Framed: COP17 on South African Television

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Compulsory declaration

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature: Date:

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Abstract

The media have a critical role to play in informing and changing public opinion on climate change, "the defining human development issue of our generation" (United Nations Development Programme for Human Development Report, 2008, 1). Developing countries are most likely to suffer the worst effects of climate change, yet few studies exist on climate change communication in the media in developing countries and in particular in Africa. Studies on climate change communication in the media focus mostly on the print media and on developed countries yet in Africa more people consume their news through television or radio. So far no study has examined television news reports of a United Nations Conference of the Parties in Africa. This study examines the way four South African television news stations (three public and one private) framed climate change news over six weeks: two weeks before, during and after the 17th United Nations Conferences of the Parties in Durban (COP17) South Africa, 2011/11/07 – 2012/01/07. Coding words were used to identify climate change stories in the main news casts on SABC 1, 2, 3 and e.tv each day. These were transcribed and in the cases of SABC1 and 2 broadcasts translated from three indigenous languages (Afrikaans, isiXhosa and isiZulu) into English. A quantitative, descriptive statistical analysis looked at the occurrence of four primary frames in these climate change stories, using binary coding questions to identify each frame. The results in the binary coding sheets were analysed by using spreadsheets. The coding questions were also used to identify and explore secondary and additional frames, which were then illustrated in graphs. Differences in framing between public and private television were also illustrated in graphs (for example local versus foreign stories, time devoted to stories, depth of stories and occurrence of climate change stories with a human angle). Secondly, a qualitative inductive analysis of text and visual material looked at links between frames (for example the link between extreme weather conditions and human action using cause and impact visuals, as

well as the link between news image and source – the framing of the politician, the activist and the scientist.) This section also looked at emotionally anchoring images of hope and guilt and the role of banners, posters and maps in climate change stories on television. Though other studies claim that coverage of the summit was "almost invisible" (Finlay 2012, 16) this study shows very high coverage on especially SABC 1 (isiXhosa and isiZulu). The following hypotheses were confirmed: the political/economic frame will dominate on all stations during COP17 but the ecological frame will be highest on at least some stations in the weeks after COP17. The ethics frame will be dominated by the secondary "Inequality/Justice" frame while the "Religion" frame will be of minimal importance. When activists set the agenda, the motivational frame will hardly feature. Climate change scepticism will receive little attention on South African television. Local (South African and African) stories will be more prominent on public television than on private television.

Keywords: climate change, COP17, South Africa, framing, public and private television broadcasting.

Table of Contents

Acronyms and Abbreviations

AfriMAP:	Africa Governance Monitoring and Advocacy Project
AMPS:	All Media and Products Study
ANC:	African National Congress
CCMP:	Climate Change Media Partnership
COP17:	Conference of the Parties 17
CSAG:	Climate Systems Analysis Group
ESKOM:	Electricity Supply Commission. (The two acronyms ESKOM and EVKOM – Elektrisiteitsvoorsieningskommisie – were combined in 1986 and the company is now known as ESKOM)
EU:	European Union
ICC:	International Convention Centre in Durban
IIED:	International Institute for Environment and Development
IPCC:	Intergovernmental Panel on Climate Change
LSM:	Living Standards Measure
MPI:	Multidimensional Poverty Index
NESTA:	National Endowment for Science, Technology and the Arts
OSIEA:	Open Society Initiative for Eastern Africa
OSMP:	Open Society Media Program
REDD+:	Reducing emissions from deforestation, forest degradation and enhancing forest carbon stocks in developing countries.
SA:	South Africa
SAARF:	South African Advertising Research Foundation
SASOL:	Suid-Afrikaanse Steenkool en Olie (South African Coal and Oil)
UEA:	University of East Anglia
UN:	United Nations
UNCOP:	United Nations Conference of the Parties

UNDP: United Nations Development Programme

WHO: World Health Organisation

Definitions

Ubuntu-ism: The capacity in African culture to express compassion, reciprocity, dignity, harmony and humanity in the interest of building and maintaining a community with justice and mutual caring (Fourie, 2008, 62).

"So it is, night follows day! Greetings Mr Editor! We hear that you will be reporting and publishing events. Is it true? So we are to have a national newspaper. The news will come right inside our huts. This is really welcome news."

Tiyo Soga (1829 – 1871). From the first edition of the Xhosa newspaper, *Indaba* (The News), Lovedale, August 1862, quoted in Couzens, T.: "The Struggle to be independent: A History of the Black Press in South Africa 1836 – 1960"

Chapter 1 Introduction

The media have been blamed for not using their ability to tell one of the biggest stories of our times. Editors have been blamed for not finding one of the biggest stories of our times marketable and African journalists have been blamed for being least equipped to tell the story to those who will suffer most from its impacts (Shanahan 2009, Mare, 2011, Finlay 2012). Susanne Moser wrote on the back cover of Maxwell Boykoff's 2011 *Who Speaks for the Climate?*, "Some day, when we will write the obituary for this period of human history, society's response to climate change, we will need to account for the role of the media in it."

This study aims to contribute to existing research on the role of the media in "one of the biggest stories of our times" – the climate change debate. It focuses on a critical moment in this debate – the 17th annual meeting of the United Nations Conference of the Parties, held in Africa for the third time since its inception in 1995. COP17 was one of the most important COPs to date because it needed to secure a global climate agreement at the expiry of the first commitment period (2008 – 2012) which left the world with no legally binding international deal to cut emissions. So far no study has examined television news reports during a UNCOP in Africa where many people depend on radio and television in local languages.

The sparse climate change communication research in Africa to date has been by English speakers and has focused on newspapers (Tagbo, 2010). This might give an indication of what information reaches urban/English speaking populations, but "there has been little study of how much reaches rural or illiterate people who depend more on radio and television and on information in local languages" (Shanahan 2009, 154). In her review of Oluyinka Esan's *Nigerian television: Fifty years of television in Africa*, Nomusa Makhubu warns, "The impact of the television medium on Africa's cultural and political dynamics is not to be underestimated" (Makhubu 2011,141). The visual aspects of television news have been "under-researched and under-theorized as a powerful resource in the changing news-mediated career of climate change…" (Cottle &Lester 2009, 932). In her study of Nigerian and South African newspapers, Evelyn Tagbo mentioned limitations associated with her research: "… in both countries, and especially in Nigeria, more people tend to consume their news through television or radio hence broadcast media would have been more appropriate for the study. But collecting data on broadcast coverage would have been very difficult to track down given the limited time for completion of this study" (Tagbo 2010, 18). This study thus meets an important identified need in climate change communication research mentioned by Tagbo and other researchers.

COP17 presented the opportunity to obtain more intense climate change coverage than usual. This may, as Mare believes, give an inflated sense of coverage as it is event-based, (Mare 2011,14) but according to Carvalho and Burgess, "It is [also] through these critical discourse moments that public understanding of climate change might be altered" (Carvalho and Burgess, 2005:1461).

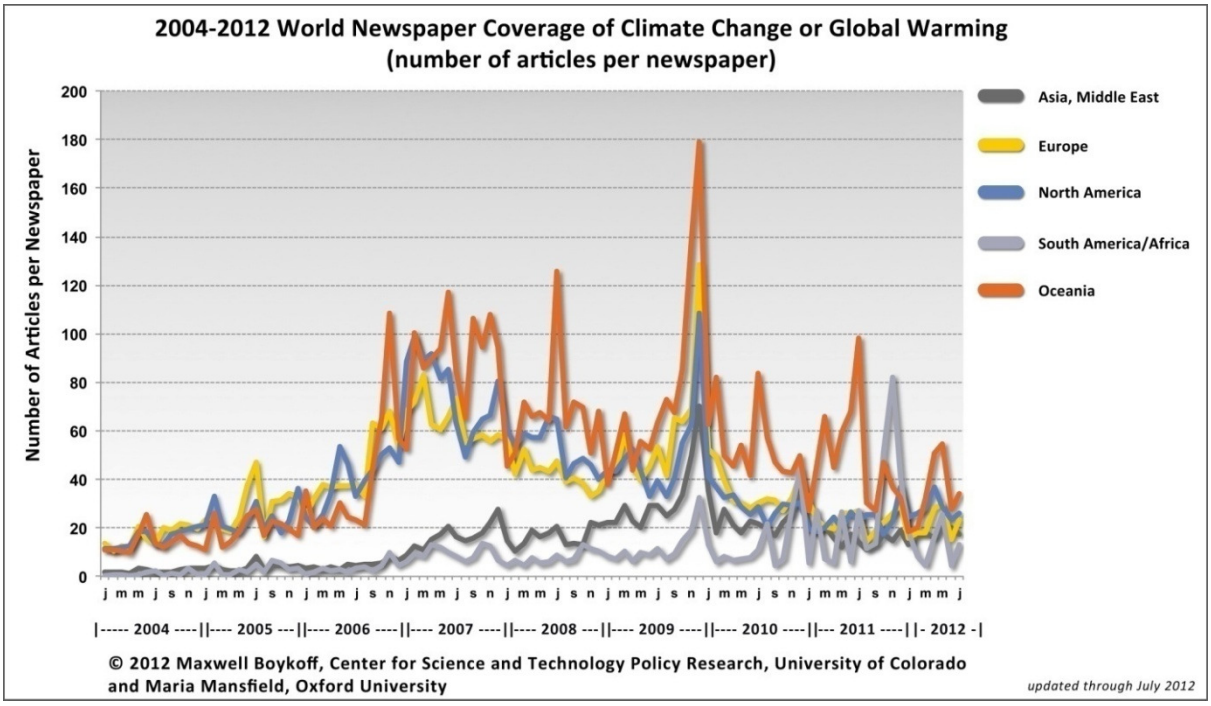
Was TV news coverage of climate change in South Africa during this critical discourse moment sufficient and efficient enough to create the possibility of altering public understanding of climate change? A 2011 Media Tenor Research Report (nr 162-2011)

covering global media including television, found that the global media coverage of environmental issues during 2011 was below the awareness threshold of 4% of the total news coverage (Bosman, 2011). In South Africa this increased from about 1% in October to about 9% in December during COP17 negotiations, which confirms statistics in Graph 1 and the assumption that there would be more intense climate change coverage than usual during this time.

The same Media Tenor Report also confirms that developing countries lag behind when it comes to climate change reporting. They also found that the already water-stressed Africa and the Middle East region garnered the least overall climate change coverage during 2011. The reason for this is thought to be the fact that their coverage is dominated by "the dominant discourse such as social and political unrest" (Bosman, 2011, 58). But there might be another reason for lack of climate change reporting in the Middel East: "Despite the fact that a number of renewable energy projects have been launched in the Middle East, the dearth of coverage begs the question: Being the main supplier of fossil energy in the world, could a focus on renewable energy be seen as a threat to a region that depends so heavily on oil for its prosperity? " (Schneider and Bosman, 2012, 69). The same question might be asked in South Africa where a newsreader reported on the speech of the minister of Energy, Dipuo Peters: "90% of the country's energy comes from ESKOM's coal fired electricity plants. According to the minister, the country's coal reserves of around 32 billion tons could last another century and the contribution of the coal industry to the South African economy could not just be forgotten" (SABC 2, 1 Dec 2011 20:08). South Africa is one of the seven largest coal-producing and one of the top five coal-exporting countries in the world. Around 77% of South-Africa's energy needs are directly derived from coal and 92% of coal consumed on the African continent is produced in South Africa. (http://en.wikipedia.org/wiki/Coal_in_South_Africa)

The title of Schneider and Bosman's March 2012 article in *Ecquid Novi: African Journalism Studies* speaks for itself: "Coverage cop-out: Global media analysis points to a lack of climate change coverage." The writers note: "What has become brutally evident is that this high-powered event and its outcomes were not a media priority. Global media analysis conducted by Media Tenor backs this up" (Schneider and Bosman, 2012, 66). In his editorial note to the *Ecquid Novi* 2012 issue, Herman Wasserman concludes, "Taken together, these articles paint a rather depressing picture of journalism's neglect and failure in the face of one of the biggest challenges of our time. One can only hope that debates such as these will contribute to a greater awareness of the media's role in sensitising and mobilising the public with regard to climate change" (Wasserman, 2012, 2).

To know what "more intense climate change coverage than usual" is, it is necessary to look at the statistics for mass media coverage of climate change over a longer period of time. The Center for Science and Technology Policy Research at the University of Colorado has tracked world newspaper coverage of climate change since 2004. Graph 1 tracks newspaper coverage of climate change in 50 newspapers across 20 countries and 6 continents and was updated in June 2012. Newspapers from South Africa include *Business Day* and *Financial Mail*. From this graph it is clear that coverage in the developing countries is far below that of the rest of the world, except during COP17, where coverage in South Africa peaked.



Graph 1: Boykoff, M. and M. Mansfield, 2012. 2004-2012 World Newspaper Coverage of Climate Change or Global Warming. Center for Science and Technology Policy Research, University of Colorado, http://sciencepolicy.colorado.edu/media_coverage.

It is difficult to find the same global statistics for television coverage. In June 2010 an American National Survey of Television News Directors about Climate Change was conducted at the George Mason University and lead investigators found that climate change is covered relatively infrequently on local TV news. More than half of news directors (50.6%) said their station reports on climate change less than once a month while 29.1% covered climate change once or twice a month on average. The majority of news directors (65%) said they will cover climate change stories at about the same frequency in the future, although 29% indicated they intend to cover the issue more frequently.

There is thus consensus among researchers that climate change coverage in the mass media has a relatively low priority everywhere compared to other news events. Why should this be the case? The answer might partially be in an article on Environmental Journalism where Ian Glenn agrees with Luhmann that “most modern societies define themselves as

systems against the environment; the environment is what is outside the system. This makes it difficult to include a consideration of nature in our self-reflections in man-made media" (Glenn 2008, 361). So why should climate change coverage be higher on the news event list? "Anything which threatens people's peace, prosperity and well-being is news and likely to make headlines" (Hetherington 1985, 40). It does not seem to apply to news about climate change, which is an ongoing, long-term threat which most people cannot see happening and do not yet experience first-hand.

Nonetheless television news remains an important way to inform and change perceptions. In a discussion paper from the Joan Shorenstein Centre on the Press, Politics and Public Policy, Frederick Mayer concludes that "this paper provides strong support for the proposition that media matters, and in particular that changes in the pattern of narratives of climate change reaching the public can explain some portion of the changes in public opinion." (Mayer 2012, 40). The United Nations Development Programme's 2007 Human Development Report on Climate Change states: "The media have a critical role to play in informing and changing public opinion. Apart from their role in scrutinising government actions and holding policymakers to account, the media are the main source of information for the general public on climate change science" (UNDP 2007, 67).

But perhaps the most poignant reason why climate change coverage in the media should be higher on the news event list, comes from one of the world's poorest and least developed countries where communities are already experiencing the effects of climate change. A 2007 Panos Institute study among community members in Zambia is quoted by the IUCN: "…Over 90 per cent of community members interviewed would like to receive information on causes of climate change, how it can be prevented, adaptation and what they can do as individuals to help control the situation…" (IUCN document 2009, 10).

And finally, the naming of the rose. What's in a name – that which we call "climate change"? "Awareness, concern and possible actions are critically shaped by what the phenomenon may be called…" (Boykoff, 2011, 8). Over the years, it has been debated whether "climate change" or "global warming" should be used and when: Lakoff quotes Frank Luntz in a 2003 language advisory to the Bush administration, called *Winning the Global Warming Debate: An Overview*: "It's time for us to start talking about 'climate change' instead of 'global warming'. 'Climate change' is less frightening than 'global warming'…" (Lakoff 2010, 71). According to Lakoff, this memo was the beginning of the use of the term "climate change." He adds pithily, "The idea was that 'climate' had a nice connotation – more swaying palm trees and less flooded out coastal cities. 'Change' left out any human cause of the change. Climate just changed. No one to blame" (Lakoff 2010, 71). Lorraine Whitmarsh found that citizens considered "global warming" a more emotive term related to increase of temperature and that the implications of climate change are more ambiguous (Whitmarsh, 2008). Baggini points out that the debate around environmental issues is conducted in a vocabulary which is often value-laden, making reasoned judgement more difficult (Baggini, 2002). Boykoff explains today's scientific definitions of the terms as follows: "While climate change is a broader term that accounts for changes in many climate characteristics such as rainfall, ice extent and sea levels, global warming refers to a more specific facet of climate change: the increase in temperature over time" (Boykoff 2011, 6). For the purpose of this study, the term "climate change" will always refer to anthropogenic climate change.

1.1 Problem Statement

Few studies exist on climate change communication in the media in developing countries and in particular in Africa. The few studies that do exist focus on newspapers and are conducted by English speakers. So far no study has examined television news reports of

a UNCOP in Africa or looked at indigenous languages. We do not know what role local media in indigenous languages in a developing country can play to inform their publics, particularly during a major event.

1.2 Purpose of the Study

In order to draw relevant comparisons with and discover differences to previous research and to find new insights into climate change communication in South Africa, this study examines the daily main newscasts on prominent private and state television stations in South Africa over six weeks: two weeks before, during and after the 17th Conference of the Parties in Durban (2011/11/07 – 2012/ 01/ 07), (a) quantitatively through content analysis of text and visual material, using four primary frames developed by Boykoff (2008a) each with a set of secondary frames and three additional frames for further exploration and (b) qualitatively, through inductive analysis of discourse and visual material**.**

1.3 Importance of the Study

Research on mass media coverage of climate change has increased over the last few years, but these studies still focus mostly on developed countries (Anderson 2009) and print media (Tagbo 2010). This is unfortunate since the developing countries are most likely to suffer the worst effects of climate change. In a 2011 study on mass media coverage of climate change in Peru, Takahashi points out that his study presents one of the first studies of media coverage in a developing country. (Takahashi 2011) Dirikx and Gelders suggest a mixed methodology of both quantitative and qualitative analyses to improve climate change communication (Dirikx and Gelders, 2010). COP17 is one of the most important COPs since it needed to secure a global climate agreement at the end of the first commitment period (2008–2012). COP17 also presented the opportunity to obtain more intense climate change coverage than usual. Therefore, by exploring climate change communication on television

news in a developing country during COP17, using qualitative and quantitative methods, this study responds to a gap in the literature.

1.3 Scope of the Study

This is a cross-sectional study (at a single point in time) of climate change communication in television news. A longitudinal study (collecting data at different points over a long period of time – two or more years) that is not event-based would present a more inclusive view of climate change communication trends on South African television (Mare 2011, 14). South Africa has 11 official languages and this study covers only four of them. Media effects will not be included in this study but would be a valuable extension in future research.

1.4 Rationale of the Study

Anthropogenic climate change or global warming has been described as one of the biggest stories of our times. The media have a critical role to play in informing and changing public opinion in order to engage in mitigation or adaptation. "Africa and other developing countries most at risk from the impacts of climate change typically have had access to the least information about it through mass media" (Boykoff 2011, 176). This study aims to make a contribution to the meagre existing body of research on climate change communication in Africa.

Chapter 2 Literature review and Theoretical Framework

2.1 Print Media in Developed Countries

(a) Two Studies using Generic Framing

In order to transcend time and place, generic frames make it possible to compare frames in different countries and situations (Dirikx and Gelders 2010). In a quantitative deductive framing analysis of Dutch and French papers, Dirikx and Gelders examined climate change coverage in 257 quality Dutch and French newspaper articles during the annual Conferences of the Parties, from COP7 in Marrakesh (2001) until COP13 in Bali (2007). They found that research on climate change communication in these countries was "sparse to non-existent" (Dirikx and Gelders 2010, 375) and that it was only a prevalent theme during critical moments – e.g. Conferences of the Parties summits. Dirikx and Gelders used five generic frames as defined by Semetko and Valkenburg (2000) to examine articles from *De Volkskrant* and *NRC Handelsblad* (The Netherlands) as well as *Le Monde* and *Le Figaro (*France*).* These frames, recurrently used in the news, are: the responsibility, conflict, consequences, human interest and morality frames. From the morality frame, their data showed that three of their coding questions had such low prevalence that they deleted them from further analysis. These questions were: "Does the story contain any moral message? " (once answered affirmatively), "Does the story make reference to morality, God, and other religious tenets?" (no affirmative answer) and "Does the story offer specific social prescriptions about how to behave?" (once answered affirmatively).

In the Dirikx and Gelders study the consequences and responsibility frames were mostly used, next in line was the conflict frame, while the human interest frame was used least. There were no significant differences in the average use of the responsibility, consequences and human interest frames during the seven years. There was no indication

that the conflict frame was used less often from 2001 onwards. The hypothesis that the Dutch and French articles would not significantly differ in their use of each of the remaining four frames was only confirmed for the conflict, consequences and responsibility frames. The use of the human interest frame differed significantly between the two countries – the Dutch newspapers more often reflected the human interest frame than the French newspapers.

Their focus on quality newspapers was motivated because quality newspapers "are an interesting source of communication on climate change usually giving more elaborate information than other media outlets" and to increase the comparability of their data as "most previous content analyses on climate change analyzed this type of newspaper" (Dirikx and Gelders, 2010, 375). For further research they suggested that a study using the popular press and the televised media would probably be more relevant for the outcomes of public policy debates.

In a second generic framing study, Boykoff (2008a) discusses the "working class" and the UK tabloid press in some detail. According to him, the tabloid media have some features in common: "*breadth* – where domestic stories as well as scandal and conflict earn greater attention than stories on international politics and economy; *(lack of) depth* – where surface-level, simplistic and sensationalist topics like entertainment, sports and personal lives are salient; and tenor – where opinion and commentary as well as informal rhetoric drive reporting and coverage" (Boykoff 2011, 89). Although these features may well constrain the reporting of environmental issues, his 2008 study "Ye olde hot aire" along with Maria Mansfield shows that climate change has increasingly been covered in the UK tabloid press although it diverged from the scientific consensus that humans contribute to climate change. Using critical discourse analysis, his 2008 study (Boykoff 2008a) examined framing of climate change stories in British tabloid newspapers. Categories of framing analyses were developed from previous projects that examined framing of nanotechnology (Anderson,

Allan, Petersen, & Wilkinson, 2005) and plant bio-technology (Nisbet & Huge, 2006) in the mass media. These were also assembled by expanding on the climate change categories developed by Boykoff and Boykoff (2007), which described reasons for increases in media coverage over time. Through these influences, four nested framing categories were developed: Ecological/meteorological, political/economic, culture/society and scientific. These were also divided into secondary frames.

He found that political/economic frames as well as ecological/meteorological frames dominated the climate change news. Stories of weather events and biodiversity dominated the primary frame of meteorological/ecological stories. There were fewer stories on conservation and protection and those often involved celebrities. The least utilized frames were those of justice and risk (secondary frame in the culture/society primary frame). They found that publishers focused more on "the rhetoric and actions of individual political actors or storm events at the expense of attention paid to questions such as the ethics surrounding uneven abilities to cope with climate change" (Boykoff 2011, 95).

(b) Studies with a motivation versus sacrifice component

Communicators in the climate change debate have begun to challenge governments and environmental organizations for their use of sacrifice-oriented messages to the public and they propose that solutions, values and visions are more effective to encourage climate change mitigation. (Nordhaus and Shellenberger, 2007; Moser and Dilling, 2007a). Protection motivation theory (Rogers, 1983) states that when people are confronted with threatening but treatable issues, they will be motivated to change their behaviour. Only when the threat is bigger than the possibility to do something about it will they not be prepared to change their behaviour. Lowe (2006) found that alarming messages do not lead to action as assumed, but to apathy and helplessness. Boykoff believes that "fearful themes have fed

readily into journalistic norms of dramatization, making such topics more conductive to story formation" (Boykoff 2011, 16). This might be good for selling newspapers, but is it good climate change communication? Sophie Nicholson-Cole and Saffron O'Neill found in their groundbreaking 2009 paper, "Fear won't do it: Promoting positive engagement with climate change through visual and iconic presentations," that although fearful representations can raise awareness, they also distance and disengage individuals from climate change mitigation and make them feel helpless and overwhelmed (O'Neill& Nicholson-Cole, 2009).

Another way to describe a motivational climate change story in order to increase positive attitudes towards climate change mitigation is the "gain frame advantage" coined by Spence and Pidgeon (2010, 662) and it shifts discourse towards a motivational-oriented approach. Gifford and Comeau claim their study was the first to empirically demonstrate this in a large community sample (Canada, n=1038). Motivational versus sacrifice framing demonstrated "for the first time to our knowledge, the value of what some observers have been calling for: messages that employ motivational-oriented and causative language rather than the sacrifice framing that has been employed by some climate change advocates and agencies" (Gifford and Comeau 2011:1305).

(c) Studies with a "distant" instead of "local" component

Spence and Pidgeon examined the effect of framing climate change impacts as "distant" instead of "local." Climate change is believed to be a psychologically distant issue, likely to impact distant people and places (Leiserowitz, 2005). Thus some believe that situating it in the present locality of an audience will help them engage with the issue (Lorenzoni et al 2007). Imagery may also give more personal meaning to an otherwise diffuse global issue (O'Neill and Hulme 2009; Cottle and Lester 2009). Although Spence and Pidgeon believe that making climate change personally relevant is likely to be a useful

communication strategy, their data indicate that it is also important to highlight distant impacts of climate change because these are perceived to be more severe than local impacts (Spence and Pidgeon 2010). To be explicit about uncertainties is considered good science from a scientific point of view, but from a public perspective, it compromises the perception of scientific authority. Morton et al considered how, by framing climate change predictions differently, one might moderate the tendency for uncertainty to undermine individual action. Their results suggest that if climate change messages are framed carefully, uncertainty is not an inevitable barrier to action (Morton et al, 2011).

2.2 Studies of climate change communication on television news

(a) Frequency of climate change reports in television news

For this section, at the time of writing, only American studies were available for scrutiny. A study by Jill Fitzsimmons and Jocelyn Fong, published by Mediamatters America, looks at climate change or global warming coverage on broadcast networks ABC, CBS and Fox (Sunday morning talk shows and nightly news programmes) between 2009 and 2011. They found that climate change coverage dropped significantly since 2009 and by 2011 these stations spent more than twice as much time discussing Donald Trump than climate change *(*Fitzsimmons and Fong, 2012). They found that the Sunday show coverage of climate change dropped by 90% between 2009 and 2011. Although Fox News covered climate change the most, much of their coverage promoted the Climate-gate controversy and downplayed the threat of climate change. Nightly news coverage decreased by 72% between 2009 and 2011.

(b) Problems facing climate change reporters on television news.

In "A National Survey of News Directors about Climate Change: Preliminary Findings", Maibach, Wilson and Witte examined the responses of 79 news directors from an

invited total of 433 in a survey from January to March 2010. Although low response rates do not necessarily indicate inaccuracy in data, they urged their readers to use caution in interpreting their findings. Some of the findings are selected here as relevant to the current South African study: despite the scientific consensus that climate change is happening and is human-caused, nearly all news directors (90%) believe that, like coverage of other issues, coverage of climate change must reflect a "balance" of viewpoints. Climate change is covered relatively infrequently on local TV news, fewer than half of news directors (44%) say their station reports on climate change once a month or more frequently. The majority of news directors (65%) say they will cover climate change stories at about the same frequency in the future, although 29% indicate that they intend to cover it more frequently. Relatively few TV news directors (28%) say they have experienced obstacles to reporting on climate change. Obstacles identified were perceived scientific uncertainty about climate change, complexity of the subject, difficulty in finding a local angle and lack of time for field reporting. Other obstacles were lack of viewer support, lack of access to trusted scientific information and lack of access to appropriate visuals/graphics. Fewer than 3 % of TV news directors cited pressure from advertisers or station owners as obstacles to climate change coverage (Maibach, Wilson and Witte, 2010).

(c) Influence of the visual aspects of television news

"While texts are often privileged as primary means of climate communication, images have been considered as a powerful way to 'bear witness' to climate change (Doyle, 2007, 131). But Doyle also has a warning about the power of images of climate change in that not all environmental problems can be seen. By the time we see the image of a drowning polar bear, it might be too late to address the problem. When we rely only on pictures, we become more reactive than proactive to climate threats.

In a first study of its kind, Cottle and Lester examined the rhetoric and nature of climate change visualization within television news by exploring two distinct dimensions of news visualization: "(1) Pictures, scenes and spectacular images of nature(s), places and people under threat; and (2) how accessed strategic relations of contention are visually infused with signs of trust and credibility" (Cottle & Lester 2009, 920). They see images as a crucial and often underestimated part of changing the public views on climate change. Szerszynski et al conclude in their study that media images like the globe (implying that we all belong to the same planet), environments (symbolizing wider threats) and people who speak for the human race, show relationships to other people and Earth and that this could carry feelings of helplessness or responsibility, distance or engagement. (Szerszynski et al, 2000, 106). Szerszynski and Toogood see these images and signs as a "re-imagination of solidarity and care at a global level" (Szerszynski & Toogood 2000, 227). After a reading of P.J. Fourie's "Ubuntuism as a framework for South African media practice and performance: Can it work?" these images might also be seen as symbols of the African philosophy of Ubuntu-ism extended to a global ubuntu-ism in the face of climate change (Fourie, 2008). (See adefinition of "Ubuntu-ism" in the Abbreviations, Acronyms and Definitions section.)

Cottle and Lester based their analysis on a two-week sample period and used daily news programmes in the UK, USA, Australia, South Africa, India and Singapore to capture significant moments. Unfortunately, from the 27 news stories gathered, only one appeared in South Africa and one in Singapore and none in India, confirming the developed/developing world and north-south divide in climate change communication. (The South African channel used in the Cottle and Lester study was SABC Africa, the international television service of the SA Broadcasting Corporation, which ceased to broadcast on 1 August 2008 after poor performance on the DStv satellite television platform. The SABC International news platform is, however, still broadcasting internationally.)

Cottle and Lester identified and quantified three categories of news visuals: (a) iconic visuals (it presents what is discussed); (b) symbolic visuals; and (c) spectacular visuals (it inspires awe or dread). Their study showed that 33,3% of images used were symbolic and 18,5% spectacular – more than half of the news stories compared to the iconic visuals Crisis and loss are depicted in images of personal photographs, ruined schools, and garden debris. Cause and impact images were the two main categories of key visuals. Cause images could be coal-fired power stations and traffic and the symbolic meaning of these are easily activated in the Western mind. Impact visuals are more complex and are split into natural (disconnected from humanity –e.g. polar bears) and human (victim in flooded street) impacts. They suggested that signs of climate change might be relayed by news reporting on extreme weather events even when no explicit connection has been made by the news reader or news reporter – the viewers are used to visuals of extreme weather events in climate change stories. "We suggest that such parallel use of visual sequences and scenes can only encourage visual relay and the possible connection with climate change in the foreseeable future" (Cottle and Lester, 2009, 928).

Impact and cause visuals could work together to reinforce a global sense of responsibility and perhaps also a sense of causing the crisis itself (in the mind of the Western viewer). Cottle and Lester think that journalistic norms will usually prevent direct invitations to respond to such a contested issue as climate change in the politicized and conflicting realm, but when framed in a humanitarian emergency, direct invitations to the audience to respond to the crisis might be allowed.

But spectacle on its own is not sufficient to mobilize people. Different environmental perspectives and discourses, "relations of definition" (Cottle and Lester 2009, 929) have a crucial role in television news' communication of climate change. The ways in which different sources and speakers are represented can influence the viewers' judgements of trust

and credibility. Scientists are usually at work bearing witness (in the field or at their desks with reports and computer screens) or acting (measuring glaciers, studying maps). These images carry "a public call to trust" (Cottle and Lester 2009, 931). Politicians are usually addressing a crowd, interviewed in a studio or inspecting the effects of climate change or the latest renewable energy technologies. A full suit has proven to be inappropriate for engagement with the environment as "climate change news is certainly not immune to the visual rolling-up-the-sleeves metaphor" (2009, 931). Cut-away shots to photographers and TV cameras reinforce the centrality of the politician in question. Climate change activists and NGO spokespeople are often interviewed outside – as part of the landscape but always inactive. Cottle and Lester find that a repeated sequence is shown in climate change television news whereby climate activists and NGOs are visually distanced from the core of political cooperation and solution. Footage usually provides visual primacy to the nation state to find a solution to climate change. "Our sample suggests that television news either carries an ongoing visual commitment to the nation state, or it has not yet found the necessary repertoire to adequately visualize Beck's explosion of boundaries and political agendas and the birth of global publics" (Cottle and Lester 2009, 932). This study has shown how visual rhetoric independently or in combination with rhetoric, helps to "mobilize or mute" appeals to the public to engage in climate change mitigation or adaptation (Cottle and Lester 2009, 933) and how it is often framed as a global issue.

In her study, "Emotional anchoring and objectification in the media reporting on climate change" Birgitta Höijer discusses examples of how emotional anchoring of fear, hope, guilt, compassion and nostalgia (often through images) takes place in climate change communications. (Höijer, 2010)

(d) Scepticism and misrepresentation in climate change reporting on TV news

Studies on climate change scepticism in television news reporting were, perhaps fortunately, only available on American news. In "Frequency of Key Climate Narratives in Television News, 2001 – 2010", Mayer identified six key basic story prototypes in climate change narratives and he discussed the frequency of these key narratives. The narratives he identified are "the climate tragedy" (we must act to save the planet); "he said she said" (and who really knows?); "don't kill the goose" (regulation because of climate change will shackle the economy); "hoax" (the science is corrupt and should be ignored); the denialist conspiracy (opponents of action against climate change are either corrupt or deluded); and "the policy game" (the futility of policy processes). Mayer's analysis of US TV news uses news transcripts of ABC, CNN, MSNBC and Fox News telecasts. Mayer believes that "the great gulf between cable and the traditional networks in coverage of climate change is perhaps most clearly illustrated by CNN's coverage" (Mayer, 2012, 13). In 2006, CNN increased coverage by 50%, introducing the "hoax" narrative. Its so-called "hoax stories" quadrupled in that year and were given more airtime than on Fox. In 2010, CNN "virtually stopped covering climate change as the total volume of all story lines combined plummeted by 87 percent" (Mayer 2012,14).

There was a dramatic drop of climate change news stories in 2010 with the exception of MSNBC, whose climate change stories remained very low and nearly disappeared in 2010. Spikes in coverage in 2007 and 2009 were accounted for by first the Al Gore documentary "An Inconvenient Truth" and its subsequent Nobel prize in 2007 and in 2009, the "Climate-gate" scandal. ABC treated the scientists and Al Gore as heroes for alerting us to the peril, CNN's coverage was more mixed but leaning more towards climate tragedy even when giving voice to sceptics (Mayer 2012, 35). But at Fox, Al Gore and his scientists were treated like villains and Gore was called a hypocrite for the use of private planes and for the size of his house. In 2009, "Fox ran nearly full-time with Climate-gate" and the UN, scientists and

Copenhagen summit organizers were now all villains. CNN started devoting much more time to the Hoax narrative than in 2007. Although ABC did not give "Climate-gate" much coverage, it also failed to tell the climate tragedy story. On CNN, the opening of COP15 at Copenhagen was throughout the day linked to the Climate-gate controversy. Their special report, "Global Warming: Trick or Truth?" defined CNN coverage for the next several days – it mostly reached for conflict and then turned to a policy game narrative. ABC presented the Copenhagen conference as the last effort to avert tragedy. It ran very few stories and few of those were about the real problem. Fox ran mostly with the hypocrisy of the conference and its delegates. MSNBC largely ignored the summit, but the small amount of climate change treatment was a limited combination of Denialist Conspiracy and Policy Game stories.

Mayer also briefly looked at effects, using the Pew Research Centre's October 2010 study called, "Little Change in Opinion about Global Warming" – (www.peoplepress.org) and found that the shifts in public opinion coincided with the changes in media coverage documented by his study (Mayer 2012, 37). He questioned whether the recession might have had a negative influence on the public's willingness to engage in climate change mitigation. (The US public's belief in global warming dropped from 79% in 2007 to 71% in 2008, 57% in 2009 and 44% in 2010.) Mayer argued that the recession alone could not account for the drop since Republicans would not be more adversely affected than Democrats and attitudes about climate change in Europe remained stable even though they were also adversely affected by recessions. The only difference between Europe and the US is the media environment and Fox's "steady drumbeat of a hoax narrative" (Mayer 2012, 37).

In another study of Fox News Channel (in 2011 the most popular cable news channel in the US according to Holcomb, Michell and Rosentiel, 2012), Huertas and Adler found that over the period of February to July 2012, in 37 out of 40 instances, representations of climate science were misleading. "Our analysis found 93% of 40 representations of climate science

on Fox News Channel to be misleading" (Huertas and Adler, 2012,7). Their snapshot analysis examined six months of Fox News Channel content which was based on keyword searches for the terms "climate change" and "global warming". Their team examined and coded these transcripts to determine if they were accurate or misleading, "based on whether they rejected or affirmed mainstream scientific understanding that climate change is occurring, is largely human-induced and affects human and natural systems" (Huertas and Adler, 2012, 3). In an earlier study Krosnick and MacInnes also found that Fox News Channel viewers were more likely than viewers of other networks to reject scientific evidence regarding climate change (Krosnick and MacInnes 2010).

Maxwell Boykoff's earlier study (2008b) examined the journalistic norm of balanced reporting, focusing on US television news segments on anthropogenic climate change on evening newscasts. His conclusion was that "in this milieu, the findings here show that through the journalistic norm of 'balance' U.S. television news coverage has been deficient in anthropogenic climate science reporting. The institutionalized and professional journalistic practice of balanced reporting has served to amplify a minority view that human's role in climate change is debated or negligent, and has concurrently engendered an appearance of increased uncertainty regarding anthropogenic climate science" (Boykoff 2008b, 8). According to the 2010 study by Maibach, Wilson and Witte (discussed on page 24 in this section) nearly all news directors (90%) believed that, like coverage of other issues, coverage of climate change must reflect a "balance" of viewpoints.

2.3 Media Studies on Climate Change in Developing Countries.

Climate change is completely under/un-reported in developing countries, particularly in Africa. "In fact conservative estimates note that environmental reporting constitutes one per cent of the total reporting in South African media" (Media Tenor South Africa Report, 2010). It adds that "only half of this percent is spent on climate change" (Mare, 2011, 12).

And yet Africa and South Africa have felt climate-related disasters close to the bone in the shape of Cyclone Eline, Cyclone Japhet, severe floodings and droughts and farmers already struggling on a daily basis. Leonie Joubert, South African writer of two books on climate change, *Scorched: South Africa's changing climate* and *Boiling Point: People in a changing climate* has been "on record as describing environmental journalists in South Africa as 'missing the story of the century'" (Mare 2011, 7). Research on the influence of media representations of climate change and the environment in developed and developing countries focused largely on practices in the Western world (Boykoff 2011, Mare 2011, Tagbo 2010, Jones, 2012, Shanahan 2011, Takahashi 2009).

Boykoff quotes Ugandan journalist Patrick Luganda: "Those most at risk from the impacts of climate change typically have had access to the least information about it through mass media" (Boykoff 2011, 176). The president of Uganda called climate change "an act of aggression" by the developed world against the developing world and Kaire Mbuende, Namibian representative to the UN called emissions of greenhouse gases by developed countries "low intensity biological or chemical warfare" (Tagbo 2010, 6).

Some studies and articles about media coverage of climate change in developing countries do, however, exist. In the March 2012 issue of *Ecquid Novi*, Alan Finlay argued that the news production challenge that climate change represents shares characteristics with HIV/Aids (Finlay 2012). Nicola Jones suggested a preliminary ethical framework for South African environmental journalists and Harold Gess proposes a new "slow journalism" for climate change journalism with more depth and substance than "fast-food journalism" (Gess, 2012).

And in Indonesia (the world's third largest emitter of carbon — primarily through deforestation) REDD+ policies are of global significance. (REDD+ stands for "reducing emissions from deforestation, forest degradation and enhancing forest carbon stocks in

developing countries.") Cronin and Santoso were able to establish how and why certain media discourses gained traction and others not by interviewing journalists and studying the media in Indonesia (Cronin and Santoso 2010). Another innovative study looked at English language newspapers serving an elite Indian readership. Simon Billet found differences in Indian and US press coverage of anthropogenic climate change over time (June 2002 – June 2007) – 98% of coverage in his Indian newspaper sample attributed climate change to anthropogenic causes. Billet argued that "depoliticisation of the scientific question of whether humans contribute to climate change is supplanted by a strong normative and political frame around Indian risk and Global North responsibility" (Billet, cited in Boykoff 2011, 52).

According to Takahashi, his study is one of the first of climate change media coverage in a developing country. He examined newspaper coverage in Peru during the Fifth Latin America, Caribbean and European Union Summit in May 2008, focusing on framing (Takahashi, 2011). For his study he chose the following main frame categories: politics, management, effects, opportunities, policy, behaviours, economics, evaluation, international politics, solutions, science and "other".

One of the least used frames was "science" –it was only used in 1% of cases. Takahashi believes that it might be the political context of the coverage that resulted in the limited science frame. He mentioned that several studies about knowledge and level of concern about climate change (e.g., Brechin 2003, Biel and Gärling 2009) concluded that there is limited understanding of science among journalists, laypersons and even policy makers. Policy frames also had a surprisingly low percentage – only 5%. In his study government officials dominated the news (35%). The results of other frames were 24% for the effects frame, 18% for international politics, 15% for the solutions frame and 14% for the economics frame.

Mike Shanahan has conveniently summarised the latest studies on climate change communication in developing countries, in chapter 12 of the book, *Climate Change and the Media*. Studies from the following countries were reviewed: Brazil, China, Honduras, India, Jamaica, Mexico, Mozambique, South Africa, Sri Lanka, Swaziland, Vietnam, and Zambia. He concludes: "For many journalists trying to cover climate change, the greatest barrier they face is in their own newsroom, where editors tend to consider the topic a lower priority than issues such as politics and crime" (Shanahan, 2009,156). In an International Institute for Environment and Development Policy Brief, Shanahan reported that in Africa opinion leaders are least informed about climate change. In 2011 he maintains that journalists who want to report on climate change struggle to convince their editors that the stories are important. Climate change news is often reported on inaccurately and presented as international news without any relevance to the local people. Vernacular languages are neglected. (Shanahan 2011)

Admire Mare concludes after her study of the Zimbabwean newspaper the *Sunday Mail* and the South African newspaper *Mail&Guardian*, that the issue of climate change is still far from being taken seriously. She also found dominance of internationally framed stories in the South African newspaper, alarmism and technocratic jargon. She found that in Zimbabwe human interest stories enjoyed favourable coverage (Mare, 2011).

Evelyn Tagbo conducted a case study of South African and Nigerian newspapers as well as four Ghanian newspapers to "serve as a lens with which to capture typical coverage trends in a sub-Saharan African country with smaller population and economy than Africa's giants, Nigeria and South Africa" (2010, 17). She based her research on data generated from online versions of the climate change stories in each of the newspapers. Only articles that discussed climate change and reflected that in their headlines were considered. Tagbo's study looked at the coverage during two separate first quarters – January to March 2009 and

January to March 2010. The COP15 conference in Copenhagen was held in November 2009, so she was able to compare reportage in the months ahead, and after the Copenhagen conference. "In terms of the quantity of coverage, the two South African newspapers studied, recorded a higher number of articles than their Nigerian counterparts with the Star being the leader in this respect. Overall, the extent of coverage in both countries was very low" (Tagbo, 2010, 29).

About 65 per cent of climate change articles in the Nigerian newspaper, *The Guardian*, dealt with international scenarios and gave little or no Nigerian context. The December 2009 United Nations conference accounted for 18 per cent of the total number of articles. Stories with a human angle accounted for only 2 per cent of the coverage. The other Nigerian paper, *The Vanguard* was shaped by domestic events organised by the Nigerian government or by Nigerian climate change campaign groups. Stories revolving around local impacts of a changing climate accounted for 32% of the articles (which is an unexpectedly high number and would have been interesting to investigate) and the Copenhagen event accounted for 13 % of coverage.

From the South African newspapers, more than 70 per cent of the *Mail & Guardian* articles were tied to international events with neither a South African nor an African background, 18 per cent of the stories were generated from the Copenhagen conference and 10 per cent were from other international events. In the South African newspaper, *The Star*, "the majority of articles were tied to the international events and taken mainly from the Reuters news agency. Many such stories were about climate change impacts outside SA e.g. in Australia" (Tagbo, 2010, 26). The COP15 conference generated 15% of the articles in *The Star*. "The use of foreign reports, mostly from foreign wire services, even though this has helped to keep climate change in the news in most African countries, has meant that little of the real situation on ground is reported" (Tagbo, 2010, 34). And Ghana? "Generally, the

findings of this study have showed that, Nigerian and South African media coverage of climate change, though not particularly outstanding, compares favourably with the negligible coverage in Ghanaian's media in the last quarter of 2008 and first quarter of 2009" (Tagbo, 2010, 33).

Limitations of this study according to Tagbo are that in both countries, and especially in Nigeria, more people tend to consume their news through television or radio hence broadcast media would have been more appropriate for the study.

2.4 Background on Public and Private Broadcasters in South Africa

There have been surprisingly few academic publications on SABC television news in the democratic South Africa and on differenes between various SABC channels, though it has been argued that "…any study that neglects differences in news values, presentations and political agendas across the various news channels in the SABC risks gross simplification and ignores major dynamics in a large and complex news organization" (Glenn 2004,137) .

For this section, it was decided to look at a 2003 study by Pieter J. Fourie, (*The future of public service broadcasting in South Africa: the need to return to basic principles* Communications Volume 29 (1 & 2) 2003 Unisa Press) and a 2004 study by Ian Glenn (*Racial News? How did SABC 1 Nguni news and SABC3 English news cover Zimbabwe in 2004?*). In the 2003 study Fourie concludes with important questions requiring extensive future empirical research. The present South African climate change study might contribute to one or two of them. In his 2004 Ian Glenn examines how differently SABC 1 (Xhosa-Zulu) news and SABC 3 (English) news framed their treatment of Zimbabwe over a three month period in 2004.

Fourie pointed out that since South Africa became a democracy in 1994, the main objectives of broadcasting policy have been to address inequality in infrastructure distribution, resources allocation, language, cultural and educational programming, to address

lack of diversity and choice as well as lack of universal coverage and access (Fourie, 2003). Despite its policy to address this, the SABC has been criticised by civic organisations and trade unions for not living up to its mandate. Although the SABC seemed to enjoy considerable credibility in 2003 as far as news and current affairs were concerned – (almost 91% of adults rated SABC news as most believable) it was criticised for broadcasting too few current affairs programmes, local content that used repeats to make up their quota, and news that lacked depth and diversity of opinions. African and Afrikaans language groups complained that little has been done to promote their languages and cultures (Fourie 2003, 154).

Does South Africa need a public service broadcaster and if so, why? Fourie refers to literature on the Canadian public broadcaster and the EU's battle against American film and television imperialism and its belief that "the cultural nature of the audio-visual industry justifies national protection" (2003,162). He motivates the need for a public service broadcaster despite a changing media landscape and says that a stable democracy "presupposes respect and understanding, a sharing of views and a common political language." Fourie also refers to Rumphorst who provides arguments against the view that the private sector can provide the same kind of service as the public broadcaster. (Fourie, 2003). He asks however, for a return to the basic principles of public service broadcasting which entails the provision of an impartial space for free expression and open debate, the provision for all interests and tastes (plurality and diversity), the provision for minorities, concern for national identity and community, competition in good programming rather than for numbers, the liberation rather than restriction of programme makers, universal accessibility and of addressing audiences as citizens, not as consumers.

Two of the questions that Fourie posed, which require extensive empirical research, might be partially answered in the present climate change communication study, even though

it is not a longitudinal study, which would have been preferable: "How distinct, if at all, is the SABC from private (commercial) and community broadcasters in South Africa?" and "Does the SABC adhere to the public interest principle and as such express a sense of national purpose, identity and pride?" In a postscript, Fourie mentioned that on the day his article was submitted for publication, the SABC announced that it would incorporate the public, NGO's and labour unions' participation in reforming its policies (Fourie, 2003, 173). There was large public response to this invitation, the final version of the draft editorial policies was released in 2004 and was going to be revised.

The 2004 study by Ian Glenn used copies of SABC 1 18h30 and SABC 3 19h00 news broadcasts that dealt with Zimbabwe over the period of July to September 2004. In terms of gate-keeping and agenda-setting, it was found that the SABC 1, although it has a more African focus, covered Zimbabwe less often than SABC 3. The reason for this seemed not to have been indifference, but a sense that "no news is good news" – setting an agenda of African normality while SABC3 reflected disorder following the expulsion of white farmers (2004, 141). They also found a difference in the framing of news between SABC 1 and 3. SABC 1 favoured a pro-African view of Zimbabwe and SABC 3 a more sceptical, hostile view typical of Western media. The study then proceeds to more detail of linguistic-cultural differences and the visual footage between the news programmes, demonstrating how powerful metaphors in Xhosa suggest positive associations with Mugabe that cannot be experienced on the SABC 3 English channel. The study looks at the three-stage history of SABC television news from where news in the African languages was a more or less direct translation of the ideologically approved Afrikaans or English and virtually identical (Glenn, 2004,145) to the third stage where the news teams in African languages are free to choose what news will suit their audiences. Glenn concludes that "We do see in SA a local example of the global phenomenon in which television news has an increasingly strong sense of its

niche ideological audience and caters to that" (Glenn 2004, 148). He also predicts that SABC 3 will become the channel for a new English-speaking black elite.

In June 2005, the SABC was relicensed in line with Section 10 of the Broadcasting Act. One of its first goals was to transmit broadcasting services to all South Africans in the 11 official languages.

AfriMAP: Public Service Broadcasting in Africa (2009-2012) is a twelve-country survey of public service broadcasting in Africa, hosted by AfriMAP, OSIEA and OSMP. It examines impartiality, independence and quality in public service broadcasting. African documents such as the *African Charter on Broadcasting* and the *Declaration on Freedom of Expression in Africa* as adopted by the AU's Commission on Human and Peoples' Rights, were used as benchmarks. The AfriMAP, OSIEA and OSMP research has started in 2008 and would continue until 2012. The South African Country Report on Public Broadcasting in South Africa was completed in 2010.

In the *Declaration of Principles on Freedom of Expression in Africa*, the African Commission on Human and Peoples' Rights states that "effective self-regulation is the best system for promoting high standards in the media" recognizing that self-regulation of the media protects freedom and must be guarded. (Lloyd et al 2010, 44) In terms of Section 11 of the Broadcasting Act, the SABC have to adhere to the values of public broadcasting. The commercial free-to-air station e.tv has to reach at least 77% of the South African population in terms of its licence, although it claims to be accessible to 80.5% of all South Africans. e.tv is owned by Sabido Investments with the SA Clothing and Textile Workers Union's Investment Company as one of its shareholders. E.tv also has significant South African content obligations. According to its licence the predominant language of broadcast will be English, but the station is also required "to provide two hours of news and information

programming per week in a wide range of official languages other than English and reflecting local, regional and provincial events and developments" (Lloyd et al 2010, 182).

A June 2009 AMPS (All Media Product Survey) shows that SABC 1 has the largest audience, followed by SABC 2 and e.tv, with SABC 3 in the third place (Lloyd et al 2010, 65). First on its list of recommendations for the SABC, is the need "to review the White Paper on broadcasting through a participatory process involving the public in debate about what exactly they want from a public broadcaster (Lloyd et al 2010, 143). (See the 2003 Fourie review in this section.)

Sources of funding for the SABC by the end of March 2009 were as follows: Commercial funding 77%, licence fee income 18%, Government allocation 2%, Other 3% (excluding the R150 million allocation from government to implement the technology plan) (2010, 152). The dependence on commercial revenue pre-dates the dawn of democracy in 1994. Challenges associated with this are that audiences will be regarded as consumers rather than citizens and an over-emphasis on cheaper programmes (foreign material or low-cost local productions). Commercial operators have also raised concerns that emphasis on income limits the number of other viable broadcasters in SA and therefore it also limits diversity. This is exacerbated by the fact that the SABC's public services are "allowed the same amount of advertising as its commercial services and the same number of minutes as private free-to-air channel e.tv" (2010,156). The survey concludes that the public broadcasting funding problem is perhaps the core public broadcasting issue that needs to be resolved in SA.

In terms of programming, the SABC has been heavily criticized, especially in 2006, for being too close to the ruling party (ANC) as well as for self-censorship (e.g. withdrawing a drama on circumcision after complaints from traditional leaders). News on the SABC channels are offered in the following languages: SABC 1: 17:30 news in SiSwati and

Ndebele, 19.30 in isiZulu/isiXhosa. SABC2 has news in Tshivenda/Tsonga at 17:30, in Afrikaans at 19:00 and in Sesotho and Sepedi at 20:30. On SABC 3, news is offered in English only.

Crucial to climate change news reporting and climate change scepticism is the following SABC editorial policy: "News and current affairs programming is required to be fair and balanced and not to take sides, although the policy cautions that fairness does not require editorial staff to be unquestioning, nor the SABC to give every side of an issue the same amount of time" (Lloyd et al, 2010, 179). The policy also commits the SABC to evaluate, analyse and appraise government policies without explicitly spelling out a watch dog role. According to the programming policy freedom of expression and the space to innovate should be at the heart of SABC programmes. The SABC also commits itself to promoting and developing local content in its programmes as well as television content from the African content. SABC performance indicators show that in the 2010/2011 year, there was a 32% local content increase (Lloyd et al, 2010, 161).

In the ANC Communication policy document of March 2012 (www.anc.org.za/docs/discus/2012/communication.pdf) the ANC reports that it has managed to extend television coverage in SA to 92% of the population since the dawn of democracy in the country, but it confesses that compared to other countries such as Canada, Australia and Nigeria it has one the of the lowest local content obligations in the world – the current local content quotas are 55% for SABC 1 and SABC 2, 30% for e.tv and SABC3 and 10% for Pay TV services. (This is probably due to the cost of local production.) The commercial broadcasting sector is dominated by foreign programming and according to this report, media consumption patterns demonstrated preference for local content (ANC Communication Policy 2012, 17). The 2012 policy demands that government funding should be targeted to indigenous languages and developmental, educational programming that supports health,

poverty eradication, rural development and crime prevention. They plan to urgently revise this into a "new forward-looking broadcasting policy" to coincide with the switchover from the analogue broadcasting system to the digital terrestrial system by 2015 (ANC Communication Policy 2012, 18).

According to the *Government Gazette* of 13 April 2012 (Vol. 562 Pretoria, No. 35255) the SABC's mandate has been guided by the following principles: Broadcasting services should develop and protect national and regional identity, culture and character. It should take into account the needs of its audience and display South African talent. It should reflect South African attitudes, opinions, ideas, values and artistic creativity. It should offer a plurality of views and a variety of news, analysis and information from a South African point of view. It should support the production of local content by South Africans, particularly by historically disadvantaged people and the specific quotas set by ICASA for local television content, independent production and SA music on the SABC's public and commercial services (Government Gazette 2012, 41).

This section of the literature review seems to highlight the following obligations: local content that focuses on local regions and on Africa, inclusion of local opinions, more educational programmes and programmes in indigenous languages and the use of a diversity of sources, not only official or expert sources. These obligations should point to a positive future for climate change communication on SABC public television. However, policy statements are not always revealing about practices on the ground. In November 2012, Professor Jane Duncan of the school of Journalism and Media Studies at Rhodes University examined coverage of a specific incident – the Marikana platiunum mine tragedy where more than 44 people lost their lives during violent industrial action and clashes with the police. Professor Duncan criticised the established news systems in South Africa and found a "distressing tendency toward citing only official sources and business perspectives. This

coverage showed a near total omission of the miners' perspectives... and [the biased coverage] helped to give credence to the perspective of the police." (http://www.ru.ac.za/latestnews/name,72436,en,html)

2.5 Theoretical Framework

Agenda setting, priming and framing are closely related and all three concepts will be discussed here. This study has chosen framing as major framework as that is what the most relevant literature focused on . The literature review has clarified this choice.

"The concept of framing is considered to be one of the most prominent features within the field of communication science" (B. Scheufele, 2004, 401). Some take it even further: "…communication researchers have become infatuated with the framing concept. According to Thomson Reuters' Web of Science, 86 papers on framing were published in the journals *Political Communication* and *Journal of Communication* between 2001 and 2010" (D. Scheufele and Iyengar, 2011, 2).

Framing is the choice of patterns of interpretation through which producers and consumers classify information so that they can deal with it efficiently. (Gamson and Modigliani, 1989, Entman 1993, Scheufele 1999, Lakoff 2010). One of the most quoted definitions comes from Entman: "Framing essentially involves selection and salience. 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 for the item described" (Entman 1993, 52). Another, more recent definition runs: "Framing defines a dynamic, circumstantially-bound process of opinion formation in which the prevailing modes of presentation in elite rhetoric and news media coverage shape mass opinion" (Scheufele and Iyengar 2011, 1). "Frames implicitly or explicitly emphasize aspects of complex issues, such

as climate change, thereby making it possible for the public to rapidly determine why an issue is important, who is responsible and what might be the consequences." (Dirikx and Gelders 2010, 732).

In his study, "Agenda-Setting, Priming and Framing Revisited," Dietram Scheufele takes a new look at these three approaches, arguing against attempts to put them all under one umbrella of agenda-setting and calling for a categorization of research on agenda-setting, priming and framing (D.Scheufele, 2000). According to him agenda-setting and priming (as an extension or outcome of agenda-setting) are based on the same assumptions or premises. "Contrary to McCombs's (1997) theorizing however, framing is based on premises that differ from those of agenda-setting or priming" (D. Scheufele 2000,299). A different Scheufele, (Bertram) comments on this: "The first [position] favours agenda-setting as a global concept subsuming priming and framing (e.g. Ghanem 1997, Takeshita, 1997), the second position regards agenda-setting as a variant of priming, which in turn needs to be separated from framing as a different mechanism of schema activation (e.g. Price and Tewksbury, 1997, Willnat, 1997). The first position is ill-founded, the second one is incomplete" (B. Scheufele, 2004, 406). He further suggests the framing effects approach should focus more on content-related frames, which are discussed in detail by public discourse and social movements" (B. Scheufele 2004, 421).

A distinction should be made between media frames and audience frames. Media frames are "a central organizing idea or story line that provides meaning to an unfolding strip of events… The frame suggests what the controversy is about, the essence of the issue" (Gamson and Modigliani, 1987, 143). Audience frames are "mentally stored clusters of ideas that guide individuals' processing of information" (Entman 1993, 53). Studies examining media frames as the independent variable, however, also often examine audience frames as the dependent variable (Scheufele, 2000).

Content analysis of network television newscasts showed that network newscasts are framed in episodic (specific events) or thematic terms (more abstract level) but rely mostly on episodic framing (Iyengar 1987, 1991). Studies on visual framing have been few and far between. "Effects of visual frames have rarely been examined, even though many studies (e. g., Entman 1991; Gamson Modigliani, 1989, Pan and Kosicki, 1993) emphasize the importance of visual framing" (B. Scheufele 2004, 421-422).

While Scheufele and Iyengar argue for new "traditional" directions in framing research in political communication to clear up the operational confusion of the last two decades (Scheufele and Iyengar 2011), environmental communicators are trying to find their framing feet by extrapolating from framing studies in diverse disciplines. Michael Dahlstrom warns, "There is so much on climate change perceptions, but it is scattered across many theoretical domains that might not always be useful …" (M.F. Dahlstrom personal email 2 February 2012). On the other hand Lakoff says, "Hypo-cognition is the lack of ideas we need. We are suffering from massive hypo-cognition in the case of the environment. The reason is that the environment is not just about the environment. It is intimately tied up with other issue areas: economics, energy, food, health, trade, and security. In these overlap areas, our citizens as well as our leaders, policymakers and journalists simply lack frames that capture the reality of the situation" (Lakoff 2010, 76). Taken together with Dahlstrom's warning, the message seems to be that we still need a lot of brainstorming, but somehow these scattered ideas will need to find focus and structure soon. But then, structure might again mean stagnation. "Assessments of frames should not just be limited to those that are labelled as important at present, but also seek to consider alternative framings that may not currently be considered important in political debates" (Forsyth, 2003,1). Society and climate science are forever changing and frames should be re-invented and reconsidered.

Framing, which is inherent to cognition helps explain and describe the complex process of climate change (Boykoff, 2011).

Chapter 3: Methodology and hypotheses

Methods used for analysing framing in climate change communication borrow from diverse disciplines like psychology, sociology, political science, ecology, economics and health (Lakoff 2010). Although this is not an effects study, experiments have already shown that the way news is framed can have an effect on the public's feelings of competence, (Gifford and Comeau 2011, Lowe 2008, Nordhaus and Shellenberger 2007, Moser and Dilling, 2007a) engagement (Spence and Pidgeon 2010, Rogers 1983) and behavioural intentions (Morton et al 2011, O'Neill and Nicholson-Cole 2009).

Many studies have emphasized the importance of visual framing (Entman 1991, Gamson and Modigliani 1989, Pan and Kosicki 1993) and yet, according to Scheufele, "effects of visual frames have rarely been examined" (B.Scheufele 2004, 421-422).

Most studies focusing on climate change coverage have studied framing through inductive qualitative analysis (Antilla, 2005) or have examined the media's portrayal of climate change through critical discourse analysis (Dirikx and Gelders, 2010). Generic frames that transcend limits of time, place and subject make it possible to compare frames and framing practices in different countries. Previous climate change communications studies have used five generic frames defined by Semetko and Valkenburg (2000) and more recently four nested framing categories were developed by Boykoff (2008a) for use in his case-study of UK tabloid press coverage of climate change. He developed the categories of framing analyses from previous projects that examined framing of nanotechnology (Anderson, Allan, Petersen, & Wilkinson, 2005) and plant bio-technology (Nisbet & Huge, 2006) in the mass media. As discussed earlier, Boykoff expanded on climate change categories developed by Boykoff and Boykoff (2007), which described reasons for increases in media coverage over time. The 2008a Boykoff study focuses on tabloid journalism, which is commonly defined by three metrics: tenor, breadth and depth because these characteristics

hold across other mass media like television news (Winston, 2002). This study will use Boykoff's (2008a) frames, as similarities are expected to be found between the two audiences. The majority of readers of tabloids are in "working class" demographics and according to the South African Advertising Research Foundation's (SAARF's) All Media and Products Study (AMPS) of January to December 2011, the Living Standard Measure of SABC 1, 2 and 3 is not aimed at an elite, educated market but falls into the "working class" category while e.tv has a broader LSM. And yet, Vusi Mona, deputy CEO of Government Communication and Information Systems made the following comment in "The SA Government blog": "The fact of the matter is SABC 3 news is targeted at the higher LSM groups 8-10 (and how many are they in the country?) whereas e.tv news is targeted at a broader range of people" (Mona, 2012, 1). This seems to be in line with Glenn's prediction in 2004 that SABC 3 "will become the channel for a new English-speaking black elite" (Glenn 2004, 148).

The decision to use the Boykoff 2008 generic frames for tabloid newspapers in the UK for the South African television news study seems apt, since most of the LSM target groups of the South African television channels, fall into the range of 5-7.

"With a growing need to engage wider constituencies in awareness and potential behavioural change, it is important to examine how these influential sources represent climate change for a heretofore understudied segment of citizenry" (Boykoff 2008, 549). In the case of the South African study, the "heretofore understudied segment" will be state and private television stations.

3.1 Approach

Dirikx and Gelders suggested that although quantitative research has several merits, a mixed methodology covering both qualitative and quantitative analyses will improve the study of climate change coverage in future (Dirikx and Gelders 2010). Also " Future

communication research should continue to combine quantitative and qualitative methods, especially when researching mass mediated communication" (Du Plooy, 2009, 40). Therefore, both quantitative and qualitative methods will be used in this study. A quantitative deductive frame analysis of text and visual material using four generic frames developed by Boykoff (2008a) will be conducted for comparative use between the Boykoff and South African studies or possible future studies and coding questions will establish the secondary frames for each. The following frames developed by Boykoff (2008a) have been used in this study:

1. The Science frame: Under this frame, issues of renewable technologies and funding for it, new discoveries, climate change scepticism or acceptance of anthropogenic climate change were grouped together.
2. Culture and society frame: This complex frame asks questions such as: "Are ordinary citizens involved in the story? Does it explain to or educate the public? Does it touch on ethics — justice, inequality, religion or just preaching the green gospel? Is there a direct link between climate change and health in this story and does it refer to transport and the need for society to reduce its use of fuel?"
3. Political/economic: This frame refers to business or economy in relation to climate change, whether politicians or businessmen are setting the agenda and whether there is a display of national responsibility or of countries passing blame to each other.
4. Ecology/meteorology: This refers to biodiversity – animals, plants and weather events like heat waves or floods.

Three additional frames were developed from the literature review to explore the conclusions reached by the Spence and Pidgeon study (2010) on distant versus local framing, the Ethics frame and the motivational frame. For this study, the frame was called the

"Proximity and Rural versus City Frame" to look at coverage of Africa versus "overseas" countries and at rural versus urban areas in South Africa since recent studies on South African newspapers found that there is little local or African content in climate change news (Tagbo, 2010, Mare 2011). The second additional frame is the Ethics frame (a frame which was deleted from the Dirikx and Gelders 2010 study since it became irrelevant). It explores the complex nature of morality which does not necessarily imply religion. It also refers to inequality or injustice, sharing and the African philosophy of ubuntu-ism (Fourie, 2008) or a superficial view of "if it's green it's good." (See definition of ubuntu-ism in the Abbreviations, Acronyms and Definitions section.) The third additional frame is the Motivational frame which has been explored by Gifford and Comeau (2011). This frame refers to words or visuals that might empower the audience, make them feel there is a solution to the problem or that they are not alone in coping with it. It may also refer to good consequences in terms of lifestyle or finance.

An inductive qualitative analysis of discourse and visual material was also undertaken. ("Inductive analysis provides in-depth insight into how different cultural perspectives play a role in the construction of climate change (Dirikx and Gelders (2010,733).") and "many studies (e. g., Entman 1991; Gamson Modigliani, 1989, Pan and Kosicki, 1993) emphasize the importance of visual framing" (B. Scheufele 2004).

To measure the extent to which certain frames appear in stories that mention or imply climate change, questions have been developed to which the coder answers yes (1) or no (0). The binary coding strategy of simple yes-no categories has the advantage that inter-coder reliabilities are relatively high (Semetko and Valkenburg 2000). The coding questions of the four generic/primary frames and three additional frames are as follows:

News Frames for climate change: (Generic frames as used by Boykoff 2008a, 2011)

To measure the extent to which certain frames appear in stories that mention/imply climate change, the following questions have been developed to which the coder answers yes (1) or no (0). The binary coding strategy of simple yes-no categories has the advantage that intercoder reliabilities are relatively high (Semetko and Valkenburg 2000, 99).

B and F are interrelated. If B(4) =1, F should also apply.

B1: Name the "human face" in this situation.

C2, C5, G2,G3 and F3 need words/phrases

If A3 is 1, A4 has to be 0.

Primary frames:

A. Science

A1. Secondary frame: Renewable technologies. Is there any reference to renewable technologies or funding for them?

A2. Secondary frame: New discoveries. Is there any reference to a new discovery (technological or scientific) connected to climate change?

A3. Secondary frame: Scepticism: Is there any reference to climate change scepticism?

A4. Secondary frame: Acceptance of anthropogenic climate change. Does anthropogenic climate change seem to be the accepted underlying view/visual in this story?

B. Culture and Society

B1. Secondary frame: Power to the people. Is an ordinary citizen telling the story?

B2. Secondary frame: Educating the public. Does the story educate/explain climate change/ adaptation to the public?

B3. Secondary frame: Link between oil and climate change. Does the story involve transport linked to oil/electricity/carbon emissions? (Petrol prices going up or down are not relevant.)

B4. Secondary frame: Ethics. Does the story touch on the issue of ethics? (Ethics include justice/inequality/religion/preaching the green gospel.) A story about a push to reduce consumption of electricity will for example not normally be an ethical issue but a practical one, except if the wording makes it an ethical one.

B5. Secondary frame: Climate change and health. Is climate change directly linked to health in this story? (Health will refer to things like famine caused by climate change or pollution face masks in the visuals.)

C Political/Economic

C1. Secondary frame: Economy/business and climate change. Is there any reference to the economy or business in relation to climate change?

C2. Secondary frame: Agenda setting by politician/businessman/economist. Is a politician/businessman/economist setting the agenda?

C3. Secondary frame: National responsibility. Is there a display or are there visuals of national responsibility to mitigate climate change in this story?

C4. Secondary frame: Passing the blame. Does this story show countries passing the blame or responsibility to each other?

C5. Secondary frame: Agenda setting by activist/NGO leader. Does an activist or NGO member set the agenda?

D. Ecology /meteorology

D1. Secondary frame: Fauna and flora. Is there any mention or are there visuals of animals/plants in connection with the climate change story?

D2. Secondary frame: Extreme weather events. Is there any mention or are there visuals of extreme weather events (floods, typhoons etc)?

Further exploration of the climate change stories - additional frames:

E Proximity and Rural versus City:

E1. Secondary frame: Rural stories. Does this story happen in a rural area in SA?

E2. Secondary frame: City stories. Does it happen in a city in SA?

E3. Secondary frame: African stories. Does it happen in the rest of Africa?

E4. Secondary frame: Foreign stories. Does it happen overseas? (Europe/America)

F Ethics:

F1. Secondary frame: Inequality and justice. Does ethics in the story refer to inequality/justice?

F2. Secondary frame: Religion. Does ethics in the story refer to religion?

F3. Secondary frame: Ubuntuism. Does the philosophy of ubuntuism /sharing explain the ethics frame in the story? Give an example on the coding sheet.

F4. Secondary frame: If it's green it's good. Ethics in this story simply implies "if it's green it's good".

G Motivation

G1. Secondary frame: We can solve this. Is there any mention of a possible solution to this climate change problem? (For example, can we curb emissions?)

G2. Secondary frame: We can cope with this. Is there any word/visual that empowers the audience or might make them feel positive about the issue?

G3. Secondary frame: We will stand together. Is there any word/phrase/visual that suggests to the audience that they are not alone in having to solve the problem?

G4.Secondary frame: We can benefit from this. Is there any mention/visual of good consequences in terms of lifestyle, survival, finance?

3.2 Data Gathering Method

This study covers the main news bulletin of the three state and one private station in South Africa. SABC 1 and 2 are linguistically targeted (Nguni and Afrikaans) while SABC3 and e.tv. aim for a wider audience of English speakers as well as second language English speakers with a good command of the language. State channel SABC 1 broadcasts news alternatively in isiXhosa and isiZulu at 20:00, representing the Nguni language cluster. State channel SABC 2 broadcasts news in Afrikaans at 19:30 and the private channel e.tv broadcasts news in English at 19:00. SABC 3 (state owned and also broadcasting in English) broadcasts its main news bulletin at 19:00. Although all the SABC channels have access to the same news content, a 2004 study indicated that in some cases significant differences emerged in how it was presented for the different cultural groups and in what is included or left out (Glenn, 2004).

The news channels used in this study were chosen on the basis of information supplied by TVSA (The South African TV Authority) and because these are the major South African television news channels. TAMS (Television Audience Measurement Survey) ratings were used to find out which are the most-watched prime time newscasts on SABC TV. The SAARF TAMS Panel provides minute by minute television viewing information, using semi-automatic electronic equipment that is connected to selected households' television equipment. By using a remote control unit, they record television set events automatically and visitors to the measured households are included (www.saarf.co.za).

The top four prime time news events before, during and after COP17 were firstly Zulu news (Izindaba on SABC1) with an estimated viewership of 3,863,000, secondly Xhosa news

(Indaba on SABC1) with an estimated viewership of 3,849,000, thirdly Afrikaans news (SABC2) with an estimated viewership of 1,955,000 and in fourth place e.tv news in English with an estimated viewership of 1,943,000. e.tv is an independent TV station in SA and the second largest channel in South Africa. eNews Prime Time is the most viewed English language news. SABC 3 (in English) has an estimated viewership of 932,000. General viewership in percentage of total tv news viewers were: SABC 1 (50.3%), e.tv (16.4%), SABC 2 (14.4%), SABC 3 9.5%. Main news bulletins on these stations covering the 6-week period (2011/11/07 – 2012/ 01/ 07, 2 weeks before, during and after COP17 in Durban South Africa), were obtained on disk with the compliments of Media Tenor South Africa. The 244 thirty-minute newscasts from the four TV stations were scanned for climate change news using the code words in appendix 1. SABC 1, (isiXhosa and isiZulu) and SABC 2 (Afrikaans) were transcribed in the original languages and then translated into English. Dr Sylvia Zulu from the Department of Media, Language and Communication at the Durban University of Technology assisted in the transcription and translation of the Nguni group languages.

The guidelines for the transcription and translation of the climate change news as well as the key words used to help identify climate change news in the relevant newscasts are included in Appendix 1. Words were not randomly chosen, but were selected after the initial scanning of the SABC 3 newscasts in English.

Words pertaining to extreme weather events were included, because although they do not necessarily point to climate change, studies have shown that signs of climate change might be relayed by news reporting on extreme weather events even when no explicit connection has been made by the news reader or news reporter. The viewers are used to visuals of extreme weather events in climate change stories. “We suggest that such parallel use of visual sequences and scenes can only encourage visual relay and the possible

connection with climate change in the foreseeable future" (Cottle and Lester, 2009, 928). News about petrol prices going up or down (which happened frequently) was initially included in the climate change transcriptions, but not used for coding since, in retrospect, it has been deemed irrelevant. Petrol prices going up or down in the short term, have more to do with politics than climate change. e.tv was the only station using news crawlers. These news items were transcribed but not used as part of the news bulletin. Crawlers in SABC 3 only pertained to the markets and were not summarized or used.

There have been complaints from African journalists that "climate change words" do not exist in their languages; the general manager of TV programmes at the Namibian Broadcasting Corporation said, "We have many words for particular weather conditions such as wind, but it takes us at least four times as long to describe an issue of climate change as it would in English.....it means it can be quite boring for the listener" (2009 BBC policy briefing #3 p10). The South African translators of isiZulu and isiXhosa were asked about this, but did not seem to experience the same problem as it seems as if the appropriate words are already in use in these languages. A list of climate change words in isiZulu appears in Appendix 3.

3.3 Database of Study

The database of this study is the transcribed and translated television news excerpts pertaining to climate change communication before, during and after COP17 from three indigenous South African languages into English plus transcribed newscasts from e.tv over the same period. SABC 3 (English) newscasts were summarized and coded but not fully transcribed. The initial reasoning was that one English language channel would be enough and that SABC1 and SABC2 would be representative enough of the public broadcaster. However, during transcription and translation, SABC3 was used to check translations from SABC 1 and SABC 2 (Xhosa, Zulu and Afrikaans). It was discovered that SABC3 does have

a distinct role and contributes something additional to the data. There was not enough time to transcribe SABC3 English news in detail. Climate change stories were, however, identified and coded, using the live material.

The disks with the recorded newscasts were the most important part of the database. Since the visual aspects of this study are as important as the text, coding could only take place while watching the newscasts even though transcriptions and translations included visual aspects. Sport, weather and economic indicators are an intrinsic part of each 30 minute news broadcast. Advertisements were subtracted from the total "newscast time." In the case of SABC 1, 2 and 3 this amounts to six minutes during the news broadcast and in the case of e.tv it amounts to seven minutes. Climate change news was grouped into different "stories", depending on the subject and how it was framed visually as "one story" by the broadcaster. Sometimes, and mostly on SABC 1 and 3, a story was interrupted by another story and continued later on. In those cases two time measurements were recorded and added up. Coding of the same "story" differed across channels, depending on what was deleted or added or visually implied.

3.4 Hypotheses:

Insights gained from the literature review and a general sense of South African television coverage led to the following hypotheses for the quantitative analysis section of this study:

H1 The political/economic frame will dominate on all stations during COP17 but the ecological frame will be highest on at least some stations in the weeks after COP17.

H2: The ethics frame will be dominated by the secondary inequality/justice frame while the religion frame will be of minimal importance.

H3: When activists set the agenda, the motivational frame will hardly feature.

H4: Climate change scepticism will receive little attention on South African television.

H5: Local (South African and African) stories will be more prominent on public television than on private television.

H6: A political event like COP17, will be covered more thoroughly by public television stations like the SABC than by the private e.tv.

H7: Coverage after COP17 will be higher than before, since consciousness and interest in climate change will have been aroused.

3.5 Validity of Data

The accuracy of the translated texts needs to be verified during the process to ensure correct analysis, as coding is influenced by the choice of words or the omission of words. It is also influenced by the visual material that fortunately speaks across different languages. SABC 3 seemed closer in content to SABC 1 than SABC 2, so it was used as a "monitor" to detect possible omissions or misinterpretations in the translated texts of SABC 1. A good relationship with the translators meant that issues could be referred back and forth.

Coding could be potentially hazardous and sometimes tough choices have to be made. By comparing the same story titles across channels and checking coding repeatedly, it became clear that some stories needed to be coded differently across channels, because of information added, left out, specific words used or because of different visual material. The same stories were therefore not necessarily coded in the same way across the different channels and it had to be so. Where visuals changed or determined the coding of a story, the nature of the visual was recorded on the coding sheet.

3.6 Originality and limitations

The originality of this study is probably also its limitation. As mentioned earlier in this chapter, framing in climate change news is still a new field and there are theorists who believe that researchers should wait until the theory and the best appropriate frames have been established before they use it in their studies. Some relatively new frames have been used in this study and they have not been tested over the years. A climate change communication study in the developing world, examining television coverage during a UN Conference of the Parties, has not been done before. The study is limited to four languages although there are 11 official languages in South Africa. More and different frames could have yielded more information. The time limitation and focus means that this study was not able to look at effects of the coverage or at change in coverage over a long period of time or examine the effects of communicaiton. The link between climate change and health is an important one and will become even more so in future but could not be discussed in this thesis due to time and focus restraints.

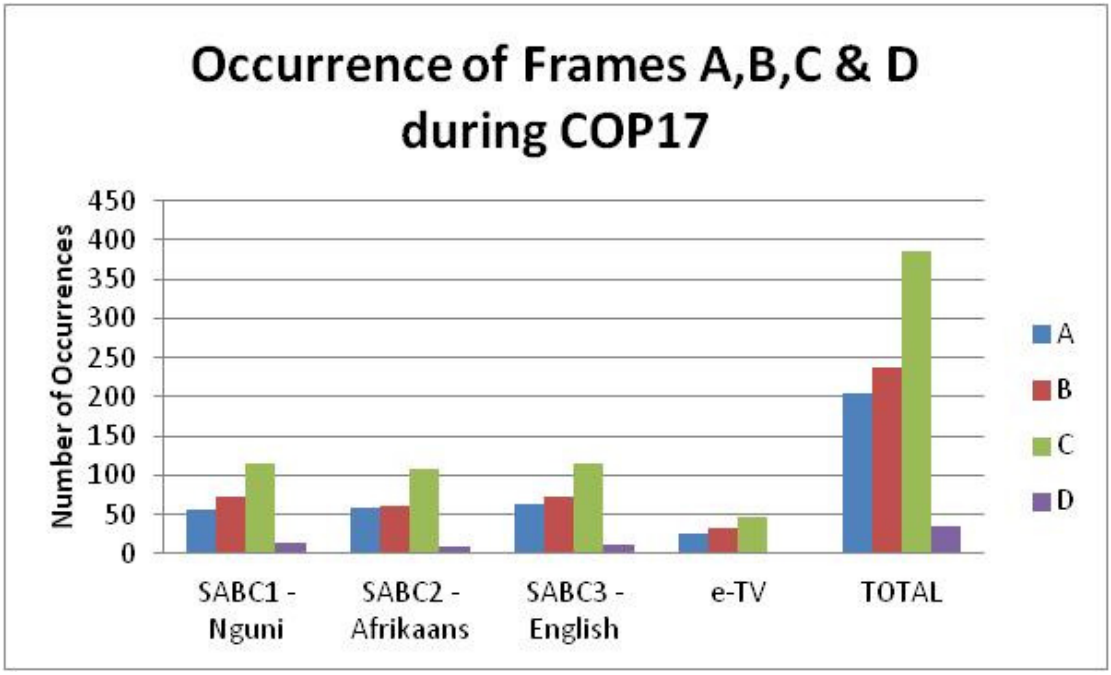
Chapter 4: Presentation of Findings: Quantitative Analysis

4.1 Quantitative analysis of text and visual material, covering the seven hypotheses.

(a) Hypothesis 1:

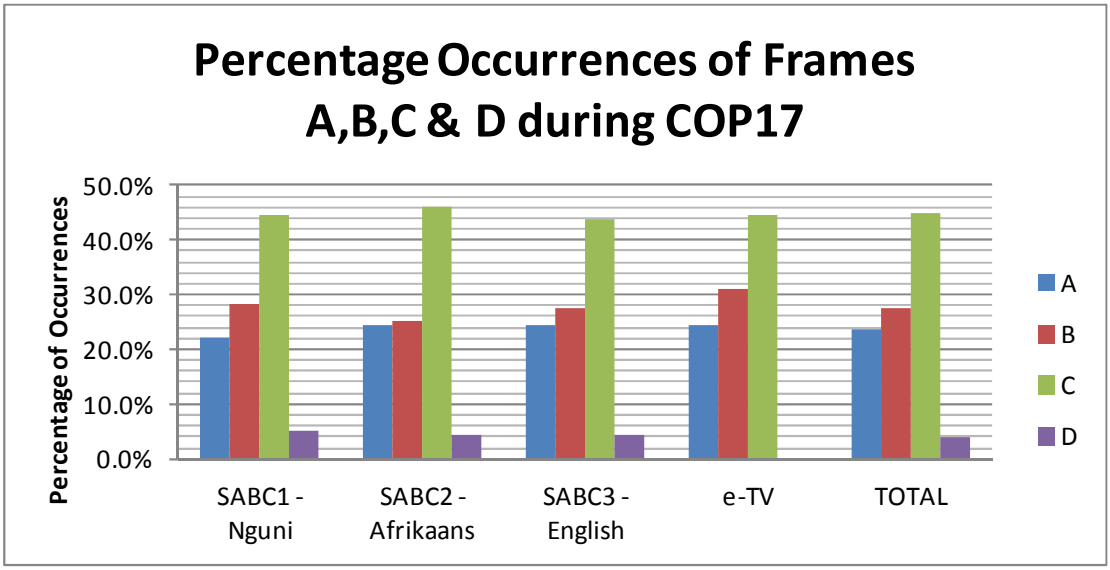
"The political/economic frame will dominate on all stations during COP17 but the ecological frame will be highest on at least some stations in the weeks after COP17."

As graphs 2, 3 and 7 show, frame C (Political/economic) dominated during the two weeks of COP17 across all television stations. Since news casts centered mostly around COP17, the salience of the political/economic frame during the two weeks of COP17 makes sense – an international conference like COP17 is always political as Takahashi (2010) also discovered in his study. The political/economic frame was highest on SABC 1 and 3 followed by SABC 2 and then e.tv. Frame B (Culture and Society) was the second most used frame across all four stations. Again, it was highest on SABC 1 and 3, followed by SABC 2 and then e.tv. Frame A (science) was the third highest frame across all four stations. Frame D (ecology and meteorology) was the least used frame during COP17 across all stations. Again it was highest on SABC 1 and 3, followed by SABC 2 and then e.tv.



Graph 2:

Occurrence of primary frames A, B, C and D on all stations during COP17. A: Science, B: Culture/society, C: Political/economic, D: Ecology/meteorology.

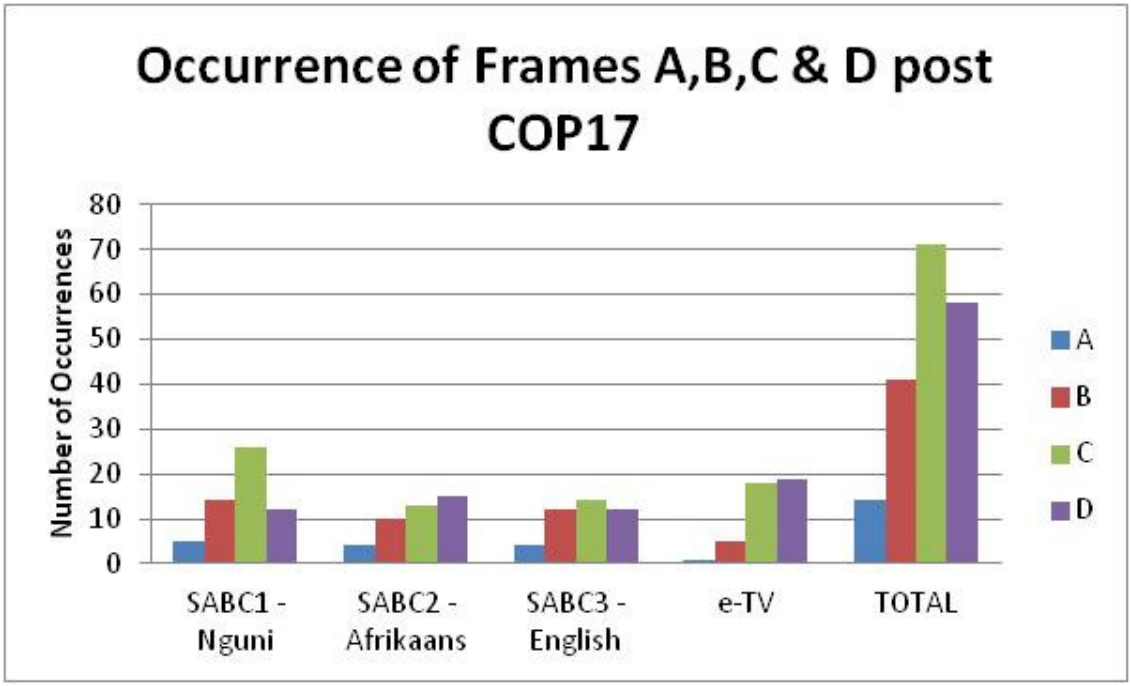


Graph 3:

Persentage occurrence of primary frames A, B, C and D on all stations during COP17. A: Science, B: Culture/society, C: Political/economic, D: Ecology/meteorology.

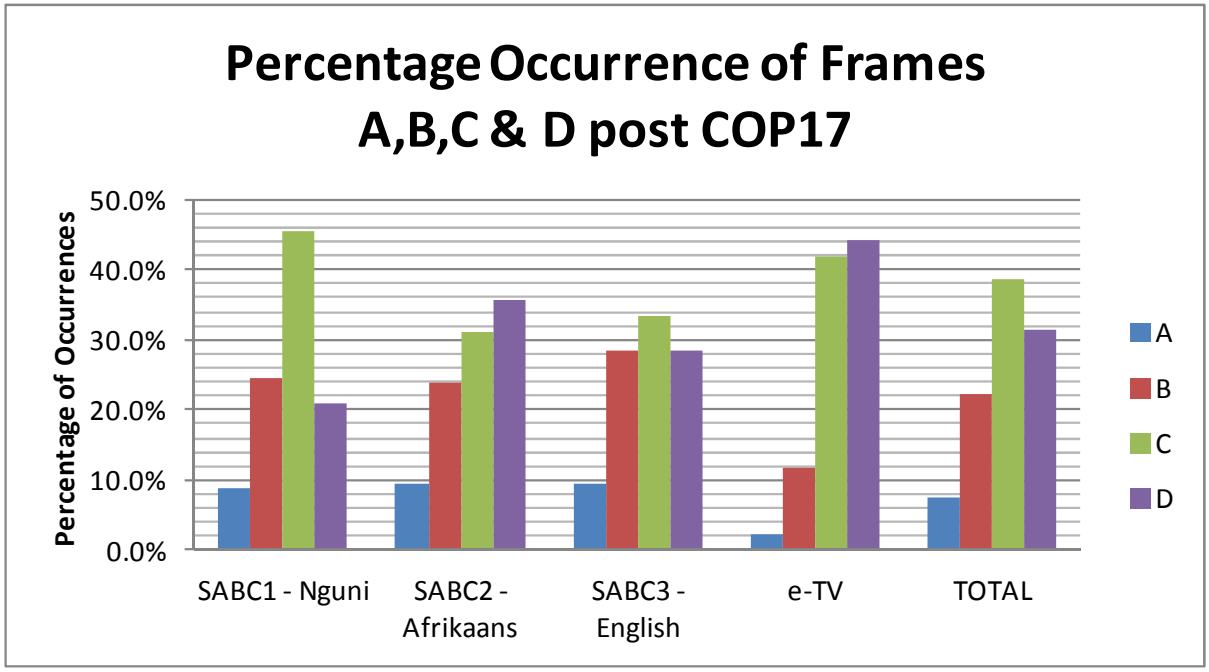
When we look at the occurrence of the four frames after COP17, things change. (Graph 4). The Political/Economic Frame C does not dominate across all stations anymore. It still dominates considerably on SABC 1(Nguni news) and only slightly on SABC3. But on SABC2 (Afrikaans) and e.tv, the news is now dominated by frame D (ecology/meteorology). This might indicate that SABC1 is more politicised than SABC2 and e.tv. or it might indicate that SABC 2 and e.tv audiences prefer news of an ecological/meteorological nature to politics. Frame D (ecology/meteorology) is not even in second place on SABC1, but takes third place after the culture and society frame (B). On SABC 3 the Political frame is followed by the Culture and Society and the Ecology frame and across all four stations, the Science frame (A) is last. The reason for the low science frame could also be explained by lack of understanding of the science of climate change by journalists (as discussed in the literature review) or the domination of politics during the conference.

The Boykoff (2008a) study of UK tabloids, as discussed in the literature review reflected the same order of frames as SABC 2 and e.tv in the two weeks after COP17. Since previous studies showed that extreme weather events usually dominate climate change news when there is no international climate change event to dominate it, (Boykoff 2011) this could explain the salience of the ecological/meteorological frame in the Boykoff (2008a) study as well as on SABC 2 and e.tv. post COP17. Why the political frame still dominates on SABC1 and SABC3 is harder to explain.



Graph 4:

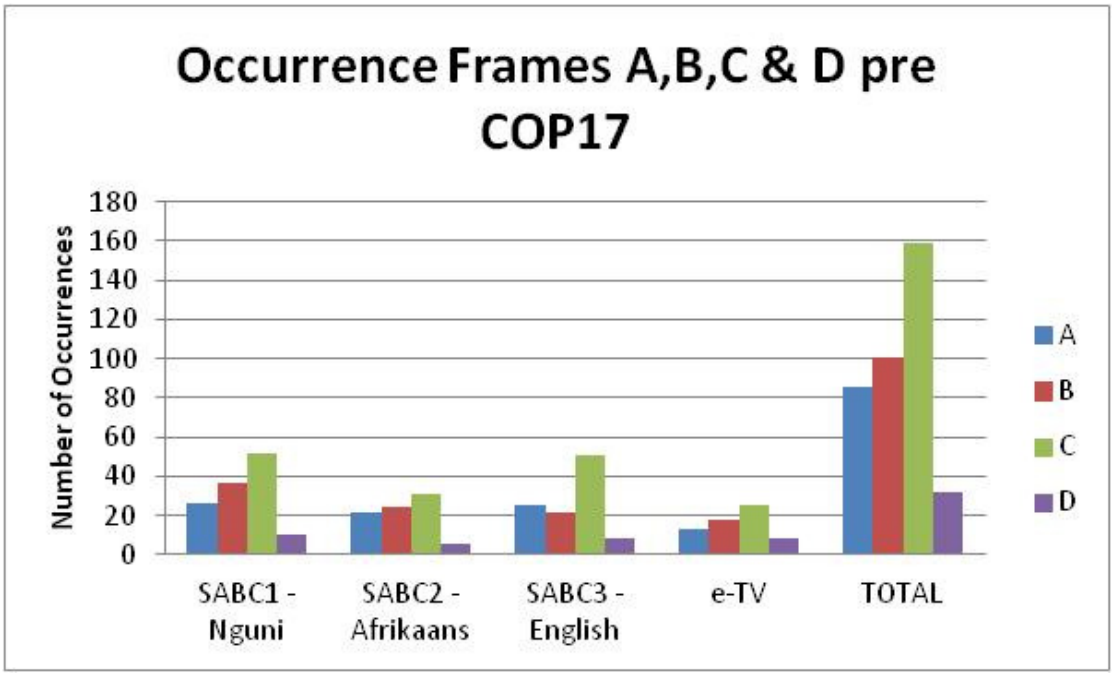
Occurrence of frames A,B,C and D on all stations post COP17. A: Science, B: Culture/society, C: Political/economic, D: Ecology/meteorology.



Graph 5:

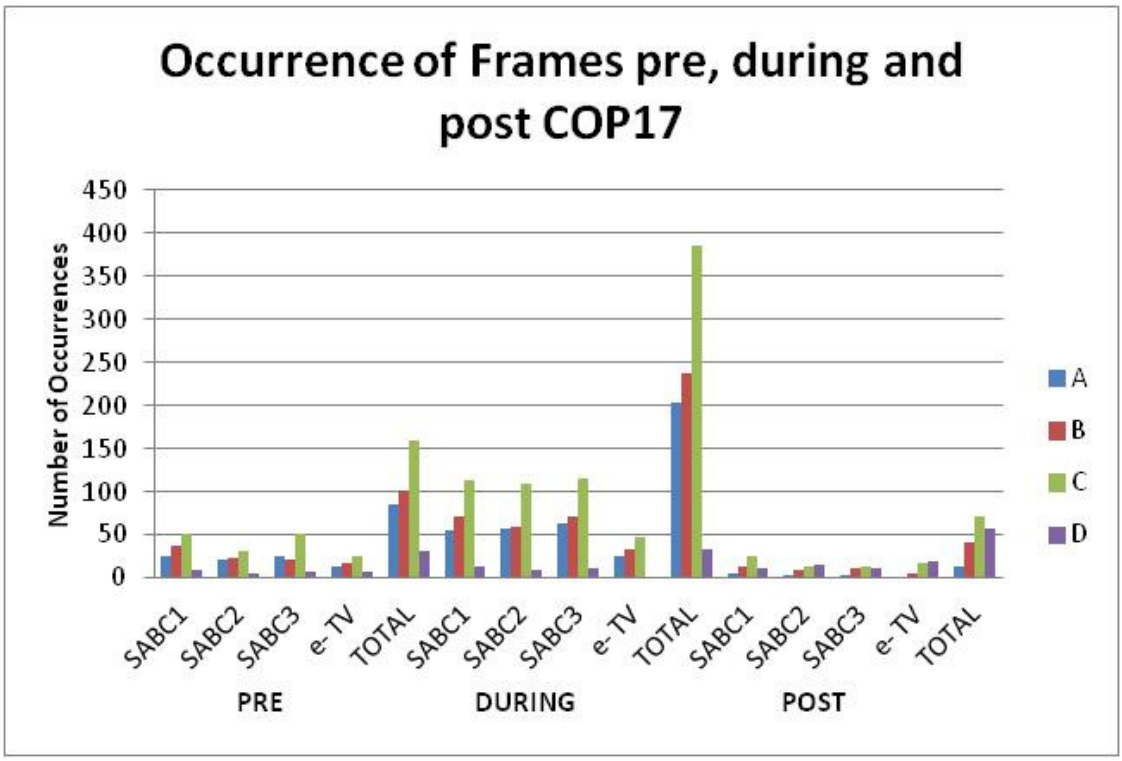
Percentage occurrence of frames A, B, C and D on all stations post COP17. A: Science, B: Culture/society, C: Political/economic, D: Ecology/meteorology.

Before COP17 the occurences of frames were the same as during COP 17 which could be explained by the fact that information about the coming COP17 event was already important and stories were leading up to it. (Graph 6.) The government was trying to educate the nation (see discussion in qualitative analysis) and political role-players were preparing for the international event.



Graph 6

Occurrence of Frames A,B,C and D pre COP17: A: Science, B: Culture/society, C: Political/economic, D: Ecology/meteorology.



Graph 7:

Occurrence of frames A,B,C and D on all stations before, during and post COP17 (combination of Graphs 2,3 and 4). A: Science, B: Culture/society, C: Political/economic, D: Ecology/meteorology.

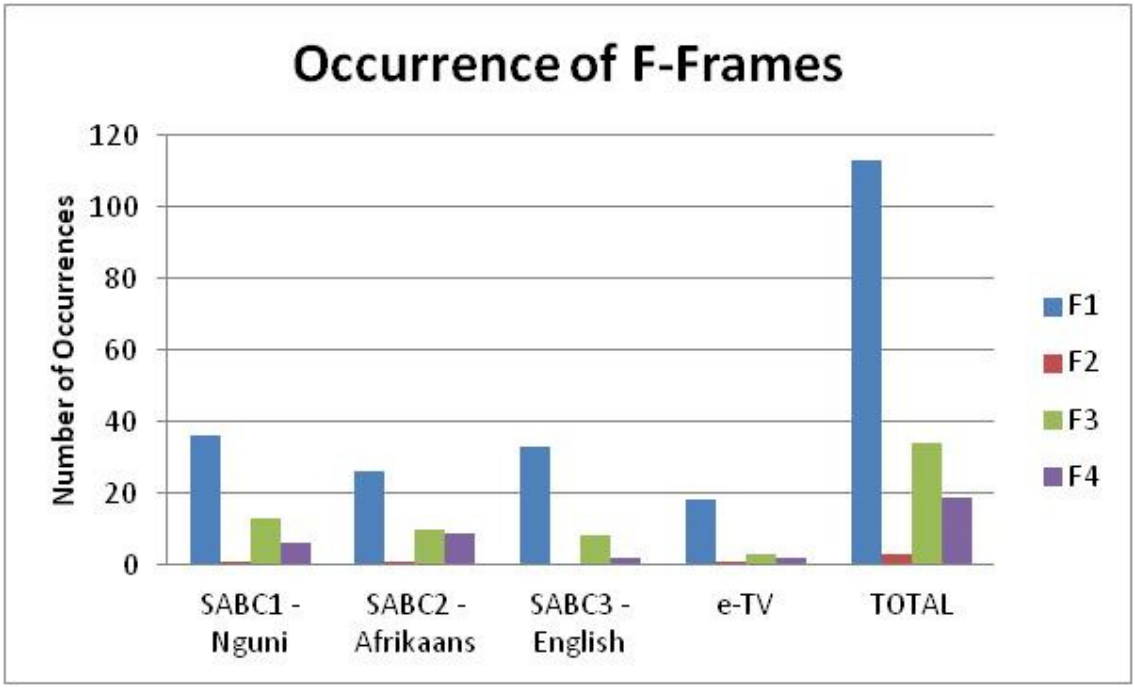
Hypothesis 1: The political/economic frame will dominate on all stations during COP17 but the ecological frame will be highest on at least some stations in the weeks after COP17 has therefore been confirmed.

(b) Hypothesis 2:

"The ethics frame will be dominated by the secondary inequality/justice frame while the religion frame will be of minimal importance."

This hypothesis was also confirmed. The morality frame was left out in a recent European study given its low prevalence in France and Holland (Dirikx and Gelders 2011). In the present South African study, coding questions were more specific in order to find out why the morality frame was almost non-existent in the European study. Four different coding questions were designed to determine the morality (in this study called the "ethics")

frame. It either referred to (F1) inequality/justice , (F2) religion, (F3) sharing/the philosophy of ubuntu-ism or (F4) morality simply meant "if it's green it's good" . The occurrence of F1 across all channels was dominant (inequality, justice). Frame F2 (religion) barely existed — in agreement with the European study. The only reference to religion was during a petition by religious leaders asking governments to take climate change seriously (SABC 1, 27 November). The secondary frame F3 (sharing and ubuntu-ism) was more dominant on SABC 1 (Nguni) and SABC3 (English) news. On SABC2 (Afrikaans) and e.tv it was as low as the "if it's green it's good" frame. Although ubuntu-ism was mentioned by the government when it was calling on South Africans to wear green and display the spirit of Ubuntu in environmentalism (story 14 on SABC 3 2011-11-24) and the word "ubuntu" was mentioned in connection with climate change and global responsibility on several occasions, it is not yet a dominant frame. Social justice is still more important for those who set the climate change agenda.



Graph 8.

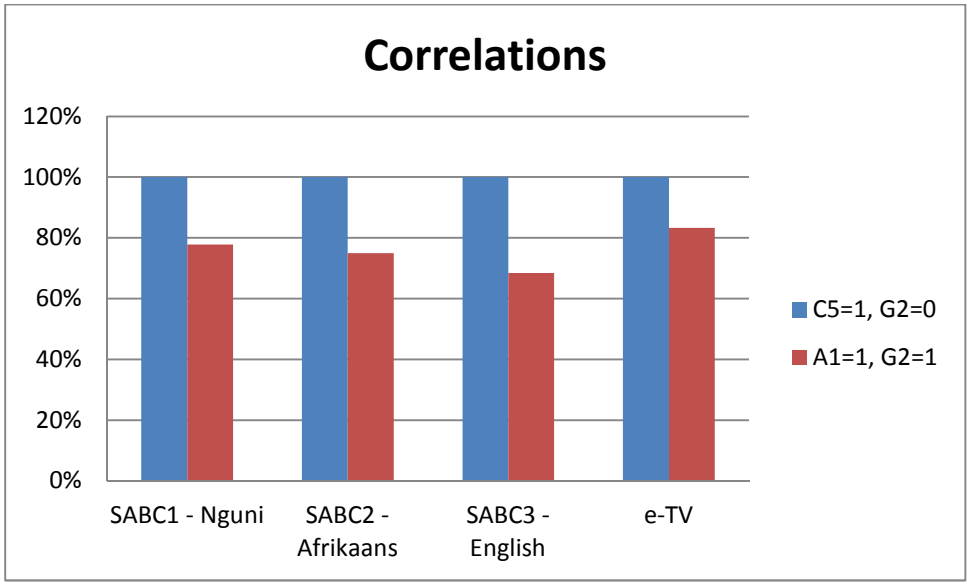
Occurrence of F-frames. F1 Inequality and justice, F2 Religion, F3 Ubuntuism and F4 If it's green it's good.

(c) Hypothesis 3:

"When activists set the agenda, the motivational frame will hardly feature."

This hypothesis was also confirmed. In the literature review, effects studies that empirically show the importance of the motivational frame to get audiences involved were discussed. There is a strong negative correlation between stories where climate activists were setting the agenda and the motivational frame. Where climate activists were setting the agenda, the motivational content of the story was zero. This happened in 100% of cases. In other words where C5=1 (Does an activist set the agenda?) then G2 =0 (Is there any word/visual that empowers the audience or make them feel positive about coping with climate change?). These findings might indicate that activism could be counter-productive and de-motivating or that the media routinely portray activists as extremists. Climate activists have a hard time trying to convince politicians, business people, educational institutions and the media (perhaps the toughest to convince) that climate change is happening and needs to be addressed. In the process they might use extreme measures that do not always empower or motivate ordinary people.

Contrary to this, when the story is about a renewable energy project, the motivational frame was shown to be high. In other words if A1 =1 (Yes to "Is there any reference to renewable technologies or funding for it?)" then there was a strong correlation with G2=1 (Yes to "Is there any word or visual that empowers the audience?") In 76% of the cases where renewable technology was mentioned the audience was empowered to feel they can play a part in mitigating climate change. Examples are the use of a solar cooker, ways to re-use recycled material and solar water heaters. (See Excel files in the additional material CD section for more detailed information.)



Graph 9

Blue column If a climate activist sets the agenda (C5=1) the motivational frame is zero.(G2) in 100% of cases. Red column: When renewable energy sets the agenda (A1=1) then the motivational frame is high in a high percentage of cases.(G2=1).

(d) Hypothesis 4:

"Climate change scepticism will receive little attention on South African television."

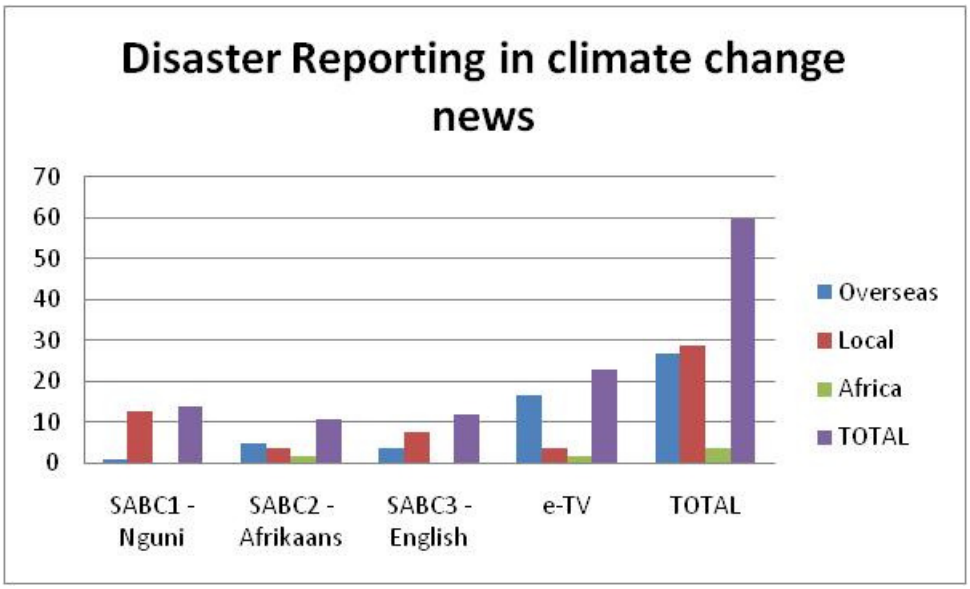
This hypothesis was also confirmed. Only one climate change scepticism story appeared in English (n=83), one in Afrikaans (n=76) one in Nguni (n=85) and nothing on e.tv. The story covered was the same one on all three stations. Only on SABC 1 and 3 was the sceptic, Lord Monckton, given air time (one sentence). He said, "It is not in danger, it will warm a little, perhaps by 1 celsius degree over the next 100 years and that is all" (SABC1 Story 54, 6 December 2011). On SABC 2 a voice-over by a journalist accompanied the visuals. The journalist used the word "claim" three times: (They "claim" that global warming is just a ploy to intimidate people. They "claim" that email messages from the UN that were leaked to them confirms that there is no crisis. They "claim" more revelations will follow tomorrow. (SABC2 story 46, 6 December 2011). On SABC1 this one story was quickly followed by reports of famine in Africa, said to be caused by climate change, which

seemed intended as a refutation of the sceptical claims. In visual footage of the story on SABC2 (story 46 of 6 December), young people made fun of the sceptics by covering up their banners.

(e) Hypothesis 5:

"Local (South African and African) stories will be more prominent on public television than on private television."

This hypothesis was also confirmed. Most of e.tv's natural disasters stories happened overseas. From n=23: overseas=17, local=4 and Africa=2. SABC 1 (isiXhosa and isiZulu) only reported on one overseas disaster story out of the total of 14. Thirteen disaster stories were local and none from the rest of Africa. SABC 2 (Afrikaans) reported on five overseas disaster stories out of the total of 11. Four were local and two happened in the rest of Africa. SABC 3 reported on four overseas disaster stories out of a total of 12. Eight stories were local and none from the rest of Africa. From the ANC Communication policy document of March 2012, dicussed in the literature review, it became clear that there is pressure on the SABC to provide more local and African content. The high local content on SABC channels is therefore not a surprising finding. The highest number of disaster stories was shown on e.tv. Typical disaster stories on e.tv were titled Smog in China, Flooding in Brazil, Cyclone in Australia, Earthquake in Christchurch, Floods in New Zealand and on SABC 1 the typical disaster stories were Flooding in Msinga, Typhoon in Kwa Zulu Natal, Storm in the Eastern Cape, Drought in Setlagole, Ficksburg storm and Climate change blamed for floods in Natal. (See coding sheets in appendix 4). The data might suggest that English speaking South Africans care more about fires in Australia or floods in New Zealand than about climate disasters in South Africa.



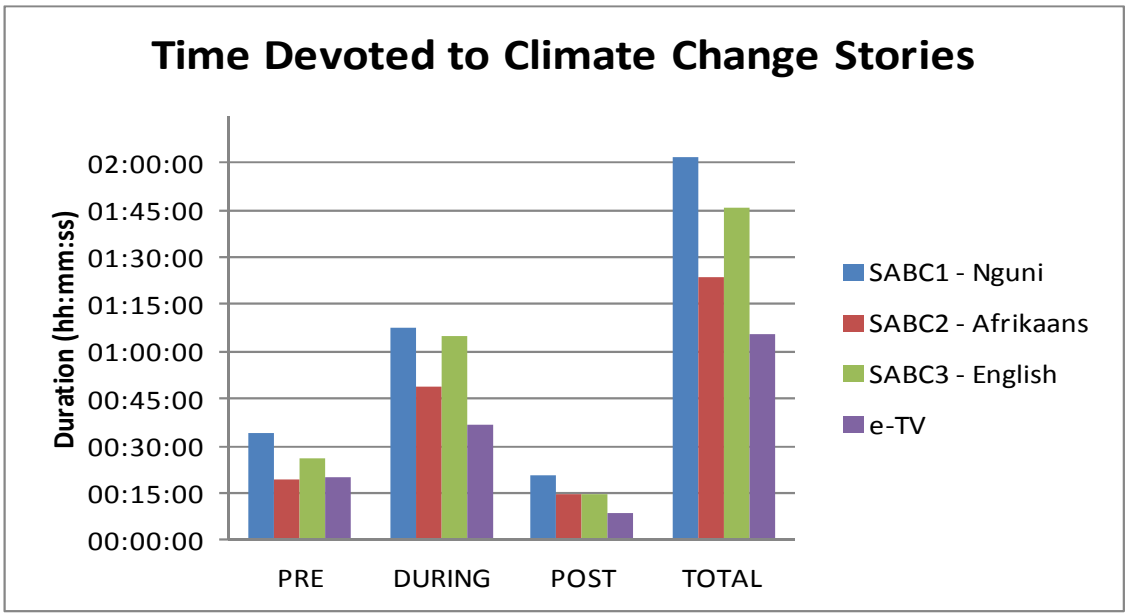
Graph 10:

Amount of stories that are local, overseas or in Africa on all 4 stations.

(f) Hypothesis 6:

"A political event like COP17 will be covered more thoroughly by public television stations like the SABC than by the private e.tv."

This hypothesis has also been confirmed. SABC1 spent the most time on climate change stories and e.tv the least. It is difficult to establish whether some languages take up more time to say the same things. Even if this were the case, SABC 1 (isiXhosa) and SABC 3 (English) spent more time on climate change communication than SABC 2 (Afrikaans). It is clear that the private broadcaster e.tv spent significantly less time on climate change news than the any of the three public stations, even when compared to the other English news channel SABC3. Graph 14 shows the ratio of climate news to total news time.



Graph 11:

Time devoted to climate change stories

(g) Hypothesis 7:

"Coverage after COP17 will be higher than before, since consciousness and interest in climate change will have been aroused."

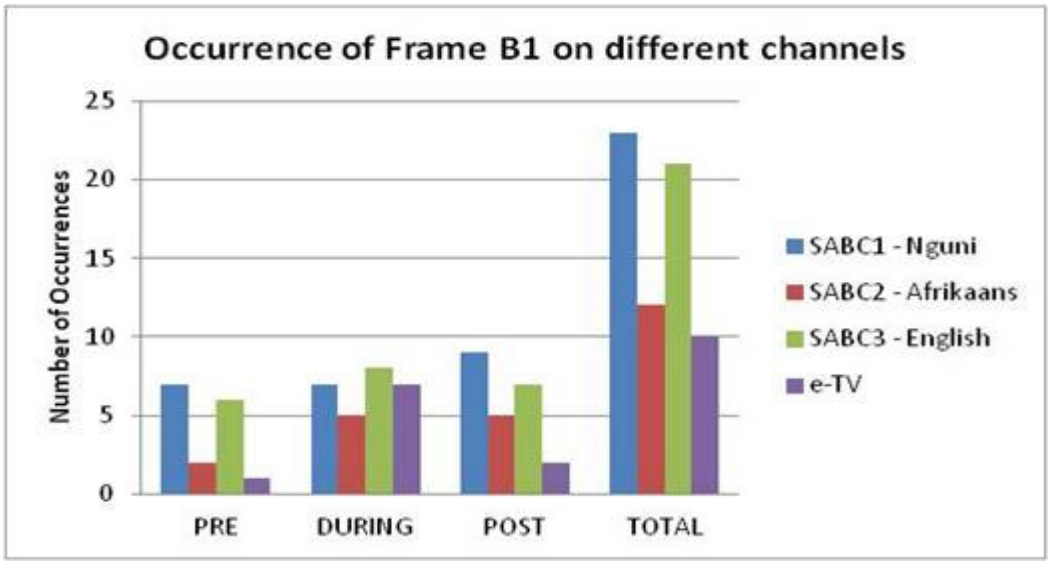
This is the only hypothesis that has not been confirmed. From graph 11 it is obvious that climate change coverage in the news was lower after COP17 than it was before. The following could be reasons for this: the excitement of a huge international conference like COP17 resulted in copious footage of preparations for COP17, especially by the SABC, who was responsible for distributing all television news internationally. It is also possible that the government wanted its citizens to seem informed about climate change when international delegates arrive in South Africa and therefore used its "mouthpiece" to prepare the country for COP17. This might not be positive for press freedom in South Africa, but is is still positive for climate change communication. Another reason might be that climate change fatigue has set in. After having been bombarded with climate change news for nearly four weeks, the audience and television news producers needed a break. It might have been more

useful to measure climate change coverage a couple of months later to determine whether consciousness and interest have been aroused.

4.2 Discussion of differences in public versus private television broadcasting:

(a) Ocurrence of secondary frame B1 (Power to the people) on public vs private TV

From the ANC policy document, discussed in the literature review it is clear that local opinions – opinions of the people are important for the public broadcaster. The following graph looks at the occurrence of secondary frame B1 (Power to the people) and asks the question, "Is an ordinary citizen telling the story?" In total, frame B1 occurred 23 times on SABC1, 21 times on SABC3, 12 times on SABC2 and 10 times on e.tv. The high occurrence of frame B1 on SABC 1 and 3 could be understood if one expects a correlation between policy and practice. The relatively low occurrence of frame B1 on SABC2 is more difficult to understand. It might be a cultural thing – that Afrikaans-speaking people prefer to listen to people they feel they can look up to in stead of "ordinary people". It would be unrealistic to draw conclusions from lack of "ordinary citizen" stories during COP17 since it was a highly political event. It is more important to look at the total occurrence of the B1 frame.

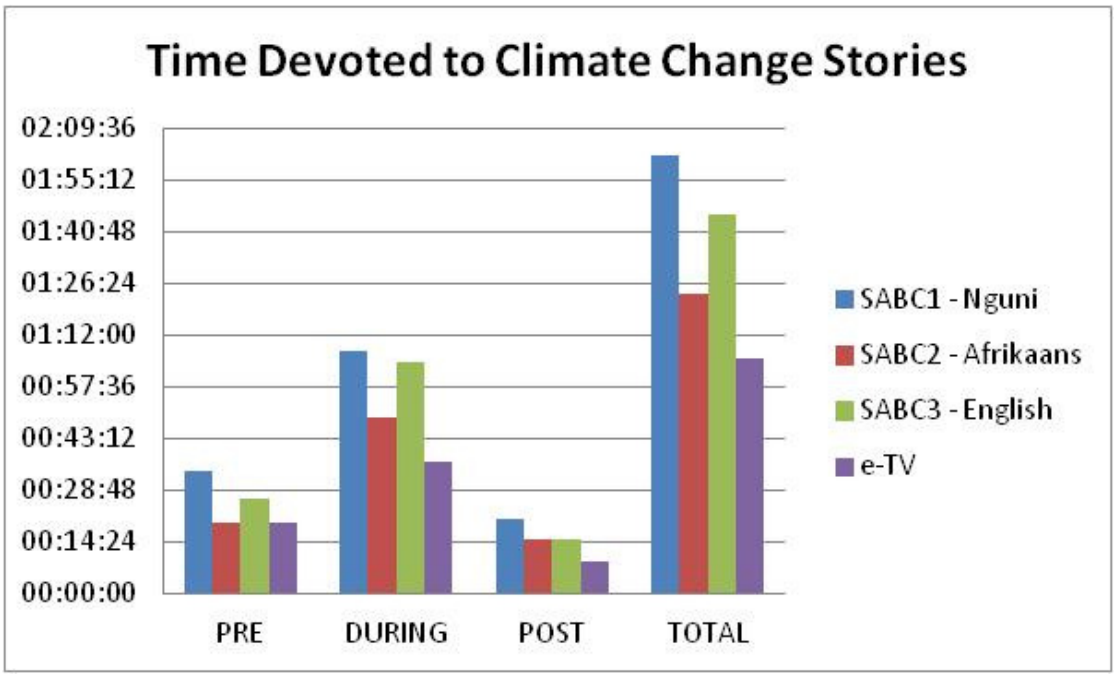


Graph 12:

Number of stories told by ordinary citizens.

(b) Time devoted to climate change stories.

Every 30 minute newscast on the four television stations included sport, economic news and weather reports. Advertising time during these news broadcasts was subtracted from the total time. On SABC 1 SABC2 and SABC3 this amounted to about six minutes advertising time and on e.tv, seven minutes. On SABC 1 (isiXhosa and isiZulu news) 85 climate change stories were coded, and these stories took up a total time of 2:04: 11 in the 24 minute x 62 news broadcasts. On SABC 2 (Afrikaans news) 76 stories were coded, taking up 1:29:29 of the total time. On SABC 3 (English news) 83 stories were coded, taking up 1:34:17 of the total time and on e.tv 51 stories were coded, taking up 1:05:39 of the total time. (See graph 13 for time spent on climate change stories on the four stations before, during and after COP17.)



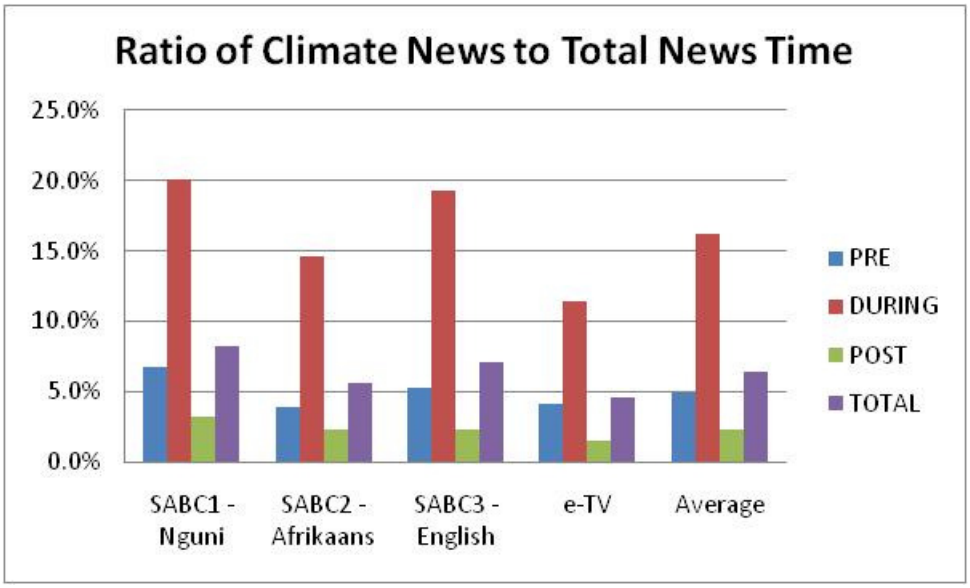
Graph 13:

Time devoted to climate change stories

As already discussed in Hypothesis 6 and illustrated in graph 13, it is clear that SABC 1 spent most time on climate change stories and e.tv the least. It is difficult to establish whether some languages take up more time to say the same things. Even if this is the case, SABC 1 (isiXhosa) and SABC 3 (English) spent more time on climate change communication than SABC 2 (Afrikaans). The private broadcaster e.tv spent significantly less time on climate change news than any of the three channels of the public broadcaster, also when compared to the other English news channel SABC3.

(c) Ratio of climate change news so total news time.

In the two weeks before COP17 there was very little climate change news. The stories from 7 – 21 November on SABC2 amounted to eight and on e.tv to six, which is why it seems as if e.tv and SABC2 have almost the same ratio of climate change news. During COP17 this changes dramatically and becomes more obvious that e.tv lagged behind in their ratio of climate news to total news time. After COP17 there is also a marked difference, since the SABC concentrated on local weather events and went into detail interviewing ordinary people, which e.tv did not do since they mostly covered foreign extreme weather events.

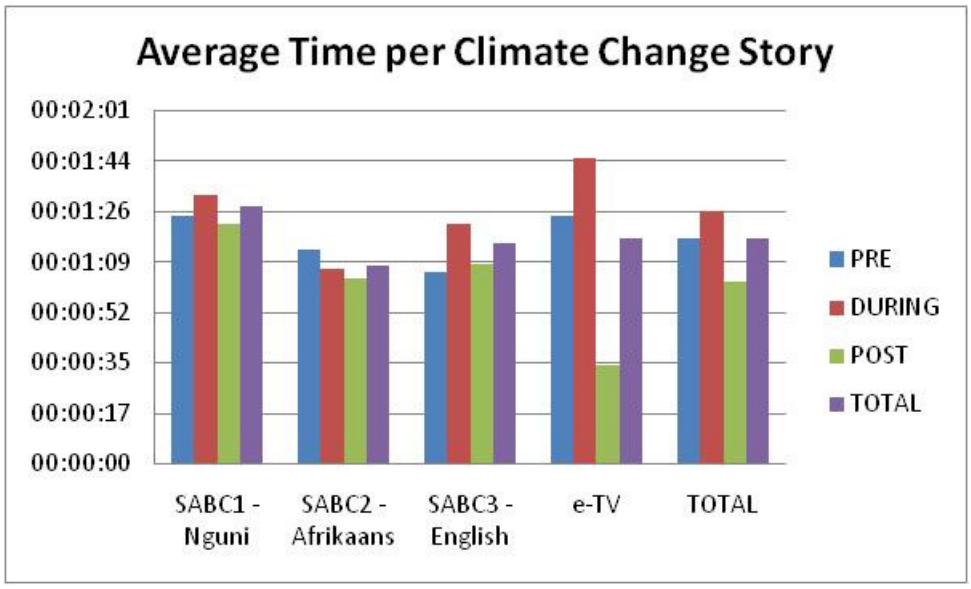


Graph 14:

Ratio of climate change news to total news time

(d) Depth of stories.

What is the average time spent on a story across the 4 channels? Although e.tv had the fewest climate change stories, they seem to spend more time on each one of them, except after COP17 when most of their stories were about extreme weather events which happened overseas. Although SABC 1 (Nguni news) also spent most time on extreme weather events after COP17, they focused on indigenous events and interviewed victims in detail, thus spending more time on their disaster stories.



Graph 15:

Depth: Average time spent on each story

In his study "The future of public service broadcasting in South Africa: the need to return to basic principles" in *Communicatio* Volume 29 (1 & 2) 2003 P.J. Fourie asks for future studies to examine how distinct the SABC is from other broadcasters in South Africa. This section has tried to point out some of the differences between SABC and the private e.tv.

Chapter 5: Presentation and Findings: Qualitative analysis of discourse and visual material

5.1 Educational content on the private versus public broadcaster.

Specific efforts to educate the audience on COP17 and climate change were made on all television stations, even the private broadcaster e.tv. The following inserts were used at least once during advertising time on e.tv news as well as SABC stations:

> "My name is Maite Nkoana-Mashabane, Minister of International Relations and Cooperation. I'm the incoming president of COP17. Climate change is increasing the average temperatures and extreme changes in weather patterns that can lead to severe natural disasters. If climate change is not addressed urgently, its impact will change our country, our continent and indeed the world as we know it. From the 28th November to the 9th of December 2011, please join me in welcoming the world to the city of Durban. SA is ready, working together, saving tomorrow today."

The following insert featuring Edna Molewa, minister of Water and Environmental affairs, also appeared on SABC1 during advertising time in a newscast:

> "Some think it is impossible to do and yet, if each one of us takes action, the impossible becomes reality. (Frame with pictures of renewable ideas.) It's simply about doing small things more often. Climate change affects all of us. But together, we can make a difference. (Picture of tree being cut, then the action is reversed so that the tree is again unharmed.) "Because sometimes reversing the situation is the only way to go forward."

Also on SABC1, the following insert appeared just before the newscast started on 25 November, three days before the start of COP17, delivered by president Zuma:

> "We are here in Durban to attend the 17th United Nations Climate change Conference which is known in short as COP17. The gathering also serves as the seventh meeting of the parties to the Kyoto protocol, in short known as CMP7. This is a very important meeting. Climate change is already having a serious impact on Africa and many parts of the world. Changing weather patterns are affecting the environment, health, natural resources, shelter, infrastructure such as roads, bridges and dams and even food production. Negotiators will discuss how to reduce greenhouse gas emissions to secure a relatively safe future. In the African context, they must help us strike a balance between insuring that climate change does not reach dangerous levels on the one hand and the need to grow our economies to eradicate poverty on the other. Negotiators must also discuss how countries can survive the impact of climate change. As the host country and president of the conference, South Africa will take forward the good work done in Mexico at COP16. We will approach the talks in a spirit of open consultation with all parties and stakeholders and insure that the discussions stay on track. We look forward to a successful conference in Durban and

> wish all our guests a wonderful stay in our beautiful country. Working together, we can save tomorrow today. I thank you."

It is therefore obvious that an effort was made by the government to educate the television audience about COP17 and climate change in newscasts before and during COP17 by buying airtime also from e.tv. In the two weeks after COP17 there were no educational inserts on climate change during the news bulletins. As mentioned before, the reason for this might be that the government wanted the country to seem educated about climate change when international delegates arrive. Or they seriously want their citizens to take note of the climate change threat. Although these advertisements were not counted as part of the climate change news, it occupies a grey zone and affects general awareness.

5.2 The links between frames (primary, secondary and additional frames)

(a) Extreme weather events and human action, using cause and impact visuals.

Depictions of the globe in the context of climate change news, as a symbolic image of global ecological citizenship, have become prominent in climate change news on television (Cottle and Lester 2009). This is demonstrated in the COP17 logo of the globe and a tree growing from it, prominently shown on two of the three SABC stations as soon as the newsreader switches to climate change news. This logo was used from 11 November on SABC 2 until the end of COP17 and on SABC1 from 13 November until the end of COP 17. Why was it not used on SABC3? Perhaps to make a statement that SABC channels are not just copies of each other. On e.tv a different logo was used to introduce the COP17 sections of each newscast: A globe shaped with the words, "COP17 Climate Change Conference" is shown with heavy traffic inside this globe. A wind turbine moves over it. This turns into a hurricane, then into a rural woman watching her pot cooking over a fire while she is feeding twigs to the fire. This turns into a flood of water and ends in a smaller globe with pictures of

an ice bear on a broken-off slab of ice, wind turbines, polluting factories, drought and a whale. These seven second images suggest causality and could be powerful in connecting extreme weather events and pollution to climate change in the minds of the audience.

On SABC 2 the following insert appeared during advertising time in the news bulletin of 30 November 2011: "More climate change means more floods, more climate change means less food, more climate change means less water, more climate change means more storm surges, unless we play our part and change the way we live. Climate action now. Save the future." Visuals show a flooded town with the words "More climate change means more floods." It shows a dried-up maize fields, with the words, "More climate change means less food" Then there are dried-up dams with the words "More climate change means less water". Water overflows a dam wall, accompanied by the words: "More climate change means more storm surges, unless we play our part." The following informational website was given: www.climateaction.org.za (Twitter and Facebook). The logo of "Environmental Affairs RSA" appeared with the information. Following this educational advertisement, was another one completely unrelated to climate change. It seemed as if the government wanted to build associations between extreme weather events like droughts, floods, food shortages and climate change.

"Relations of definitions" is how Cottle and Lester (2009) define the strategic play of different views and voices, identities and interests. Images of coal-fired power stations and traffic on highways are routinely used in stock visuals during COP17 climate change news to make the connections between an extreme weather event and anthropogenic climate change. Sometimes even steam emissions from cooling towers served as reinforcement of this relationship. Two examples (there are copious examples) are visuals of flooding and pollution in story 17 called "Opening of COP17"on SABC2 (28 November 2011) and visuals of pollution during story 27 (Continued dependency on oil) on SABC2 (1 December 2011).

There is no doubt that images of extreme weather events and human action were connected to climate change through visual messages during news bulletins on all television stations during COP 17. (See coding sheets in appendix 4).

(b) Links between news image and source – the framing of the politician, the activist and the scientist.

How were politicians, scientists and activists/NGO representatives depicted on South African television? Scientists were shown either at their desks researching climate change problems on computers, or in the field or in laboratories "bearing witness" to the problem and sending a message of "you can trust us". On 28 November SABC2 ran a story on the Atmospheric Watch Station at Cape Point. Scientist Bhwoodien Parker showed the journalist the graphs and figures on his computer, explaining what is happening to the atmosphere. He is shown to be in the field, in his laboratory, bearing witness. He also empowers the audience by telling them how they could personally play a role in mitigating climate change. Politicians are either shown addressing crowds (in the Durban International Convention Centre during COP17) or rolling up their sleeves, being "one of us." On 19 November, SABC1 showed president Zuma toiling in the soil with his spade, demonstrating to rural people how to plant their own crops. On 26 November, SABC 3 shows Christiana Figuerez of the United Nations, spade in hand, planting trees during a "Rebuilding our Forests" project. Kgalema Motlanthe is shown on 27 November on all four televisions stations, in a "Walk the Future" project, walking with the crowd along the Durban beach in a campaign to build awareness of rising water levels. On 3 December, Maite Nkoana-Mashabane, South Africa's Minister of International Relations and Cooperation**,** tells a crowd outside the Convention Centre "We will save the world" and then shouts "Amandla" (power) which was answered by the crowd with "Awethu" (us) which means "power to the people." During the COP17 debates in the Convention Centre, the camera often zoomed back to show

photographers and other television cameras focusing on the politician on stage, reinforcing their centrality in the global climate change crisis. The visual message seemed to be "we are one of you but we are also leading you through the crisis." In contrast with the politicians, activists and NGO representatives are always shown on the fringes, often on the lawn under the trees outside the Durban Convention Centre. This distances them visually from the core of political debates and solutions to the global crisis. They are shown shouting slogans with the crowd or handing out pamphlets. Statistics in the quantitative analysis section show that their messages are mostly not represented as empowering or inspiring positive action.

In contrast, scientific innovation stories were mostly inspiring and empowering and there were many of them during the COP17 newscasts. Especially, e.tv ran stories on "Extreme recycling". On 1 Dec there was a story about a whole dormitory built from recycled material by an entrepreneur from Gauteng. Then they had a story about an entrepreneur from Nairobi who fuels a power generator using biodegradable waste – anything from cow dung to weeds. The biodegradable waste ferments and naturally produces gas that fuels the power generator. The entrepreneur explained that it could be applicable everywhere – in slums, apartment blocks etc. On 4 December they ran a feature on artist Mbongheni Buthelezi who recycles waste from rubbish dumps and with a welding torch, creates pieces of art that are exhibited in the Johannesburg Art Gallery and sold by his international agents across Europe. We saw Mbongeni arriving with his expensive car at his townhouse where more expensive cars are parked, visually confirming that he "turns rubbish into hard cash."

Ordinary people were often seen to do something to mitigate climate change. SABC 3 ran a story on 8 November about a "Green cyclists' tour" to raise awareness of climate change in small communities and towns. Cyclists (including a 70-year old rider) were interviewed.

It therefore seems that the agents of climate change (politician, activist and scientist) are framed in very specific ways that link the news image and the source. Ordinary people are often depicted as heroes who try to mitigate climate change in their own small way.

(c) Links between oil, cars and climate change.

Despite many stories showing off renewable initiatives being implemented or opened by government, it was also emphasized that South Africa will continue to use oil (because of its abundant supply of coal and Sasol's profitable coal-to-oil conversion). President Zuma said during one of his COP17 speeches, "Renewable energy still costs more than non-renewable energy, which in SA is largely supplied by cheap, abundant coal supplies." On 13 and 14 November SABC 3 ran stories on SA's Abu Dhabi oil connection and an auto plant agreement signed in Abu Dhabi (13 and 14 November SABC 3). These stories were weaved in among stories of Greenpeace protests against ESKOM and SASOL where posters read "Leave the oil in the soil" (3 Dec SABC 3) or "Optimised integration of renewable energy now" (26 November SABC 1). A direct connection between driving cars that use petrol and climate change was only hinted at in stock visuals of traffic on highways, except for one story on the electric Leaf and two on the South African electric car, the Joule on SABC 2 (7 Dec) and SABC 3 (7 Dec). Naledi Pandor, Minister of Science and Technology, is shown driving in one of the Joules from the ICC exhibitions ground onto the highway. Minister Pandor remarks afterwards, "We are hoping that there will soon be an electric vehicle paper on where we are taking the electric energy industry in SA. So we hope that will be the precursor to the decision on what we will do in respect to the Joule". On SABC 1 there is a short visual of the Joule at the ICC exhibition grounds while President Zuma inspects the exhibition , but no mention of what it was (electric, local or otherwise). The Joule electric car project has since been closed down because of lack of government support.

5.3 Emotionally anchoring images of hope and guilt.

Birgitta Höijer examined the emotionally anchoring images of fear, hope, guilt, compassion and nostalgia in a study of a Swedish tabloid newspaper and public service television news on climate change, discussed in the literature review. Höijer explains "anchoring" as follows: "Climate change is emotionally objectified, that is, turned into something physical and concrete" (Höijer 2010, 722). In this study emotionally anchoring images of fear have been found in various cases, for example footage of rising sea levels (28 November SABC 1 during opening of COP17) and people fleeing floods and earthquakes (e.tv 23 Dec shows images of terrified people during the Christchurch earthquake, a bus submerged in water and flooded houses during typhoon Washi in the Philippines). David Cadman, deputy mayor of Vancouver, Canada says during the opening of COP17 on SABC 3 (28 November) "The glaciers of the world are melting. And those glaciers contain 80% of this planet's fresh water. And we're seeing the impacts on the globe already from a climatic change perspective, whether it's the floods in Bangkok or the floods in Northern Nigeria, in Northern Pakistan… Everywhere you go, climate is affecting local people in their own places."

We see emotionally anchoring images of hope, on the one hand through individual micro-action (Höijer 2010), for example the interview with cyclist Matema Thosago about cycling with his climate change message through the country (25 November, SABC 1) and the "dew maker man" story on 29 November (SABC 1,2 and 3), and on the other hand through examples of organizations giving hope for a better world. On SABC 1, 2 December, we see people walking barefoot in the dust from their rondavel village to the new solar-powered water hole provided by the government, where their donkeys are drinking thirstily. The government representative mentions how "timely" this opening of the solar-powered water hole is, since this happens during COP17. Collins Chabane (Minister in the

Presidency): “It is very good that we are doing it, to unveiling this thing at the time when this COP17 is taking place where they talk about eh… sustainable energy eh… It is very sustainable. The community used to spend a lot of money, sometimes they can’t get the money to buy the diesel. ”

Examples of images of emotional anchoring of collective guilt are seen when young people on Durban’s North Beach bury their heads in the sand in a symbolic act of showing how countries deny the seriousness of anthropogenic climate change as well as their responsibilities. Flags of various “guilty” countries are displayed next to the young people on the beach. (2 Dec, SABC 2). Emotional anchoring of individual guilt is reflected in posters like, “Have you sold your grandchildren for a 4X4?” during a protest march (SABC 1, 3 December). Emotional anchoring of compassion often uses images of animals, women or children. In a story on climate change refugees, emaciated children are shown on SABC 1 (1 December) and the face of a child on a poster reading “Climate change kills me” is shown on SABC 2, (3 December) during a “global protestors unite” story. A rural farmer and his wife struggle to survive because climate change is ruining their crops. They are shown working together in the field on a SABC 1 story on 30 November. The emotional anchoring of nostalgia takes place during the “Walk the Future” story on 27 November (SABC 1) where Kgalema Motlanthe walks with a crowd along the Durban coast and global climate change as existential threat is emphasized by the journalist telling the audience that walking like this will not be possible in future, due to rising sea levels. Human life will not exist in future in the ways we are used to. Beautiful visuals of wild animals and their babies in the Isimangaliso Wetlands Park (SABC 1, 5 December) are tempered by feelings of nostalgia as the journalist warns that this might not be available to future generations since these animals will the threatened by extinction if the wetlands are not protected.

African farmers already experience climate change first hand. On 30 November 2011, SABC 1 ran a story of rural farmers struggling with climate change. The farmer and his wife are shown working in the field and he shows the audience what his crop looks like. He explains how the weather has started to change and he never knows when it is going to rain anymore. On 22 December SABC 2 ran a story on farmers struggling with drought in the North. On 29 November (story 30) SABC 3 accused the local tourism department of Durban of not doing its job while publishing booklets in which it pretends to take pride in the protection of its natural environment and bio-diversity. The news reader begins the story by saying that the SABC has "uncovered a mound of debris" on a Durban beach which is a contradiction in terms since it is the city hosting an international climate change conference. The journalist Njanji Chauke interviews Gogo Sothile, a healer and soothsayer who says the beach is supposed to be holy, sacred and clean and that she brings people there to cleanse them – the beach is practically her workplace and she says she is saddened by the changes she sees in nature. The same personal story comes from fisherman Nelson Surajlall.

There are many other stories that localize the global crisis of climate change through the imagery – "this flow between the domestic and threatened environment reinforces the connection between people's lives and nature" (Cottle and Lester 2009, 927). The many floods and storms in KwaZulu Natal and Limpopo during the COP17 event were mostly covered in detail on the SABC stations. Images of destroyed schools are followed by interviews with principal and learners. A child has been drowned in the Msinga flood and images of toys or photographs are shown and the uncle, mother or grandmother interviewed. Private loss is shown to us, the emotionally anchoring image of guilt touches domestic spaces and viewers are invited to care.

5.4 The role of banners, posters and maps.

Maps used in climate change news on television turn locations into more than far-away threatened places that are distant and irrelevant. Maps were often used, especially on SABC 3, to explain where in South Africa a specific natural disaster took place. Graphs were also used by SABC 3 to explain policy outcomes of COP17 to the audience. On 11 Dec, just after the end of COP17, SABC 2 shows a map of Africa symbolically set alight around its equator by climate change activists in a story that was coded "Not everyone happy with pact".

Emotive banners and posters used during marches by activists visually contributed to show their anger and frustration. The camera regularly zoomed in on these emotive posters while the newsreader comments objectively on the march or protest. Examples are a banner on SABC 1 during a 3 December protest reading, "Have you sold your grandchildren for a 4X4?" and on SABC 3 during a 9 December protest, "Don't kill Africa", "Leave the oil in the soil" (3 December on SABC 3 – "Global activists unite")

5.5 Does the SABC express a sense of national purpose, identity and pride?

P.J Fourie asks in his 2003 study, "Does the SABC adhere to the public interest principle and as such, express a sense of national purpose, identity and pride?" This study finds that SABC news coverage of COP17 definitely expressed a sense of national purpose, identity and pride in showing stories of local renewable projects, politicians taking part in climate change marches with the public, Maite-Nkoana Mashabane telling a crowd outside the Convention Centre on 3 December "We will save the world" and then shouting "Amandla" which was answered by the crowd with "Awethu" and the government calling on South Africans to wear green and display the spirit of Ubuntu in environmentalism (story 14 on SABC 3 2011-11-24). The word "ubuntu" was mentioned in connection with climate change and global responsibility on several occasions. On 1 December SABC 1 ran the

following story on its newscast (it was not on any of the other channels): a beehive shaped hut nine metres high and covered with lush vegetation was unveiled at at the launch of the "Beehive Project" at the Botanical Gardens in Durban. Trevor Manuel, South African Minister in the Presidency, said, "This beehive is about what we are capable of being. And what we need to be capable of, is living at one with our environment." This very strong and beautiful image of a beehive (symbol of all working together for the same purpose) seemed to be a particularly apt image for "environmental ubuntuism" On 11 December the word "ubuntu" was used on e.tv when a journalist commented on minister Maite-Nkoana Mashabane's talk: "A happy ending for what many people thought was doomed from the start. It will go down in history as the longest COP. In an overtime finale, delegates were ordered to end the bickering in the spirit of Ubuntu." On SABC 3 the word "ubuntu" was also used on 24 November: "The government called on South Africans to wear green and display the spirit of Ubuntu in environmentalism." This is an interesting image for global environmental citizenship and could be explored in future studies.

Chapter 6: Conclusions

The following hypotheses were confirmed:

H1: The political/economic frame will dominate on all stations during COP17 but the ecological frame will be highest on at least some stations in the weeks after COP17.

H2: The ethics frame will be dominated by the secondary inequality/justice frame while the religion frame will be of minimal importance.

H3: When activists set the agenda, the motivational frame will hardly feature.

H4: Climate change scepticism will receive little attention on South African television.

H5: Local (South African and African) stories will be more prominent on public television than on private television.

H6: A political event like COP17, will be covered more thoroughly by public television stations like the SABC than by the private e.tv.

One was not confirmed. H7: Coverage after COP17 will be higher than before, since consciousness and interest in climate change will have been aroused. Coverage after COP17 was in fact lower, probably due to climate change fatigue. It was higher before COP17 since there was a lot of excitement building up in anticipation of the big international conference.

The public broadcaster spent more time interviewing ordinary people than the private broadcaster – frame B1 (power to the people) was more dominant on the public than the private broadcaster.

More time was devoted to climate change news on the public than the private broadcaster. Although e.tv had the fewest climate change stories, they seem to spend more time on each one of them, except after COP17 when most of their stories were about extreme weather events that happened overseas.

Specific efforts to educate the audience on COP17 and climate change were made on all television stations, even the private broadcaster e.tv, where the government bought airtime to run educational inserts during advertising time. The reason for this might be that the government wanted the country to seem educated about climate change when international delegates arrive. Or they seriously want their citizens to take note of the climate change threat.

There is no doubt that images of extreme weather events and human action were connected to climate change through visual messages during news bulletins on all television stations during COP 17.

The agents of climate change (politician, activist and scientist) are framed in very specific ways that link the news image and the source. Ordinary people are often depicted as heroes who try to mitigate climate change in their own small way.

Despite many stories showing off renewable initiatives being implemented or opened by government, it was also emphasized that South Africa will continue to use oil (because of its abundant supply of coal). There were few direct connections between climate change and cars running on petrol in climate change news on television before, during or after COP17.

There are many other stories that localize the global crisis of climate change through the imagery. The emotionally anchoring image of hope and guilt touches domestic spaces and viewers are invited to care.

Maps used in climate change news on television turn locations into more than far-away, threatened places that are distant and irrelevant and emotive banners and posters used during marches by activists visually contributed to show their anger and frustration.

SABC news coverage of COP17 definitely expressed a sense of national purpose, identity and pride in showing stories of local renewable projects.

Chapter 7: Recommendations

Climate change activists and NGO's need to be careful not to undermine their own vision and work and become counter-productive in their effort to raise awareness. More studies exploring the link between motivation and activism need to be undertaken.

The connection between health and climate change is one that needs more exploration – this will become a major issue in the next decade (Prüss-Üstün and Corvalán 2006).

Work by Swedish researchers Berglez, Höijer and Olausson about the individualization and nationalization of the climate issue could be valuable background reading for a study of the African philosophy of ubuntu-ism as frame for global environmental care.

Recommendations to broadcasters: to avoid climate change communication that only reports on natural disasters, a dedicated climate change section should be introduced to television news bulletins and this could take up some of the time dedicated to the sport, weather report or economic indicators section. This should not include extreme weather events, nor should it be in the style of other wildlife programmes. It should still be news – the latest findings or happenings with some explications. Natural disasters should be part of the rest of the news programme. Events like superstorm Sandy will not necessarily boost public engagement in climate change.

This study suggests that the medium of television could play a significant part in telling one of the biggest stories of our times. The strong visual impacts of television place heavy responsibilities on the shoulders of the climate change journalist. Media studies borrowing from different disciplines like psychology, sociology and environmental studies need to be undertaken to guide proper coverage of climate change in a developed and developing society. It is the responsibility of the media to bring climate change news to those who need to hear it most – they need to bring it "right into our huts."

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Appendix 1: Guidelines for transcription and translation

1. Please use the following key words to help you to identify climate change news in your bulletin:

Climate change, global warming, carbon emissions, Kyoto protocol, COP 17, Green Climate Fund, greenhouse gas, carbon tax, green economy, pollution, recycle, UN climate change conference, climate change activists, electricity plant, oil refinery, oil spills, litter, solar powered farm, wind farm, hydropower, nuclear power, wind turbine, green energy, renewable energy, sustainable energy, sustainable lifestyle, Greenpeace, ESKOM, SASOL, PetroSA, Oilwatch, coal exports, oil leases, oil price, natural gas, radio active, natural disasters, flood, storm, earthquake, tsunami, weather patterns, drought, water scarcity, biodegradable waste, oil for food scandal, green hub, fracking, natural gas, bio-fuel.

2. Put the date of your news bulletin and the day of the week as heading. (The first bulletin of 7/11/2011 is on a Monday.)

3. Media Tenor has marked all 61 news bulletins on TV 1 as being in "Zulu". The bulletins are alternatively in Zulu and Xhosa, sometimes 2 in a row in the same language. Make sure you are given the correct bulletins to translate.

4. Please indicate the time frame of every piece of climate change news, so that it is easy to trace.

5. Transcribe first in the original language, then translate into English. Please look at spelling and grammar as this will be kept for future reference.

6. Give an indication of what happens visually during your piece of translation.

7. When inserts are in English, you do not have to transcribe it, as I will do that afterwards. Just give me an indication with a time frame of where the English inserts in your bulletin are.

8. The 6 minutes of advertising, 4-5 minutes of sport, 2-3 minutes of weather and one minute of market news could be fast forwarded or skipped (use mouse to drag timeline) to save time.

9. Start with the 2 weeks during the COP 17 conference in Durban (28 November 2011 to 11 Dec 2011) since those bulletins are the busiest. The three weeks before and after, will be easier to do.

10. Good luck, I hope you find this enjoyable and interesting as well!

Appendix 2: Example of a coding sheet for e.tv

Story:				**Date**:	**T;ime frame**:		**Total time**:
5	**Government's Green Accord**			**17 Nov**	**00:49-02:53**		
	A	B	C	D	E	F	G
1	1	0	1	1	1	0	1
2	0	1	1	0	1	0	1
3	0	1	1		0	0	1
4	1	0	0		0	0	1
5		0	0				
Story:				**Date**:	**Time frame**:		**Total time**:
6	**Impact of cc on children**			**19 Nov**	**04:31-06:16**		
	A	B	C	D	E	F	G
1	0	1	0	0	1	1	1
2	0	1	0	0	1	0	1
3	0	0	1		0	0	1
4	1	1	0		0	0	1
5		1	1				
Story:				**Date**:	**Time frame**:		**Total time**:
7	**COP 17: Can Kyoto be saved?**			**23 Nov**	**12:25 – 14:49**		
	A	B	C	D	E	F	G
1	0	0	1	0	0	1	0
2	0	1	1	0	1	0	0
3	0	0	1		1	0	0
4	1	1	1		1	0	0
5		0	0				
Story:				**Date**:	**Time frame**:		**Total time**:
8	**Street carnival and blue march**			**25 Nov**	**10:40- 12:33**		
	A	B	C	D	E	F	G
1	0	0	0	0	0	1	0
2	0	1	1	1	1	0	1
3	0	0	1		0	0	1
4	1	1	0		0	0	0
5		0	1				

Visuals: S7: Pollution, smog in China, parliament dancing in green clothes. B1: Story 6: 2 learners;
C2: Story 5 Ebrahim Patel; Story 7 Maite N-M, Edna Molewa Story; 8 Mayor of Durban. G 2:S5 seize the moment, enough renewable electricity, create 300 000 new green jobs; S6: challenge, young minds can bring about change, conscious effort; S8: ready, free, safe, hospitality, powerful message

G3: Story 5 working together; Story 6: we must stand up and fight it; S8 message, march.

Appendix 3: Some climate change words in English and IsiZulu.

ENGLISH	ISIZULU
• Climate Change	Ukuguquguquka Kwesimo Sezulu
• Global Warming	Ukufudumala Komkhathi
• Greenhouse gases	Izisi Ezingcolisa Umoya
• Green Economy	Umnotho Ohlanzekile
• Pollution	Ukungcoliseka
• Floods	Izikhukhula
• Oil	U-oyela
• Coal	Amalahle
• Earthquake	Ukuzamazama Komhlaba
• Weather	Isimo Sezulu
• Climate	Isimo Sezulu
• Drought	Ukomisa Kwezulu
• Wind Energy	Amandla Omoya
• Hydropower	Amandla Amanzi
• Natural Gas	Igesi Yemvelo
• Natural Disasters	Izinhlekelele zemvelo
• Gas	Igesi
• Electricity	Ugesi

Note from the translators: Kindly note that we use ‘Isimo Sezulu’ for both Climate and Weather. It is the context that will tell you whether we are talking about weather or climate at a given time.

The following appendices will be provided on CD to save the trees!

Appendix 4: Coding sheets

Appendix 5: Raw material – transcriptions and translations

Appendix 6: Excel files