number of mainstream movies and documentaries on climate change. *The Day after Tomorrow* is a fictional account of the chaos that might ensue if some of the predictions of climate change scientists were to occur. *An Inconvenient Truth* is a documentary style movie explaining the science behind climate change and the effects thereof. *Happy Feet* is an animated feature film which describes the plight of Antarctic penguin populations due to climate change, and most recently, Leonardo diCaprio's *11th Hour* is a documentary which explains that the earth is on the brink of anthropogenically caused disaster.

A study of the impact of any or all of these movies would be fascinating. It would be hypothesised, for example, that the impact of a movie like *Happy Feet* on children's attitudes to climate change would be far greater than an explanation of the science behind it.

6.9.3(c) Editorial and advertorial integrity

In a recent column in *The Guardian*, George Monbiot (2007) points out the apparent hypocrisy in newspapers; "The editorials urge us to cut emissions. The ads urge us to raise them."

Monbiot details several examples; in *The Daily Telegraph* an article urging people to carpool in order to lesson their carbon footprint was placed next to a much larger advertisement by Ryanair for £10 flights to France. Another article in *The Independent* urged readers to join climate protestors at Heathrow airport but in the same newspaper advertised its own special offers of flights to Spain, Kenya and California.

Following such observations, a survey was conducted in which advertising space given to cars, air travel, and oil companies was calculated for five daily newspapers over ten days. *The Financial Times* had the least with only 2.75 pages worth of such advertisements over the ten days, the *Times* had the most with the equivalent of 42 pages of space devoted to advertisements which promote fossil fuel consumption. Monbiot then questioned the relevant editors on the findings.

A similar, more comprehensive study would be fascinating. As companies, including media houses, across the world start trying to reduce their carbon footprint, will this and should it impact on the advertising in newspapers? While newspapers rely largely on advertising for their revenue, surely some lines need to be drawn?

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8. Appendices

8.1 Sample of questionnaire for journalists

1. What is your opinion of the level of environmental reporting in South Africa and more specifically the Western Cape in terms of a) environmental journalists b) amount of space and resources afforded to the environmental beat?
2. How do you think the environmental beat is viewed by the editor? (Your personal experience from past to now)
3. What would you like to see change in terms of this beat?
4. What are some of the difficulties in reporting on environmental issues? And more specifically climate change?
5. In terms of reporting on climate change, about 14% of the articles surveyed in the the *Cape Times* were from the wire, what is your opinion of copy received from the wire, and can you use your own discretion when choosing articles?
6. With proximity being a big news value, do you think climate change is portrayed locally enough?
(In the articles surveyed from the *Cape Times* – 51% had no African context at all - this is the highest of all the papers, 10% did have African context, 26% had South African context and 21% had Western Cape context – this is the lowest percentage of the papers analysed).
7. Aside from the press agencies, the sources most commonly quoted in climate change articles in the *Cape Times* are scientists and politicians, NGOs and other newspapers (with most of the information coming as a result of conferences and reports) what are some of the challenges in finding other sources, for example people who are being affected by climate change already (refugees, farmers, businessmen, etc)?

8. *Cape Times* had a far larger amount of opinion pieces, letters and editorials discussing climate change than the other two papers. Why do you think this is so?
9. The sources to a large extent dictate the frame/beat that the story then fits into. In the *Cape Times* the most prominent frames used were the Environmental, Political and Conflict frames, and to a lesser extent, the Human or social impact and Business/Economic frames. As climate change progresses it is likely to become an increasing social issue, as well as a health issue and an economic one. Has climate change been typecast as environmental? As other issues arrive, do you expect that they will be covered by the environmental reporter or by another?
10. 7% of articles made mention or reference (though not necessarily complementary) to climate change sceptics. What is your view of giving sceptics space?
11. In the year of study there were no articles which offered tips on being more energy efficient or water wise (during water restrictions). What is your view on the media's place in invoking personal changes in terms of the environment? How do you view the media's responsibility in terms of climate change?
12. Do you believe the articles on climate change are indepth enough?
13. The *Cape Times* had far more articles on climate change than the other two newspapers. Has the *Cape Times* specifically committed to prioritising climate change? Or is there any other reason you can think of to explain this?
14. How do you find the scientists relate to media? And whose responsibility is it to improve communication between scientists and media?

8.2 Sample of questionnaire for scientists

1. What is your opinion of (a) the quality and (b) the quantity of **environmental** reporting in the South African media?
2. What is your opinion of **climate change** reporting in the South African media in terms of (a) quality and (b) quantity?
3. Do journalists get the science right?
4. Are there any topics (within the subject of climate change) that you think are underreported on and need more attention?
5. What changes do you think could improve the dialogue between scientists and journalists?
6. What is your view on the media making mention (through articles, columns or letters) of climate change sceptics?

8.3 Sample of questionnaire for climate change sceptic

1. What is your opinion of environmental reporting in general in South Africa?
2. What is your view on climate change reporting?
3. What topics do you think require more coverage?
4. Do you think that lack of coverage on certain topics is intentional?