Adapting communication conventions: Helping vulnerable people in Adelaide learn about climate change and adaptation

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A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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Declaration

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Robert Palmer

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Dedication

I dedicate this thesis to:

…My wife Melissa who agreed to let me take time out of full-time work to investigate how communications can be enhanced to help vulnerable people in Adelaide learn about climate change and adaption. It would not have been possible without her support.

…My son Jack, whose positivity and tea making skills made the thesis journey a much more enjoyable experience.

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Table of contents

Declaration ii
Acknowledgements iii
Dedication iv
Table of contents v
List of Figures viii
List of Tables ix
List of Maps ix
List of Abbreviations x
Abstract xi
Chapter One 1
  Introduction 1
  Rationale for the research 8
  Thesis structure and chapter outlines 12
Chapter Two: Mediatization theory 18
  Introduction 18
  The foundations of mediatization theory 19
  Using institutional mediatization theory 23
Chapter 3: Literature review 33
  Introduction 33
  Mediatization, climate change and adaptation 33
  The public and the public sphere 38
    The public and public sphere in a modern democracy 41
    New media and the public sphere 48
    Online opinion leaders in a modern public sphere 57
  Climate change and communications research 61
    Framing theory and climate change communications 65
    The Information Deficit Model 72
    Uncertainty, risk and disaster management communications 81
  Conclusion 95
Chapter Four: Methodology 98
  Research design 100
  Data collection: Qualitative data 103
    Qualitative sample: Who 104
    Qualitative sample: Size 107
    Qualitative sample: Where 109
  Data collection: Quantitative data 109

Survey Design ... 110
Quantitative sample: Who ... 112
Quantitative sample: Size ... 114
Quantitative sample: Where ... 115
Quantitative sample: When ... 118
Data analysis: Qualitative data ... 119
Data analysis: Quantitative data ... 120
Integration ... 121
Conclusion ... 122
Chapter Five: Survey Results ... 123
Introduction ... 123
The sample ... 124
Knowledge of climate change and adaptation ... 125
Trust in information sources ... 127
Media consumption ... 133
Television ... 133
Radio and newspapers ... 136
Internet and social media consumption ... 139
Communicative preference ... 141
Seasonal influences ... 144
Conclusion ... 145
Chapter Six: Interview Results ... 148
Introduction ... 148
Indicator 1: Behavioural ... 150
Extent of institutional media communication output ... 150
Limited engagement with the professional media ... 151
Social media scepticism ... 157
Non-media communication output ... 160
Indicator 2: Perceptions ... 168
Negative media perceptions ... 169
Limited influence of media to influence change ... 172
Indicator 3: Structure ... 176
Economic and social capital restrictions ... 177
Policy restrictions ... 183
Indicator 4: Mediated forms of communication ... 187
Climate change and adaptation communication research ... 188
Alternative local framing ... 190

Other cultural influencers 196
Conclusion 201
Chapter Seven: Discussion 203
Introduction 203
Dysfunctional media relations 204
Structural and perception reform 209
A counter-public engaging in public spheres 215
Seasonal mediations 217
Conclusion 221
Chapter Eight: An institutional media focused community of practice 224
Introduction 224
Communities of practice and boundary objects 225
Element 1: Organisational membership 231
Element 2: Rotational leadership 238
Element 3: A virtual and face-to-face CoP 241
Conclusion 242
Chapter Nine: Conclusion 244
Research constraints 247
Future research requirements 248
Final Summary 249
References 250
Appendix 1: 278
Publications during candidature 278
Conference presentations during candidature 278
Appendix 2: The survey 279
Appendix 3: Survey sample selection tool 294
Appendix 4: Interview request email 295
Appendix 5: Informed consent form for participant involvement in the semi-structured interviews 296
Appendix 6: Interview guide for semi structured interviews 297
Appendix 7: Ethics Approval 299

List of Figures

Figure 1: A conceptualisation of the mediatization of politics 28
Figure 2: Examples of using negative images to induce emotional responses to climate change 70
Figure 3: Al Gore uses a scissor lift to make a dramatic scientific point about climate change and accompanying promotional material for the film An Inconvenient Truth. 74
Figure 4: More positive representations of climate change, including a poster promoting a talk by climate scientist Richard Somerville and the front cover of the South Australian climate change adaptation plan 80
Figure 5: Thesis research question flow diagram 98
Figure 6: Thesis research procedural diagram 100
Figure 7: Ethnic backgrounds of survey participants 124
Figure 8: Education attainment levels. 125
Figure 9: Survey respondent awareness of climate change vs. climate change adaptation 125
Figure 10: Sources of information about climate change adaptation 126
Figure 11: Trust levels in local government as a source of information about climate change and adaptation. 128
Figure 12: Trust levels in state government as a source of information about climate change and adaptation. 128
Figure 13: Trust levels in federal government as a source of information about climate change and adaptation. 128
Figure 14: Trust levels in academics as a source of information about climate change and adaptation. 129
Figure 15: Trust levels in journalists as a source of information about climate change and adaptation. 129
Figure 16: Trust levels in the State Emergency Service as a source of information about climate change and adaptation. 130
Figure 17: Trust levels in NGOs as a source of information about climate change and adaptation. 130
Figure 18: Trust levels in friends and family as a source of information about climate change and adaptation. 131
Figure 19: Trust levels in the internet as a media source of information about climate change and adaptation. 131
Figure 20: Trust levels in newspapers as a media source of information about climate change and adaptation. 132
Figure 21: Trust levels in television as a media source of information about climate change and adaptation. 132
Figure 22: Trust levels in radio as a media source of information about climate change and adaptation. 133
Figure 23: Preferred television channels 134
Figure 24: Preferred television viewing times of survey participants. 134
Figure 25: Pay TV consumption habits 135
Figure 26: News and current affairs programs watched regularly by the surveyed group to find out about issues of the day. 136
Figure 27: Preferred radio stations 137
Figure 28: Preferred radio listening times 137
Figure 29: Survey participants newspaper consumption habits 138
Figure 30: Summary of survey participants trust levels in social and cultural institutions 213
Figure 31: Shared characteristics of the participants identified in the survey results 216

List of Tables

Table 1:The four phases of political mediatization ... 27
Table 2: The indicators of mediatization at an organisational level ... 29
Table 3: How Frandsen applied the indicators of institutional mediatization to her analysis ... 30
Table 4: Types of publics and how they might respond to an issue presented to them. ... 44
Table 5: General personal characteristics might influence a person's support for or against the development of climate friendly government policy. ... 90
Table 6: Segmentation messaging options extracted from Hine et al. (2013, p. 54) ... 91
Table 7: Australian segments' views about the usefulness of potential sources of information about climate change. The mean is representative of the average value finding within a segment. ... 92
Table 8: People contacted to participate in semi-structured interviews. ... 108
Table 9: Income levels to identify urban poor Australians adapted from Poverty Lines Australia: December Quarter. ... 113
Table 10: Open ended responses to what climate change adaptation means ... 126
Table 11: Adaptation plans named by respondents ... 127
Table 12: Internet media consumption ... 139
Table 13: Online sources of information ... 140
Table 14: Other alternative media sites accessed regularly by this sample ... 140
Table 15: Communicative preferences for how survey participants would like to receive communications about climate change adaptation. ... 142
Table 16: Semi-structured interview participants ... 149
Table 17: Key themes identified in interview results from using the indicators of mediatization as the analytical tool ... 150
Table 18: Local government partners in regional planning ... 226
Table 19: Benefits of organisational sponsorship of a community of practice extracted from Ling (2014). ... 232
Table 20: Examples of communities of practice established by climate change adaptation planners and professionals ... 235

List of Maps

Map 1: Percentage of households in Adelaide local government areas living on less than $600 per week ... 116
Map 2: Land surface areas in Adelaide vulnerable to extreme heat ... 116
Map 3: Approximate location of survey collection points ... 117

List of Abbreviations

ABC	Australian Broadcasting Corporation
BBC	British Broadcasting Corporation
BTE	Back of the Eye Survey
CALD	Culturally and Linguistic Diverse
CoP	Community of Practice
CSIRO	Commonwealth Scientific and Industry Research Organisation
DEWNR	Department of Environment, Water and Natural Resources
DPC	Department of Premier and Cabinet
ESL	English as a Second Language
FTE	Front of the Eye Survey
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
MIAESR	Melbourne Institute of Applied Economic and Social Research
NCCARF	National Climate Change Adaptation Research Facility
NGO	Non-Government Organisation
PCCC	Premier's Climate Change Council
SES	Socio-economic Status
SES	State Emergency Service
VCoP	Virtual Community of Practice

Abstract

In this thesis, mediatization theory is used to investigate whether political institutional approaches to communications are helping people from low socio-economic (SES) backgrounds in Adelaide, Australia, learn about climate change and adaptation. People from such backgrounds are the focus because they are more vulnerable than others in society to climate change and thus have a more pressing need to learn about how to adapt to the challenges they face. However, knowledge is limited about how such people in developed nations learn about climate change and adaptation.

A mixed method, convergent research design was adopted for the study. Quantitative data was collected via a survey of 110 people living below the poverty line in Adelaide. Qualitative data was collected from nineteen semi-structured interviews with expert professionals associated with climate change and adaptation communications. The survey data was analysed with standard statistical reporting techniques. A thematic analysis of the qualitative data was conducted, using the institutional indicators of mediatization to identify the themes.

Results show that those who completed the survey are aware of climate change but not adaptation. The survey respondents have consistent traditional and new media consumption habits, are engaging regularly with current affairs and view climate change and adapting to it as an issue of concern to people from a low SES background. Participants unanimously express distrust in political institutions responsible for communicating climate change and adaptation in Adelaide. Results also show greater concern about climate change amongst respondents who completed the survey in the summer than those who participated in the winter.

The interview results show unanimously that expert participants have dysfunctional relationships with the media, and think it is pointless communicating with people from low SES backgrounds about climate change and adaptation. This is because interview participants think people from a low SES background will never be interested in the topic and are potentially climate sceptics. They do not think that the media is an effective way of

communicating with people from low SES backgrounds, and rarely consider using it as a means of communications about climate change and adaptation.

The thesis argues that political institutions in Adelaide are not mediatized, and, through a lack of media engagement, are not helping people from low SES backgrounds in Adelaide learn about climate change and adaptation. It argues that expert participant perceptions of people from a low SES background in Adelaide as being a politically and socially disengaged section of society are inaccurate. The thesis finds evidence of a low SES counter-public in Adelaide and suggests a short-term mediated method for communicating with them but argues that in the long-term, institutions in Adelaide will benefit from becoming mediatized. A process for institutional mediatization is proposed via a community of practice to help focus attention on the development of media engagement skills and expertise at an inter-governmental level. This study concludes that the results might have wider applicability in Australia, and potentially in other developed nations.

Chapter One

Introduction

This thesis uses mediatization theory to investigate whether political institutional approaches to communications are helping people from low socio-economic (SES) backgrounds in Adelaide, Australia, learn about climate change and adaptation. Adelaide has very high concentrations of people from low SES backgrounds, and they are considered more vulnerable than other sections of society to the impacts of climate change (Sevoyan et al. 2013), especially to a projected increase in the frequency and intensity of heat waves[1] (Steffen, Hughes & Perkins 2014). Due to this elevated level of vulnerability, there is a need for people from such backgrounds to learn about, and adapt to, these changes (Barnett et al. 2013). This thesis explores these issues and identifies how institutions can more effectively communicate with climate change vulnerable people in Adelaide.

Knowledge is limited about how people from low SES backgrounds, especially in developed nations, learn about climate change and adaptation (Dodman 2013). Studies have been conducted about South Australians understanding of climate change and adaptation (Hanson-Easey, Bi, Saniotis, et al. 2013), with some preliminary data indicating that the media might be an important source of information used by such people to learn about it (Sevoyan et al. 2013). However, these studies did not focus solely on people from a low SES background in Adelaide.

[1] For this thesis, heat wave is spelt as two words. In some publications reviewed for this thesis, heat wave is spelt as one word. However, in the dictionary used for this study, the word is spelt as two words (Collins Dictionary 1992).

Further, it is not understood if the political institutional actors in Adelaide that are responsible for communicating climate change and adaptation are equipped to communicate with people from low SES backgrounds. These political institutional actors include federal government; state government; local government; government departments including (but not limited to) health, mental health, Indigenous health, social services and education; and government appointed advisory bodies. Nor is it known if those institutions that work in, or are associated with, the climate change and adaptation field, consider how to implement communications at the finer scale needed to specifically target people from low SES backgrounds.

In a modern democratic system, a political issue such as climate change[2] and adaptation will ordinarily be communicated to members of a community through the media (Moody 2011). Although this is not the only way that a political issue will be communicated, for most people, the media is often the key forum through which they interact with political institutions (Park 2013; Strömbäck, J 2008; Strömbäck, J & Esser 2014). The media, which from here on is considered to comprise both traditional (print and broadcast) and new (online platforms including Facebook and Twitter), connects individuals with political issues, and helps to shape and influence their views about them (Hepp 2017). Media in this thesis encompasses both traditional and new media sources because of observations noted in Couldry and Hepp (2013) who argue that it is now almost impossible to separate the two when thinking of "the media". This is because of the massive expansion of traditional and new sources into the online environment via the near "universalisation of mobile phones that [has] positioned all media in our lives, every day, as a basic reference-point" (Couldry & Hepp 2013, p. 2).

[2] The Yale Program on Climate Change Communications (2017) explain that the study of climate change is a scientific endeavour, but the multiple political and social domains it crosses to find solutions to it, has made it an intensely politicised issue whenever it is discussed in public domains.

The media has played a powerful role in shaping opinions and views about climate change (Butler & Pidgeon 2009; Foust & O'Shannon Murphy 2009). A review of 70 surveys conducted in the United States, over a twenty year period between 1987 and 2007, showed the media was the main source of information for the general public (Nisbet & Myers 2007), and evidence has been identified to suggest that people's perceptions about climate change are directly associated with how the subject is presented in media communications about it (Eskjær 2013).

The media is considered by political institutions a necessity for the dissemination of information and to facilitate political discussion and democratic participation for members of a community (Hepp, Hjarvard & Lundby 2015; Mazzoleni & Schulz 1999). The media appears to have become interwound with, and carry influence over, political institutions, influencing the relationships these institutions have with members of the communities they govern. As such, the media is said to be integrated into the fabric of social and political institutions (Hjarvard 2013), helping to direct and shape relationships with people both within and outside their spheres of influence (Strömbäck, J 2011).

That integration into the way institutional actors think and communicate through media constructions is called mediatization, and, when used in research such as this, can be helpful in considering the consequences of the increasing influence of the media on those exposed to it. Thus, mediatization theory provides a research framework and analytical tools that help examine the impact the media might be having upon internal and external institutional relationships (Frandsen 2015; Hepp, Hjarvard & Lundby 2015).

Mediatization theory can be used to explain how media integration within a political institution has created a special role for the media to perform certain functions, most notably, obtaining/gaining the collective attention of both internal and external audiences. Theorists argue that the media now has the power and influence to set political agendas, but given the inter-dependent nature of the relationship between an institution and the media, political institutions retain the ability to control processes and communicative functions (Mazzoleni & Schulz 1999). The impact of the dual role performed by the media suggests that it has become the most important source of information for people when learning about a political issue (Hepp & Krotz 2014; Strömbäck, J 2008). The outcome is that the media can be seen to exert direct influence and has the power to shape public perceptions about an issue, which, in a non-entertainment context[3], can lead to cultural and political change over time (Flew & Swift 2015; Lundby 2014).

Mediatization provides the theoretical basis of this thesis and is used to examine whether the media has an important function at an institutional level for helping people from low SES backgrounds in Adelaide learn about climate change and adaptation. Mediatization is used to identify, and then analyse, the level of media permeation within the political institutions in Adelaide that are responsible for climate change and adaptation communications, and to evaluate whether this will help people from low SES backgrounds learn about the challenges they face. Therefore, the overarching research question for this study is:

[3] It is not argued that the media does not influence cultural change in other contexts because it does, especially when you consider how fashion spreads. However, in the context of mediatization in this research, the focus is not on entertainment generally, but on politically instigated institutional media.

Do current political institutional approaches to media communications help people from low SES backgrounds in Adelaide learn about the challenges they face because of climate change, and if not, how can they be enhanced?

This overarching question implies that people from a low SES background are a cohesive group in Adelaide who have similar characteristics to which an institution can target its communications. In media studies, groups of people with shared characteristics are described as a public, who "engage in discussions about issues of concern to the state" (Butsch 2011, p. 150). The place where these discussions take place are described as public spheres (Habermas 1989), which is normally considered an arena where private individuals with shared concerns can come together to exercise formal and informal control over the state: "formal control through the election of governments and informal control through the pressure of public opinion" (Curran 1991, p. 29). Curran (1991, p. 29) says the media is central to the process of control, and, when considering the development of knowledge within a public about a political issue, the media "provides an independent forum for debate… and are the principle institution of the public sphere".

However, there is limited information available that can be drawn from to ascertain if a definable vulnerable low SES public exists in Adelaide, and about how people from a lower SES demographic might be participating in public spheres. Further, the concept of both a public and public sphere are challenged in a media-saturated environment. This is because some scholars now suggest that both the concept of publics and public spheres have become more fragmented in recent years due to the diversity of media now available for people to engage with (Batorski & Grzywińska 2017). Thus, this study also draws upon public sphere

literature to help ascertain the extent to which institutional communications could help people from a low SES background learn about the need to adapt to a changing climate in Adelaide.

Hepp, Hjarvard and Lundby (2015) also state that the role of the media must be kept in context, and that other non-media influencers (such as opinion leaders) might still have a prominent role to play in the dissemination of information to and amongst publics. Consequently, this study draws from literature describing communication flow models that have been applied in media studies, including in the field of climate change communications research (Nisbet & Kotcher 2009) to describe the role and influence of opinion leaders on people in their sphere of influence in a modern media driven society. Therefore, the following sub-questions were considered:

- *What are the perceptions held by professionals who are associated with the climate change and adaptation communications field about people from a low SES background in Adelaide?*
- *Do people from a low SES background in Adelaide have common identifying characteristics?*
- *Do people from a low SES background in Adelaide have common media consumption habits and what non-media sources of information do such people draw from?*

It is important to note that climate change and adaptation communications have been extensively studied (Moser 2014), to the point where the field has been described as a "booming industry" (Nerlich, Koteyko & Brown 2010). Often climate change and adaptation communications are discussed as separate entities, such as '*how to communicate climate change*' versus '*how to communicate climate change adaptation*'. For this thesis, the two are

combined because the term adaptation is rarely used in isolation when discussed in the media, and is generally contextualised as a climate change issue. Therefore, by combining the two, the many different studies on this topic provide a pool of resources and information pertinent to this thesis, especially for identifying potential practical enhancements to institutional media communications to help people from a low SES background in Adelaide learn about climate change and adaptation.

Of most relevance is climate change and adaptation communication research that has considered framing theory, the Information Deficit Model (IDM), uncertainty, risk and disaster management communications theory (Bostrom, Böhm & O'Connor 2013; Boykoff & Boykoff 2007; Byer, Lalani & Yeomans 2009; Catapano 2001; Chongkolrattanaporn 2013; Harvey et al. 2012; Nisbet & Kotcher 2009; Solomon et al. 2012; Weingart, Engles & Pansegrau 2000). Set against this research, a further three sub-questions are considered:

- *Do people from a low SES background think climate change is an issue of concern to them?*
- *What are the perceptions held by professionals involved in climate change and adaption communications about existing theoretical approaches for mediating climate change and adaptation to people from a low SES background in Adelaide?*
- *What existing climate change communications theory is being applied in adaptation planning in Adelaide?*

In sum, when answering the research questions, this thesis presents results and discussion based on analysis of data using mediatization theory, but draws from public sphere literature and other fields of research from the climate change and adaptation communications research

arena. While mediatization theory can help establish the extent of media permeation within an institution, there are benefits in drawing from these other fields of literature as they contribute to a wider interpretation of what the project results mean for communicating climate change and adaption to people from a low SES background in Adelaide. This is important given that the fields of climate change adaptation and media communications are inter-disciplinary due to the social, economic and environmental domains they impact (Galford et al. 2016). Building upon these observations, in the next section of this chapter, the rationale for the research is explained, followed by the thesis structure and chapter outline.

Rationale for the research

Three significant factors provide the motivation for this research. Firstly, studies assert that communicating the need for people to learn about climate change and adaptation is an urgent global challenge (Heinrichs 2010). This is because scientists have concluded that the Earth's climate is changing at unprecedented levels not seen for millennia, and these changes will have profound impacts upon all life (Intergovernmental Panel on Climate Change 2014). There is scientific consensus that humans are responsible for climate change (Byer, Lalani & Yeomans 2009), which is causing more extreme weather and sea level rise, amongst many other impacts (Berwyn 2017). Major international studies have concluded that it is beyond doubt that those from lower SES backgrounds, even in a developed nation like Australia, are the most vulnerable to climate change impacts (Intergovernmental Panel on Climate Change (WGII) 2014; Kreslake, Price & Sarfaty 2016).

In Australian society, a common risk exposure for people from a low SES background are heat waves, which have been described as a "silent killer in Australia" (Hughes, Hanna & Fenwick 2016, p. 1). Heat waves have killed many more Australians than all other natural

hazards combined, including bushfires, cyclones and floods (Middelmann, 2007). Climate change is causing a rapid increase in the number and intensity of heat waves in Australia (Steffen, Hughes, & Perkins, 2014, p. 9). The Australian Climate Council concludes that unless radical reductions in levels of greenhouse gas (GHG) emissions are made globally, the impact on Australia will be severe, with summers being on average 7°C warmer. In Adelaide, the Climate Council forecasts a doubling in the number of extreme hot days by 2070. In Melbourne, Canberra and Adelaide, the number of extreme hot days has already reached the levels originally predicted in climate change models for 2030 (Whinnett 2014).

These extreme changes to the Australian climate will be felt differently by different sections of society, and people classed as vulnerable are said to be the most susceptible to the negative impacts of more extreme climatic conditions. The Intergovernmental Panel on Climate Change define vulnerability to climate change as the degree to which socio-economic systems are susceptible to, and unable to cope with, adverse impacts of climate change (Intergovernmental Panel on Climate Change (WGII) 2014). In this context, studies have shown the most vulnerable people in an urban developed nation are those with economic disadvantage and other vulnerabilities, including sub-standard housing, outdoor workers, culturally and linguistic diverse (CALD) communities, living in areas with minimal tree cover, low educational standards, old age and existing health problems. Therefore, for this thesis, people living under such circumstances in a developed nation context are considered as most vulnerable to the impacts of climate change and are in more need than others in society to learn about how to adapt to it.

Adelaide has high concentrations of people living under such conditions (Barnett, G et al. 2013; Hansen, A, Bi, Saniotis, Nitschke, et al. 2013; Sevoyan et al. 2013; Zhang et al. 2017)

and many have suffered ill health or been killed due to extreme heat events (Zhang et al. 2017). Hanson-Easey (2013) found that it is important to improve adaptation knowledge in South Australia because although vulnerable people who participated in their research are aware of climate change, many were unaware of the immediate and urgent threat it poses to them.

The second factor prompting this study occurred in January 2014, when southeast Australia, including Adelaide, was impacted by an extreme heat wave[4]. Although not as severe in length and duration as the 2009[5] heat wave, the 2014 event was serious; the United Nations World Meteorological Organisation declared on January 16 of that year that Adelaide was the hottest city on Earth, with temperatures exceeding 45ºC (Milman 2014). By the end of the heat wave, 275 people had been admitted to hospitals in Adelaide with heat stress related conditions (Rice, Crouch & Nankervis 2014). This heat event came just five years after the 2009 heat wave that killed 432 people in Victoria and South Australia (Kilialea 2016). The 2014 event resulted in lower levels of death, but the data is not clear if it resulted in less ill health overall than the 2009 event (Nitschke et al. 2016). Nitschke et al. (2016) attribute this in part to a new heat warning system established in Adelaide after the 2009 event, but suggest that the 2009 event is unparalleled, and ongoing research into communication interventions is needed. Consequently, scholars argue that despite these tragic events and improvements to emergency health warning systems, Australia remains unprepared to deal with extreme heat events in the future, with under-resourced health care facilities and inadequate social policies to cope with hazardous heat waves (Hughes, Hanna & Fenwick 2016).

[4] In Adelaide, a heat wave is defined as five consecutive days over 35° or three over 40°
[5] The 2009 heat wave is a record breaker in Adelaide with thirteen days over 35ºC. It is blamed for the death of 82 people in Adelaide (Zhang et al. 2017). The 2014 heat wave had five days over 35ºC between January 12–17, However, a second period of extreme heat between January 27-February 2, although on one day in that second period, the temperature dropped below 35ºC.

The third factor motivating this research draws on personal experience: while working on another climate change communications project, it became clear that people from lower SES backgrounds were not motivated to engage with the topic of adapting to climate change when existing media and communication techniques were used. In that case, the Arabana people, an Indigenous group from the deserts of northern South Australia were being encouraged to participate in a project to write a climate change plan for their country (Nursey-Bray & Palmer in-review). The Arabana people showed a stark disinterest in climate change and adaptation when conventional climate change communication approaches were used to engage with them about it. Therefore, alternative approaches were trialled which resulted in an increased interest in the topic. This raised questions about how other vulnerable people from low SES backgrounds might respond to conventional methods of climate communications. This experience is discussed further in Chapter Three.

These factors provided an indication that more attention to this subject is required because the climate is not going to simply change and settle into a new 'normal'; change will be ongoing for many years. In fact, until global emissions of GHG start to reduce significantly, the climate will continue to change and become increasingly dangerous, particularly to vulnerable people from low SES backgrounds. Consequently, climate change adaptation has been described as the "next big collective challenge" (Leviston 2013, p. 231) and developing communications about it requires urgent attention (Heinrichs 2010).

Climate change adaptation media communication research is a relatively new field and was initially shunned by communication specialists working in the government and non-government sectors because it was perceived as conceding defeat in the endeavour to mitigate

emissions (Measham 2013; Ribot 2011). However, that school of thought has weakened and media communications are now seen to play a crucial role in helping governments, other institutions and individuals take appropriate steps in dealing with the impacts of a changing climate (Waschka & Torok 2013). This thesis makes a contribution to understanding how the media can contribute to that key role. The next section of this chapter provides an overview of this thesis structure, including chapter outlines.

Thesis structure and chapter outlines

The next chapter presents the theoretical grounding of mediatization theory, including its background and how theorists use it to explain the role and influence of media in society. This chapter introduces the *indicators of mediatization* (Donges & Jarren 2014; Frandsen 2015) which are used in the data gathering and analysis process. The indicators of mediatization are analytical tools that help determine institutional perceptions, structures and behaviour towards the media. When the indicators are used in a study, they can help explain the extent to which media communications might have become of special interest, influencing how institutions formulate their communicative relationships with a community and other factors such as attitudes towards the media and the amount of media output produced by an institution (Donges & Jarren 2014). These indicators are also used to frame the results in Chapter Six and the discussion in Chapter Seven.

Chapter Three follows with a literature review describing how mediatization theory has been applied in the field of climate change and adaptation research. Public sphere literature and a synthesis of relevant information from the climate change communication field that have been drawn upon for this study are reviewed. The section that reviews the literature of publics and the public sphere commences with a description of Habermasian ideas and subsequent

critiques. This is followed by a synthesis of studies that describe publics and public spheres in contemporary media-driven societies. This section helps explain how the concept of a public and public sphere are theorised and identified in a modern society context. The idea of counter-publics is also presented and reviewed in response to broader critiques of Habermasian concepts, especially arguments that his ideas are too narrow and universal in design.

Literature about the impact of new media on publics and public spheres is presented, including a demonstration of how both concepts have been impacted by internet based communications. Other studies highlight that impacts upon both publics and public spheres should be kept in context because of non-media influencers. Work investigating the [enduring] role of opinion leaders and information flow communication models, including in the climate change and adaptation communications field, is described.

The chapter concludes with a review of inter-disciplinary studies about climate change and adaptation communications. Mediatization theory describes how the media has become an integral part of the day-to-day operations of an institution, but understanding how best to utilise it to communicate with a target audience is an integral step. Identifying practical ways for future climate change and adaptation communications in Adelaide, beyond theoretical explorations, is both useful and potentially lifesaving. Therefore, the last section of the review examines different frames and suggested methods for communicating climate change and adaptation to both broad and targeted audiences.

Chapter Four outlines the mixed method convergent research design that was used for this study. Data collection occurred via a survey (conducted over two periods) and semi-

structured interviews. This approach allowed information collection from two different sets of actors in the climate change and adaptation communicative domain: people from a low SES background in Adelaide who need to learn about it and those responsible for delivering the communications, hereafter referred to as expert participants. The data from these sources are a rich and contrasting source of information to analyse with mediatization theory. Survey, respondents were selected based on their economic status measured against the Melbourne Institute of Applied Economics and Social Research (MIAESR) *Poverty Line Index* and where they live in Adelaide. Expert purposive sampling was used for identifying semi-structured interview participants.

The method chapter explains the design of the interview and survey questions and the analysis techniques that were applied to the data collected. For the semi-structured interviews, thematic analysis and inductive coding based on the indicators of mediatization were used, while standard analytical reporting was applied to the survey[6]. The survey was conducted partly in mid-summer and partly in mid-winter to identify whether seasonal influences change perceptions of how people view and respond to the issue of climate change and adaptation. The use of saturation as a mixed-method research technique was used and is described, as is the process of results integration.

Chapter Five presents the results of the survey with people from a low SES background in Adelaide. The results provide information about:

- Trust levels in the political institutions charged with communicating climate change and adaptation in Adelaide;

[6] See Table 2 and Table 3 for a description of the indicators. See page 119 for a description of the standard statistical reporting techniques used.

- Patterns of media consumption amongst people from low SES backgrounds;
- The influence media might hold on such people;
- Whether they view climate change as a threat to which they need to adapt;
- If the weather can change how they perceive climate change as a threat to which they need to respond to.

Chapter Six presents the results from the semi-structured interviews conducted with the expert participants. The results present information about:

- Perceptions expert participants hold about media;
- How they think media should be integrated into the *modus operandi* of political institutions in Adelaide regarding the communication of climate change and adaptation;
- Information about institutional resources dedicated to helping people from a low SES background in Adelaide learn about climate change and adaptation;
- Expert participant perceptions about how they think people from a low SES background in Adelaide might perceive the threat posed to them by climate change and adaptation.

In Chapter Seven, the results are integrated and key messages from the project distilled and discussed. One of these key messages is that the institutions charged with helping vulnerable people learn about climate change are not mediatized. The results show that media is not integrated into the *modus operandi* of the institutions charged with communicating climate change and adaptation. The results show that expert participants hold perceptions that people from a low SES background in Adelaide are politically and socially disengaged, and it is

therefore pointless trying to communicate through the media with them about climate change and adaptation. Further, expert participants hold perceptions that the media in Adelaide are climate change sceptics, and people from a low SES background are also most likely sceptical.

However, these perceptions are potentially inaccurate because the people who participated in the survey are not climate sceptics, and display characteristics of a counter-public who actively engage with political issues in public spheres, providing institutions with an opportunity to engage with them in the media. This will be a difficult undertaking for the expert participants because the interview results show that they appear to have dysfunctional relationships with the media, and, in most cases, limited to no professional media engagement experience or knowledge about how to engage with and manage media relations in a media driven society.

Chapter Seven then discusses a need for institutional structural reform about media use in Adelaide. Suggested reforms include changes to perceptions about media use and the media logic adopted by institutions for communicating climate change and adaptation in Adelaide. This chapter suggests a short-term mechanism to facilitate reform that could help people from a low SES background become more informed about climate change and adaptation. However, climate change and adaptation are a long-term communicative challenge, and the chapter concludes with a suggestion that institutional mediatization is needed to help vulnerable people in Adelaide learn about their need to adapt to climate change into the future.

Chapter Eight outlines a proposed process to help institutions mediatize, one that involves the establishment of an inter-local governmental media focused community of practice (CoP). Mediatizing those institutions might potentially improve, enhance and make more appropriate the communications they produce, and help people from a low SES background in Adelaide learn about climate change and adaptation.

Chapter Nine sums up the study, identifies research constraints and provides recommendations for further research.

Having now introduced the thesis, the following chapter presents the theoretical grounding of mediatization theory, including its background and how theorists use it to explain the role and influence of media in society.

Chapter Two: Mediatization theory

Introduction

Climate change and adaptation communications are primarily instigated by political actors to raise awareness of climate change, warn of its dangers, dispel it as a hoax or mobilise support for proposed policy solutions (Yale Program on Climate Change Communication 2017). Often, climate change and adaptation communications are presented as a political issue (Dunlap 2016), ideologically polarised (Farrell 2016), and as reflecting a conflict between those who believe in the science and those who do not (Callaghan 2014). The main way for political actors to communicate their message is through media, which has become "the most important source of information and vehicle of communication between the governors and the governed" (Strömbäck, J 2008, pp. 229-230).

To help understand the implication of the scenario presented by Strömbäck above, mediatization has emerged as a theory that considers the "interplay between media, culture and society" (Hepp, Hjarvard & Lundby 2015, p. 314). Lundby (2014) says mediatization theory does this by providing a framework to examine how this interplay is manifested. Lunt and Livingstone (2016) add that this framework is proving to be particularly beneficial for examining the interplay between social and political domains in a modern media-saturated society.

The principle aim of the theory is to provide a framework to direct research examining the influence "of media and communications in other social and cultural domains" (Hepp, Hjarvard & Lundby 2015, p. 316). According to Hepp, Hjarvard and Lundby (2015), mediatization is about the "interrelation between the change of media and communication, on

the one hand, and the change of culture and society, on the other hand". In other words, mediatization is used to describe a long-term process where political and cultural institutions are influenced by and changed as a result of the expansion of available media in society (Hepp 2017). Therefore, using mediatization theory helps to explain the role of the media in this process of social change. This is the focus of the next section of this chapter.

The foundations of mediatization theory

Mediatization theory has developed from the study of *media effects* upon individuals and institutions, and the role media plays in influencing political and social formations (Jensen 2012a). The theory has its origins in the critiques of universalised linear communication models that say the media is a separate entity from cultural, social and political institutions, where the communications produced remain objectified and entirely translatable because the message is the same for everybody in any place or time (Shannon & Weaver 1949). Preiss et al. (2007) say linear models, such as the sender-message-channel-receiver model (see Berlo 1960) are an 'effect-paradigm', where media acts as an independent force, and through the communication process, is capable of exerting influence on people's opinions about political and other cultural issues (Hjarvard 2013).

The effect-paradigm is based on work by Altheide and Snow (1979), who argue that the power of the media lies in institutional media logic, which is mediated and then directly adopted by people in society. Media logic is broad and focuses primarily on how news is organised at an editorial level and then presented to an external audience by an institution (Altheide & Snow 1979). Strömbäck (2011, p. 373) is more specific and says media logic is:

> The institutional, technological, and sociological characteristics of the news media, including their format characteristics, production and dissemination routines, norms and needs.

Mediatization theorists are critical of theories that explain the influence media has upon society through the logic deployed by an institution to communicate with an audience. These critiques have focused on observations that show it is impossible to determine a single logic that is mediated by all media:

> First of all, do all media have a logic? Is it the same logic? If not, what is the common logic that unites their logics into some overall media logic? Second, when media platforms change over time, do they acquire a wholly new media logic (Couldry 2014, p.56).

Krotz (2014) has offered similar critiques, arguing that a "media-guided representational system, must, of course, consist of changing forms over time, and, thus, it is misleading to call it media logic that holds true over time". Hjarvard (2013) says the argument that a single media logic, static in time, and whose effects are measurable and definable, is difficult to establish and quantify as an issolated event. However, he adds that the concept should not be discarded altogether, providing it is contextualised as non-linear and is a:

> Conceptual shorthand for the various institutional, aesthetic, and technological *modus operandi* of the media, including the ways in which the media distribute material and symbolic resources, and operate with the help of formal and informal rules (Hjarvard 2013, p. 17).

The dramatic rise in information technology and the amount of media to which people are exposed on a daily basis has resulted in further critiques of mediated models of communication theory. In a western democratic context, information is available almost everywhere and accessible twenty-four hours a day via the internet and social media on personal devices (Couldry & Hepp 2013). It is dynamic and, due to the popularity of online technologies across the world, political and social institutions have become increasingly relient upon media, causing "a shift of paradigm where everything is now mediated" (Nie, Kee & Ahmad 2014, p. 363).

Thus, for this study, based on the concepts described by Couldry (2014) and Hjarvard (2013), the media is understood as non-linear, but central to the realisation of modern society. This thesis also draws on Krotz's assertion that it is important to understand that "no technology is a medium by nature… it only becomes a medium if it is embedded in culture and society and if a media related culture emerges" (Krotz 2014, p. 79). These two points are central to the role of mediatization in its capacity to be used as a theoretical frame through which to explore media effects upon society. Mediatization thus describes a consequence of the dramatic rise in media such that:

> Culture and society to an increasing degree become dependent on the media and their logic. This process is characterised by a duality, in that the media have become integrated into the operations of social institutions and cultural spheres, while also acquiring the status of social institutions in their own right (Hjarvard 2013, p. 17).

Here, Hjarvard is explaining that culture and society are permeated by the media to the extent that “the media may no longer be conceived as being separate from cultural and social institutions” (Hjarvard 2013, p. 2).

Couldry says that now society is consuming such vast levels of media, media has become infused with all social processes (Couldry 2012). This is the basis upon which the theory of mediatization is based because:

> We communicate in the presence of media, about media or about media content, or are involved in experiences and emotions or on the basis of knowledge we have acquired from media. In other words, more and more ‘parts’, ‘objects’, ‘relations’ and ‘fields’ of culture and society are then constructed under media-related conditions and contexts. If all this happens, we can speak of the emergence of a media-related culture – and we then call these activities, parts, relations, objects, fields and societies mediatized (Krotz 2014, p.83).

Couldry (2014) notes this description is by far the clearest explanation of mediatization theory. Under these media saturated conditions, he argues that the theory can be used to explain how the increasing involvement of media in all spheres of life, “in the long-run, [media] becomes increasingly relevant for the construction of everyday life, society, and culture as a whole” (Couldry 2014, p.57). Miller (2014) takes it further, arguing that when:

> Media are everywhere and used for nearly everything, they lose their familiar distinctiveness as material devices, discrete services and social practices. Instead, they become embedded, intertwined and increasingly hidden. And their use begins to

surpass simulation to become an extended social reality and augmented sensory and cognitive experience (Miller 2014, p. 108).

In this way, media relations in contemporary society are said to be a meta-process to describe long-term processes of change as a consequence of specific engagement (Hepp 2009). A meta-process in this regard explains how framing the world through the lens of the media can manage how a person, or institution, manages and influences the relations around them. One builds upon the other and mediatization theorists say that the more the media becomes infused within the workings of society and its institutions, the more likely reality is to be constructed through a media-framed world (Lundby 2014). This infusion has consequences, resulting in the media becoming an "irreducible dimension of all social processes" (Couldry 2012, p. 137). Mediatization theory provides the analytical tools to examine what this might mean for society, from both institutional and social perspectives.

Using institutional mediatization theory

Mediatization theory has been critiqued and described as *constrained* due to its application to real world studies (Couldry 2014; Deacon & Stanyer 2014). The word constrained has been interpreted in this thesis as meaning the rigour has not yet been adequately tested and the theory has not yet been established as a high-order theory in media studies. The relative juvenility of contemporary interpretations of the theory, compared with more established media theories (such as audience reception models), has encouraged scholars, particularly Deacon and Stanyer (2014), to urge caution about claims made by theorists as to what mediatization theory can reveal in research when studying the impact of media upon society. However, only through longer-term studies can those constraints be overcome, and its value at this stage of its development therefore lies more as an analytical tool that can provide a

framework for tracing long-term processes of social change "that could never be captured through single empirical [media study effect] exercises" (Deacon & Stanyer 2014, p. 1038). Couldry (2012, p. 134) says using mediatization theory in the study of social and institutional change is particularly beneficial as it captures the "general effects [of media] on social organization" within and between the different constituting parts of society". It is these theoretical effects that this study will utilise in order to identify if institutions in Adelaide can help climate change vulnerable people in Adelaide learn about adaptation. To analyse these general effects, mediatization scholars use a range of approaches including institutional, social, cultural and material perspectives (Hepp, Hjarvard & Lundby 2015).

To determine an appropriate approach for this study, consideration was given to who is responsible for helping vulnerable people from a low SES background in Adelaide learn about climate change and adaptation. More information is presented in Chapter Four, but, in summary, political institutions, including state and local governments[7], have this responsibility in Adelaide. Thus, this study has drawn from literature that have described an institutional mediatization theory approach to examine the interplay between institutions and groups in society.

Hjarvard (2008, 2013) explains that using mediatization theory can help to identify the influence of the media on social interactions (communications) between an institution and its constituent target audiences (both internal and external). In the context of this study, mediatization theory can be used to help identify how media might help people learn about climate change and adaptation and be influenced by what they learn in the communicative activity. In this way, Hjarvard (2013, p. 39) says institutional mediatization makes the media

[7] For a description of these political institutions and the applicability of them to this study, please see Chapter Four, page 107.

a “shared resource or interface” which enables communications with social groups who are the target of their communications. Fransden (2015), in reflecting on a real world study that applied an institutional approach, illustrated how mediatization theory could be used to reveal the effectiveness or otherwise of internal communications in Danish sports organisations. She found that an institutional approach was beneficial because media are today (2015, p. 3):

> Both important semi-independent ‘out-there’’ institutions that govern access to public information and attention, and specific organizations (like a newspaper or broadcaster) that […] organizations orient their events and communicative activity towards. And media are also ‘‘in-there’’ as mental orientations with communication personnel and with the emergence of digital media also as technologies and various platforms that may be put both into internal, private, or semi-private use and into external, public use.

Hjarvard (2013, p.13) says that applying an institutional approach to mediatization research can “situate analysis… at the meso-level of culture and society”. That theoretical perspective is crucial to this study because the political institutions responsible for communicating climate change and adaptation in Adelaide are situated at the meso-level - namely, local governments who have been allocated the task by the South Australian state government to communicate with their consitutents about climate change adaptation. Frandsen (2015, p. 4) argues that application of an institutional perspective that investigates meso-level communications is extremely beneficial because it makes it possible to specify the key elements of an institution that “become aware of media and start considering them as a relevant and central part of their environment”. From the perspective of political communications, identifying those elements is based on answering questions that identify

how institutions and the media become dependent upon each other in order to conduct social relations (Strömbäck 2008; 2011). Hjarvard (2013, p.43) provides context to this theoretical aspect by explaining:

> The media have become integrated into the daily practice of a political organisation… whilst at the same time, media have evolved into a partly independent institution that controls a vital political resource in a democracy: society's collective attention.

In this way, the media performs an important social and cultural function: it can directly comment about a political issue, helping to influence public discussion and opinion about it. By questioning the level of mediatization in political communications at a local level in Adelaide, institutional mediatization theory provides a framework for assessing the potential interplay between institutions, the media and outside to other specific audiences, including groups and publics.

To assess that interplay at a political institutional level, Strömbäck (2008, pp. 236-240) describes four phases of mediatization which are presented in Table 1.

1	When the mass media in a particular setting constitute the most important source of information and channel of communication between the citizenry and political institutions and actors, such as political parties, governmental agencies or political interest groups.
2	The media have become more independent of governmental or other political bodies and, consequently, have begun to be governed according to media logic, rather than according to any political logic. As more autonomous organizations, the influence of the media on the institutional level increases; thus media logic becomes more important for those attempting to influence the media and its content. The result is that the media do not unconditionally mediate the messages preferred by the different sources.They now make their own judgments regarding what is thought to be the appropriate messages from the perspective of their own medium, its format, norms and values, and its audiences.
3	The independence of the media has further increased, and that the media in the daily operations have become so independent and important that political and other social actors have to adapt to the media, rather than the other way around. The media continue to be governed more by media logic than any kind of political logic, and in this phase, political actors must accept that they can no longer rely on the media to accommodate them… This forces political actors to further increase their skills in news management and so-called spinning, and it makes media considerations an increasingly integral part of even the policy-making processes.
4	The fourth phase of mediatization is thus attained when political and other social actors not only adapt to the media logic and the predominant news values, but also internalize these and, more or less consciously, allow the media logic and the standards of newsworthiness to become a built-in part of the governing processes. If political actors in the third phase adapt to the media logic, they adopt the same media logic in the fourth phase.Thus, in the fourth phase, the media and their logic can be said to colonize politics, with political or other social actors perhaps not even recognizing the distinction between a political and a media logic.

Table 1:The four phases of political mediatization

These four phases outline a process which starts where the most commonly used type of communication utilises interpersonal communication forms such as face-to-face interactions between an institutional representative and a target audience. The process of political mediatization concludes when institutional representatives are mainly guided by the media and use it to communicate with their target audiences. Figure 1 below is extracted from Strömbäck (2008; 2011, p.235) and provides a pictorial conceptualisation of the mediatization of institutional politics.

Figure 1: A conceptualisation of the mediatization of politics

Other scholars have factored further nuances into the process of political institutional mediatization, including contributions from framing and agenda setting theory (Hepp, Hjarvard & Lundby 2015; Shehata & Strömbäck 2014). However, it is the study of the *process* that is at the core of current mediatization research, and, as Marcinkowskito (2014, p. 16) explains, is how "the anchoring of media logic govern[s] the creation of public attention outside the media". Donges and Jarren (2014) suggest that the mediatization of political institutions can be identified by using three indicators: perception, structure and behaviour. Donges and Jarren (2014) explain that these indicators reveal the communication culture within a political institution and its perspectives on the role of the media in their organisation. Table 2 presents each indicator and describes how it helps to identify the extent of media penetration into the day-to-day operations of a political institution (Donges & Jarren 2014, p. 190).

Aspect	Characteristics	Possible indicators
Perception	Changes in perception of environment	— Increase of media monitoring — Diversification of guiding rules to select articles to monitor — Perception of a growing importance of mass media for the organisation — Existence of a clipping report/transmission of information within the organisation — Increase of news agency services
	Orientation to other organisations	— Existence of an ideal or “best practice” model concerning communication — Systematic observation of other parties/“observation of the enemy”
Structure	Increase and/or shift in resources	— Increase of human resources within the communication unit — Increase of financial resources for communication tasks
	Changes in rules	— Changes of organisational charts and position in the communication unit — Existence of corporate identity — Existence of corporate communication — Changes of responsibilities concerning communication tasks
	Externalisation	— Increase of cooperation with external consultants — Increase of media training and consulting services
Behaviour	Increase and diversification in communication output	— Increase of press releases and press conferences — Diversification of channels or utilisation of new channels and technologies (podcast, internet streaming, etc.) — Diversification of target group communication

Table 2: The indicators of mediatization at an organisational level

Frandsen (2015, pp. 4-5) applied these indicators to examine the extent of new media penetration into institutional sports organisations in Denmark by examining their perceptions of the media, structural support for conducting communications through the media and behaviour around how the media is used (see Table 3 below):

Indicator	Description
Perception	Mediatization is seen as a reaction to a perception of an increased importance of media and communication. It requires a certain mental orientation from within the organization towards that part of the outer world that is media. How (and to what extent) is such awareness present with the people and performed in the working routines of the organization?
Structure	A perception of media and communication as increasingly important implies that the organization takes action on this and concurrently makes changes in its structural dimension. An increase in the amount of resources (time, people, and money) spent on communication, use of formalized communication strategies, and explicit organizational attachment of communication competencies to the executive level are all structural indicators of mediatization.
Behavior	Perceptions and actions must be executed through the actual external communication output. Therefore, changes in the amount and forms of communication are important measures of mediatization. Issues of prioritization between various platforms, and the purposes that underlie the use of them, become essential matters as well.

Table 3: How Frandsen applied the indicators of institutional mediatization to her analysis

By using the indicators in her analysis, Frandsen (2015) found that the media is a powerful and essential agent in institutional relations between sports organisations in Denmark and their external partners and internal workforce (including volunteers). However, the indicators also helped to identify media communication constraints, including that the level of resourcing was undermining the effectiveness of institutional media communications, and that this was of concern to the sports organisations that participated in the research. This study provides an important real world example of the use of an institutional approach to using mediatization theory. The Frandsen study provides an analytical example from which to draw, and, along with Donges and Jarren's (2014) theoretical indicators of how to identify if mediatization is occurring at a political institutional level, is used to help guide the analysis of the information collected in this thesis research. A detailed explanation is provided in Chapters Four and Six of how the indicators of mediatization were applied in this study.

Mediatization researchers stress that mediated forms of enquiry should not be dismissed altogether and that they form an important part of the theory. This is because they provide context to examine how a person's response to media at a particular moment "in time and

space", as a short-term message, might impact upon the receiver (Couldry 2012, p. 113). Hjarvard (2013, p.18) explains that:

> Denying the media properties and dynamics of their own, the media's specifications are dissolved into the practice of situated social interaction and we are left with an enigma, and not an answer… and by embedding our understanding of media logic in the sociological framework of institutions, we are able to consider the relationship between social interaction and the larger units of society.

Couldry (2014) argues that understanding that relationship is challenging at a universal level, but defendable at a local one. He says that mediatization has not yet situated itself as a high order media studies theory, but has demonstrated its utility to describe the transformative powers of media upon culture and society. To date, most of these findings are largely restricted to localised studies in Europe and North America. That is not to say the theory has no place in other parts of the world, just that there are few studies that have been conducted to examine mediatization in other jurisdictional contexts. Where this has occurred, the theory has been used in diverse contexts.

In one study, mediatization theory was applied to investigate how institutional media could influence the outcome of a government-led policy review in Australia (Rawolle & Lingard 2010). In that study, Rawolle and Lingard (2010) found that mediatization theory helped to reveal that media logics influenced the policy themes adopted in a review of Australia's science and technology capabilities. This included influencing the final title of the report, "*Backing Australia's Ability*", which they say has "the aphoristic character of media headlines" (Rawolle & Lingard 2010, p. 283). However, they argue that researchers might

need to consider other meta-processes alongside mediatization, such as the influence of globalisation, when considering the influence and role of the media in institutional social relations.

That finding is consistent with observations made by Hepp, Hjarvard and Lundby (2015, p.318), who conclude that there is “a growing awareness of multidimensional factors at work” when using mediatization theory to study institutional communications. They say the growing awareness of these other factors will encourage studies that connect mediatization research with other areas of study, such as the influence of globalization and individualization on understanding the role of the media in transforming and influencing social change. This project does that by connecting mediatization research with the major geo-political issue of climate change and adaptation. However, this study also builds on previous studies that have used mediatization theory in the study of climate change and adaptation communications, and these are the focus of the first part of Chapter Three, the literature review.

Chapter 3: Literature review

Introduction

Having presented the theoretical context that grounds this research, Chapter Three reviews the literature relevant to the study. First, it reviews scholarly work on the relationship between mediatization theory and climate change and adaptation research. As this study is the first in the context of mediatization research and climate change communications in a low SES urban context, the literature reviewed is by necessity broad in scope, drawing from a wide range of works. Second, studies describing publics and the public sphere are summarised to explain how each one can be contextualised in a modern society and how they link with this study in the context of mediatization research. Finally, the literature in the field of climate change and adaptation communications research is discussed to illustrate how previous investigations articulate how the issue can be communicated to both broad and targeted audiences.

Mediatization, climate change and adaptation

Climate change is described as a "mighty case study" for mediatization research by Kunelius (2014, p.64), who suggests three areas to consider when using mediatization in climate change communications research:

1. Mediatization and representing the real: climate science and media logic;
2. Mediatization and political representation: climate change, media and the political field; and
3. Mediatization and professionalism: climate change and professional autonomy.

Kunelius (2014) asserts that climate change presents one of the most fascinating opportunities to study how the interplays between institutions and the media described above influence representations of an issue. Work in Europe that asked scientists, journalists and heads of environmental protection associations in Germany, France and Belgium about their “mutual relationships and on the political and mediatic treatment of climate change” (Mormont & Dasnoy 1995, p. 50) found that the mediatization of climate change was "interactive" [between] the agents who disseminated information and the public. Their commentary on climate change mediatization shows that:

> The role of the press and journalists is not only to communicate information (coming from experts or authorities and directed towards the public) but also to 'represent' the public interest, that is to say, to ask experts and the authorities questions that the public is asking (Mormont & Dasnoy 1995, p. 63).

They concluded that using mediatization theory in the study of climate change communications provides two clear approaches for analysing the influence of media between an institution and a target audience. The first approach considers the media and its influence upon public opinion formation, and asserts that analysis must consider different social positions. The second approach is based on the view that media impacts must be contextualised as a presentation of ideas by multiple sources; but that those ideas cannot be presented to an audience without the media (Mormont & Dasnoy 1995). In this way, Mormont and Dasnoy (1995) say that climate change cannot be communicated without factoring in the complex relationships between an institution, the media and relevant sources used to present information to an audience.

However, Kunelius (2014, p.73) observes that this approach might have unintended consequences. He says that in a climate change mediatization context, questions posed by a public that is opposed to the idea of tackling climate change present a paradigm of uncertainty and doubt that "has made a stronger mark on the logic of media and journalism than vice versa" (Kunelius 2014). Consequently, he argues that *counter-mediatization* might also have to be considered when considering climate change communications. Counter-mediatization, although not a term used widely in the literature, describes a scenario where a controversial issue (as climate change and adaptation is often portrayed in the media) might be better off not being communicated via the media in the first place because an issue of such controversy cannot be settled satisfactorily in such a forum. In other words, media communications continue to generate controversy and the argument remains that the topic might be better debated outside public media domains.

Kunelius (2014, p.73) uses an illustrative example of the *climategate* scandal in the United Kingdom, which he says is an example of "how late modern epistemologies of journalism can be taken advantage of by playing on the tensions between epistemologies of 'lay man' realism and contemporary science". In this case, internet hackers obtained emails from the University of East Anglia which purported to demonstrate that scientists working on climate change were exaggerating the influence of man-made produced GHG upon the Earth's climate. Climate sceptics obtained these emails and presented information in the media to cast doubt in the minds of the public about the science of climate change. Kunelius (2014) suggests that institutions might be better off not mediatizing, or generating media communications about climate change, as they are likely to encourage those opposed to tackling the issue to make more strident and assertive communications in response.

This theme is an important consideration in the formulation of questions about how to understand people and their responses to institutional communications via the media about climate change and adaptation. Although discussed further later in this chapter, climate sceptics present an issue to factor in when considering the interplay between institutions and external publics in Adelaide.

A second theme regarding counter-mediatization draws from the broader discussion in Chapter Two about the mediatization of politics (Strömbäck 2008; 2011). Kunelius (2014) is brutal in his assessment of the mediatization of political climate change communications in a country such as Australia, arguing for its potential to undermine institutional media due to the level of dependence a local community might have upon the mining of fossil fuels. Australia is a country that derives large tax incomes and other benefits from the sale of fossil fuels: oil and gas $8.8 billion (Australian Petroleum Production & Exploration Association Ltd. n.d); coal $37 billion in company tax and state royalty payments (Mineral Council of Australia 2016)). Therefore, local economic dependence on the sale of fossil fuels could directly impact upon how a media institution might respond to the need to communicate climate change, including the introduction of bias against reporting of climate change as being a threat or a real phenomenon (Kunelius 2014).

Although South Australia has a well advanced climate change adaptation planning strategy in place, the state is home to Australia's most significant onshore gas-producing region (South Australian Chamber of Mines and Energy Member n.d). Further, large scale expansion of the fossil fuel industry is South Australian government policy in the form of releasing new exploration areas, production incentive grants and a royalty sharing program offered to farmers to encourage them to support coal seam gas mining on their property (Koutsantonis

2017). Therefore, in a South Australian context, institutions charged with helping people from a low SES background in Adelaide learn about climate change and adaptation might have to consider these economic factors, and potentially consider other non-media approaches to help people from a low SES background learn about climate change and adaptation.

Salazar (2011) explored this issue in an investigation into whether the mediatization of museums would be beneficial, and would help people from a community learn about climate change and adaptation. Salazar (2011) says climate change communications are subject to inter-government and competing commercial forces because of the multiple social and economic issues that are raised when trying to respond to changing climatic conditions. Consequently, Salazar's (2011) paper presents a case that suggests institutional mediatization of museums might not be beneficial, and although traditional mass media should not be ignored, its place in the process of communicating with a target audience needs to be kept in context. He says that mainstream media journalism is more likely to report on climate change events (knowledge transfer) rather than the communication of climate change processes (knowledge exchange). In this way, Salazar (2011) says that the mainstream media are more likely to focus on disseminating information about risks and dangers, rather than helping people learn about how to respond and adapt to the challenges they face due to climate change.

Therefore, he says that community based media, such as that generated by the museum sector, can help a target audience obtain a more meaningful understanding of the consequences of climate change and how to adapt to it. Salazar (2011) says community media can identify publics in their sphere of influence and encourage them to understand the

urgency of tackling climate change and avoid the negative consequences of a changing climate. Salazar (2011) concludes that a local organisation is in an advantageous position to identify a target public audience and engage with it in public spheres about the issue of climate change in ways that cannot be achieved through mainstream media sources. However, identifying publics and appropriate public spheres in which to engage with them is a complex endeavour. Therefore, the next section of this chapter focuses on the conditions required in a modern media-driven democracy to identify publics and public spheres.

The public and the public sphere

The theoretical ideas of publics and the public sphere are central to this thesis because they focus on people and their engagement in political communication flows between them and political institutions via the media (Husband 1996). Publics are defined as "an aggregate of people who engage in public discussion on issues of concern to the state" (Butsch 2011). This idea of a public has its origins in the Enlightenment (Habermas 1998), but became more defined during the 17th and 18th centuries when governments were seen as deriving their authority from "the people" (Calhoun 1975). Butsch (2011, p.151) explains that:

> By the end of the nineteenth century, the new fields of crowd psychology and of sociology had identified publics as a safe social formation that did not threaten social order, and as distinct from other forms of collective behaviour such as crowds and social movements.

The notion of a functioning and politically engaged public has long been studied and contested, with the foundations of arguments for or against it found in the writings of Walter Lippmann and John Dewey. Lippmann (1922) argued against the notion of a public on the

grounds that it is not possible for people to formulate suitable responses to abstract concepts, such as science, as a coherent set of understandings in a time scale suited to political objectives. He argued that "the masses were absolutely illiterate, feeble-minded [and] grossly neurotic" (Lippmann 1922, p. 42). John Dewey (1927) argued the opposite, saying that a public can exist and will arise as a consequence of a community of people engaging with issues of shared concern.

Current debates about publics and the public sphere draw largely from Habermas (1989), who describes the public sphere as a space in society where people join together to conduct rational and critical debate about issues of public concern. He built on ideas that the public is a world of shared individuals (Arendt 1958), claiming that during the growth of liberalism in 17th century Europe, a bourgeois political class emerged that acted as a counterweight to absolutist states (Fraser 1990).

In Habermas's conceptualisation, the counterweight political class described above participated in debates in a space in society situated "between the private sphere (consisting of the economy and family) and the sphere of public authorities (formed by the state and the judiciary)" (Verstraeten 1996). Habermas views this process of public engagement as vital for a strong democracy, where private citizens conduct informed debate about what constitutes the public good, contributing to political decisions consistent with the will of the people, not a powerful few (Calhoun 2011).

Fraser (1990) describes Habermas's idea of a public and public sphere as a conceptual one, which "designates a theatre in modern societies in which political participation is enacted through the medium of talk" (Fraser 1990, p. 57). The participation of people in political

discussion acts as a form of communicative power (Habermas & McCarthy 1977), where public opinion contributes to political legitimacy (Olson 2011). This early explanation of the public sphere was based on liberal ideology, which demanded a clear separation of powers between the state and society, and focused on bourgeois social structures. At the same time, the media was described as the principle institution in society capable of distributing political information (Curran 1991), and the base from which citizens could draw to form public opinion in order to exercise formal and informal control over government (Husband 1996).

These interpretations of Habermasian publics and public spheres have been significantly critiqued over many years, primarily on the grounds that they fail to recognise social and institutional diversity in a modern democratic society (Fraser 1990). However, Dahlberg (2005) says Habermas attempted to clarify his ideas in his later works by explaining that they represented a short-lived, ideological phase, and in contemporary contexts:

> When talking of the public sphere, Habermas is not talking about a homogeneous, specific public, but about the whole array of complex networks of multiple and overlapping publics constituted through the critical communication of individuals, groups, associations, social movements, journalistic enterprises, and other civic institutions. (Dahlberg 2005, p.112)

Even so, the notion of publics and public spheres continues to be critiqued and challenged (Butsch 2011). Habermas explains this phenomenon as a change in relations between the state and society because:

> Confronting it [the state] stood a public authority limited to a few functions, and between the two, as it were, was the realm of private people assembled into a public who, as citizenry, linked up the state with the needs of civil society according to the idea that in the medium of this public sphere political authority would be transformed into rational authority (Habermas, 1998, p.222).

Habermas said the demise of liberalism accompanied by the rise of capitalism and welfare states had resulted in a complete intrusion by ruling political institutions into the arena the public sphere was designated to maintain. This intrusion culminated in the institutionalisation of key democratic functions, including the free press, which Butsch (2011) says acts as an intermediary between local and national institutions. These conditions provided the media with the opportunity to undercut political institutions and in so doing, undermine the idea of functioning and active public spheres by turning the population into a mass composed of isolated, anonymous, and identical individuals (Butsch 2011).

Such descriptions have resulted in claims that the notion of publics and public spheres struggles to exist in a modern, fragmented media-dominant democracy. However, as the next section shows, both concepts remain central in the literature about how people become informed about issues of the day, and how the concept still allows people to contribute to critical debate about how to respond to such issues that they are exposed to (Calhoun 2011).

The public and public sphere in a modern democracy

In the modern democratic era, literature on the public and the public sphere remains centred on the concept of a group of people with similar characteristics mobilizing around issues of common interest (Stansberry 2012). Constructions of the modern notion of community

generally recognise that a society is constituted of diverse, non-homogeneous subgroups (Kim 2011), and that some will be more active and engaged in political issues than others (Grunig 1989). Subgroups are sometimes referred to as counter-publics and can be described as:

> Some publics develop not simply as one among a constellation of discursive entities, but as explicitly articulated alternatives to wider publics that exclude the interests of potential participants (Asen 2000).

The key point here is that the idea of universality should be avoided, and that race, gender, sexuality, ethnicity and other differences need to be understood and recognised when considering how to communicate through the media in modern society. The needs and interests of the members of these counter-publics can then be considered alongside more dominant discursive publics (Fraser 1992; McLaughlin 1993). Fraser explains how these counter-publics, including working class people, ethnic minorities and gay and lesbian people, often combine to form a public and discuss issues of joint concern in their own discursive public sphere. By doing so, counter-publics are empowered to express their own needs and formulate opinions about issues of concern to them. These issues can then be expressed and *circulated* as a *counter discourse* to the more dominant groups within society (Fraser 1990, p.67). Thus, the idea of publics and a public sphere in a modern society emerges through:

> The whole array of complex networks of multiple and overlapping publics constituted through the critical communication of individuals, groups, associations, social movements, journalistic enterprises, and other civic institutions (Dahlberg 2005, p.112).

Therefore, unlike earlier Habermasian concepts of a singular public and public sphere (or as Fraser calls it, the public-at-large), Dahlgren (2005) says that in a modern democratic system, there are many publics and spheres that are constituted in many different spaces. This point has a high degree of utility for this study because it explains the need to examine whether people of low SES backgrounds in Adelaide can be constituted as a public who are active in public spheres. Australia is a stratified society, where democratic participation is impacted by class, race and educational opportunity (Perry & Lubienski 2014). People from a low SES background in Adelaide incorporate multiple identities, and, as found by Husband's (1996) study of multi-ethnic public sphere, it is difficult to conceive of them as an audience that can be homogeneously served based on a singular communicative need.

Media and communication researchers have investigated whether mechanisms can be established to see if a communicative need exists within/among different publics. For example, Grunig (1989) suggests segmentation of community into: non-publics, latent publics, aware publics and active publics. Determination of the type of public can then help to determine communicative need, including identification of the perceptions and motivations of that public, which in turn can be used to help frame appropriate communications that will enable those in that public sphere to actively participate, discuss and respond to issues of shared concern (Kim 2011). Table 4 below draws from Kim (2011, p. 2) and summarises how

different types of public[8] might respond to an issue (such as climate change and adaptation) when it is presented to them.

Type of public	How they might respond to an issue
Non-public	Issue will have no concern to them.
Latent public	Issue will be a problem, but the group of people are yet to detect the problem.
Aware public	Issue has been recognised by the group of people, but [they] are yet to organise themselves or respond to it.
Active public	Issue has been recognised and the group of people are engaging with it and working on ways to respond to it.

Table 4: Types of publics and how they might respond to an issue presented to them.

Although this body of work exists, the notion of publics participating in a public sphere in a modern democracy is subject to critique (Goode 2005). Critiques tend to centre on claims that the economic interests asserted in the media continue to undermine the public sphere (Verstraeten 1996) and that the internet is disrupting, and overly fragmenting, information flows (Barton 2005; Goldberg 2011; Habermas 2006; Humphreys 2013; Sousa, Pinto & Silva 2013). However, it is broadly accepted that public spheres are still realised today, with scholars such as Mahoney (2003) claiming that many features, including social movements, new information and communication technologies, are contributing to public sphere expansion. Mahoney (2003) says public spheres are expanding because of those features, but locating the boundaries where one public sphere starts and another finishes is a difficult endeavour due to the complex and competing political, economic and social elements that constitute contemporary democratic systems.

[8] Kim (2011) did not focus on counter-publics in her study.

Gerhards and Schaeffer (2010) say the boundaries of a modern public sphere exist (to a greater and lesser extent) in three fora (Gerhards & Schaeffer 2010). The first is via face-to-face communicative interactions, such as in pubs or clubs (Gerhards & Schaeffer 2010). In other words, a public sphere is said to manifest "when two or more individuals, who acted singularly, assemble to interrogate both their own interactions and the wider relations of social and political power" (Keane 1984, p. 2). This realisation of this type of modern public sphere is non-exclusive, and open to all, but it is weak and has limited influence on the formation of public opinion.

The second forum is public events, such as political rallies, which facilitate greater participation of members of a society in the exchange of information than the first forum described above. However, public events can be dominated by leaders in society pushing their own agendas, which might be at the expense of others. This includes minorities not strong or confident enough to participate (Gerhards & Schaeffer 2010). Consequently, this public sphere can be exclusive and less representative of the people who participate in it as the influence of the strong can dominate the weaker members.

The third forum is the media, which has a significant impact on society because its reach far extends beyond the other two fora. Given its extensive reach, and contemporary diversity within both traditional and new media forms, the media is more crucial than ever in the formation of a modern public sphere, especially for presenting debates within social movements (Paul et al. 2015) and encouraging participation in politics by citizens who have been socialised within a media-driven society (Dahlberg 2001b).

Fuchs (2014) says in a modern society, political information is mediated through three types of media: capitalist; public; and civil society (normally referred to as NGOs in Australia). Capitalist media are organisations that are privately owned businesses and, although they can undermine the realisation of a public sphere, they are in fact a critical part of it (Fuchs 2014). Fuchs (2014, p.68) says the capitalist media is:

> Culturally located in the public sphere, but at the same time they are part of the capitalist economy and therefore not only produce public information, but capital and monetary profit by selling audiences/users and/or content.

This means the news information produced by journalists in capitalist media might be influenced by the concerns of the owners or funders of the organisation (including the advertisers that rent space within the media to promote their products and/or issues of interest to them (Belch et al. 2009)). This sentiment was highlighted earlier in this chapter, where Kunelius argued that in Australia, localised economic conditions associated with fossil fuel production might influence how climate change and adaption are presented in media. Therefore, according to Fuchs (2014), capitalist media provides a source from which to extract information, but is not necessarily a public sphere in and of itself because it might not represent a neutral space for citizens to engage in debate.

Like their capitalist counterparts, public media can play a compromised role in the formation of a public sphere (Reid 2014). This argument appears counter-intuitive, as public media is described as more trustworthy than commercial outlets, representing a vital pillar of a modern democracy (Freepress 2017). This is the case in Australia, where the public broadcaster, the Australian Broadcasting Corporation (ABC), is governed by an Act of Parliament that

requires it to provide an independent and balanced service (Australian Broadcasting Corporation Act (Cth) 1993 s2 (iii)). However, a public broadcaster is funded by and part of the state apparatus (Fuchs 2014), which means it can be aligned with and thus representative of state opinion (Reid 2014). Accusations of bias have been made towards the ABC, which has been said to report favourably on the political perspectives of the government of the day (Hosking 2016), or to express a left-wing bias with regard to climate change (Delingpole 2012) and the renewable energy debate (Paterson 2014). Others have argued that the ABC is biased against the government of the day, including claims that the organisation works with other media outlets to undermine and bring down the government (McDonald & Iggulden 2015).

Civil society media, or alternative media, plays a potentially more constructive role in the realisation of a modern public sphere (Fuchs 2014). This is because it is generally run on a non-profit basis, which encourages the expression of alternative views that challenge government political policy and corporatised communications (Fuchs 2014; Sandoval & Fuchs 2010). Others say that alternative media creates the conditions conducive to the formation of an effective public sphere because of its emancipatory powers that open up opportunities for citizen engagement in the formation of media production (Sandoval & Fuchs 2010). Couldry (2003) makes a similar point in arguing that alternative media challenges the influence of the mass media by providing an opportunity for the expression of alternative points of view when creating content.

This discussion masks another ongoing debate, which is about public spheres and the impact on them by the increasing influence of online media communications. Debate about the influence of online media communications is unavoidable in a modern democracy like

Australia because over 85% of the total population is online (Australian Bureau of Statistics 2016). Of those, 69% use social media on a regular basis, and Facebook is by far the most popular platform, with 95% of total online users maintaining a profile (Sensis 2016). In the 15-17 year age group, 91% use the internet to access social media (Australian Bureau of Statistics 2016), while 35% of all Australian social media users say they use it to access news and current affairs (Australian Bureau of Statistics 2016). These statistics point to the growing influence and importance of social media, which is reflected in the growing body of literature that discusses the impact of social and internet based media upon public sphere theory. This literature is reviewed in the next section.

New media and the public sphere

Calhoun (1998) says a key benefit of the influence of online communications is that it liberates people from the need to gather in physical groups to discuss matters of public concern (Calhoun 1998). This observation about online communications might upset traditional formations of a public sphere, but Calhoun (1998) also expresses a note of caution, arguing that the benefits expressed about the liberating feature of online communications might be exaggerated. These two points are representative of the debate about the impact of online communications upon the formation of a public sphere in a contemporary society (Rauchfleisch & Kovic 2016).

Many authors describe the impact of online and social media communications on the formation of public spheres in optimistic terms (Aouragh 2014; Dahlberg 2001a). To some, online media communications represent an opportunity for universal political enfranchisement as they provide open access for people to participate in democratic processes (Hirschkind, de Abreu & Caduff 2017). O'Sullivan & Carr (2017) argue that this

participation transforms the way people interact with political issues in the media, making it much harder to distinguish between one-way, two-way and multi-way interactions. For example, online communications mean traditional mass media messaging is no longer confined to traditional mass media outlets. Further, some scholars also say that online communication is not interpersonal, leading to the idea of a new form of communicative action - "*masspersonal*" (O'Sullivan & Carr 2017).

The idea of communicative transformation is explored by Griffiths and Barbour (2016), who argue that online communication technologies transcend and reduce barriers between mass and interpersonal communications, encouraging the formation of multiple active publics. Griffiths and Barbour (2016, p. 2) also argue that online technologies provide the opportunity to create physical space in society where publics can emerge and engage with each other visibly – "however fleetingly" - to assemble and discuss issues of shared interests. The concept of being visible in this context is important as it provides an opportunity for private people to gather in a public way to discuss issues of shared concern. This idea can be directly related to the Habermasian ideal of private individuals gathering in public space (in that case the coffee shops and tea houses of 17th century bourgeois Europe) to discuss issues of the day. Further, Bowd (2016, 132) argues that the idea of visibility retains importance in modern news information sharing contexts and has many advantages such as helping an individual draw traffic to a website and providing an "opportunity for audiences to disseminate content online".

The blurring of boundaries, the creation of visible space, and the advantages that this can provide for the sharing of news information indicate that online media provide a fruitful forum for the realisation of public spheres. Indeed, it has been said that online communicative

exchanges between the media and various publics epitomise the notion of a communicative exchange, where people can have many-to-many interactions and debate issues of concern in a neutral environment (Lagos, Coopman & Tomhave 2014).

Rauchfleisch and Kovic (2016, p. 1) suggest that the idea of many-to-many interactions might represent "the most acute and a very immediate form of an interaction between users who are not merely a passive audience, but active and interconnected agents". Dahlberg (2001a) says this is achieved because online communications provide people with the tools, time and space to reflect upon an issue, and respond to it in a time frame suited to their needs. Bowd (2016) provides an example in the context of a newsroom. She says consumers of news become active participants in the journalistic process by contributing online and disseminating information to wider audiences via their personal social networks. Hermida et al. (2012, p. 816) explain that such a blurring between journalistic practice and audience participation represents an evolution of the public sphere "where the dynamics of publication and distribution of news are being reshaped by networked publics".

The evolution of online communications also represents a levelling force that is breaking down traditional hierarchical structures of the mass media, encouraging the formation of new and different types of publics and public spheres (Schudson 2003). As described in the previous section, traditional media can undermine the formation of a public sphere due to corporate or government intervention in the type and content of published news. Online communications can challenge those interventionist forces, encouraging a public to form and engage with news and politics in a way that is less influenced by the agenda of either a corporate media entity or a government ideology (Hermida et al. 2012).

The breakdown of traditional hierarchical media influence is most evident through the expansion of social media, but not all social media platforms appear to have the characteristics of an idealised notion of a public sphere described above (Kaplan & Haenlein 2010). For example, Spears et al. (2002) found that public engagement about a political issue via social media is influenced by the level of anonymity that a platform provides its users. For example, Facebook users publish more comprehensive, regular and detailed comments about news and political issues than YouTube subscribers, where discussion was more inclined to be abusive and less detailed (Halpern & Gibbs 2013). Halpern and Gibbs (2013) say this is because Facebook requires people to create a personal profile, whereas YouTube allows people to establish an account anonymously. That finding is similar to those in studies of public spheres as traditionally conceptualised, where political deliberations increase in amount and quality when people participate publicly/visibly via face-to-face social networks (e.g. church, volunteer group or work) (McKuen 1990; Scheufele et al. 2004).

Thus, platforms like Twitter and Facebook might facilitate the formation of a public sphere because they enable people to share and debate political discussion amongst heterogeneous audiences. An example of this hypothesis being tested is in Yang, Quan-Haase and Rannenberg (2016). In a study of Twitter, they found that it represents a public sphere because it provides a forum for traditional media entities to distribute news, but also facilitates open political debate amongst a diverse audience. They argued that this is particularly the case with political communications because Twitter, unlike Facebook, does not require reciprocal relationships between users, allowing for information to be shared and debated more easily.

However, Halpern and Gibbs (2013) observe that Facebook has other benefits for encouraging the formation of public spheres due to its notification system. For example, a person might be notified and encouraged to think about a political issue of which they previously had no knowledge. This communicative action might encourage more independent deliberations about a political issue and thereby encourage the formation of new and expanded public spheres. Reid (2014) extends this argument, suggesting that online communications provide an opportunity for public service (and capitalist) media to expand public spheres. For example, Reid (2014) says that the public service media can publish content, but the capacity provided for people to comment and debate what is published diminishes the influence and impact of media ownership.

Other studies point to a less optimistic future for both publics and public spheres due to internet-based media communications. Sousa, Pinto and Costa (2013) argue that internet based social media communications fragment collective opinion in favour of small, non-representative groups. The impact of fragmentation can result in one-sided interactions between a group of people and media who share the same view, limiting the quality of democratic deliberations to which a person is exposed (Batorski & Grzywińska 2017; Rikken 2014; Zuckerberg 2017). Gerhards and Schäfer (2010) say this is not always the case, but smaller, more marginal groups may be disadvantaged for other reasons. When reflecting on website-based interactions, they found that:

> Public debate in the internet, as long as it is organized by search engines, advantages established actors, while making it more difficult for smaller actors and their arguments to appear in a relevant manner. One main reason are certainly the modes of selection that search engines apply: their gatekeeping, in contrast to the old mass

media, relies mainly on technical characteristics of websites (Gerhards & Schäfer 2010, p. 13).

Batorski and Grzywińska (2017, p.4) build on this argument in arguing that the architecture of online technology facilitates the collection of "opinion-reinforcing information… [resulting in] selective exposure". Selective exposure is nothing new, and has long been a feature of mass media consumption. For example, a person with left-leaning tendencies in Australia would rarely choose to expose themselves to information presented in *The Daily Telegraph*[9]. However, conventional journalistic norms require a story to provide space for the presentation of different sides of an argument. This means those who do choose to expose themselves to media outside their normal ideological leaning might be exposed to an alternate view if journalistic norms are used. However, journalism norms do not apply to members of a public who are writing on social media, and the ability to interact almost instantaneously with others has been found to sometimes discourage people from expressing alternative points of view due to a fear of becoming isolated online (Soffer & Gordoni 2017).

This fear of isolation can result in polarised, homogeneous communicative environments (Bakshy et al. 2012; Soffer & Gordoni 2017). This, coupled with the issues identified above concerning the architecture of the internet, "strengthens selective exposure" (Soffer & Gordoni 2017, p. 5) and encourages people to focus on individualised interests (Sunstein 2004) rather than a greater public discourse (Tewksbury 2003). In a study of extremist politics, it was found that the narrowing of interests caused by selective exposure to online political media communications had the potential to destabilise public spheres and that audience fragmentation threatens social integration (Downey & Fenton 2003).

[9] The Daily Telegraph is a tabloid style newspaper owned by News Corp and printed daily in Sydney, New South Wales, Australia.

Another consequence of fragmentation is highlighted in a study of posts on the United States National Public Radio[10] Facebook page (Peach 2011). In that study, discourse analysis was applied to examine whether Facebook constitutes a modern public sphere. Results showed that it did not because people were not actually interacting in a meaningful exchange of views and opinions. Instead, constructive interactions were undermined by aggressive and abusive "*trolling*[11] behaviour" (Peach 2011, p.122).

Peach (2011) concludes that unless Facebook encourages greater levels of reciprocity and constructive interactions, it cannot act as a public sphere (Peach 2011, p.125). Compounding these findings is what Habermas (2006, p. 422) says is the "colonisation of the public sphere by market imperatives", which could have the effect of limiting the effectiveness of a platform like Facebook to act as an independent forum for people to democratically debate political and social issues. It can be argued that due to the commercial nature of social media, such communication environments might never fully fit the description of a public sphere (van Dijck 2012). Findings from a study about the utility of Twitter as a 21st Century public sphere are consistent with this point. In examining the role of Twitter as a public sphere in the #r*ighttobeforgotten* (RTBF) campaign it was found that:

> *Twitter* was not able to fulfil its function as a virtual public sphere, as information did not diffuse in an unfettered manner, but rather was controlled by a few key influencers. On *Twitter*, we continue to see this elite being highly involved and central to the RTBF debate. In particular, news outlets – through editors, newsroom staff and

[10] National Public Radio is a news and current affairs public broadcaster in the United States of America. NPR has 989 member and associate member radio stations that constitute NPR (National Public Radio 2017).
[11] Trolling is the verb used by online "community members to describe a textual practice, which is designed to inscribe and provoke an emotional response" (Gorton & Garde-Hansen 2013, p. 297).

> broadcasters – continue to have an agenda-setting function, often being the first to tweet on RTBF news (Yang, Quan-Haase & Rannenberg 2016, p. 15).

Other observations about online social media communications acting as a public sphere suggest that its usefulness to facilitate public participation "has been seriously oversold, and that internet technology is not only failing to democratize the world, but is used by authorities and regimes to control its citizens and suppress dissent" (Reid 2014, p. 38). This view is shared by other scholars who argue that many claims about social media impacts are overstated and that social media does not represent an improvement in how democratic institutions interact with their citizens (Macnamara 2012; Macnamara & Kenning 2011).

A second perspective on this issue is drawn from a speech given by Robert Thomson, Chief Executive of News Limited, who said:

> Our mastheads are committed to producing high quality content, qualified by a rare breed of fact-checkers called journalists. We are in an era on which integrity is precious, yet digital [media] distributors have long been the platform for fake and the fallacious, highlighting an issue which we have long stressed, that they have eroded the integrity of the content, undermining its provenance. Put simply, content distributors are profiting at the expense of content creators and at the expense of veracity (Australian Broadcasting Corporation 2017a).

However, given the place of News Corp Australia in the media marketplace, commentary from the Chief Executive should be contextualised with a degree of critical engagement and not just taken at face value. For example, a survey of that "rare breed of fact-checkers" found

that that they were likely to be swayed by the political view of their editorial bosses (Hanusch 2014). This is important, because the lower-ranked journalists surveyed in that study said they were more centre-left-leaning politically, whereas the bosses indicated they were centre-right-leaning, which could result in editorial influence distorting the reporting of an event, even at News Corp Australia. As described previously in this chapter on pages 34-35, local economic conditions can potentially influence how a media organisation might report on the issue of climate change, so if a centre-left leaning journalist, supportive of combating climate change feels the power and influence of a centre-right leaning senior staff member, they might be unable to write stories about it in a way that they think it should be. In this scenario, the influence of centre-right leaning senior staff members would directly influence what is published/broadcast about climate change. Wiewiura and Hendricks (2017) found that to be the case during the 2016 US presidential election where ideologically driven institutions (and individuals within those institutions) distributed information through online communication sources that was biased and false which had a big impact on swing voters.

The literature in this section indicates that although new media has fragmented audience attention, and in some cases, polarised political debate, the evidence is that media remains an important source of political information for people in society. The new media environment provides opportunity for political institutions to distribute information to people who can then engage with it, and discuss its meaning with others, if they so choose. The literature also shows that some new media forums are more likely to facilitate the formation of public spheres than others. This is valuable information for institutions to consider when deciding if media fora are an appropriate place to try to engage with a target audience about climate change and adaptation.

The section has also indicated the importance of context, because although media (old or new) is facilitating the formation of publics and public spheres, no section of society is under its total influence (Boykoff 2009; Deacon & Stanyer 2014). That observation is reflected in evidence that shows other cultural influencers continue to play a role in shaping public opinion about a political issue such as climate change (Hepp, Hjarvard & Lundby 2015; Winter & Neubaum 2016). One of those influencers (and of relevance to this thesis) is opinion leaders in modern media-driven societies, and literature on that subject is reviewed next.

Online opinion leaders in a modern public sphere

The role of opinion leaders is important to this study as they are said to play a part in the process of sharing and interpreting information debated in a public sphere. The study of opinion leaders originated in the development of the two-step flow of communication theory (Katz & Lazarsfeld 1955) which states that opinion leaders are people who "can be characterized by personal predispositions ("who one is"), domain-specific factors (such as competence and interest in the domain/"what one knows") and social connections ("who one knows")" (Winter & Neubaum 2016, p.3). Opinion leaders obtain information in the media (first step), and then, via face-to-face interactions (second step), attempt to influence their peers. The two-step flow of communication has been found to be extremely important in political communications, and more influential than the mass media alone, when it comes to influencing voting behaviour (Winter & Neubaum 2016).

Critiques of the two-step flow of communication model argue that modelling the influence of opinion leaders in the media can never show a simple cause and effect of a message communicated, because as Burt (1999) notes, communications flows in multi-step directions.

Some scholars, including Bennett and Manheim (2006), suggest communications from opinion leaders in the media do flow in just one direction, but Burt (1999, p. 51) argued that they do not, and that information flows in multi-steps, which means opinion leaders "are not at the top of things so much as people at the edge of things, not leaders within groups, so much as brokers between groups". In other words, the power of an opinion leader lies more in their ability to "trigger contagion" (Burt 1999, p. 50) about an issue in a way that generates discussion within and outside their sphere of influence.

Bennett and Manheim (2006) suggest that the two-step model has been undermined by internet-based communications. They say that with the use of "stealthy technologies" (Bennett & Manheim 2006, p.229), information can be targeted at smaller and more defined segmented populations. This process of targeting information contributes to audience fragmentation, and represents a one-step flow of communication as it reduces the ability of others to influence the information dissemination process.

The growth of new media has generated a renewed interest in these ideas (Winter & Neubaum 2016), including in the study of climate change communications (Nisbet & Kotcher 2009). Nisbet and Kotcher (2009, p. 330), for example, studied opinion-leader campaigns on climate change and noted that the issue of communicating climate change was "stuck in gridlock" because online communications had diluted the influence of opinion leaders by "activating many more loose ties at once" (Nisbet & Kotcher 2009, p. 340). This view is echoed by Weeks, Ardèvol-Abreu and Gil de Zúñiga (2015), but they assert that even in a diluted and fragmented media environment:

> Online social influence is powerful and can impact a range of political behaviours, such as the media outlets people select, what they learn on social media, and even whether they vote. Thus, it appears online influence remains strong (Weeks, Ardèvol-Abreu & Gil de Zúñiga 2015, p. 4).

This interpretation of the impact of the internet on the power and influence of opinion leaders is supported by literature that shows how highly active online contributors perform positive functional discursive roles online by driving ideas, contributing regularly and informing debate (Graham & Wright 2014; Kies 2010). Others find that information exchanged on social media is often considered more trustworthy than traditional sources (Turcotte et al. 2015). Graham and Wright (2014) found that contrary to widespread belief about the negativity of political discourse online, the people who are most active in online debates perform many influential roles:

> Including helping other users; replying to debates and summarising longer threads for new users; being empathetic towards others' problems; and engaging in (largely) rational critical debate (Graham & Wright 2013, p. 639).

There are others who disagree, such as Bennett and Manheim (2006, p. 226), who say that new media diminishes the role of opinion leaders on the basis that such technologies "mainly produce self-centred churn with little coherent social impact". A similar observation was made in a study of personality traits of Web 2.0 technology users which found that influence on social media was more about "self-impression management" than contributing to the topic being discussed (Krämer & Winter 2008, p. 4). Others argue that although the influence of opinion leaders "in traditional and interpersonal settings has diminished" (Weeks, Ardèvol-

Abreu & Gil de Zúñiga 2015, p. 2), online communications provide many new opportunites for opinion leaders to exert their influence over others. This is reinforced in another study which showed that opinion leaders were perceived as strong and trustworthy online when others in a shared network had recommended that they be trusted (Turcotte et al. 2015).

This section of the review has summarised literature that suggests publics and public spheres are still conceivable in a modern, fragmented, media-driven society. The existing research illustrates the diverse fora in which a public might be identified, and the conditions required to realise public spheres. Further, it shows that non-media sources, including opinion leaders, are still important to consider under modern media conditions, but that the power and influence they hold is less clear and open to conjecture. Opinion leaders might still influence a public group, even in an online public sphere. This highlights the importance of understanding who opinion leaders might be in a low SES community context in Adelaide, because if the people who are presently distributing information about climate change and adaptation have no influence, the communication process will potentially be undermined.

However, if a low SES public sphere exists in Adelaide, and attempts are made to communicate with it via media, it is important to review how best to present climate change and adaptation to a public audience. Thus, the last section of this chapter reviews literature in this area. It provides a background to the field, introduces key communication theories including framing theory and the Information Deficit Model, and discusses the role of uncertainty, risk and disaster management communications within a climate change and adaptation context.

Climate change and communications research

Studies into how to communicate climate change have been prominent in the study of climate change overall and have focused on many areas. This has included the role of the media, which is described as playing a powerful role in shaping opinion on the climate change issue (Butler & Pidgeon 2009; Foust & O'Shannon Murphy 2009) and is often seen as the main source of information for the general public (Eskjær 2013). However, in practice, the communication endeavour is described as only "partially successful [and] a work in progress" (Warner 2007, p. 167). Communications have focused on trying to assist governments and others to achieve reductions in GHG which, to date, is not happening. For example, since the commencement of this thesis in 2014, GHG have risen in Earth's atmosphere from 395 parts per million to over 400 parts per million (CSIRO 2016), with no indication of levels reducing in the near future. The ongoing increase in GHG emissions suggests that climate actors struggle to communicate the importance of tackling the issue effectively. The communication challenge is also demonstrated by public opinion in many countries (including Australia) which continually fluctuates, with polling showing that people have mixed opinions about tackling the issue (Hanson 2013). Achieving success in climate change communications is also particularly challenging due to:

> The way individuals or groups of people respond to climate change messages is extraordinarily complex, dependent on all sorts of variables, like cultural, societal, and political values, personal experience, and the practice or desire for individuals to cohere with values characteristics of groups with which they identify (Painter, 2013 pp. 34-35).

The challenge of developing effective climate communications is further complicated by the parallel need to communicate *adaptation* to climate change. Adaptations to climate change are described as actions that people can take at either a personal or societal level to reduce exposure to hazards (Adger, Arnell & Tompkins 2005; Elrick-Barr et al. 2014) and by mobilising "physical and social elements to enable adaptation" (Keys, Thomsen & Smith 2016, p. 433).

By necessity, climate change communication theory is interdisciplinary (Galford et al. 2016), and the study of how to communicate the issue has been informed by social scientists, economists, health, behavioural and psychological scientists, and those researching in the physical and environmental sciences, including McGaurr, Lester and Painter (2013), Beck (2009), Barnett, Lambert and Fry (2008), Mirfenderesk (2010) and Kasperson et al. (1988). An interdisciplinary approach has also been adopted in the newer field of climate change adaptation communications research that reflects on the dimensions of how to communicate the need to adapt to climatic changes to various communities (Hansen, A et al. 2011; Keys, Thomsen & Smith 2016; Moser 2014; Nursey-Bray et al. 2013; Sevoyan et al. 2013). One example of this approach is an edited book by Whitmarsh, O'Neil and Lorenzoni (2011) which includes contributions from social scientists, economists, psychologists, geographers, environmental scientists and policy experts. Much recent PhD research that focusses on climate change communications also draws on an interdisciplinary approach, including work by Callaghan (2014), Hytten (2013), Leviston (2013), Chongkolrattanaporn (2013), Gaillard (Gaillard 2011) and Hodder (2011).

This interdisciplinary approach to researching how to communicate climate change and adaptation suggests that institutions embarking on developing climate change and adaptation

communications should consider incorporating interdisciplinary messages. This is because climate change, and adapting to it, requires different responses from a range of societal actors. For example, a political media story targeted at the engineering community will be different to one presented to a person from a low SES background.

Some scholars have focused on the study of climate change communications using various strands of media theory. For example, Arévalo (2012) used content analysis by applying a quantitative coding frame to identify reasons for a declining level in media coverage of international climate summits. Leiserowitz, Smith and Marlon (2010), Leiserowitz et al. (2016) and Roser-Renouf (2016) also utilised media content analysis to track public perceptions of climate change at the Yale Project on Climate Change Communications. Former BBC journalist James Painter (Painter 2013) used framing theory to study public understanding and engagement with climate change and adaptation when it is communicated as an uncertain risk to society. Gurney (2014) conducted quantitative textual analysis to examine why climate change received low levels of media coverage in the 2013 Australian federal election. There have also been studies describing media portrayals of climate change through content analysis techniques (Bailey, Giangola & Boykoff 2014; Boykoff & Boykoff 2004; Eskjær 2013; Schäfer & Schlichting 2014) and empirical studies examining the extent of news coverage of the issue (Boykoff 2007, 2008, 2009).

Given the extensive reach of climate change communications as a media interest topic, literature has also emerged from other fields in the humanities, including the visual arts, film and cultural studies. For example, Walker (2014, p. 366) describes the emergence of the "cli-fi" genre and says "one of the strengths of novels over non-fiction, is that it gives us characters with whom to identify". Although extensive review of these publications is beyond

the scope of this thesis, they are testament to the multiple and diverse fora in which the topic of climate change and adaptation communications is embedded.

However, the review of the literature in this context reveals that there is a gap in research undertaken within the humanities on the study of climate change and adaptation communications. This is particularly apparent in the context of understanding how to develop climate communications that target people from low SES backgrounds in a developed world context (Dodman 2013). This project contributes to narrowing this gap. Further, this study is timely: the field of adaptation communications research has been characterised as facing an urgent challenge, one that requires a deeper examination of the relationship between media and climate change because:

> The inclination to empirically expand our knowledge about the media's role in shaping how citizens understand climate change has not been very pronounced compared with the interest in ''merely'' exploring news reporting (Olausson 2011, p. 282).

As a body of work, the literature provides information from specific studies and underlying theorisation/conceptual ideas of climate change and adaptation communication studies that are useful to this research project. These studies include climate change and adaptation communication research in relation to: framing theory; the Information Deficit Model (IDM); and uncertainty, risk and disaster management communications (Bostrom, Böhm & O'Connor 2013; Boykoff & Boykoff 2007; Byer, Lalani & Yeomans 2009; Catapano 2001; Chongkolrattanaporn 2013; Harvey et al. 2012; Nisbet & Kotcher 2009; Solomon et al. 2012; Weingart, Engles & Pansegrau 2000).

These studies, along with the scientific findings published by national and international scientific institutions, indicate that climate change requires nuanced and often context-specific communications, resulting in the field being described "as something like a booming industry alongside more established 'communication enterprises', such as health, risk and science communication" (Nerlich, Koteyko & Brown 2010, p. 1). The next section reviews a range of key studies that provide different constructions of what constitutes effective public engagement on climate change and adaptation, and discusses why that matters in the context of this thesis.

Framing theory and climate change communications

There is a long-term academic assertion that the media has the power to influence public perceptions about climate change and build public opinion that favours government action to reduce emissions of GHG (Mormont & Dasnoy 1995). Framing theory has been utilised by academics to help explain how public opinion can be influenced by climate change and adaptation media communications. Although a complete review of framing theory is beyond the scope of this thesis, understanding its basic elements is important as it has been extensively utilised in climate change communication studies (see Burton & Dredge 2007; Chongkolrattanaporn 2013; Entman 1993; Foust & O'Shannon Murphy 2009; Fünfgeld & McEvoy 2011; Gifford & Comeau 2011; Knight & Greenberg 2011; McCright et al. 2016; McEvoy, Fünfgeld & Bosomworth 2013; Rigney 2011; Roosvall & Tegelberg 2013; Trumbo 1996).

Framing is defined as "the way in which individuals and the mass media turn the flow of everyday life into narrative events" (Chandler & Munday 2011). Goffman (1974, p. 25) argues that framing is simply an individual or institutional "attempt to define what is it that's

going on here?". In this way, Entman (1993) says that "frames" define problems, assist in diagnosis of causes, enable evaluation of solutions and prescribe solutions. This, he says, must be done through methods that make communications "more noticeable, meaningful or memorable" (Entman 1993, p.53). In this way, framing helps people understand, share concerns about and hopefully support suggested solutions to address the problem being raised, such as climate change and adaptation (McEvoy, Fünfgeld & Bosomworth 2013). Shen, Ahern & Baker (2014, p. 98) say that framing a story well in the news can have a profound impact upon a person, influencing their opinions and attitudes towards political issues, and that this is achieved by "highlighting certain attributes of issues". The key way in which communicators apply framing is through the deployment of narratives, applied through words and images, to place an emphasis upon certain elements of a story in order to try to exclude or deflect interest away from others (Gamson 1992). Therefore, framing concentrates the audience's attention by alerting a person to key points of a news story, and the accompanying narrative provides a cultural or social context that aims to resonate with a target audience (Lück et al. 2016). In this way, Cohen argues that framing does not tell people *what* to think, but *how* they could think about a particular issue (Cohen 1963).

Trumbo (1996), drawing from Entman (1993) and applying framing theory to climate change communications, asserts that the use of framing assists communicators (such as journalists) to understand and give meaning to the climate change story. This is because frames have been found to "play a central role in how people make sense of news, remember news events and use news to guide decision-making and action" (Davis & Kent 2013, p. 72). Fünfgeld and McEvoy (2011) add that using framing theory provides an opportunity to ensure long-term engagement in the media and present climate communications as a long-term process of learning, where humans learn how to adapt to changing climatic conditions. Foust and

O'Shannon Murphy (2009) found framing was a useful theoretical perspective to utilise in investigating what triggers interest in a climate change news story. They argue that media coverage should focus on using frames that encourage an audience to become advocates for reducing GHG. Another study using framing theory found that a suitable way of encouraging people to become advocates and supportive of GHG emission reductions should focus on using images over words that can be linked to climate change (Gifford & Comeau 2011). However, research has suggested that representatives from the media industry (including journalists and editors) are not always responsive to reporting upon frames projected by an institution that "contradict or question the status quo in times of crisis" (Davis & Kent 2013, p. 74). Further, research demonstrates that when conflicting frames are presented in the media, a majority of any audience exposed to a news story will be more receptive to and 'take home' the messages presented to them by those whom they perceive to be the most elite institution represented in the story (Valkenburg & Semetko 1999). These factors have made it difficult to convince some news services to frame climate change and adaptation as a serious threat to society (Feldman et al. 2012).

Historically, climate change and adaptation actors have tried to obtain news coverage by using frames that target broad public audiences with the intent of making them understand that climate change is a global issue requiring international action based on strong scientific evidence. A classic example of this framing in practice, often described in the literature, is when the media reported a speech in the US Senate's Energy and Natural Resources Committee by scientist James Hansen, who said "it is time to stop waffling so much and say that the evidence is pretty strong, that the greenhouse effect is here… [and its] impact will last centuries" (Hansen, J 1988).

Painter (2013, p. 8) said such long-term abstract scientific claims are “particularly difficult concepts to convey to the public and can make the journalists’ job difficult”. In response to the idea of abstract claims being hard to convey, studies show that early media messaging produced by those advocating a reduction in GHG to limit climate change, constructed the issue as an almost certain apocalypse (Hytten 2013). The frame used was the notion of a “tipping point”, which regularly appeared in media reporting between 2002 and 2007 (Russill & Nyssa 2009). Russill and Nyssa’s (2009) research shows that between 2002 and 2007, 16% of the times that the words “tipping point” were used in UK news media stories, they were used in the context of a climate change story[12]. The aim of the frame was to generate an emotional response from the public (Russill and Nyssa 2009). It was also used to explain how an environmental or social system can absorb incremental change over time that few people observe, until the tipping point is reached and profound, highly visible changes occur that many people observe (Grotzer & Lincoln 2007; Russill 2008). Climate change actors encouraged the use of a tipping point frame by the media as it aimed to capture the attention of the public, build support for tackling the issue and encourage a political response[13] (Chongkolrattanaporn 2013; Cook 2006; Entman 1993; Foust & O'Shannon Murphy 2009; Gifford & Comeau 2011; Knight & Greenberg 2011; Myers et al. 2012; Trumbo 1996).

The tipping point frame was used by a diverse suite of communicators to warn of the imminent danger climate change poses to planet Earth (Russill 2008), including in 2006, when the then British Prime Minister Tony Blair and his Dutch counterpart Jan Peter

[12] Russill & Nyssa (2009) analysed data from Oreskes (2004), Boykoff & Boykoff (2004) and Boykoff (2007), plus extracting stories for analysis extracted from the Scientific Citation Index (SCI) and the ISI Web of Knowledge.

[13] As shown later in this section, the tipping point frame was part of a successful global political campaign, with both public and political opinion by 2007 showing strong support for countries like Australia to tackle climate change. The strong support can also be shown by the signing of international agreements by a majority of the world’s countries that put in place legally binding frameworks forcing countries to reduce their GHG emissions.

Belkenende wrote a joint letter to leaders of the European Union stating that "we have a window of only 10-15 years to take the steps we need to avoid crossing catastrophic tipping points… so we must act quickly (Balkenende & Blair 2006, p. 1).

The letter was distributed to media outlets and the use of the term catastrophe when describing the tipping point scenario aimed to generate an emotional response in those targeted by the communication (Sheppard 2012). The literature shows that the use of emotions in social and environmental issue campaigning is a tried and tested tactic, with many examples stretching back to at least the anti-slavery movement (Lamb 2016). Unlike anti-slavery campaigns, which focused on the exploitation of human emotions of "inhumanity, cruelty and immorality" (Oldfield 2007), early climate change communications focused on exploiting human emotions of fear (through the use of images such as a burning planet Earth) and compassion (through the use images of vulnerable creatures, such as stranded and starving polar bears) in order to engender a response (Sheppard 2012) (see Figure 2 for examples).These points were originally discussed by Whitmarsh, O'Neill and Lorenzoni (2011) who said public engagement in the issue of climate change should and must be manifest in multiple forms. This includes visual cues that are aimed at driving emotional and engaging responses. Some authors (particularly from the health communication field) claim that fear is a strong emotion and can be exploited as it is an arbiter of behavioural change. Further, such authors argue that in communicating climate change, 'fearful' framing should be deployed, along with efficacy[14] options (Australian Medical Association 2009; Maibach, E, Roser-Renouf & Leiserowitz 2008).

[14] The authors quoted here suggest that it is useful to frighten people, but also to provide them with a remedy that will lessen the impact of climate change. The use of the word efficacy in climate change communications research is intended to explain to people that climate change should be feared but there is capacity to respond to the challenge it poses to society.

The main aim of trying to induce an emotional response in a social campaign is to create an effect in the hope of aligning and binding “individuals into communities” (Rodan & Mummery 2014). By binding individuals into a community, a union can be created that can apply pressure to produce an outcome that favours the cause over which those individuals bonded. This topic is discussed further in Chapter Eight, where the formation of a community of practice at a local government level is suggested as a mechanism to bond professionals over the subject of communicating climate change adaptation to people from a low SES background in Adelaide.

A union of bonded people over a particular political cause can be built more effectively by encouraging the use of negative – rather than positive - emotional frames in the media (Perrin 2009). Indeed, during early attempts at encouraging public support for government action on tackling climate change, the use of negative frames in Australia was highly effective, with the image of a stranded polar being seen as most representative of why the issue of climate change should be tackled (Leviston 2013).

Figure 2: Examples of using negative images to induce emotional responses to climate change

The success of this approach can be seen in two Australian studies. The first found that 68% of Australians believed “global warming was a serious and pressing problem… [and] along

with international terrorism and the possibility of unfriendly countries becoming nuclear powers, were the top-rated threats to Australia's vital interest" (Cook 2006). The second showed that public opinion was less concerned about the economic cost to the Australian tax payer of tackling climate change when it was regularly framed in negative and emotional ways in news and other media communications (Morrison, M. & Hatfield-Dodds 2011). Further, at a political level, emotional and negative media and communication framing drove high-level political support for tackling climate change. For example, then Prime Minister Kevin Rudd said in a speech that climate change was the "great moral, environmental and economic challenge of our age" (Rudd 2007) and the federal election of that year was described as the world's first climate change election (Glover 2007). Therefore, at the time, communicating a message about the threat posed by climate change drove public and political opinion in Australia to develop policies aimed at reducing GHG emissions to stop anthropogenic climate change (Heath 2011, p. 86).

However, despite the fact that by 2010 large volumes of negatively framed emotional communicative activity about climate change had encouraged small sections of society to be more *climate friendly*[15], some authors argued that no real social change was taking place in mainstream society (Davidson 2011; Fünfgeld & McEvoy 2011). For example, households purchasing green power remained at low levels and GHG emissions continued to rise (Hytten 2013). Lusthaus (2010) makes a similar case, saying "with such an important issue, merely reverting to feelings or emotions is not sufficient" (Lusthaus 2010).

Walker (2014) echoes this shift in direction, noting that although audiences are used to climate change being described in apocalyptic ways, a more positive approach, such as

[15] Climate friendly behaviour is described as actions that stem from individual behaviour change towards a lower individual carbon foot print (Blanchard 2010)

romantic comedy, could be a more effective way for communicating climate change and the key to writing about the topic:

> May be to focus on the small things as well as the large, to explore the emotional realm and to take a playful and innovative approach in order to engage readers' hearts and not just their heads (Walker 2014, p. 368).

Roeser (2012) concurs with these ideas, saying that climate change should be communicated in more positive frames that "should trigger moral emotions that entice moral reflection and motivation for a more sustainable lifestyle" (Roeser 2012, p. 1039). The idea of changing climate change framing to a more positive tone is considered further in the following section. This is because whether negative or positive framing is employed, people must be equipped with knowledge about the science of climate change to understand why it is a problem in the first place. How that knowledge is generated via media has been the subject of academic discussion, primarily centred on the presentation of climate change information via an Information Deficit Model (IDM), and literature pertaining to it is the focus of the next section of this review.

The Information Deficit Model

The IDM literature can explain why climate communicators and researchers from the field suggested altering media framing about climate change and adaptation from negative messaging to a more positive frame. It also shows that the IDM model was used extensively by climate communicators but then fell out of favour. The reasons for this provide valuable information to draw from in Chapter Seven, in suggesting practical ways to help people from

a low SES background in Adelaide become more informed about climate change and adaptation.

The key function of the IDM was to contend with the problem of communicating the uncertainty associated with climate change and adaptation science (Painter 2013). It is hard for a climate actor to explain to a journalist the following hypothetical example - *the Earth is at a tipping point threatening all life upon it unless we take radical steps to change how modern society functions… we think this might or might not occur in the next fifty years or so*. Uncertainty, while integral to understanding the science of climate change, presents a major challenge when considering how to communicate it via media (Pidgeon & Fischhoff 2011). The literature shows that one approach for trying to help people understand is to present information that includes the wide range of and degree to which climate impacts might affect society and the environment (Byer, Lalani & Yeomans 2009). This approach requires inundating people with increasing levels of scientific information until they grasp what is being said (Sheppard 2012). This approach is what is known as the Information Deficit Model, and it has been used by communicators to help them explain climate change and adaptation science to both lay and informed groups in society.

The IDM approach has been used extensively by climate communicators, most notably in the 2006 documentary *An Inconvenient Truth*. As Figure 3 shows, scientific information was presented in increasing detail, but in super-human-sized graphs accompanied by strong emotive images of emissions pouring from power station chimneys, melting glaciers and hurricane force winds whipping up raging seas (Guggenheim 2006). The film has been described as the moment the findings from the Intergovernmental Panel on Climate Change

(IPCC) finally began to "register with the man and woman on the street… [and] the first PowerPoint presentation ever to win an Oscar" (Sheppard 2012, p. 17).

Images removed for copyright purposes

To view the image of Al Gore on a scissor lift visit: https://www.moviesteve.com/film-of-the-day-16-september-an-inconvenient-truth/

To view accompanying promotional material visit: https://www.imdb.com/title/tt0497116/

Figure 3: Al Gore uses a scissor lift to make a dramatic scientific point about climate change and accompanying promotional material for the film An Inconvenient Truth.

Other relevant documentaries such as *Meat the Truth* (2008) utilise the IDM approach, in this case to explain the impact of the livestock industry on rising GHG emissions. In this documentary, the viewer is bombarded with scientific facts throughout the film, which was described as starting "where *An Inconvenient Truth* left off" (Bexley 2009). The *11th Hour* (2007), presented by actor Leonardo DiCaprio, also utilises an IDM approach and exploits negative human emotions, including fear of vulnerability and mortality, to present a narrative that indicates there is one last chance to curb emissions of GHG before life on Earth is destroyed. Of the film, Dargis (2007) reflects:

> In one interview snippet after another, dozens of scientists, activists, gurus, policy types and even a magical-mushroom guy go through the arguments, present the data and criticize the anti-green faction… They whip through the pictures and the interviews fast — at times a little too fast — and keep the information flowing as quickly as the visuals (Dargis 2007).

The 11th Hour and *An Inconvenient Truth* also illustrate that communicators thought there was benefit in using people other than scientists to inundate the public with information about the problem of climate change. Many of the "other" people were celebrities (or, as discussed earlier, potential contemporary opinion leaders) and large numbers of them have taken part in climate change information communication campaigns, a fact that has led to the coining of the term "politicised celebrity system" (Boykoff & Goodman 2009). The main reason for using celebrities in climate change communications is that they create drama, help sustain media interest, connect climate to culture and take an abstract notion difficult to relay and place it into a context that enables people to more readily connect with it (Anderson, A 2011; Boykoff, Goodman & Littler 2010; Doyle, J 2015).

However, scholars have expressed concern about using the IDM because its effectiveness or otherwise is not based on empirically tested evidence to demonstrate that people change their behaviour as a result of being exposed to increasing levels of information through the media (Boykoff & Goodman 2009; Grabe & Myrick 2016). There is some evidence that the relaying of increasing amounts of information can have an unintended consequence. Studies have shown that in a socio-environmental campaign context, sometimes the mere act of obtaining information about a problem is perceived by an individual as taking action to fix that problem (Finger 1994; Rabkin & Gershon 2007; Tribbia 2007). Other studies have concluded that inundating people with increasing levels of information in negative, emotional frames has a negative to ambivalent impact on target publics about climate change (Boykoff 2008; Boykoff & Goodman 2009; Kahan 2014; Morrison, M. & Hatfield-Dodds 2011; Potter & Oster 2008; Ward 2009).

Flinger (1994) is influential in the development of this school of thought, and long before climate change had become a broad public interest topic in the media, he questioned the utility of such an approach in public domains. He asked why, despite the very high awareness and concern about climate change around the world "little social action [was] being taken individually and collectively to solve the environmental problems and to stem the environmental crisis? (Finger 1994, pp. 143-144). Chess and Johnson agree and claim that:

> Social science theory and much empirical research show that the link between information and behaviour can be tenuous at best [and]… information is not entirely consequential, but it is much overrated as a change agent (Chess & Johnson 2007, p. 223).

Potter and Oster (2008, p. 122) also critique the IDM, arguing that although it is useful in building general awareness among a lay public, it is not suitable for communicating climate change because the topic itself is potentially "unrepresentable… [and] the information-deficit model leaves no room for the impossibility of capturing the totality of a thing". Sheppard additionally asserts that the problem with the IDM is that it makes climate change too global and that we must move on from films like *An Inconvenient Truth*, and "put the message in the specific local context of each audience, to make it relevant and reveal whatever evidence is already there within each community (Sheppard 2012, p. 17).

This sentiment was empirically tested in a Swiss survey, which found that scientific information is critical but needs to be accompanied by culturally relevant information about how people can help with the problem (Shi, Visschers & Siegrist 2015). In this case, people were more likely to express a willingness to change their behaviour when they received

manageable suggestions and information, such as that reducing a person's consumption of "dairy products can substantially reduce their contribution to greenhouse gas emissions" (Shi, Visschers & Siegrist 2015, p. 2198). This is opposed to receiving information about an uncontrollable issue, such as an increase in extreme weather events, that they could do nothing about.

Shi et al. (2016) have built on this study by conducting cross-country research in Canada, China, Germany, Switzerland, the United States and the United Kingdom. Their findings suggest that concerns about the IDM might be distorted and public information campaigns on climate change are not a "lost cause" but:

> The emphasis on the causes (versus the physical and consequential dimensions) of climate change should be encouraged in risk education and communication, whereas an emphasis on the physical characteristics about climate change might backfire (leading to dampened public risk perceptions about climate change) (Shi et al. 2016, p. 762).

In an earlier study undertaken through a series of surveys assessing the impact of *An Inconvenient Truth* and the release of the Stern Report[16] (Great Britain Treasury 2007), Morrison and Hatfield-Dodds (2011) found that for Australian audiences, those with an existing limited engagement in the climate change issue became less inclined to support low-

[16] The Stern Report is the name given to a study written by the British economist Nicholas Stern from the Grantham Research Institute on Climate Change and the Environment at the London School of Economics. Titled 'The Economics of Climate Change: The Stern Review', the report is the most significant study into the predicted impacts on the global economy due to climate change. The report is often cited as it concluded that climate change is the greatest market failure ever seen, and that the benefits of taking early political and economic action to prevent catastrophic climate change far outweigh the costs of not acting. Consequently, communicators such as Al Gore often use the report in communicative activity to draw attention to the issue, and to encourage public and political opinion in favour of taking action to stop climate change.

to-medium-cost policy solutions. They also found that those who were more engaged became less price sensitive, and more content with the idea of spending more of their own and other tax payers' money to fund policy solutions to the climate change issue. Their study indicated that climate change media, when communicated via the tipping point frame and utilising an IDM approach, might be useful, but only with those already in support of tackling the issue.

However, there has been little follow-up of these findings and instead, ongoing publications demonstrate that researchers have focused on trying to reduce the level of scientific information presented to the public because there is a strong belief that it does not work. Further, Futerra[17] (2010, p. 4) makes a case that "many climate messages are dull or depressing and audiences have an inbuilt veto: the veto of their attention", causing the communication processes to fail.

The literature shows that scholars have argued that climate change as an issue should be framed as an opportunity for social change, with ideas that will connect those with the power to implement change at local levels (Somerville & Hassal 2011). Leviston (2013, p. 204) says this shift in framing can be achieved through "long-term concerted efforts to couple communication of climate change issues with positive imagery such as renewable energy, [so] these stimuli become linked at a more automatic level" to addressing the issue. This quote illustrates that a shift in direction regarding how climate change should be communicated has occurred. This observation is important to this thesis because it is central to understanding possible ways for helping a target public learn about climate change and adaptation.

[17] Futerra wrote a report for the UK government providing recommendations for the framework of that countries climate change communications strategy.

Futerra (2010) says the IDM should be avoided, and that climate change framing, whether it is meant to encourage emissions reductions or progress adaptation, should avoid the use of negative images (such as burning planets and starving polar bears). Instead, Futerra suggests climate change should be presented as an opportunity for developing technological solutions to transform society, where cleaner air (burning fewer fossil fuels), less polluted cities (we will be driving in electric cars), healthier populations (riding bikes more) and new employment opportunities in a carbon-free economy, are strongly and positively envisioned.

This view is endorsed by Gifford and Comeau (2011, p. 1306), who say, "effective frames for climate change solutions should enhance perceived competence and position climate change within a holistic sustainability ethic". Others have written that the IDM approach should be avoided, particularly in the adaptation space, and instead the issue should be localised and made salient with the presentation of efficacious possibilities (Hanson-Easey, Bi, Williams, et al. 2013; Intergovernmental Panel on Climate Change (WGII) 2014; Moser 2016; Ungar 2007). The aim is to "[make the] abstract concept of [climate change] adaptation meaningful in real, imaginable, practical and acceptable terms to both decision makers and lay audiences" (Moser 2014, pp. 3-4).

This notion of presenting climate change and adaptation in more positive ways has been implemented in practice at the State Government level in South Australia, via the state climate adaptation plan. The plan presents climate change as a challenge that "will also create opportunities for innovation, diversification and leadership in both mitigation and adaptation activities" (Government of South Australia 2012, p. 2) (see Figure 4 for examples of this change in approach). Other researchers challenge the effectiveness of this approach on the

grounds that climate change is not a product and cannot be sold in the same way as commercial goods (Corner & Randall 2011).

Courtesy of University of California Television

Courtesy of Department of Environment and Water

Figure 4: More positive representations of climate change, including a poster promoting a talk by climate scientist Richard Somerville and the front cover of the South Australian climate change adaptation plan

However, the climate change literature shows that the communication of solutions and, specifically relevant to this thesis, the communication of adaptation, is not as easy as simply reducing the levels of information presented, changing frames or highlighting the benefits that responding to climate change might bring. Scholars argue that communicating the topic, even to an informed public, is much harder than other issues (Berke & Lyles 2013), and this has been attributed to several factors, including:

1. GHG are invisible making them hard to relate to;
2. Many of the impacts predicted by science are for some distant future time, placing them outside a person's immediate sphere of thought and day-to-day reality;
3. Modern urban societies are disconnected from the natural world because we live and work in air-conditioned offices, insulating us from the everyday climate;

> 4. Most people, although they believe in climate change, do not think any individual action they might take to reduce emissions will make much difference, and thus they fail to comprehend the cumulative impact;
> 5. The continuing level of uncertainty about the actual consequences predicted by scientists creates a "wait-and-see" response in the community.
> (Moser 2010, pp. 33-35)

The literature makes a case that it is still the issue of communicating the uncertainty in climate science that causes most headaches for communicators when trying to reach a target audience (McGaurr, Lester & Painter 2013; Painter 2013). Further, Shackley and Wynne (1996) have said the reporting of uncertainty in climate change science can challenge the authority of the scientific endeavour, especially in policy formation contexts. This argument not only presents challenges in and of itself, but also encourages others to make a public case that: (i) questions the climate change scientific consensus (Bray 2010); (ii) suggests climate change is not primarily caused by anthropogenic influences (Mishchenko et al. 2007); and (iii) suggests that climate change is a hoax initiated by the Chinese government in order to undermine the manufacturing industry in the United States of America (Trump 2012). The next section considers the issue of uncertainty, and presents an overview of studies that argue the challenge of addressing it could be met by framing communications about climate change and adaptation in terms of risk and disaster management.

Uncertainty, risk and disaster management communications

While the impacts of climate change are already being felt (Intergovernmental Panel on Climate Change (WGII) 2014; National Academy of Sciences 2016; Steffen, Hughes & Perkins 2014; World Medical Assoiciation 2009), its acute impacts will be felt in the medium

to long-term[18]. The long-term nature of the problem is a significant barrier to developing climate change and adaptation communications, in terms of both messaging and engagement (McGaurr, Lester & Painter 2013; Painter 2013).

However, Beck (2009) says uncertainty need not be a damaging force and should be embraced when it emerges. In his theory of the *risk society*, Beck says “humans project our experiences of the past into the future and in this way become entangled in the snares of the past in the seemingly calculable future” (2009, p. 17). It is the notion of a calculable future that Beck says provides modern society with an opportunity for *creative uncertainty*, where people are forced to identify creative solutions to climate change. Beck (2009, p.17) says uncertainty allows humans to “expect the unexpected” and, although working through solutions may be potentially difficult and socially challenging, it forces people to be creative, consider factors not necessarily expected and find solutions that could be more robust and resilient. Beck suggests these psychological dimensions have enabled humans "to make rational the irrational, incalculable, unpredictable consequences of climate change" (Back 2009, p.19) and can help people work through creative solutions to the threat it poses to people, the environment and society.

Beck’s observations about uncertainty in the climate change field are an important part of this thesis because those who do not support the climate change hypothesis (climate sceptics) have been extremely successful in using uncertainty as a tool for generating high levels of media coverage (Boykoff & Rajan 2007). This might have implications for how institutions

[18] The Commonwealth Scientific and Industry Research Organisation (CSIRO) has forecast that beyond 2030, human caused climate change will increase in intensity and severity in Australia. In Australia, depending on how global governments manage to limit the level of GHG emissions, average temperatures will increase between 0.6°C under a low emission scenario, and up to 5.1°C under a high emission scenario (CSIRO and Bureau of Meteorology 2015). The CSIRO explain that this is not the end of the story and temperatures will continue to rise into the 21st century.

can potentially interact with people from a low SES background in Adelaide through the media, as coverage influences public and political opinion about what measures (if any) should be taken to address it (Frazier 2013; Knight & Greenberg 2011; Lefsrud & Meyer 2012).

Cox (2010, p. 125) says sceptics have achieved large scale penetration in the media because they "have become more sophisticated in mounting resistance to climate campaigns by running equally effective 'public will' initiatives and/or manufacturing uncertainty about climate science itself". Further, forceful public attacks against scientific claims about the need to address and adapt to climate change impacts regularly occur (Bolt 2014, 2016), scientists are personally attacked in the media (Knight & Greenberg 2011) and climate change communication researchers are sent hate mail (Goodman 2013). This strategy is designed to exploit the problem of uncertainty in the minds of the community and undermine the asserted scientific consensus that climate change is a real threat that requires adaptation (Hobson & Niemeyer 2013).

Consequently, despite the shift in academic discourse towards a view that climate change should be framed more positively as an opportunity to create a sustainable world, some media reporting presents dealing with climate change as an unnecessary economic gamble, based on suspect and uncertain science (Boussalis & Coan 2016; Dunlap & Jacques 2013; Readfearn 2016).

The problem of responding to the issue of uncertainty is compounded by some scholars' argument that the creative exploitation of uncertainty is no more than an effective exploitation of media norms (Boykoff 2013; Boykoff & Boykoff 2007; Knight & Greenberg

2011). Media norms include journalistic standards of fairness, balance, objectivity and accuracy, where a journalist is expected to present the views of "legitimate" spokespeople from different sides of a debate with "roughly" equal attention (Entman 1989, p. 30). However, as noted by Cunningham (2003), "ask ten journalists what objectivity means and you'll get ten different answers".

Media norms have posed a major challenge to the reporting of climate change in the media (Boykoff 2007). One norm that has had a profound impact upon the reporting of climate change is the idea of balance, where journalists have presented the issue as one where the science community is equally divided between those who support the hypothesis that human-produced GHG are causing climate change and those who do not. Boykoff and Boykoff explain (2007, p. 1193):

> These opposing scientists, who receive 'roughly equal attention,' create the appearance of a hot scientific debate between the upper echelons of the science community, which elides the fact that on one 'side' there are thousands of the world's most reputable climate-change scientists who vigorously engage the process of peer review, while on the other side there are only a few dozen naysayers who generally have not had their sceptical assertions published in peer-reviewed publications.

Other studies have found that while media consumption and scientific knowledge about climate change impact behaviour in important ways, media norms and a person's political predisposition are more important. For example, Bass (2016) found in a study that climate change scepticism is "less likely to reflect scientific misinformation than predispositional

factors, such as wariness about expanded government regulation and executive overreach" (Bass 2016, p. xvi).

There is also evidence indicating that political ideology is an important consideration in how a journalist reports climate change and adaptation. One study of three cable news broadcasters in the USA between 2007-2008 found that:

> Nearly 60 percent of Fox News broadcasts were dismissive of climate change, whereas less than 20 percent were accepting of climate change. On the other hand, more than 70 percent of CNN and MSNBC broadcasts were accepting of climate change. Not a single MSNBC broadcast took a dismissive tone toward climate change and just 7 percent of CNN broadcasts did so (Feldman et al. 2012, p. 11).

This data presents a polarised picture because those who watch Fox News are considered more conservative in political persuasion, whereas those who view CNN and MSNBC are more liberal[19]. Some authors have been scathing of the media and the need to express balance in climate change media stories. For example, Trevor Jackson wrote, from an academic perspective, a Christmas Editorial for the *British Medical Journal* saying media norms are "creating a sense of equivalence where there was none, and privileging maverick and dissident views so that they appeared as valid as established scientific fact" (Jackson 2011, p. 1). The responses to Jackson's editorial were equally forthright, with one contributor accusing him of trying to stifle debate by "grossly exaggerating his own position" (Penston 2011).

[19] A liberal in this context is not a supporter of the Liberal Party of Australia, but a person whose political and social philosophies are *non-conservative* and follow true liberalism as defined by the Oxford English dictionary. This is as "a person who is willing to respect or accept behaviour or opinions different from one's own, open to new ideas" (Oxford English Dictionary 2014).

Such interactions have led to arguments made by scholars that climate change is an ideologically driven political issue, and that a media source's ideological foundation, can affect how it covers the issue (Hmielowski et al. 2013; Measham 2013). Indeed, Bass (2016) concludes that understanding a person's political ideological inclination is vital to understand as it impacts how people digest information presented to them in the media. This is consistent with a study that found the power of the media in influencing the development of environmental management policy rested more in political persuasion when people engage with normative democratic deliberations (Kleinschmit 2012).

A recent study has indicated that despite norms of balance, journalists are now less inclined to use sceptical spokespeople in the reporting of climate change, and that US science journalists believe "climate deniers have largely lost their 'media standing' and are no longer viewed as credible experts on climate issues" (Gibson et al. 2016, p. 424). As Gibson et al. (2016) explain, journalists have had time to *internalise* the scientific consensus on man-made climate change and thus contrarian views are less needed in climate change stories because the debate has moved on from science to policy and solutions.

Nonetheless, evidence shows that there has been a general decline in public support to tackle climate change. In Australia, that decline has been relatively strong, with the number of people wanting governments to take aggressive action on climate change falling from 68% in 2006 to 36% in 2013 (Hanson 2013). As public opinion has changed, so too has the politics of climate change; federal elections in Australia saw a change from a Labor[20] government committed to tackling climate change to a conservative Liberal/National Coalition, led by prime minister Tony Abbott, who said he was "unconvinced by the so-called settled science

[20] Labor is the correct spelling of the Australian Labor Party.

on climate change" (Australian Broadcasting Corporation 2009). This diminished public opinion in favour of tackling climate change in Australia has persisted, with concerns about it still fifteen percentage points lower than at their peak in 2006 (Oliver 2016).

Media coverage has been influential in effecting this change in public and political support (Boykoff 2013). While, as discussed above, journalists in the United States are less inclined to present contrarian views about the science, in Australia, spokespeople from climate change sceptical institutions (especially think tanks such as the Institute of Public Affairs and the Centre for Independent Studies) are successful in obtaining regular media exposure; they have prosecuted a case that because humans are not responsible for causing climate change, tackling it would cost jobs and create an unnecessary economic crisis (Bell 2013; Dunlap 2013; McCright et al. 2016). In this context, while some assert that the role of the media should not be over-stated (Hepp, Hjarvard & Lundby 2015), the influence of it on the climate change debate has been described as pivotal (Beck 2009) and the "critical arena for debate" (Doulton & Brown 2009, p. 191).

Others have argued that part of the problem in understanding the influence of the media in shaping public opinion about climate change is a tendency to "simplify and reduce the complexity of the relationship between media content and audience reception" (Olausson 2011, p. 282). Olausson (2011) further argues:

> Much current research on climate reporting makes use of the argument that the media play a central role in shaping citizens' understandings of environmental risks to justify studying media. However, these kinds of statements in media research are made rather hastily and self-evidently, and are rarely verified with reference to empirical studies

> on the relationship between media output and audience reception. Unfortunately, this (unintentional?) neglect to empirically support the relationship between climate reporting and citizens' understanding of climate change results in something that is best described as ''media-centrism".

All these issues go to the nub of the problem this thesis explores: that is, how to develop a media and communication environment regarding climate change adaptation that connects political institutions and people from low SES backgrounds in Adelaide. While this literature review has summarised current and historical treatments of the relationship between the media and climate change and adaptation, minimal work has been undertaken on the use of the media by people from a low SES background in developed nation cities such as Adelaide. Further, none of it relates to how institutionally generated media communications might help a low SES demographic learn about adapting to climate change.

One study is helpful, however, because although it reports upon a national survey conducted in the US, it presents information about the influence the consumption of media might have upon people from a low SES background (Leiserowitz & Akerlof 2010). The results suggest that people from such groups might be less influenced by the uncertainty frame and media than other groups in society. This conclusion was based on empirical data that found:

> Hispanics, African Americans and people of "Other" races and ethnicities were often the strongest supporters of policies to reduce greenhouse gas emissions, even when informed that some of these policies would entail individual costs. It is commonly believed that global climate change is primarily a concern of only upper and middle-class whites, while minorities are focused only on local issues of environmental

justice. These two national studies strongly suggest that these assumptions are often wrong (Leiserowitz & Akerlof 2010, p. 18).

The study does not argue that all people from ethnic minorities in America are from a low SES background and in more need to adapt to the impacts of a changing climate than other societal groups. However, data shows that ethnic minorities in America are more likely to be from a lower SES demographic, be more vulnerable to the impacts of climate change (Hansen, A, Bi, Saniotis & Nitschke 2013; Schuldt & Pearson 2016) and live in areas more susceptible to extreme weather events, including heat waves (Jesdale, Morello-Frosch & Cushing 2013).

These studies reinforce earlier points (see section on publics and public spheres) about the significance of understanding how to identify the characteristics of publics and counter-publics. One such mechanism for doing so is segmentation, where a community can be divided into separate parts based on shared characteristics. Once the segments have been identified, it is possible to formulate ways to tailor messaging for each group. Segmentation has been applied in climate change communication research, including a desk-top review of factors that influence public opinion in the development of climate change policies (Drews, Jeroen & Bergh 2016). Table 5 highlights how the use of segmentation enabled identification of the general personal characteristics that might influence a person's support for or against the development of climate friendly government policy (Drews, Jeroen & Bergh 2016, p. 867).

General categories	Factors	Main findings and effects on policy support
Social–psychological factors and climate change perception	Political orientation	Left-wing orientation (+), right-wing orientation (-)
	Worldviews	Egalitarianism (+), individualism (2), hierarchism (-)
	Religiosity	Beliefs in 'Christian end-times theology' (-), evangelical beliefs (-)
	Personal values	Self-enhancement (-), self-transcendence (+), environmental values (+)
	General environmental beliefs	Endorsement of the New Environmental Paradigm (+), existence (+), human causation (+)
	Beliefs about climate change	Existence (+), human causation (+)
	Risk perception	Beliefs in present/soon and severe impacts, at personal and societal level (+)
	Knowledge	Assessed climate change knowledge (+), self-rated knowledge (0)
	Information seeking and processing	Effortful and systematic (+)
	Affect and emotions	Negative affect and imagery (+); emotions such as worry (+), interest (+), hope (+), fear (-)
Perception of climate policy and its design	Pull versus push measures	Pull measures (e.g. subsidies) tend to be favoured over push measures (e.g. restrictions, taxes)
	Perceived policy effectiveness and benefits	Policy is perceived as effective and beneficial in addressing climate change (+)
	Policy costs	Higher personal economic costs (-)
	Perceived fairness of policy	Progressive distribution of policy costs (+)
	Use of revenues	Recycling and earmarking of policy revenues (+)
Contextual factors	Trust	Trust in key actors (e.g. government/politicians, scientists) (+)
	Social norms	Perceived policy support by others (+)
	Participation/deliberation	Civil society involvement and public deliberation (+)
	Economic and political aspects	Economic downturn (-), contrary discourses on climate change by political elites (-)
	Geography and weather	Experience of extreme weather (+), geographical exposure (0)
	Media coverage and Framing	Media matters, though the direction of influence depends much on content and frequency; diverse set of framings are proposed, e.g. framing of climate change as a public health issue (+)
Notes: (+) indicates a positive effect on policy support, (-) indicates a negative effect, (0) indicates no effect.		

Table 5: General personal characteristics might influence a person's support for or against the development of climate friendly government policy.

In an earlier study, Maibach et al. (2011) identified six segments within the American public: alarmed; concerned; cautious; disengaged; doubtful; and dismissive. In Australia, studies have been conducted to identify the characteristics of segments within the Australian public

(Ashworth, Jeanneret & Gardner 2011; Morrison, M, Duncan & Parton 2013; Sherley et al. 2014). Hine et al. (2013) identified three characteristics: dismissive, uncommitted and alarmed. Table 6 below provides a summary of these segments and some suggested messaging and policy options that could be used to engage with such groups (Hine et al., 2013, p. 54)

Segment	Messaging options and policy strategies
Dismissive	Avoid direct references to climate change and sustainability. Develop strategies that emphasise other valued outcomes (e.g. economic development or a caring society).
Uncommitted	Provide motivational messages to increase self-efficacy and concern
Alarmed	Provide information about: • Effective ways to minimise personal carbon footprint. • How to lobby industry and government. • Where to access relevant means and resources. Remove structural barriers preventing transition from intention to action. Provide feedback that climate change views are shared by others as 'social' proof.

Table 6: Segmentation messaging options extracted from Hine et al. (2013, p. 54)

Morrison, Duncan and Parton (2013) segmented the Australian population into six groups: alarmed; concerned; cautious; disengaged; doubtful; and dismissive. In that study, they also asked participants about how useful they found different forms of communication as sources of information about climate change; these findings are presented below in Table 7 (Morrison, M, Duncan & Parton 2013, p. 217). They identified that the cautious segment is most likely to be politically open to having their views changed about climate change and

that the most useful form of information for communicating with them is television news, newspapers and the internet.

Information source	Alarmed	Concerned	Cautious	Disengaged	Doubtful	Dismissive
	Mean	Mean	Mean	Mean	Mean	Mean
Family and friends	2.52	2.34	2.15	1.97	2.14	1.9
Internet blog sites	2.03	1.89	1.75	1.6	1.72	1.7
Internet sites	2.84	2.61	2.28	2.03	2.13	2.03
Television news and current affairs programs	2.76	2.81	2.65	2.47	2.39	2.25
Radio	2.5	2.44	2.27	2.2	2.22	2.28
Newspapers	2.62	2.68	2.51	2.34	2.34	2.24
Magazines	2.34	2.3	2.11	1.98	2	1.87
Newsletters or flyers from interest groups	2.39	2.15	1.97	1.77	1.75	1.62
Environmental organisations	3.19	2.74	2.28	1.88	1.77	1.56
Books	2.95	2.52	2.12	2.03	2.19	1.96
Academic articles	3.05	2.66	2.23	2.1	2.15	1.95
My local council	2.39	2.26	2.14	1.91	1.86	1.57
Government correspondence (e.g. mail outs)	2.6	2.38	2.2	1.9	1.72	1.51
The CSIRO	3.27	2.86	2.41	2.28	2.24	1.87
Doctors	2.01	1.85	1.79	1.71	1.68	1.51
Scientists	3.29	2.89	2.39	2.2	2.29	2.08
Teachers	2.48	2.14	1.95	1.75	1.67	1.48

Table 7: Australian segments' views about the usefulness of potential sources of information about climate change. The mean is representative of the average value finding within a segment.

A critique of this study asserts that the suggested segmentation does not go far enough and that its results identify only heterogeneous groupings (Sherley et al. 2014). Sherley et al (2014) argue that more detail is required about the underlying characteristics of sub-segments (counter-publics) within the groupings. Through a desk-top analysis, Sherley et al. (2014) profiled sub-segments of the cautious group and found they were not responsive to emotional

messaging about climate change, and instead were more inclined to react favourably to suggested policy based on more neutral appeals.

Another key theme in the literature is the suggestion that the exploitation of risk and disaster management communication techniques has utility when formulating public appeals about climate change. These are based on the rationale that risk and disaster management communication techniques can localise a global problem into more meaningful and imaginable terms to a target audience (Heinrichs 2010). Consequently, the usefulness of employing risk communications has been extensively researched within the climate change communication field (Beck 2009; Slovic et al. 2010). An analysis of media coverage of the climate change issue in Australia found that using the language of risk in climate change communications was beneficial because:

> It shifts public debate away from the idea that decisions should be delayed until conclusive proof or absolute certainty is obtained (a criterion that may never be satisfied), towards timely action informed by an analysis of the comparative costs and risks of different choices and options (including the risk associated with doing nothing) (McGaurr, Lester & Painter 2013, p. 23).

This observation could be directly relevant to people from a low SES background in South Australia as they are likely to live in areas that are more at risk of being "exposed to environmental impacts such as flooding, heat island effects and disaster events" (Sevoyan et al. 2013, p.145). In a study examining public risk perceptions to climate change, Reser et al. (2012, p. 49) also found that levels of adaptation "tend to increase with education, knowledge of climate change science, climate change concern and other demographic and psychological

variables". The use of risk and/or disaster management communication methods may therefore have applicability to the communication of climate change and adaptation to people from low SES backgrounds in Adelaide.

Another South Australian example demonstrates the effectiveness of using risk frames in building communications about climate change and adaptation (Nursey-Bray et al. 2013). In that project, researchers worked with the Arabana[21] peoples to write a climate change adaptation plan for their people and country[22]. A core part of the planning process was to encourage participation from community members to help write the plan. Initially the research team drew from climate change communication publications, which, as described above, encourage communicators to talk about climate change and adaptation in a positive frame. Thus, the research team communicated with the Arabana people about climate change and adapting to it as an opportunity for the sustainable development of their people and country. However, that approach failed, and very few Arabana people were attracted to participate in the project (Nursey-Bray & Palmer in-review).

After discussing the problem with Arabana leaders and elders, the research team re-structured climate messaging around a theme of risk, cultural loss and hardship, as rationales for the need to design appropriate adaptation strategies. Individuals responded instantly to this change in approach, and strong participation in the project was secured, highlighting that communications using risk and negative frames in this instance were motivators for action.

[21] The Arabana are an Aboriginal people from the northern part of South Australia. Their country includes Kathi Thanda-Lake Eyre, unique mound springs where the Great Artesian Basin breaks through to the surface, creating flowing pools of water in an otherwise arid landscape, and BHP-Billiton's Roxby Downs uranium and copper mine. Arabana were uniquely impacted by colonisation, as the original Ghan Railway route between Adelaide and Darwin, passed through their land, and many Arabana people were employed on the railways. As such, they were dispersed along the original route, and Arabana now have large populations in Darwin, Alice Springs, Port Augusta and Adelaide.
[22] Country is the term used by Indigenous Australians to describe their traditional land.

That research presents a case study to draw from as it is one that has explicitly tested, in real world conditions, how an identified group of people from a low SES background responded to climate change and adaptation information presented to them in media.

Conclusion

This chapter has outlined the key fields of literature that set the context for this thesis. It has shown that mediatization theory has applicability to the study of climate change communications, and that mediatization theory provides analytical tools for analysing the influence of media between an institution and a target audience about climate change and adaptation. Importantly, this literature review demonstrates that the theory is useful in the context of this study as it can help reveal if institutional approaches to communicating climate change and adaptation will help vulnerable people in Adelaide learn about the threat it poses to them. The literature also highlights a note of caution that an institutional approach to mediatization in the field of climate change communications might be problematic and provide opportunity for sceptics to undermine efforts to help people from a low SES background learn about climate change and adaptation. Therefore, the literature shows that although climate change represents "a mighty case study" (Kunelius 2014, p. 64) for mediatization research, institutional caution should be employed, and that in some cases, media communications about climate change might need to be avoided.

The review illustrates that a modern media-saturated society provides institutions with an opportunity to engage with publics and counter-publics in multiple public spheres. This section of the review also considered how publics can be identified as well as the public spheres with which/how they might be engaging about an issue such as climate change and adaptation. Further, the literature reviewed indicates that although new media has fragmented

audience attention, and, in some cases, polarised political debate, the evidence is that both old and new media remains an important source of information for people in society. The literature also shows that some new media forums are more likely to facilitate the formation of public spheres than others. This is valuable information for institutions to consider when deciding if media is an appropriate place to try to engage with people from a low SES background in Adelaide about climate change and adaptation.

The literature presents a range of complex and contradictory arguments regarding how climate change and adaptation should be framed, and how much background scientific information should be used in media communications about it. Studies have indicated that when large volumes of information are presented in negative frames in media communications, public and political opinion in favour of tackling climate change is high.

Despite these elevated levels in public support for favouring tackling climate change, scholars have argued that although opinion for change may be high, real behavioural change, such as lowering GHG emissions, is low. Therefore, a counter argument is that significant behavioural change will only occur if less information is used in communications, and that climate change and adaptation should be framed in positive ways.

However, evidence identified in this review indicates that when communicators follow that strategy, public and political opinion in favour of tackling climate change decline. These contradictory conclusions provide valuable information for institutions in Adelaide that will need to consider carefully how to frame and present climate change and adaptation to help people from a low SES background learn about the challenges they face.

Finally, the literature review has established two key research gaps. First, minimal work has been done investigating how to communicate climate change adaptation to people of low SES backgrounds in developed countries such as Australia. This includes Adelaide. Second, there has been no application of mediatization theory as a theoretical tool to help understand how institutions can interact with people from a low SES background, so these people can learn about climate change and adaptation. These are the research gaps that this project aims to help fill, and the next chapter outlines the methods used to conduct the study.

Chapter Four: Methodology

In the previous chapter the research gaps were established, and this chapter outlines the methodology used for collecting and analysing the data to answer the overarching, and sub-research questions:

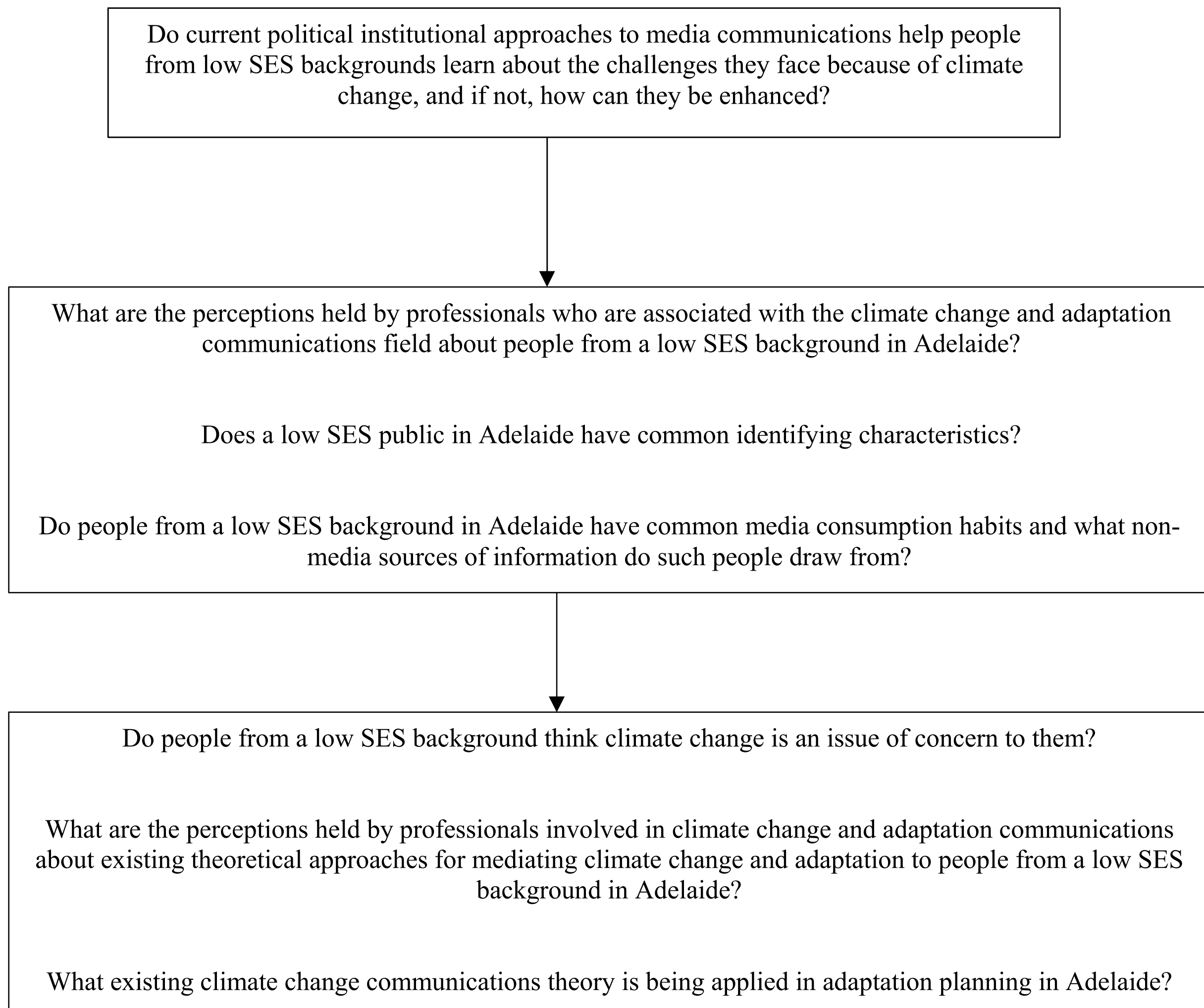


Figure 5: Thesis research question flow diagram

As described in Chapter One, the rationale for this study is based on three major factors: (i) communicating the need for people to learn about climate change and adaptation is an urgent, global challenge; (ii) there has been an increase in intensity and frequency of extreme heat events in Adelaide, such as the 2014 heat wave that hospitalised 275 people; and (iii)

previous South Australian research has indicated that current suggested approaches for communicating climate change and adaptation to vulnerable groups might not work. Adelaide was also considered suitable as a study area because it is in South Australia, a state with an advanced climate change and adpatation plannning process. South Australia was the first state in Australia to introduce climate change legislation[23] and, in 2012, published a state-wide adaptation strategy (Government of South Australia 2012). There are now 12 regional adaptation plans in South Australia at various stages of implementation (Government of South Australia 2017a). In Adelaide, there are five planning zones, three of which have high concentrations of people from low socio-economic backgrounds, reflected in the following plans: *Resilient South Adaptation Plan 2014 (including the City of Onkaparinga local government)*; *Adapting Northern Adelaide Climate Change and Adaptation Plan (including City of Salisbury and City of Playford local governments)*; and *AdaptWest Regional Climate Change Adaptation Plan (including City of Port Adelaide Enfield local government)* (Government of South Australia 2017b). The plans are coordinated by local governments, who collaborate with service providers, government agencies, not-for-profit organisations, businesses and industry (URPS 2016).

To collect information from people associated with (or those who would be expected to have knowledge of) adaptation planning, and from people living in the areas covered by the plans, a mixed method research approach was adopted. This chapter describes the research design, followed by an explanation of how the data was collected and the analytical process that was used.

[23] Climate Change and Greenhouse Gas Emissions Reduction Act (SA) 2007

Research design

A mixed method, convergent research design was used in conducting this research. A convergent design is specifically designed for mixed method research, and is used to create a framework for collecting information about a problem from multiple angles (Creswell 2015). The design facilitates the collection of multiple data sets that can then be integrated to create a more complex picture of the problem being studied. As Figure 6 illustrates, the two data sets for this thesis were collected independently of each other and the integration of results is presented in the analysis and discussion.

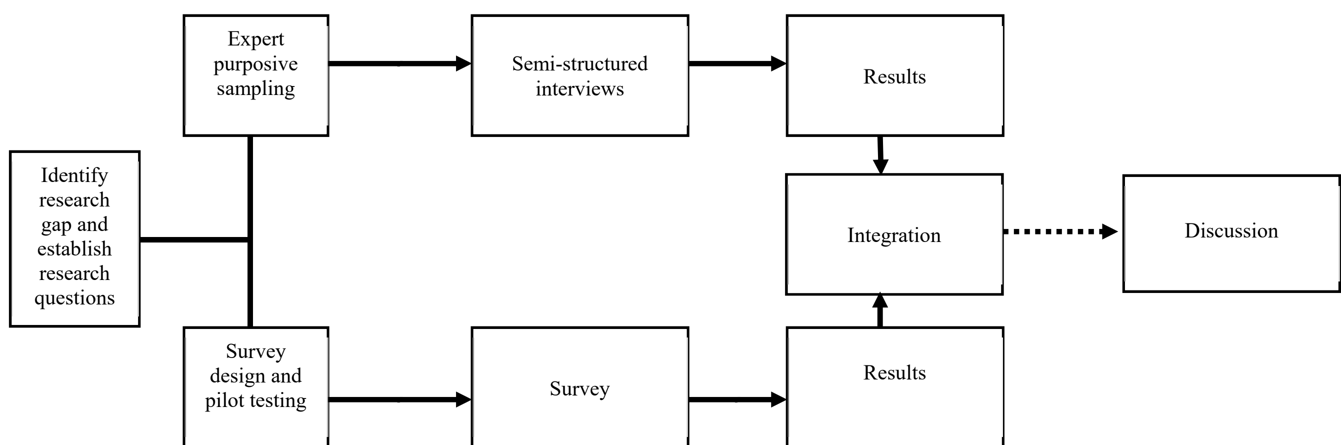


Figure 6: Thesis research procedural diagram

A mixed method approach was adopted because it was the most appropriate to enable deep investigation of the issues and gaps in knowledge identified during the literature review. Quantitative data was collected via a survey, to establish whether a low SES public in Adelaide can be defined and, if it can, to identify whether people within in it are engaging with political issues and how. This aim was achieved by collecting detailed information about the media consumption habits of people from such backgrounds. Data was also collected from these participants to identify levels of awareness about climate change and adaptation

and their levels of trust in the political institutions charged with communicating climate change and adaptation in Adelaide.

Qualitative data was collected via semi-structured interviews, aimed at enhancing understanding of the institutional use of media in the day-to-day deliberations of the organisations charged with communicating climate change and adaptation in Adelaide. This is an area that has not previously been explored in Adelaide. There is no published literature about how those institutions view the media as a tool for communicating climate change and adaptation to a target group in Adelaide, including people from a low SES background.

Mixed method research is beneficial to this type of study because “all research methods have both strengths and weaknesses and the combination of the strengths of both provides an opportunity for generalization and precision” (Creswell 2015, p. 15). Creswell adds that mixed method research enables the researcher to:

> Obtain two different perspectives, one drawn from closed-ended response data (quantitative) and one drawn from open ended personal data (qualitative) and [to] obtain a more comprehensive view and more data about the problem than [either] a quantitative or the qualitative perspective (Creswell 2015, p. 15).

Consequently, the data collected is potentially enhanced because it allows insights into the varying standpoints about an issue, and how they are factored in and contribute to discussions about what the research might mean in relation to the questions being asked. This is also a transparent approach because those who participated in the study can read the thesis and see

how their views and opinions have been included in the process of reaching conclusions from the discussions about the information collected.

The utilisation of this approach is consistent with and builds on knowledge generated by other PhD studies in the climate change and adaptation communications field including: Gaillard (2011), who investigated community based climate change education programs; Adlong (2014), who researched education as a means for mobilising community action on mitigation; Chongkolrattanaporn (2013), who examined global warming campaigns in Thailand; Anisuzzaman's (2014) thesis on local government barriers to adaptation; Kirk's (2014) work on science communication and capacity building for non-government-organisations in the Pacific region research; and Leviston (2013), who applied functional analysis to identify motivational responses to climate change.

Importantly, a mixed method research approach facilitates the gathering of information from participants who may hold diverse interests, experience different socio-economic conditions and hold different world views (Creswell 2015). This approach is appropriate for this study because a person bringing up a family whilst living on the poverty line in Adelaide is likely to hold different views to those of a person in a secure and stable well-paid job in the state bureaucracy. Lived experiences influence how people interpret world events, and thus factoring in different perspectives greatly enhances overall research output (Bulsara 2014) and makes findings more exhaustive and comprehensive (Gaillard 2011). Further, Wills (2007) concludes that a mixed method research approach improves the objectivity of the researcher, and forces them to disentangle their own views and hypothesis from the data collected. Mixed information sources can also off-set any weaknesses in one with the

strengths of the other, enhancing research quality (Singleton & Straits 2010). Therefore, for this research, two sets of data were collected.

Data collection: Qualitative data

Semi-structured interviews were used to collect the qualitative data. This is because the researcher wanted to maintain a degree of control over the form of the discussion with participants but not restrict the conversations to a rigid view of the world imposed by him (Berger, A 2014; Creswell 2015). A semi-structured interview encourages a more thorough and thoughtful approach to an interview than an unstructured interview, as it enables a more extensive investigation of a person's experience (Raymond & Knight 2013). An interview also overrides superficiality and allows a researcher to obtain a deeper and more meaningful insight into how a person constructs a world view that influences the actions they take (Angela 2011). Moreover, in the ordinary course of conducting research, time is limited, which means a researcher must extract as much relevant information as possible in the shortest amount of time. Semi-structured interviews minimise time restrictions, but extract valuable data by providing an opportunity for a participant to express their views (Creswell 2015).

Semi-structured interviews were preferred over a structured approach as the structured process can become unproductive if an interviewee is restricted in their ability to respond in a more open way. Gaillard's (2011) climate change communication research is illustrative of this point, in that semi-structured interviews encouraged respondents to express their viewpoints more constructively and creatively than in a tightly controlled process. Further, a semi-structured interview, when done well by a skilled interviewer, allows the researcher to delve into a participant's personality to find out what motivates them to make the decisions or

take the actions they do (Berger, A 2014). In this context, semi-structured interviews provided a suitable research technique to gather data about the extent of mediatization in Adelaide institutions, and how this might influence institutions' interactions with people from a low SES background. However, a semi-structured interview still needs a degree of guiding and should ensure the conversation remain focused and on topic and that all the issues of interest to the subject being studied are "explicitly covered" (Anderson, J 2012, p. 302). To meet those requirements, an interview guide was used in each interview and this is presented in Appendix Six. Interviews lasted on average 42 minutes.

The semi-structured approach to interviews builds upon research conducted by Crigler and Jensen (1997, p. 177), who found the technique was useful for "empowering participants" to explain their general understanding of issues that are more diffuse and with limited starting knowledge. They found that when research questions are raised with limited starting knowledge, responses are often a qualified "point of view" and "quite general" in nature (Crigler & Jensen, p. 178). These observations are helpful to this research because, although the expert participants are linked to the climate change and adaptation media field in many and varying ways, the emergent nature of the subject means they often had to draw from educated opinion, rather than lived experience.

Qualitative sample: Who

The basis for obtaining a sample of participants for qualitative data collection is to obtain input from people who are most likely able to "help the researcher understand the central phenomenon being studied" (Creswell 2015, p.76). In this study, expert purposive sampling was the method adopted for selecting participants for the semi-structured interviews (Lund Research 2012). Sampling included the identification of people from the adaptation and

communication research fields, government, non-government organisations (NGOs), the health care sector, journalism, emergency services and politics. Given the study is focused on an Australian audience, experts from Australia were identified where possible. The experts were targeted on the basis that they provided “the most productive sample to [help] answer the research question” (Kerr, Nixon & Wild 2010, p. 271), and they included experts from Adelaide and further afield although, where possible, local sources were favoured. Expert sampling was also used because it helps to “identify new areas of interest [and] will open doors to other participants” (Lund Research 2012) to build the size of the participant pool.

Purposive sampling can have the disadvantage of reflecting researcher bias because the selection of participants is based on the judgement of the researcher, but this issue can be reduced if strict criteria and a process of selection are factored into the decision making process (Lund Research 2012). To avoid researcher bias in this study, sampling was based on the selection of professionals who could be expected to know about the topic of climate change adaptation and communications, and a three-step process was followed:

1. Participants were identified based on: contribution to the study of climate change adaptation communications; contribution to adaptation plans, including in areas of Adelaide that have areas of high concentrations of people from low SES backgrounds; and, if possible, media profile, so as to draw out lived experiences of working with media institutions.
2. Phone calls were made to potential participants whose contact details were publicly available and, with the aid of a script, the researcher introduced himself and the project. If a potential participant agreed to participate, an interview was immediately scheduled with them. This approach was useful because capturing the attention of

busy people is difficult and it prevented the need for a long-winded process of follow-up trying to find times for interviews. To overcome possible accusations of researcher bias in purposive sampling, the conversation concluded with a request for advice as to who else could contribute data to the project. For possible participants whose phone number was not available, initial contact was made via email (see Appendix Four). Again, a suggested time for an interview was provided at the time of writing, should they agree to participate, and a request was made for advice about any other expert they thought could contribute to the project.

3. The final stage was to invite the other professionals suggested by participants.

In the ethics approval process, this approach was queried on the basis it might not work and that further approvals from senior management might be required. However, in practice, professionals in this field work in a semi-autonomous environment which enabled a direct approach to be made, and no such authorisation to participate was required. This is in stark contrast to Chongkolrattanaporn (2013) work, who found in her PhD research that she had to contact senior managers and seek permissions to interview professionals who had worked on climate change campaigns in Thailand.

An accidental benefit identified during the participant recruitment process was the time of the year for which the interview schedule was arranged. Interviews were arranged in early January, traditionally a slow time of year for professionals in Australia. This meant that the researcher captured the attention of people who otherwise might be snowed under with deadlines and working commitments.

Qualitative sample: Size

As described above, sampling is a function of obtaining input to a project from people most likely able to help the researcher understand the central phenomena being studied (Creswell 2015). The number of people needed to participate therefore varies for each project, so the method of arriving at a sample size adopted for this project was saturation. Information (or data) saturation is a qualitative research technique used to explain the moment in a study when it is concluded that no new data collected will add any further benefits or insights (Robinson 2014). Charmaz (2006) explains that saturation in qualitative research is the point in a data collection process when the responses become repetitive and no new content is uncovered by the researcher. There are no standard tests to determine when this moment has been reached, which is why the issue is sometimes contentious and should therefore be explained in a study to show how the determination was made (Kerr, Nixon & Wild 2010). In total, 39 experts were invited to participate in this study and a summary of the fields they work in is presented in Table 8.

Professional sector	Numbers contacted
Health and climate communications	3
Climate change adaptation planner	4
Journalism	4
Climate change and science communication researchers	7
NGO	4
IPCC authors	2
Government staff	3
Climate Change Council Members	3
Private consultants	2
Climate change and science communication researchers	3
Political appointments	4

Table 8: People contacted to participate in semi-structured interviews.

Of the thirty-nine-people sampled, nineteen agreed to be interviewed. Three declined the invitation and eleven did not respond. Six others agreed, but kept postponing the interviews and so these never eventuated. Participants were told that the interview would take up to one hour, which is said to be about the amount of time for which a researcher should aim (Raworth 2012).

Qualitative sample: Where

Fourteen interviews were held face-to-face in metropolitan Adelaide. The interviews in Adelaide were conducted at each participant's place of work. Four interviews took place via Skype, and one by telephone. Each interview was recorded for transcribing purposes. Prior to the interviews taking place, an informed consent form was issued outlining the scope of the project and interview. The participant was asked to agree to the terms of participation and sign the consent form prior to interview. The informed consent form is presented in Appendix Five.

Data collection: Quantitative data

The quantitative data collection method used was a survey. This method was adopted to collect quantitative data because surveys have a long tradition in media studies and are seen as a useful tool for collecting large amounts of data in a relatively short amount of time (Anderson, J 2012; Berger, A 2014; Clough & Nutbrown 2002). The survey instrument's aim was to obtain data from participants from a vulnerable low SES background about:

- Knowledge, thoughts and perceptions of climate change and adaptation;
- Levels of trust in political institutions charged with helping people learn about climate change and adaptation;
- Levels of trust in other democratic institutions which might be, or are, involved in the process of helping people learn about climate change and adaptation;
- Levels of engagement with media and the types of media they consume to access information about an issue such as climate change and adaptation;
- Communication preferences about climate change and adaptation;
- Seasonal influences over perceptions of climate change and adaptation.

A survey was also selected because it is a useful tool for collecting broad information about a particular topic, but from a select target group (Clough & Nutbrown 2002). The survey received approval by the University of Adelaide Human Research Ethics Committee[24] and is presented in Appendix Seven.

Survey Design

Anderson (2012) says a vital component of survey design is the method used for measuring the data collected, and the development of the quantitative instrument used in this study draws from his approach. Anderson (2012) provides useful guidance on designing surveys that aim to be both exploratory in nature and to obtain more insightful information about abstract issues, such as audience feelings about an institutional mediated message on climate change and adaptation.

[24] Ethics approval number H-2014-235.

Anderson (2012) suggests that a method for collecting diverse types of information from the same survey is to create front of the eye (FTE) and back of the eye (BTE) questions. FTE questions in a media survey are designed to capture clearly definable empirical data sets such as television channels regularly viewed, the time of day they are most likely be watched, or what other sources are used to obtain information. In this way, a FTE question captures empirical data associated with a literal and physical act undertaken by a person such as regularly turning on the television at seven o'clock to watch the evening news. Anderson (2012) says FTE survey questions are useful at capturing empirical evidence of cognitive behaviours, including attitudes and values associated with an issue being investigated. For this survey, FTE questions were designed to collect, amongst other information, baseline empirical data sets about participant media consumption habits, and awareness levels about climate change and adaptation.

However, when more nuanced and subtle data is required, BTE questions may be more effective. According to Anderson (2012), the appeal of including BTE questions in a survey is that they capture information about perceptions, feelings and sensations. For example, a BTE question in the survey used for this thesis captured data relating to respondent feelings and sensations about how climate change and adaptation issues might resonate with a person in different institutional mediated scenarios. In this way, a BTE question can indicate how a person from a low SES background in Adelaide might respond to a climate change and adaptation message framed as an opportunity versus a threat.

Anderson (2012, p.221) recommends the utilisation of existing scales when measuring responses to a BTE question in a survey because, from an epistemological perspective, there are "no limits on the number of attitudes, opinions [or] values… that can be held by people".

He says it is therefore “good form” to utilise existing scales that have been used in other surveys, as they have been tested and carry more validity. Therefore, through using a mix of existing scales to frame the questions being interrogated, the final quantitative instrument developed for this thesis ended up as a survey consisting of 43 questions. It is a mix of Likert scale, open-ended and multiple-choice questions. However, before taking the survey into the field, pilot tests were conducted at the University of Adelaide to establish the survey’s performance as a data collection tool. Six post-graduate students and five staff members from the Department of Media took the pilot survey, with a mixture of English and ESL speakers involved. Based on their comments and feedback, the survey was amended, and the final survey took approximately ten minutes to complete. The survey is presented in Appendix Two.

Quantitative sample: Who

The survey sample was based on levels of socio-economic disadvantage. There are many ways to measure socio-economic disadvantage, and two methods have been used previously in climate change and adaptation research in South Australia (Barnett, G et al. 2013; Sevoyan et al. 2013). In Sevoyan et al. (2013) they utilised the 2011 Australian Bureau of Statistics (ABS) census data to measure socio-economic disadvantage and who is most vulnerable to climate change in South Australia. They identified a climate vulnerable household in South Australia as one with an income of less than $600 per week. In Barnett et al. (2013), they classified socio-economic disadvantage as a household with an income level of between $1-399 per week[25].

[25] Barnet et al. (2013) studied four Australian cities and found Adelaide has the highest concentration of climate vulnerable households with incomes between $1-399 per week: Adelaide had 28%, Brisbane 22%, Sydney 23% and Melbourne 24%.

For this thesis, socio-economic disadvantage was measured against the poverty line, as defined by the Melbourne Institute of Applied Economic and Social Research (MIAESR). The MIAESR publish quarterly updates (*Poverty Lines*) to show the estimated "minimum income levels required to avoid a situation of poverty for a range of family sizes and circumstances" (Melbourne Institute of Applied Economics 2013).

This data is a benchmark figure established in a formula after the 1973-1975 federal Commission of Inquiry into Poverty (known as the Henderson Inquiry), to show the minimum level of disposable income needed to support the basic needs of a family of two adults and two dependent children. The measurements for other types of households are measured against equivalent scales. Table 9 presents the sample selection tool used in this study, based on the MIASER poverty line index as of December 2013 (Melbourne Institute of Applied Economics 2013).

Income Unit	**Including Housing $ per week**
Head in workforce	
Couple	673.82
Couple plus 2	946.11
Single person	503.71
Single parent plus 2	782.72
Head not in workforce	
Couple	578.55
Couple plus 2	850.84
Single person	408.44
Single person plus 2	687.44

Table 9: Income levels to identify urban poor Australians adapted from Poverty Lines Australia: December Quarter.

Quantitative sample: Size

In a scientific study, approximately *n150* responses would have been required to avoid a scientific nonresponsive bias result with a confidence interval of plus or minus 5% (Creative Research Systems, 2014). However, this research is conducted within a mixed methodological approach, so the survey design drew from those principles to guide appropriate sample size. To be consistent with the method used for the collection of qualitative data, saturation was used to determine sample size for the survey. In this context, a stepped process of data collection was followed, where information was gathered, ongoing analysis was conducted after each data collection phase and, in following this sequence, saturation was determined (Jensen 2012b). Further, Glaser and Strauss (1967, pp. 62-65) assert that the collection of more and more “numbers” for a survey needs to be considered carefully because it can make the results appear uninteresting and add little to the theoretical investigation.

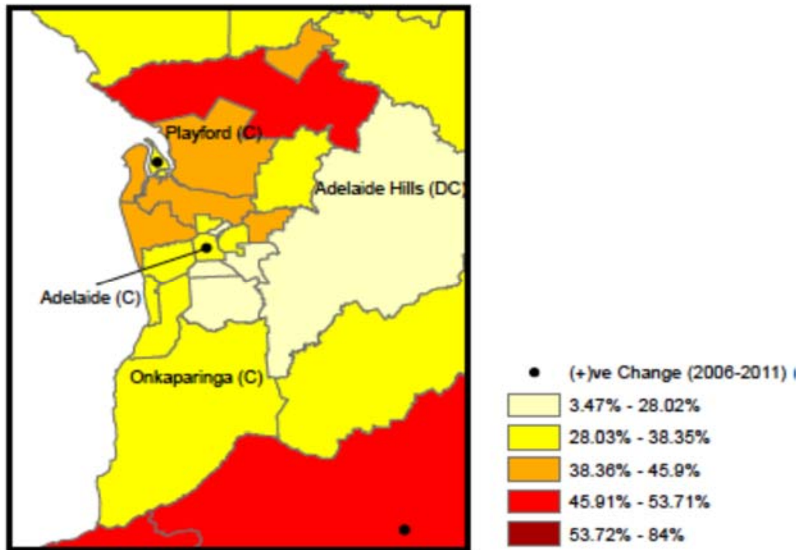
Using these principles, the sample size for this project was deemed adequate after *n110* people had completed the survey, with the answers presenting very consistent results in media consumptive behaviour, trust levels in the societal institutions charged with helping people adapt to climate change and thoughts about how much of a threat the issue poses to people from a low SES background in Adelaide. For example, after 110 people had completed the survey, 84.5% of respondents had stated they regularly source information about news and current affairs from Facebook. It would probably have added little more substance to this study if a similar finding was made after the completion of *n150* surveys.

Quantitative sample: Where

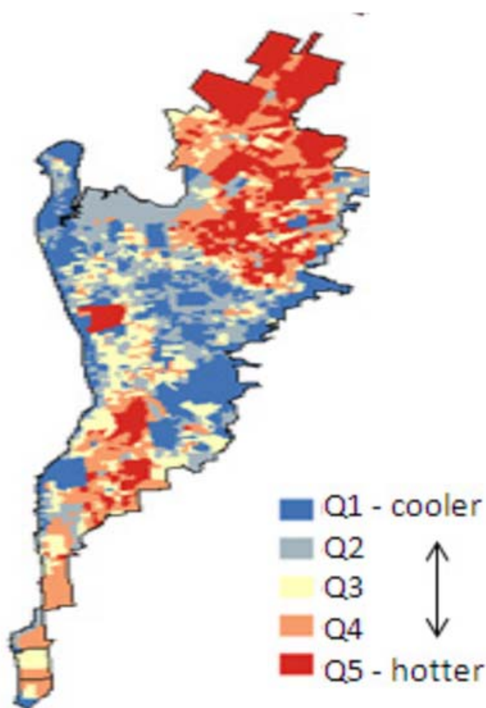
The selection of locations for conducting the survey was informed by the demographic data drawn from the regional planning process described earlier on page 108, and by drawing from Sevoyan et al. (2013) and Barnett et al. (2013). Based on the levels of socio-economic disadvantage described above on page 112, Sevoyan et al. (2013) found high concentrations of climate vulnerable people living in the local government areas of Port Adelaide Enfield, Salisbury, Elizabeth and Onkaparinga. In their study, they identified those areas had high levels of economic disadvantage and concentrations of older and/or disabled people which increased a person's chance of experiencing negative health due to extreme weather by 75% (Sevoyan et al. 2013). They concluded that "economic exclusion and climate awareness are the strongest predictors of vulnerability to extreme weather" (Sevoyan et al. 2013, p. 90), and those areas of Adelaide have high concentrations of such people. In Barnett et al. (2013) they made a similar finding that those areas of Adelaide identified in Sevoyan et al. (2013), have high concentrations of people with economic disadvantage living in climate vulnerable housing.

These two studies were therefore used as baselines to guide the implementation of the survey for this research, which focussed on the northern and southern suburbs of Adelaide. Both areas contain high concentrations of people from low SES backgrounds, people who will need to adapt to climate change due to their elevated levels of vulnerability to extreme weather, especially heat. Map 1 and Map 2 highlight the study areas selected based on the criteria described above. It is not suggested here that people living with economic disadvantage are the only people in society susceptible to the impacts of climate change. However, the Sevoyan et al. (2013) and Barnett et al. (2013) studies demonstrate that those in Adelaide *most vulnerable* to the impacts of climate change are those living with multiple

disadvantages, in low quality housing and are less likely to have the economic resilience to fund immediate responses, such as turning on air conditioners during periods of extreme summer heat.



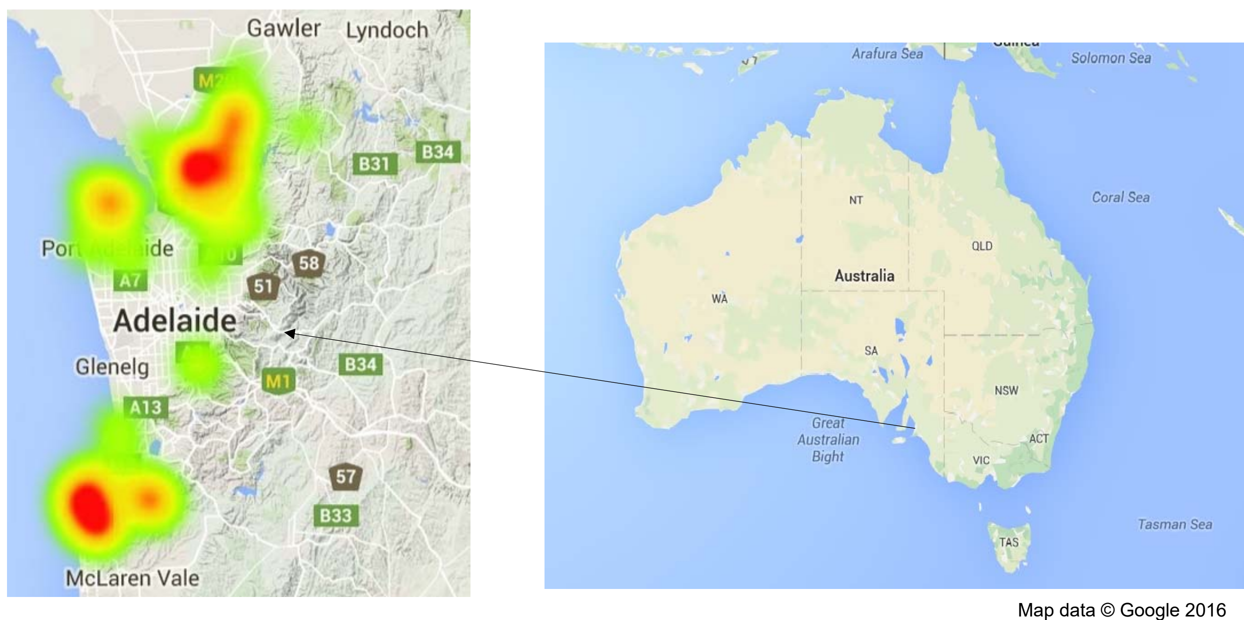
Map 1: Percentage of households in Adelaide local government areas living on less than $600 per week (© NCCARF, Sevoyan et al. 2013, p.24).



Map 2: Land surface areas in Adelaide vulnerable to extreme heat (© CSIRO, Barnet et al. 2013, p.28).

Data collection points were established in the field at the following social locations:

- Elizabeth Shopping Centre;
- John Street, Salisbury (outside the front of John Street Library);
- Nile Street, Port Adelaide (outside the front of Nile Street Library);
- Burgess Drive, Noarlunga (between the Train Station and Colonnades Shopping Centre);
- Beach Road, Christies Beach (between Perry Street and Fowey Street).



Map 3: Approximate location of survey collection points

The survey was conducted by randomly approaching individuals in each location and asking them to participate in the study. This method of data collection was used and found to be effective by Chongkolrattanaporn (2013) when conducting survey work investigating the effectiveness of global warming campaigns in Thailand. The survey for this thesis was

conducted offline using Survey Gizmo software, with each response entered on an iPad and synchronised at the end of the day when connected to the internet.

Quantitative sample: When

The survey was conducted over two stages: the first in the height of summer between February 17 and March 2, 2015; the second in mid-winter from July 26 to July 30, 2015. The purpose of doing so was to assess whether the weather influences a person's perspective on climate change and adaptation. Although it is impossible to determine if the same person would answer questions differently if they were surveyed in different weather conditions, results from this survey could be helpful for identifying practical suggestions for the time of year that institutions should consider communicating with vulnerable people in Adelaide via media. The information will also contribute to a growing body of research that is investigating if the weather might alter how journalists report climate change (Shanahan & Good 2000) and how their audience might react to what they hear (Brulle, Carmichael & Jenkins 2012; Kirilenko, Molodtsova & Stepchenkova 2015).

In the study conducted by Kirilenko, Molodtsova and Stepchenkova (2015), it was found that extreme hot weather, and the mass media coverage of it, influenced public interest in climate change. They found Twitter traffic increased when the mass media covered extreme weather events. They did not test specifically if people were likely to react more, or less, favourably to a pro-climate change message, but they did find evidence that "the public recognise extreme temperature anomalies and connect these anomalies to climate change" (Kirilenko, Molodtsova & Stepchenkova 2015, p. 99). Therefore, the aim of conducting the survey for this thesis at contrasting times of the year was to see if respondents reacted differently to a climate change message.

Data analysis: Qualitative data

Analysis of the qualitative data is based on Anderson (2010), who says that a good rule to follow is to make sure that the process established is transparent and replicable by other researchers. Therefore, the following process was established to meet those standards. Each interview was electronically recorded, and transcription was completed by the researcher. Transcription was conducted with the use of *Dragon Naturally Speaking* software. The interviews were played back in headphones at half the normal speed and the words were spoken back into a microphone and transcribed into Word documents. The process was efficient, cost effective and, because the researcher prepared the transcriptions, there was a continual re-familiarisation with what was said and by whom.

The transcription data was then entered into NVivo 7, as the software is a useful tool for managing transcripts during the analysis process (Bazeley 2013). An inductive thematic analysis was conducted with the intention of letting the data guide the coding themes and for itself to become a "descriptor of results" (Jones 2007). The themes were structured by using the theoretical indicators of mediatization as described by Donges and Jarren (2014) and Frandsen (2015) and developed over several weeks of interrogation of the transcripts. This coding was also influenced by Rödder (2011), who examined data about the influence of mediatization upon the development of scientific knowledge. Dominant and sub themes were identified, and the full thematic hierarchy is presented in Chapter Five. This approach to analysis also factored in Hjarvard's (2013) recommendation and concerns raised about over stating the role of the media in modern society by Deacon and Stanyer (2014) to include a consideration of more mediated forms of communications when considering the extent of mediatization within an institution. Due to the small field of expertise that this research could draw from, confidentiality was maintained by placing participants in alphabetical order and

assigning each a number. However, for clarity and data transparency, the participant number is also assigned a description of the field they represent (presented in Table 16 on page 149).

Data analysis: Quantitative data

The analysis of the quantitative data used standard statistical reporting techniques (Lang & Altman 2013). These standard techniques are designed to draw out the vital statistics that a survey aims to capture by using the original, unmodified data, and is performed in a way that the results can be incorporated into other analysis in the future. Therefore, the following four standards were adopted:

1. The statistical program used for managing the data in the analysis is named.
2. Numbers are reported with an appropriate degree of precision. For ease of comprehension and simplicity, numbers are rounded to a reasonable extent. For example, mean age can be rounded to the nearest year without compromising analysis. If the smallest meaningful difference on a scale is 5 points, scores can be reported as whole numbers; decimals are not necessary.
3. Total sample and group sizes for each analysis are reported.
4. Data is displayed in tables or figures. Tables present exact values, and figures provide an overall assessment of the data. (standard statistical reporting tecniques adapted from Lang & Altman 2013, pp. 4-5)

No weighting was applied to the analytical process, so the analysis generates a general picture of the characteristics of the people who participated, rather than an attempt to be weighted towards an entire population. The analytical approach used is based on the

argument that “there is a lot to be said for keeping analysis simple if some clear-cut findings are identified from a small sample” (Statistical Services Centre 2001, p. 13).

Results are presented in plain, grey coloured bar charts, and tables have consistent styling. This is to avoid over-emphasising one result over another, and to make the data easily read by others, because “if a display is unfamiliar, it becomes a problem to be solved rather than an aid to understanding” (Lewandowsky & Spence 1990, p. 207). Graphs were utilised for comparative analysis and, where specific numerical data is analysed, tabular representation is used. Due to the large volume of data collected in the survey, graphs and charts are also used in the analysis to avoid long-winded descriptions that would be hard for a reader to follow. Long narratives about a quantitative result are difficult to follow, but at the other end of the spectrum, brief written summaries are inadequate as they can lead to questions of selectivity and researcher bias (Statistical Services Centre 2001). Therefore, the analytical method used for this research provides a balanced presentation of the results from the survey.

Integration

Integration is the key step in mixed method research that explains how the researcher “brings together the qualitative and quantitative results” (Creswell 2015, p.123). For this study, Creswell (2015) and Bazley (2009) are influential in determining the point at which integration occurs. Creswell (2015, pp. 82-83) that integration can be found in several locations including in the data collection phase, the data analysis phase or in the report that help explain meaning behind the two data sets (i.e. discussion).

Bazley (2009) adds that integration is more than just a representation of a functional process used to justify data collection methods and assumptions made about research findings. It is also "the primary issue to determine what data and analyses are needed to meet the goals of the research and answer the questions at hand" (Bazley 2009, p.203). Creswell says that in a convergent research design, a popular place to locate integration is:

> Through a discussion in which the quantitative and qualitative results are arrayed one after the other. In this approach, the researcher discusses first the quantitative results and then the qualitative results and indicates how these two results compare (Creswell 2015, p.84).

Therefore, as illustrated in Figure 6, integration occurred at the point when data collection ceased, the two data sets were analysed, and the results were used to inform the discussion.

Conclusion

This chapter has outlined the methodological approach adopted for collecting data and the process applied for analysing the information collected. It has also described the point at which the two data sets are integrated. The next two chapters present the results from implementing the methodology just described.

Chapter Five: Survey Results

Introduction

This chapter presents results of the survey of people from a low SES background in Adelaide. As discussed in Chapter Three, participants for the survey were obtained through random statistical sampling in three areas of Adelaide with high concentrations of people from low socio-economic backgrounds. These areas were Port Adelaide (principally focused outside the library on Church Street), Salisbury (John Street) and Onkaparinga (outside Noarlunga Centre Train Station and Beach Road at Christies Beach) (please see Map 3).

A total of *n110* participants participated in the survey. Ten respondents were excluded from the analysis. Although this ten self-identified as living below the poverty line, analysis of the postcode data showed that they live in areas of Adelaide considered less vulnerable to the impacts of a changing climate. That data has been preserved, and could be used for further research examining differences between people's perceptions living in different socio-economic areas of Adelaide, but it fell outside the parameters of this study. Following the methodological approach detailed in Chapter Four, data saturation was achieved, even with the exclusion of the ten participants. Saturation was most notable when comparing answers to the questions about the following:

- Knowledge of, and views about responding to climate change;
- Trust levels in societal institutions;
- Trust levels in information sources;
- Media consumption habits;
- Internet and social media consumption.

The sample

73% of respondents self-identified as being Australian. This is a good sample of the demography of the areas of Adelaide sampled. ABS data shows that 70.2% of the local population in the areas sampled self-identified as Australian (City of Port Adelaide and Enfield 2015).

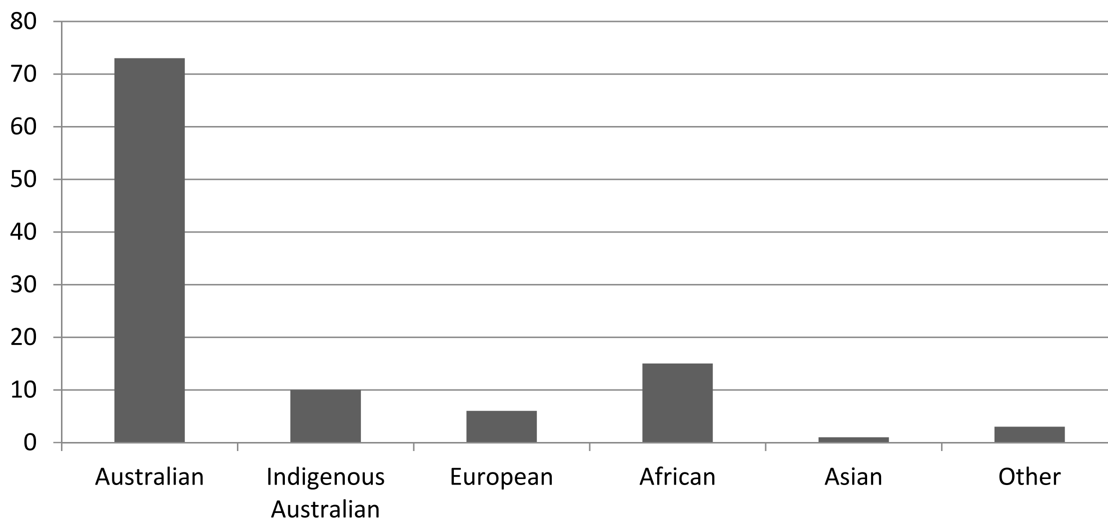


Figure 7: Ethnic backgrounds of survey participants

Most participants left school at the end of year 10, and just 19.6% completed year 12. This is a low figure compared to the national rate of 52% (Australian Bureau of Statistics 2013), and well below the metropolitan Adelaide average of 79.2% (Australian Bureau of Statistics 2011). This statistic is probably reflective of the low SES demographic from which survey data was obtained.

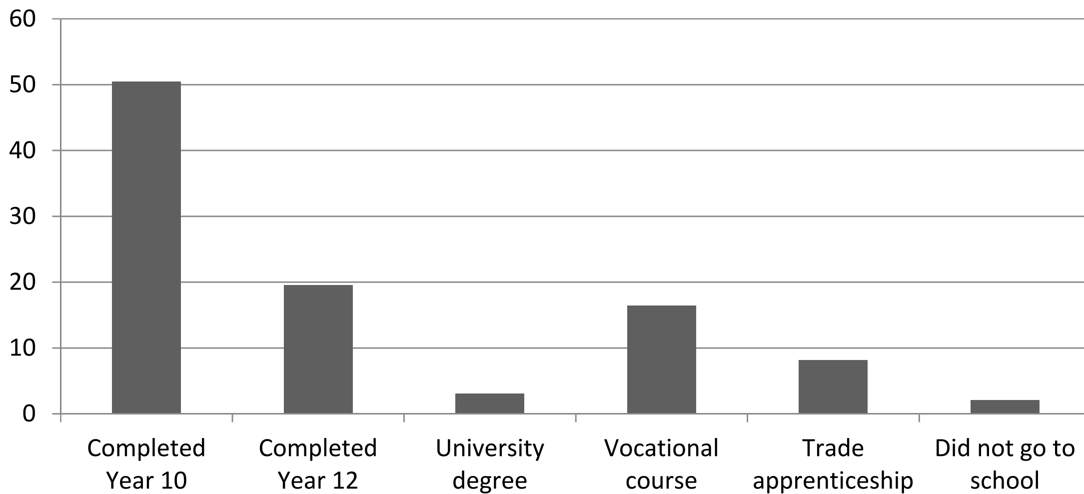


Figure 8: Education attainment levels.

Knowledge of climate change and adaptation

Although climate change and adaptation communications are described in Chapter Two as "somewhat of a booming industry" (Nerlich, Koteyko & Brown 2010), the survey participants have limited knowledge of it as a concept. Only 10% of respondents have heard of adaptation, compared to 99% who have heard of climate change:

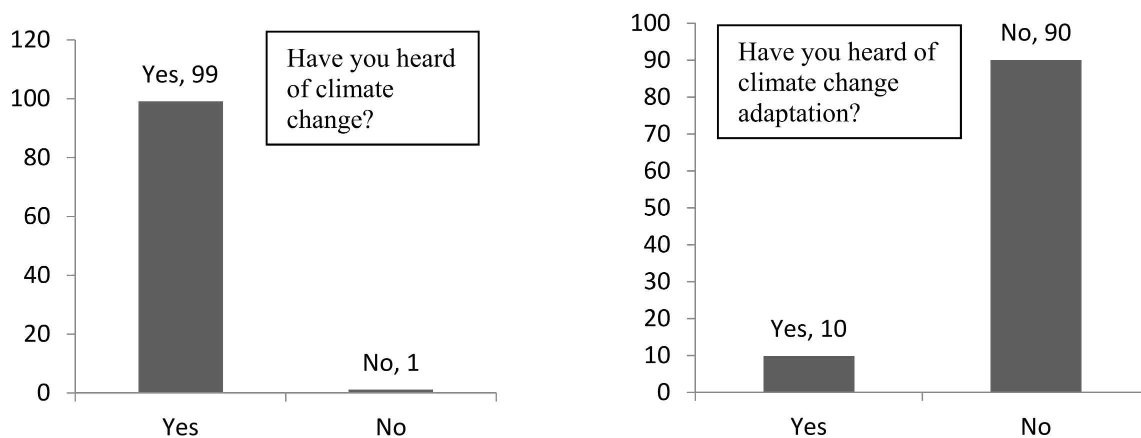


Figure 9: Survey respondent awareness of climate change vs. climate change adaptation

Of those who have heard of climate change adaptation, television is the main media identified as the source of information.

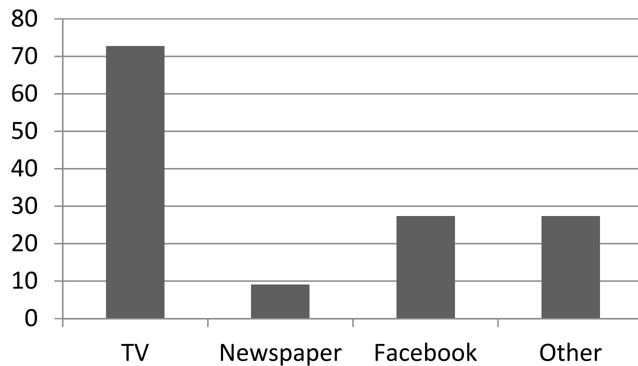


Figure 10: Sources of information about climate change adaptation

However, when the open-ended responses are examined, only two of the five people who have heard of adaptation could be described as anywhere near accurate in explaining what it means. Table 10 presents participants' responses in their own words:

Count	**Response**
1	I think it was about trying to change the way we live
1	I was listening to what you just said to my friend
1	It's about trying to love it, the climate that is
1	Can't remember now
1	Heard about it on the TV but can't remember now what it actually means

Table 10: Open ended responses to what climate change adaptation means

The low level of awareness about climate change adaptation is reflected in the respondents' knowledge of the South Australian regional planning process. When asked if they had heard of the state plan, 98% said they had not. Of the respondents who said they had heard of another adaptation plan, the responses indicate they are confusing them with other projects.

Count	Response
1	Clean energy supplement
1	Plant more trees
1	South East Asian adaptation plans

Table 11: Adaptation plans named by respondents.

As illustrated by Table 11 above, not one survey participant identified a local plan that has been written for the areas in which they live; including the AdaptWest, Resilient South or Adapting Northern Adelaide plans noted in Chapter Four.

Trust in information sources

In this section, the results show a broad trend relating to levels of trust in potential information sources about climate change and adaptation; respondents have low levels of trust in key political institutions that are responsible for communicating climate change and adaptation information to people in South Australia. This is particularly acute in relation to the level of trust in the federal government, with 74% viewing them overall as not trustworthy. Almost half of the respondents, 47%, describe the state government as not trustworthy. Although trusted more, 37% still express distrust in local government and only 16% describe it as being an institution that could be trusted.

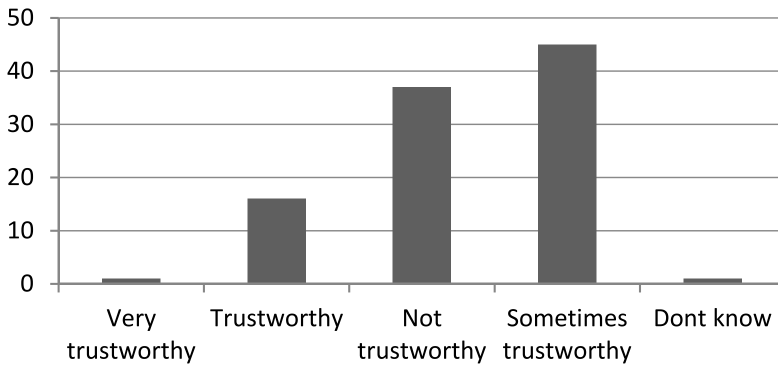


Figure 11: Trust levels in local government as a source of information about climate change and adaptation.

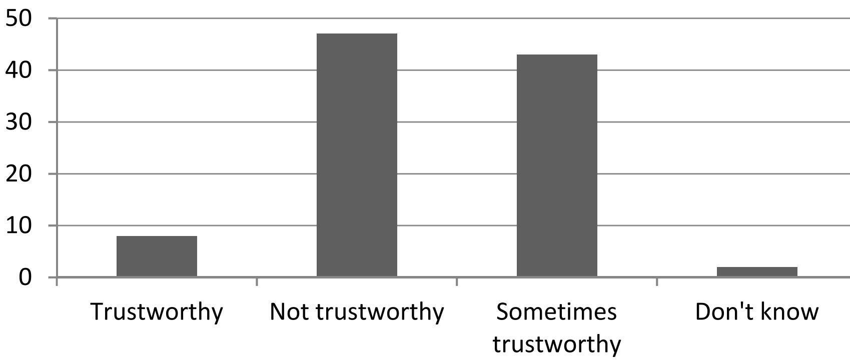


Figure 12: Trust levels in state government as a source of information about climate change and adaptation.

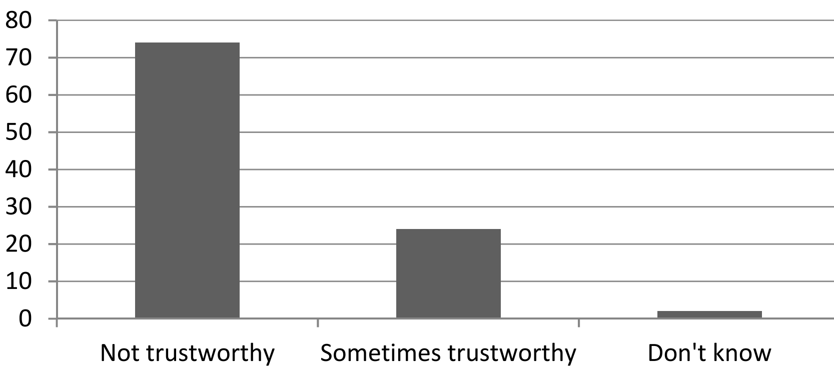


Figure 13: Trust levels in federal government as a source of information about climate change and adaptation.

The level of trust in other cultural influencers that are involved in the exchange of climate change and adaptation information is more mixed. Many participants simply do not know that other institutions might be involved in the dissemination of information about climate change and adaptation. Academics, for example, are perceived as more trustworthy than not, although a sizeable proportion do not know how they feel about them.

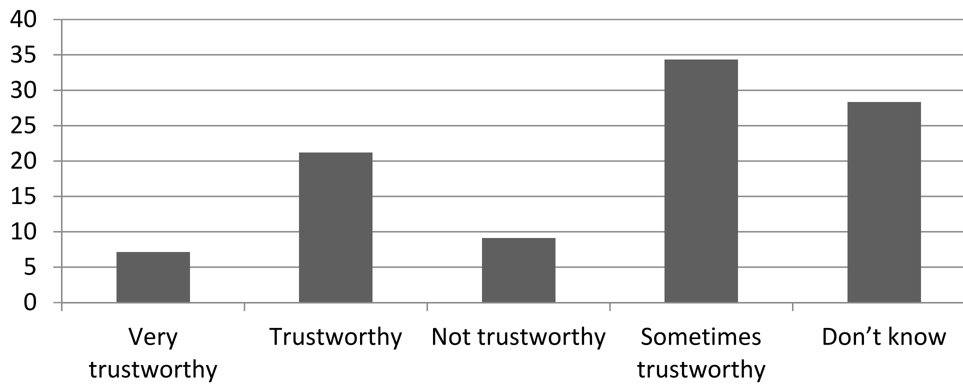


Figure 14: Trust levels in academics as a source of information about climate change and adaptation.

Only 7.1% of the respondents perceive journalists as trustworthy, but 62.6% view them as sometimes trustworthy. A quarter of respondents perceive journalists as not trustworthy.

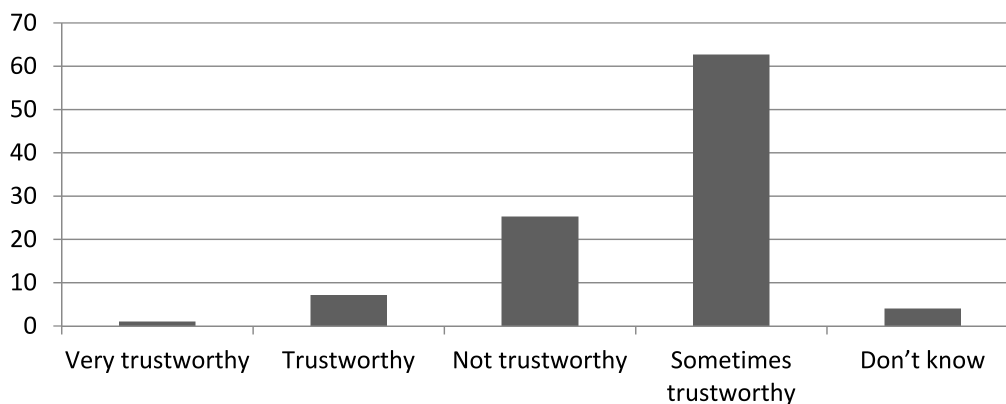


Figure 15: Trust levels in journalists as a source of information about climate change and adaptation.

The State Emergency Service (SES), an institution that is actively involved in face-to-face communications during extreme heat events in South Australia[26], are perceived as more trustworthy than not, but again, 45% of respondents do not know how they feel about them.

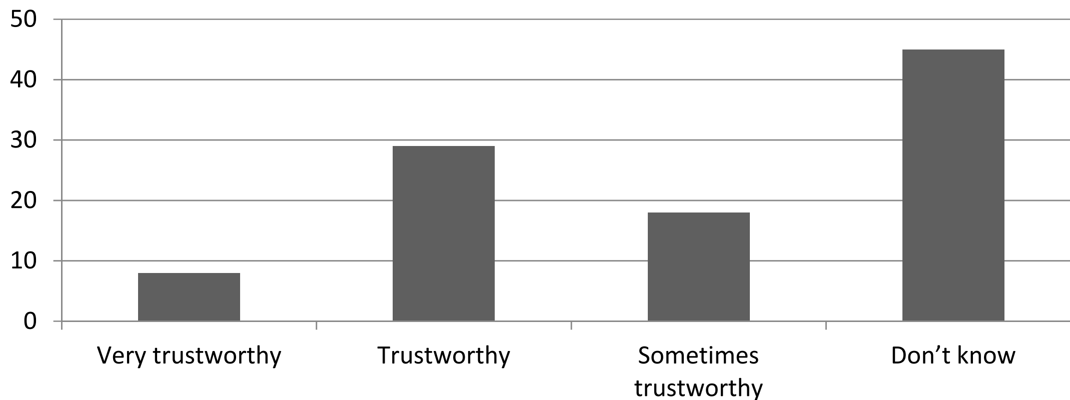


Figure 16: Trust levels in the State Emergency Service as a source of information about climate change and adaptation.

Survey respondents view NGOs in a similar fashion, with trust levels being relatively high, but over a third not knowing how they feel about them as a source of information about climate change and adaptation.

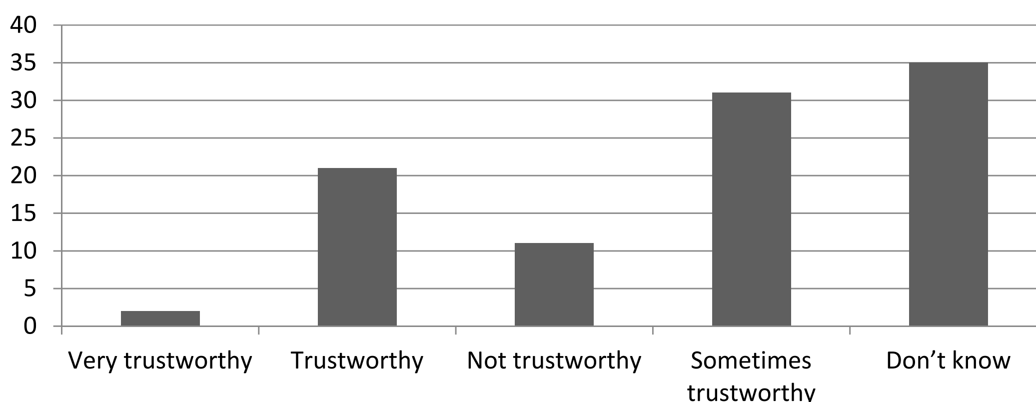


Figure 17: Trust levels in NGOs as a source of information about climate change and adaptation.

[26] The SES have distributed health warnings at hardware stores and at Adelaide International Airport during extreme heat events in South Australia (Australian Broadcasting Corporation 2015b, 2017b).

Trust levels in friends and family present a complex picture. One third of respondents view them as a trustworthy source, 44% perceive them as sometimes trustworthy and 18% as not trustworthy.

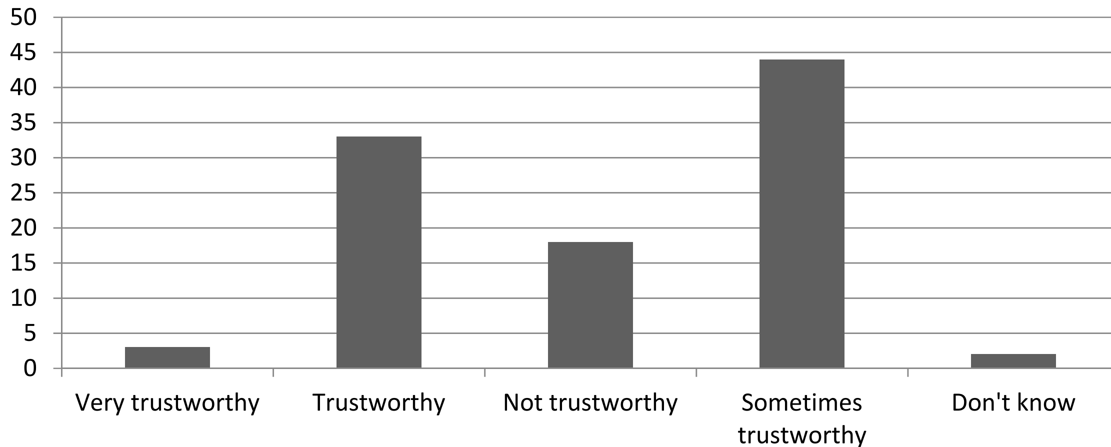


Figure 18: Trust levels in friends and family as a source of information about climate change and adaptation.

When examining trust levels in types of media as a potential source of information about climate change and adaptation, the internet is trusted by the people who participated in the survey, whereas trust in newspapers is more polarised.

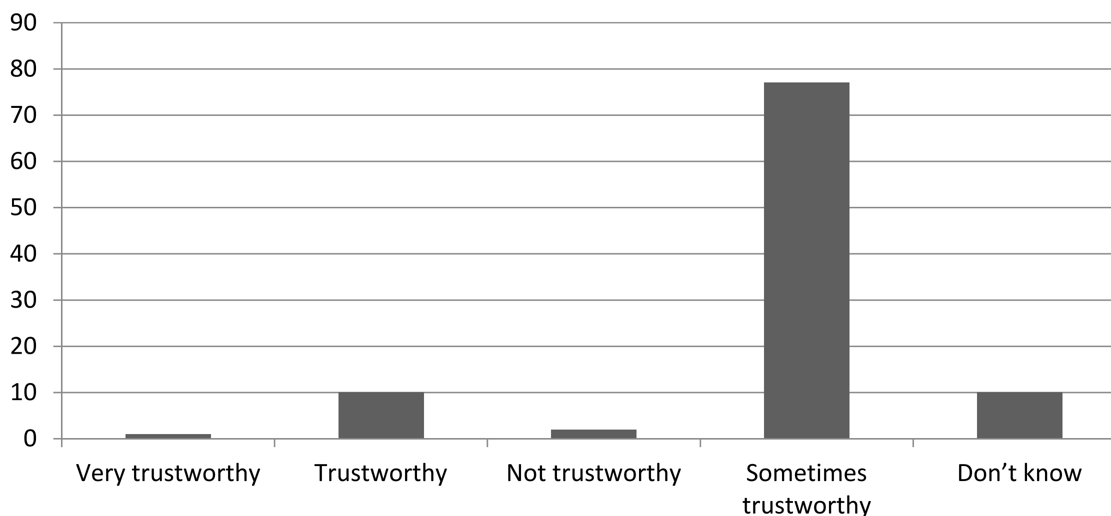


Figure 19: Trust levels in the internet as a media source of information about climate change and adaptation.

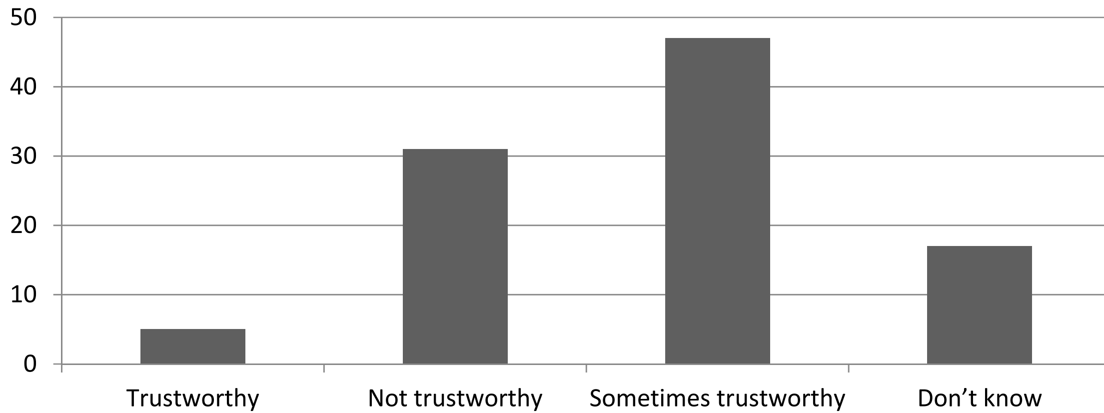


Figure 20: Trust levels in newspapers as a media source of information about climate change and adaptation.

The television is a trusted source of media, with 66% of participants seeing it as sometimes trustworthy and 27% as trustworthy. Only 5% view television as an untrusted source of media.

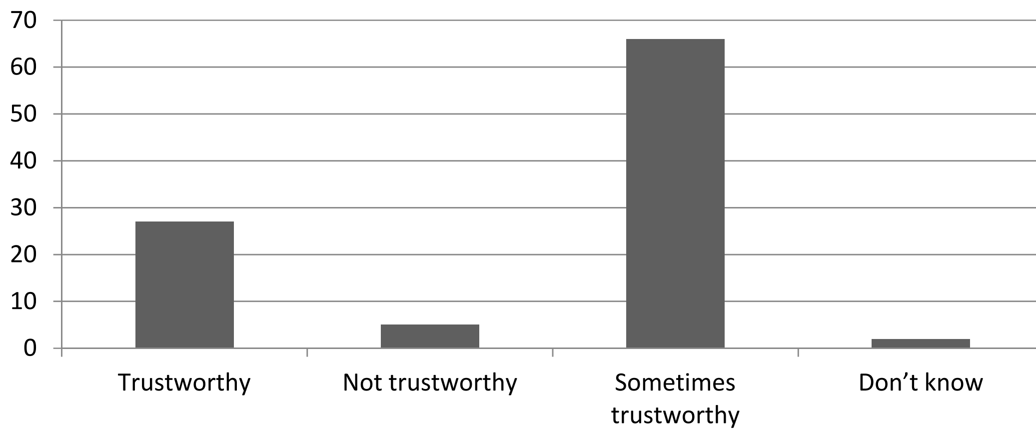


Figure 21: Trust levels in television as a media source of information about climate change and adaptation.

Only 18.2% of survey respondents view radio as a trusted media source for information about climate change and adaptation, but 48.5% of respondents do not know how they feel.

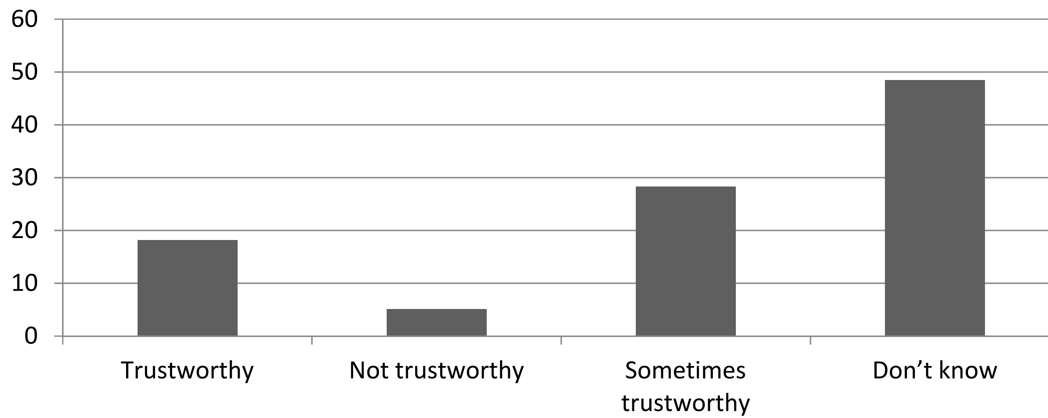


Figure 22: Trust levels in radio as a media source of information about climate change and adaptation.

These findings might provide a context for the next section of this chapter which shows a broad trend relating to participant media consumption: a tendency towards television viewing and the internet.

Media consumption

Television

Analysis shows consistent patterns of media consumption in relation to television, which is consumed in significant quantities by this group. The data shows that free-to-air television is popular, and that Channel 7, Channel 9 and their affiliated channels are consumed most regularly. The most popular viewing period is in the evening slot between 4 p.m. and 9 p.m., and the night time slot between 9 p.m. and 1a.m.

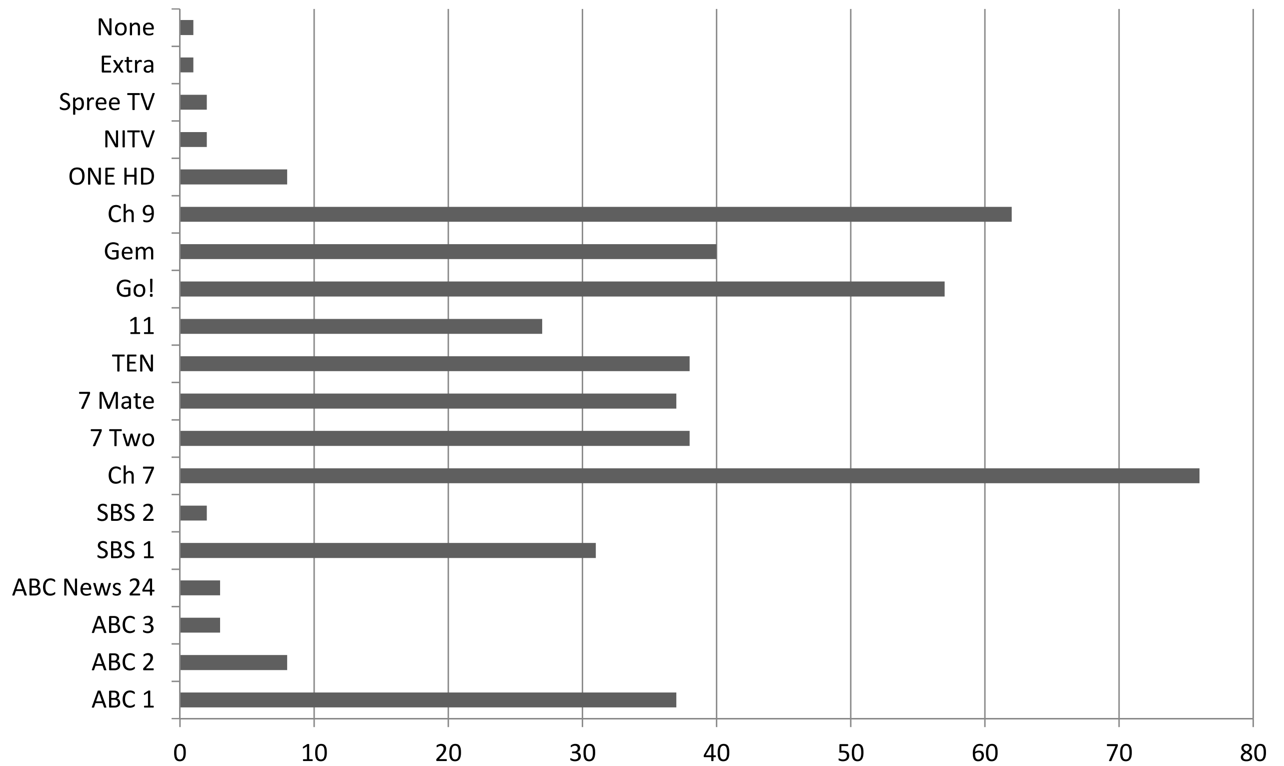


Figure 23: Preferred television channels

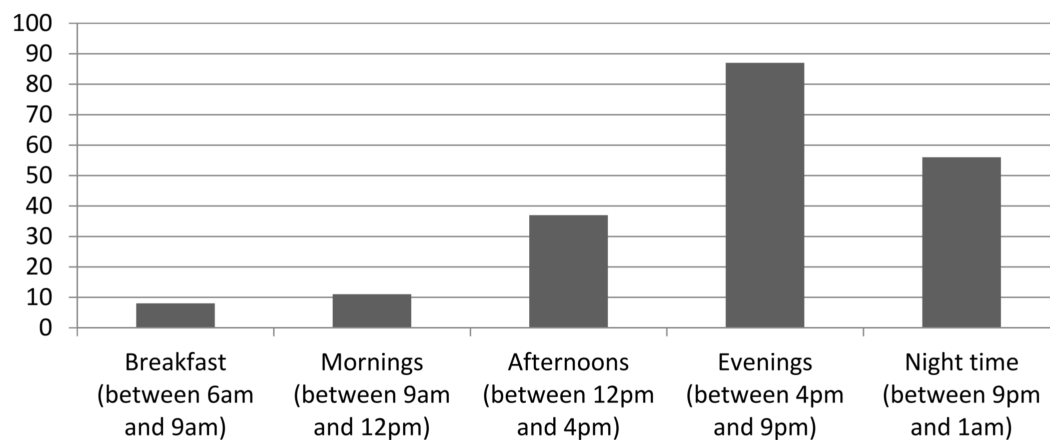


Figure 24: Preferred television viewing times of survey participants.

Pay TV is not watched by 64.1% of this sample, but for those who do, it is primarily to access sport channels, and to a lesser extent to watch documentaries broadcast on the Discovery and National Geographic channels. It is not to watch news and current affairs.

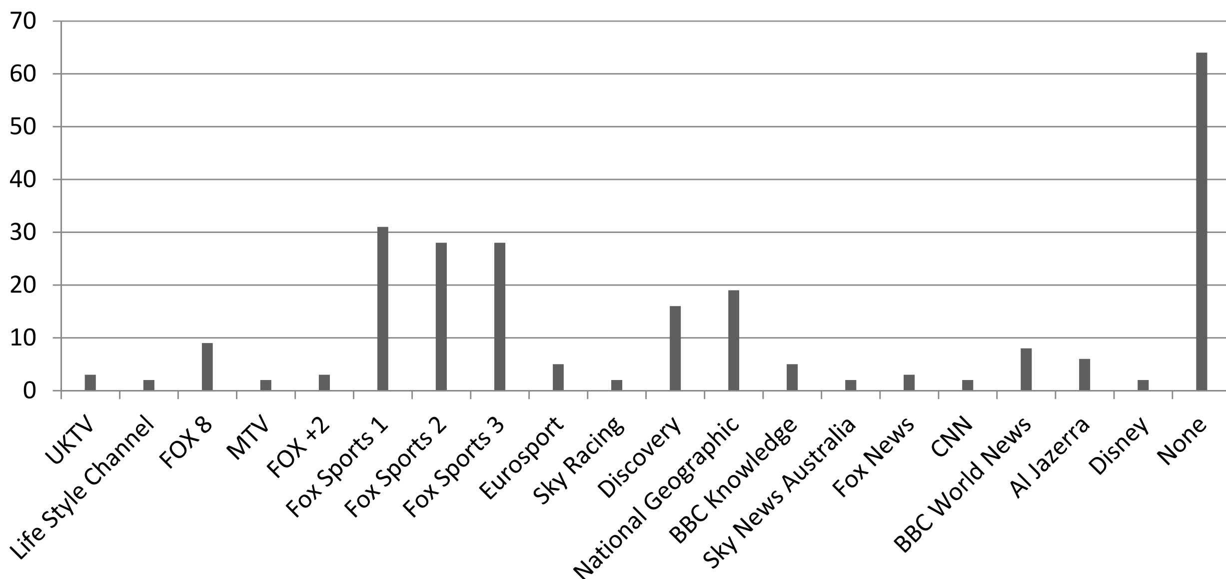


Figure 25: Pay TV consumption habits

Contrary to findings in other studies of media consumption in lower SES demographics[27], survey analysis reveals that news and current affairs television media is consumed by this sample in Adelaide. A majority of those who participated in the survey regularly view such programs on free-to-air television to find out information about issues of the day. Only 15% of those surveyed indicate that they do not regularly watch news or current affairs programs to learn about issues of the day.

[27] Some basic media consumption data was captured in Sevoyan et al. (2013) and is presented on pp. 108, 110 and 158. It is limited to assumptions about people from low SES backgrounds in South Australia obtaining information about climate change and adaptation from television viewing, but it does not identify specific consumptive behaviour.

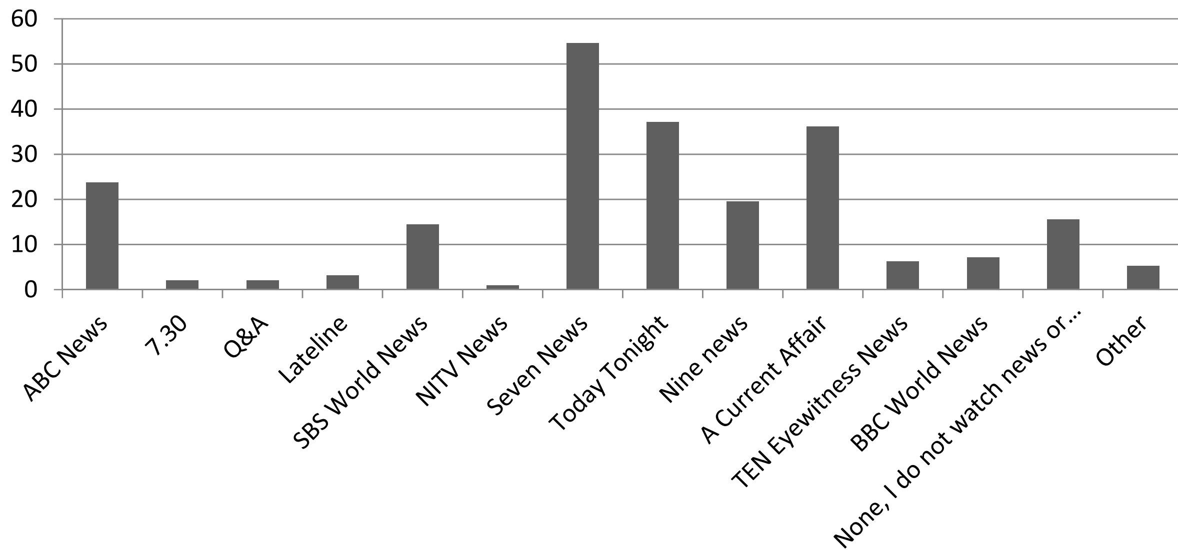


Figure 26: News and current affairs programs watched regularly by the surveyed group to find out about issues of the day.

Radio and newspapers

59.2% of the respondents do not listen to the radio, and of those who do listen, commercial stations are preferred. Nova[28] is the most popular, with 14.3% of participants regularly tuning into that station to listen. Nova includes news bulletins in its daily schedule, but has no daily programming dedicated to current affairs.

[28] Nova is a commercial radio station owned by Illyria Nominees Television, a private investment company of Lachlan Murdoch (O'Connor 2017)

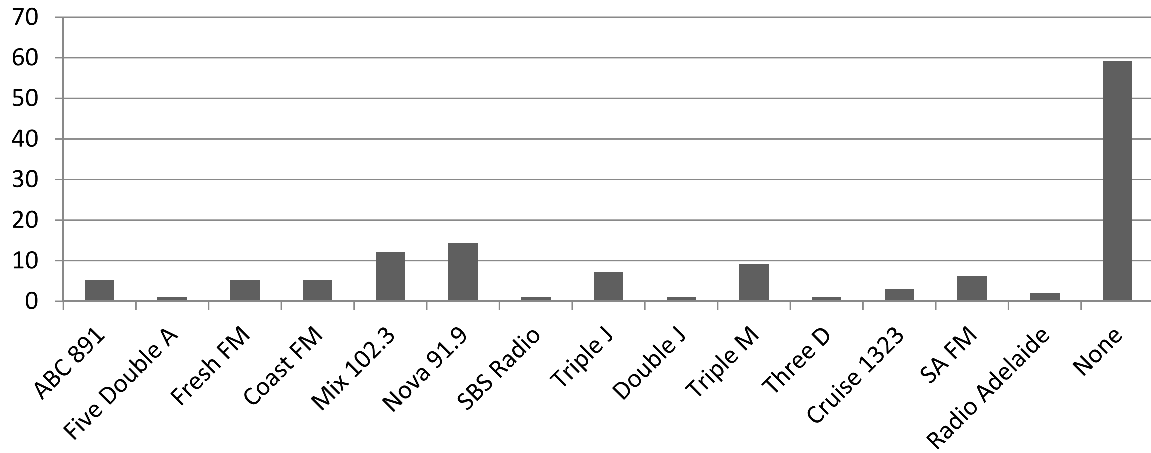


Figure 27: Preferred radio stations

The most popular time for listening to the radio is during the morning and late-night time slots.

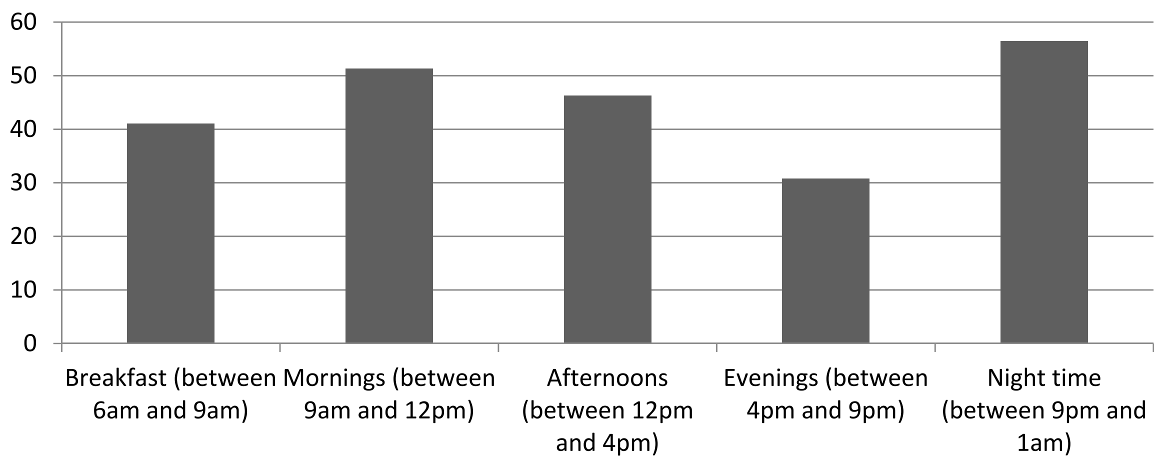


Figure 28: Preferred radio listening times.

The survey shows that just 4% of the people who participated regularly choose to read a newspaper. For those who do read a newspaper, *The Advertiser* (Adelaide's only printed daily newspaper) is the most popular. *The Advertiser* is owned by News Corp Australia, a Rupert Murdoch controlled business[29]. Other newspapers that survey respondents say they read are also owned by News Corp, which is probably reflective of the fact that the company own all locally focused print newspapers in Adelaide. The ownership issue is beyond the scope of this thesis, but, as illustrated in Chapter Three, climate change and adaptation content might be influenced if conservative ownership encourages conservative consumers of the news and current affair products produced (Feldman et al. 2012). Media coverage of climate change and adaptation to which participants might have been exposed in Adelaide is considered further in Chapter Seven.

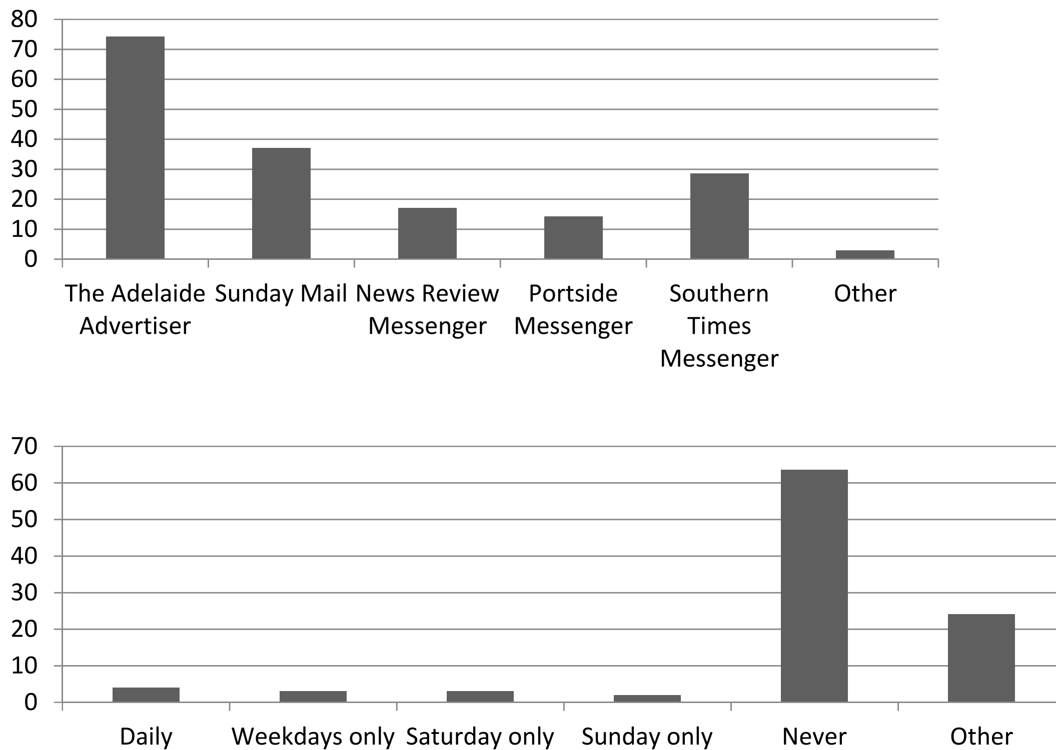


Figure 29: Survey participants newspaper consumption habits

[29] Rupert Murdoch, the Chairman and largest shareholder of News Corporation and owner of 21st Century Fox, has a long-standing financial interest in the Adelaide media market. He started his media empire in Adelaide, after he took control of *The News*, which he inherited from his father in 1954 (Doyle, C 2011).

Internet and social media consumption

The survey results show that the people who participated consume very high levels of internet-based media. When asked if they regularly use the internet to access information about issues of the day, the results were:

Value	Percent	Count
Yes	83.7%	82
No	16.3%	16
Total		98

Table 12: Internet media consumption.

The use of social media as a source of information is also high among this sample. The source of choice is Facebook, with 84.5% of participants stating they use Facebook regularly to look for information about issues of the day. Other well-known social media sources are not as popular:

Value	Percent	Count
Blogs	1.2%	1
Facebook	84.5%	71
Twitter	4.8%	4
Myspace	0.0%	0
Other Social media	35.7%	30
ABC News	9.5%	8
Commercial news website	11.9%	10
Other	53.6%	45
Total		84

Table 13: Online sources of information

Analysis of the open-ended responses to this question shows that the other key internet based sources used by participants to look for information about an issue of the day are YouTube and Google. Table 14 below presents the open-ended responses provided by the survey respondents.

Responses "Other"	Count
Google	22
Wikipedia	4
YouTube	23
National geographic	2

Table 14: Other alternative media sites accessed regularly by this sample

Communicative preference

Survey respondents indicate that they are responsive to hearing media communications about climate change adaptation, with just under 90% stating they wanted to hear more about the topic in the future. Television is by far the preferred medium through which they wish to access climate change adaptation information, followed by Facebook.

Participants also indicate that they think advertising would be a useful way to communicate with them about climate change and adaptation. However, the data also shows that government communication, such as a mailout, is not perceived as an effective way of communicating with them about climate change and adaptation. This is consistent with data about the lack of trust displayed in the institutions charged with communicating climate change and adaptation in Adelaide. Table 15 outlines the participants' preferences for how they would like to receive communications about climate change adaptation.

Value	**Percent**
TV	80.8%
Radio	18.2%
Newspaper	10.1%
Advertisement	27.3%
Posters	16.2%
Leaflets	5.1%
Talk in a community centre	4.0%
Talk in a religious institutions	8.1%
Friends and family	9.1%
Government mail out to local residents	3.0%
Non-government organisations	2.0%
Doctor or health worker	5.1%
State Emergency Service	5.1%
Red Cross	0.0%
Blog	1.0%
Facebook	59.6%
Twitter	1.0%
Government website	4.0%
Do not want to be communicated with	10.1%
Other	16.2%
Total	

Table 15: Communicative preferences for how survey participants would like to receive communications about climate change adaptation.

To assess what kind of messaging would work for this sample (as discussed in Chapter Three), participants were asked how climate change and adaptation should be framed in media. This was achieved by asking participants to rank how likely they would be to seek further information about climate change and adaptation based on two statements presented

as part of the survey. Participants were read two statements (one negative, the second positive) and, based on each one, were asked to rank on a Likert Scale of one to five how likely they were to react to that message and seek out further information about climate change adaptation (five means they would seek more information urgently).

Statement 1 read:

> *Adapting to climate change will create a more liveable community where you and your family will be happy, healthy and safe, reducing the impacts of climate change.*

Statement 2 read:

> *Climate change is predicted to have a big impact on people from low socio-economic areas. People could suffer serious illness or even death unless people take urgent action to adapt to these changes.*

Results show that statement 2 yielded a stronger response than statement 1. Over 10% more of the respondents said they would seek further information when encountering a climate change and adaptation message if it were presented using a negative frame rather than a positive one. 51.5% of people ranked a score of 3 or above for statement 2, compared with 40.4% for statement 1.

Further, when respondents were asked at the end of the survey whether they had anything to add, some colourful comments were made by respondents, such as: “sounds like another thing for me to worry about” and “get the information out there about this because it sounds

bad". One survey respondent said: "I don't really care about this" and "no one is going do anything about it, you are wasting your time", but this person was in the minority, as most respondents said they thought climate change and adaptation were problems they would have to learn how to contend with.

Survey analysis also indicates that the time of year may influence how a person might respond to hearing about climate change and adaptation in the media, and this is explored in the next section.

Seasonal influences

As discussed in Chapter Four, the survey was conducted during two seasons (summer and winter). The purpose of so doing was to see whether seasonal influences impact upon a person's views of the threat posed by climate change. To test perceptions, survey respondents were read the following assertions (adapted from academic literature) and asked if it sounded like an urgent issue that they needed to respond to:

> Climate change is said to pose a serious threat to people from lower socio-economic areas because of poor housing and higher levels of existing poor health. Adapting to the threat posed by climate change is therefore described as urgent.

An attempt was made to collect 50% of the responses in summer and 50% in winter. However, the data shows that slightly more responses were obtained during the winter collection phase: 47% of responses were collected in summer, and 53% in winter.

Collectively, 65% of participants said they agreed with the statement that adapting to climate change sounded like an urgent challenge. However, results show that the weather might have affected how people perceive climate change and adapting to it.

During the first data collection period, most of the days were hot (several in heat wave conditions). Of those surveyed in those conditions, 73% of respondents viewed adapting to climate change as an emergency for people from a low SES background. In contrast, the second data collection period was in winter, during July, with temperatures in the low-to-mid teens. In those conditions, only 54% of respondents viewed climate change adaptation as an emergency. The implications of this finding are discussed in Chapter Seven.

Conclusion

These survey results present an insight to how a sample of people from an urban low SES background view climate change and adaptation, and the type of media they are interacting with when sourcing information about such an issue. They also highlight the levels of trust people have in both the content and the institutions delivering various media. While these results need to be kept in this context, and it is acknowledged that they do not necessarily represent people from other Australian cities, the strong consistency in many of the answers suggests they might also be applicable to other regions.

The results suggest that vulnerable people in Adelaide have not been exposed to communications that they trust about climate change adaptation. The medium of trust indicated by the sample who participated in the survey is the media, especially television news and current affairs programming. These results indicate a need for greater media content on the subject, as vulnerable people in Adelaide are engaging with news and current

affairs on a regular basis, and are more likely than not, to trust messages that they hear about it if presented in sources that they regularly consume. However, the lack of trust displayed in the institutions responsible for communicating climate change and adaptation issues to them presents a challenge, and as the following chapter indicates, there are major hurdles to overcome if those issues of trust and low levels of media content are to be addressed. The results in the following chapter clearly indicate that institutions responsible for communicating with vulnerable people in Adelaide through mediums that such people are engaging with, will at this time, be virtually impossible. This is because the data shows that these institutions are not mediatized, and this will prevent them from improving their engagement with vulnerable people in Adelaide on the topic of climate change and adaption in the future.

In sum, the key findings from the survey are that people of low SES background sampled in Adelaide:

1. Have no knowledge of adaptation as an issue within the climate change debate;
2. Have very low levels of trust in government and are unsure about the role other institutions might hold in the climate change and adaptation communication endeavour;
3. Display similar media consumptive behaviour. This includes the consumption of high levels of media, especially free-to-air television and internet based communications;
4. Watch current affairs programs, including the news on free-to-air commercial television daily;
5. Have similar communicative preferences, preferring to be communicated with about climate change and adaptation via television and Facebook;

6. Are concerned about climate change and although they had no knowledge of climate change adaptation at the commencement of the survey, once they had learned a little about it (via that participation), they consider climate change adaptation as very important;
7. May be influenced by the weather: it might change how people feel about the need to adapt to climate change.

The next chapter presents the results from the second part of the methodological process outlined in Chapter Three. The results from semi-structured interviews with the expert professionals who were expected to know about climate change and adaptation communications are described.

Chapter Six: Interview Results

Introduction

This chapter presents results from the data collected through conducting semi-structured interviews with experts involved with, or expected to know about, climate change and adaptation communications. In total, nineteen interviews were conducted between February 23, 2015 and March 18, 2015, taking on average 42 minutes to complete.

As participants were de-identified at the time of inserting the transcription data into NVivo, each was allocated a number based on their alphabetical listing. To provide context as to who is saying what, a description of the area of expertise they represent is also provided.

Participant	Professional affiliation	Institutional description
1	Climate change adaptation researcher	University staff member
2	Journalist	Adelaide based commercial television reporter
3	Climate change and science communication researcher	University staff member
4	Premier's Climate Change Council Member	The Premier's Climate Change Council is an advisory board established under the Climate Change and Greenhouse Emissions Reduction Act 2007 (SA). The role is to provide independent advice to the Minister for Climate Change on reducing greenhouse gas emissions and adapting to climate change (Government of South Australia 2016)
5	Climate change adaptation researcher	University staff member
6	IPCC author	University staff member
7	South Australian political appointment	Elected member of the South Australian House of Assembly
8	Health and climate communications	Emergency Management Unit, SA Health, staff member
9	Health and climate communications	Emergency Management Unit, SA Health, staff member
10	South Australian political appointment	Elected member of the South Australian Legislative Council
11	Climate change adaptation planner	Local government staff member
12	Health and climate change communications	Department for Health and Aging staff member
13	Climate change adaptation planner	Local government staff member
14	Climate change and science communication researcher	Commonwealth Scientific and Industry Research Organisation staff member
15	Climate change adaptation researcher	Independent consultant
16	Climate change adaptation planner	Local government staff member
17	IPCC author	University staff member
18	Journalist/Political advisor	Adelaide based journalist and political advisor
19	Premier's Climate Change Council Member	See participant 4 above

Table 16: Semi-structured interview participants

The inductive analysis of the transcripts was conducted using the indicators of mediatization (see Table 2). Consistent with the theoretical framework and methodological approach, a fourth indicator was used to collect interviewee thoughts and perceptions about mediated forms of communications. Analysis of the data using these four indicators established dominant themes, and these are summarised below in Table 17.

Indicator	Themes identified through interview data analysis
Behavioural	— Limited engagement with professional media — Social media scepticism — Non-media communication output
Perceptions	— Negative media perceptions — Limited influence of media to influence change — Perception of research efficacy targeting a low SES demographic — Internal political processes
Structure	— Economic and social restrictions — Policy restrictions
Mediated communications	— Climate change and adaptation communication research — Alternative local framing — Other cultural influencers

Table 17: Key themes identified in interview results from using the indicators of mediatization as the analytical tool

Indicator 1: Behavioural

Extent of institutional media communication output

The first indicator was used to help identify expert participant behaviour towards using media as a way of communicating to both internal (work colleagues) and external (target public) audiences. As shown in Table 2, the behaviour indicator establishes mediatization as occurring at an institutional level if those who work in it increasingly use the media as a mechanism for producing communications, such as writing press releases to announce initiatives or diversifying the number of media channels they use to disseminate information.

The interview analysis shows that all the expert participants have communicated the issue of climate change and adaptation at some point, but very few have done so through any media, and the number of channels they use is limited. Where expert participants have communicated in the media directly, they indicated that the information they presented about climate change adaptation was not the initial focus of why they were communicating, but

arose incidentally during the media engagement. The interviews also indicated that some expert participants consider the act of booking advertising space as engagement with the media[30] about climate change and adaptation. Further, the interview results show that the media is not a preferred communication platform and that much of the communication output by expert participants has been in other, non-media, fora. This non-media communication output includes the provision of academic services, participation on boards and committees, provision of advice to government departments and NGOs, and delivery of speeches at conferences and community forums. The next section of this chapter outlines the detailed interview results.

Limited engagement with the professional media

Interview analysis shows that expert participants do not generally communicate through the media, and consequently have had limited experience of engaging with professional media on the issue of climate change and adaptation. Five participants detailed specific experiences with journalists from the media industry, but only two indicated that they had regular interactions, including the provision of ongoing commentary on issues of the day related to climate change:

> I'm frequently involved in just direct interviews with the media providing, commentary on issues that I guess are the story of the day, the story of the hour on whether it's climate change science or misinformation being propagated by climate change sceptics or statements by politicians (Participant 6, IPCC author).

[30] A discussion on why this is not considered media engagement for the context of this study is provided in the next section of this chapter.

Moreover, the five expert participants who have had experience with a journalist from the professional media industry indicated that they had communicated the topic of climate change adaptation in the mid-2000s, but only sporadically since then:

> The most concentrated period on adaptation [media] was during 2004 to 2005, when I was working in the Department of Agriculture, Fisheries and Forestry, for the Commonwealth government, and working on climate adaptation in agricultural systems (Participant 17, IPCC author).

Participants said that government programs are a key influencer when considering media, and the experts who had commented in the media said the primary focus had been on non-urban groups, especially those in the agricultural sector, as the following quotes show:

> I spent a fair bit of time talking through the media and directly with the wine industry and groups like that on adaptation but interestingly, I haven't spent a whole lot of time talking to people in urban areas about adaptation (Participant 17, IPCC author).

> I'm probably not going to go out to communicate with that low SES demographic in mind (Participant 11, climate change adaptation planner).

> Climate change is largely going to impact on rural and regional South Australians because their infrastructure is very sparse (Participant 7, South Australian political appointment).

> My work is more high-level than talking through the media about climate change and adaptation that target such narrow-focused groups (Participant 13, climate change adaptation planner).

> Not the local Adelaide community directly about adaptation, but have communicated with rural communities about it (Participant 3, climate change and science communication researcher).

Only one of the five expert participants with media experience of talking with a professional journalist indicated that people from a low SES urban background had been the focus of the story. However, the media interaction occurred in Bangladesh, not urban Adelaide, and was a result of a behind-the-scenes advisory role providing a briefing to a Bangladeshi journalist about climate change and adaptation.

Those participants who have engaged with the media in Adelaide, and linked climate change with an increase in extreme heat events, said they done so unconsciously when talking about extreme heat in other contexts, and that the communication had not been targeted at specific groups in society:

> When it comes to communication, whoever it is that we would be talking to doesn't care why it's hot, it is just hot. So unconsciously we are talking about climate change, but it's about the impact of extreme heat events, specifically in South Australia (Participant 8, health and climate communications).

Another participant reflected that when weather and climate are linked in the media, it is usually in relation to information targeted at older, urban South Australians during periods of extreme heat wave conditions. In this context, overall analysis of the interview results confirms that media communications generally occur during extreme weather events, and in Adelaide, this invariably is during a heat wave, and the communication is almost always targeted at older groups:

> In terms of targeting other vulnerable demographics outside of those older people, those cultural groups who may not have been able to understand a broad message, it hasn't been targeted at any other demographic groups (Participant 9, health and climate communications).

Expert participants with an interest in direct engagement with Adelaide-based media asserted that in any case, their opportunity to *obtain* media coverage on the issue was *only* possible during extreme weather-related events. One participant observed that:

> You know, we put out our press releases and just one journo might come along, but once we got a reasonable run because there were huge bushfires around at the time (Participant 4, Climate Change Council Member).

While this interaction was not targeted at a low SES urban demographic, the quote indicates/suggests that when a weather-related event is unfolding, the media may be more responsive and inclined to report on a climate change story. However, although the media might run stories about a bushfire, and link it to climate change and the need to adapt, this scenario might not resonate with a low SES urban group in Adelaide who do not live in

bushfire prone areas. This topic is raised again later in this chapter, in the section titled *Mediated Communications*.

However, expert participants do not necessarily perceive themselves as having no media engagement experience. As noted earlier, several Adelaide-based expert participants viewed professional media engagement as including the purchase of advertising space in local sources. Therefore, it appears that even though some expert participants do not engage with journalists, they feel that they engage with media through advertising. Specifically, climate change and adaptation experts who work in government express a view that the purchase of advertising is the same as conducting other media engagements (such as being interviewed by a journalist), and was one they felt comfortable with:

> So, we had a lot more radio advertising because people tend to have the radio in the background, so we would have radio advertising, in the case of heat, it's a message you know (Participant 7, South Australian political appointment).

However, the purchase of advertising space is not the same as being interviewed by a journalist about climate change and adaptation, and the conflation of the two by expert participants is significant. Advertising does not constitute media engagement per se: it is a "paid form of nonpersonal communication about an organisation, product, service or idea by an identified sponsor" (Belch et al. 2009). Also, no evidence was forthcoming by Participant 7 to support that claim about media consumption habits, which they said was based on the following rationale:

> They [government agencies] do all the radio stations, complete blanket hit because you know the old people might not be listening to certain radio station but their daughters might be (Participant 7, South Australian political appointment).

Also, Participant 7 explained that the advertising copy did not mention climate change and adaptation. Instead, the advertising was a health warning message, announcing a heat wave was forecast and accompanied by tips on how to cope with the extreme weather event. Further, another participant explained that they did not intend to link climate change and adaptation in media communications in Adelaide:

> We will not be targeting people from our poorer areas in the media about extreme heat and adapting to climate change. The local media is not the place to be doing that because those people do not see themselves as a group of people that we can target, it's much more loose than that, I mean, if you were poor, would you think yourself as different or more vulnerable *per-se*, I don't think they would see themselves like that so trying to engage with them in the media seems pointless (Participant 13, climate change adaptation planner).

Participant 16 expressed a similar opinion, explaining that the limited media output targeting people from a low SES background was because:

> They are not a formal group that we can target, say like another stakeholder group, such as the renewable energy supporters, or the local disability advocates. Poor people are just poor, not organised, so we haven't attempted to talk with them via any media at this stage of our planning cycle (Participant 16, climate change adaptation planner).

Analysis of the interviews show that these institutional media behaviours are not confined to traditional forms of print and broadcast media.

Social media scepticism

The interview analysis suggests that the expert participants are also sceptical about social media, and are sparse in their engagement with it. Several expert participants, (including 7, 10, 9 and 17) said they posted information on social media due to necessity, but its utility was for basic awareness building, not to enhance adaptation outcomes. These expert participants said this was due to the structure of social media, explaining that it was difficult to hold constructive interactions with people in society over the long term through such sources.

Participant 7 explained that although he had limited experience with social media, in his view, most people "don't use it to find out new information, they use it to reinforce their existing opinions". The same participant held negative views about the utility of Facebook in particular, arguing that "there is no real debate on Facebook, or if there is, it ends up about Nazis and climate sceptics" (Participant 7). Participant 10 expressed a similar sentiment, noting that:

> I don't engage in debates with people on Facebook... I suspect it reinforces people's existing views and opinions and prejudice rather than challenges people with new information (Participant 10, South Australian political appointment).

Another expert participant said social media was inherently flawed and of little value for long-term engagement on climate change and adaptation because:

> The structure is designed to give you stuff that you've liked in the past, so it's unlikely that people are going to be challenged with new stuff (Participant 9, Health and climate communications).

Many participants expressed an opinion that social media (especially Facebook) was not used by people from a low SES background for engaging with issues described as "important stuff" (Participant 10, South Australian political appointment). Instead, a common view exists that Facebook is more about chit-chat with and between such people, instead of serious debate:

> The problem that I find with Facebook is they [people from a low SES background] want to just comment on completely inane stuff so I only get involved, involved in very, very limited level (Participant 17, IPCC author).

Participant 10 justified his low level of social media output along similar lines by suggesting that people from a low SES background would never use it in a meaningful way, so there was no point in engaging with them on it about climate change adaptation:

> Are there petitions from the groups in Mansfield Park to the Council, and organised Facebook campaign for say shade cloth over the playground, probably not (Participant 10, South Australian political appointment).

The analysis indicates that these views have led to a lack of confidence in the utility of using social media, and expert participants are not thinking about how to construct long-term communications with people from a low SES background in Adelaide via such sources.

Participant 17 sees some tactical advantage in short-term communications, but only in a reactive way to provide information on extreme weather events, not as a long-term engagement strategy:

> We put these out as short infographics that can be shared on social media. So that could be one way that one could get out very quick and easy to digestinformation on how do you cope with some of these extreme events (Participant 17, IPCC author).

Participant 2, who has a professional media background and now works in a political role in South Australia, held a contrary opinion. To her, social media is integral, and an important part of future engagement efforts to communicate with vulnerable groups about climate change and adaptation:

> There is a lot of people in the disability community that use Facebook to communicate. People that have disabilities who find it difficult to communicate in other ways, use social media quite effectively (Participant 2, journalist/political advisor).

Further, the interview analysis highlighted that expert participants primarily use social media to target younger demographics, not older groups:

> We've got hardly a percentage up in SMS and social media of course with the older population, but of course, you have to get younger people who get admitted to renal hospital for renal dysfunction of course (Participant 12, health and climate change communications).

Access to the internet is also considered a problem by expert participants from the adaptation planning field, which means that from their perspective, social media should be used wisely when trying to target vulnerable groups:

> 30% of our population isn't online at all, they have no Internet connection, that's across the population, in those sorts of [economically deprived] areas it's probably up to 50 to 60% so we can put lots of stuff on our website and Twitter and Facebook accounts but it wouldn't make a difference (Participant 16, climate change adaptation planner).

Although many expert participants described low levels of direct media engagement, they did indicate that they thought there was a need to communicate with different public audiences about climate change and adaptation. In many of the interviews, experts steered conversations away from the use of the media to explain how they had attempted to communicate the topic in other ways. This finding is significant because it indicates that while experts agree that there is a need to communicate the issue of climate change and adaptation, they do not believe communications should be through media. As discussed in Chapter Two, Strömbäck argues (2008) that most people will learn about political issues through media. Therefore, this result indicates that expert participants do not display behavioural traits that factor in media in their day-to-day *modus operandi*, and that non-media communications are preferred.

Non-media communication output

The interview analysis showed that experts are active in non-media communications on a regular basis. In particular, expert participants described communicating in multiple fora such as the provision of academic services, participation on boards and committees, provision of

advice to government departments, NGOs and delivery of speeches at conferences and community forums.

Academic services included talking with people about the subject when conducting research, delivering conference papers or seminars and writing for publications in journals. For example, participants 1 and 5 explained their communication outputs as:

> It's basically in the papers that I've written, particularly for NCCARF. I've also given some conference presentations at an international level (Participant 1, climate change adaptation researcher).

> My climate change communications have been when researching with communities around South Australia about their understanding and risk around climate change, which includes questions about adaptation (Participant 5, climate change adaptation researcher).

Two participants considered that academic communications were a more effective form of communication output than media because they had a measurable impact of elevating the issue of adaptation in small target groups – something they explained could not be said for communicating through media. For example, Participant 12 talked about a research project that aimed to reduce the mortality rate associated with extreme heat in Adelaide, and found that face-to-face, personal interactions whilst collecting survey data from vulnerable older people had a measurable communication benefit. The participants in that survey were then targeted by advertising through a government mail-out of information. Participant 12 said their study (*not published at the time of interview*) showed that those who received face-to-

face communications, as well as the mailout, had improved health outcomes, and this was directly attributable to:

> A research assistant who was very, very good in talking not as a researcher but with compassion and with understanding and with, you know getting into conversation with these people (Participant 12, Health and climate change communications).

This view is interesting because the expert participant is making an assessment based on limited media engagement experience. As has been shown so far, few forays into media have been made by the expert participants when trying to communicate climate change and adaptation, which makes it difficult to conclude if one approach is more effective than another.

Providing advice to government, NGOs and boards is another example of how expert participants are communicating, with one saying it is more important than communicating through the media because:

> It's how you actually cross communicate across to everyone and get adaptation into everyone's thoughts in terms of what they do every day (Participant 11, climate change adaptation planner).

This form of communicative output was described as important by expert participants in the adaptation planning field because they argued that if staff internally at a local government level communicated with each other about adaptation, decisions that favour an adaptation outcome would obtain wider support. From a local government perspective, these internal

communications were considered vital because they had a "knock-on effect that encouraged elected members to be supportive of adaptation planning processes that are likely to directly affect people from their wards" (Participant 11, climate change adaptation planner). Participants from the South Australian health sector also described a period (2006-2009) where substantial levels of communication took place through the provision of internal advice about the state government's climate change and adaptation agenda. This was attributed to the interest of the then state Premier Mike Rann, who was very supportive of responding to the issue of climate change adaptation:

> Then the climate change branch which was with the Department of Premier and Cabinet (DPC) and now with the Department of Environment Water and Natural Resources (DEWNR). So there was this kind of real political impetus of doing something (Participant 12, health and climate change communications).

During that period (2006-2009), many of the policy decisions that are being followed today, such as the production of regional climate change adaptation plans, were initiated, and expert participants recalled how they were required to produce considerable amounts of internal communications. This, they suggested, demonstrated that "internal communications are important because they can encourage good policy outcomes that benefit the public" (Participant 1, climate change adaptation researcher).

However, expert participants say they are now conducting less climate change and adaptation communication activity because they are infrequently asked to provide advice about it. One interviewee said this was because the issue had been "demoted as responsibility for climate change adaptation was moved from the DPC to DEWNR" (Participant 16, climate change

adaptation planner). The consequence of this structural change, according to participant 16, is that there is now less pressure to develop communication outputs about adaptation as it no longer ranks as a high priority on the state and federal government agendas.

Further, the interview data showed that expert participants associated with government in South Australia believed that driving long-term media interest in an issue was much harder if it was perceived as having less influence in government circles, with fewer powerful and influential people speaking on behalf of the cause. This implies that when politicians with more power and influence over decisions are supportive of adaptation communications at a public level, internal government structures respond. This in turn suggests a cycle that when internal communications about adaptation drops, so too does the amount of external interaction through media or other communication sources.

Outside of government, results show that the expert participants also consider the provision of advice to NGOs and other community based boards and committees as a non-media communication experience. This was especially the case for those interviewees who worked in local government and were employed to write adaptation plans (including for the suburbs of Adelaide that are the focus of this research). One distinct topic that emerged from analysis of the interview data is a perception that face-to-face communications are more effective at elevating the issue to a target audience than trying to talk with them through media about it. For example, Participant 11 described their communication output about adaptation when delivering presentations at workshops where community groups and NGO stakeholders were present:

> We have done a lot of community consultation. We've done stakeholder consultation but not actually gone out into the community and I don't think we, we've not done that well as a council either and I think this is a good starting point for us in terms of what the community think and know about these issues and are they already adapting and dealing with it or is there a point where we can come in and help them, give them some information so that they become more resilient. So I guess it's just in that space about not going out with a massive great big thing we're just piloting this little project and just seeing how it works and see what the outcomes are. It may flop but it may not (Participant 11, climate change adaptation planner).

Participants also indicated that communicating in such forums had added benefits, most notably the opportunity to distribute printed materials which they hoped would make their way to the wider membership of the organisation hosting the event. This included communications with community groups and NGOs who have contact with people who are considered vulnerable to the impacts of climate change:

> "[We] targeted at specific organisations within the region so... community organisations like environmental organisations, surf lifesaving clubs, Salvation Army, you know a broad range of NGOs that cover all different social, community, environmental, and economic sectors so also business associations and industry associations were targeted and we did have a good cross-section of representatives along to our first lot of workshops about that (Participant 16, climate change adaptation planner).

Participant 16 said that a stakeholder approach was more appropriate for communicating adaptation within wealthy areas of Adelaide, not for targeting people from the poorer suburbs because:

> Vulnerable people from the poorer suburbs are not engaging with stakeholder groups and the only way to engage was to physically [go] out to homes in those areas and have a chat with them (Participant 16, climate change adaptation planner).

However, the interview analysis indicates that a stakeholder approach to climate change and adaptation communications, no matter the level of affluence in a community, is preferred by political expert participants and advanced as a necessity because:

> It becomes sort of a diminishing return position. So, we tend to rely on stakeholders to take information from government and then disseminate to their networks. And, change the language to suit their demographic targets. That's how government typically does it… and the level of penetration down to the individual householder I suspect is pretty small. But, that's how government works generally across the whole population, we don't tend to sit down with individuals at the front door. (Participant 7, South Australian political appointment).

This quote highlights the complex communication conundrum that faces those who need to help people from low SES backgrounds in Adelaide with the long-term process of adapting to climate change. Interview analysis indicates that the expert participants believe that a person from a low SES background will be distant from democratic processes, which means government communications might have limited penetration into their day-to-day lives.

Further, the importance of differentiating between climate change and adaptation communications was raised by participants 4 and 11, who noted that the only communicative output that they had produced derived from their membership of the South Australian Premier's Climate Change Council, and this was about climate change only, not adaptation:

> My only communications have been by virtue of [working on] the Climate Change Council and by virtue of speeches to various community sectors, mainly professionals… including local councils, yes, but not the local community directly (Participant 4, Premier's Climate Change Council member).

> I'm involved as a member of the Climate Change Authority which is required under legislation to provide information and advice to the federal government on all these policies on climate change and in particular climate change science, climate change mitigation and on climate change adaptation (Participant 19, Premier's Climate Change Council member).

One participant described a communication output as a committee/board member that included adaptation. In this case, it was in relation to a talk in an area with high concentrations of people from low SES backgrounds in Adelaide, but:

> It's probably come up as part of a broader package when we went around to various parts of Australia as the Climate Commission and held public forums. In your area we held one in Playford, I think that was in 2012. So, adaptation issues come up usually in audiences of 400 of people but it's hard to tell in those evening sessions who was in a lower socio-economic class, it will not be clear (Participant 17, IPCC author).

However, this experience showed that climate change adaptation was communicated as an incidental topic. Further, at these times, adaptation was discussed in general terms and not directed at a target group in society. This analysis confirms earlier assertions by Participant 7 that the committees and boards established by government are not designed to engage directly with the public, but via stakeholders, which might exclude people who do not participate in such groups. These results suggest that where that engagement occurs it is not often on climate adaptation per se, but as part of a broader discussion about planning where climate change might be raised as a side issue.

In summary, results analysed against indicator one highlight that professionals in the field have produced limited media communication output regarding climate change and adaptation targeting people from low SES backgrounds in Adelaide. Results indicate the expert participants are not inclined to produce media and communications outputs that target such groups, whether using traditional or new media sources. The next section discusses the results analysed against indicator two, showing perceptions of expert participants about the extent to which they consider media should be part of institutional climate change and adaptations communications that targets people from a low SES background in Adelaide.

Indicator 2: Perceptions

The second indicator used to analyse the semi-structured interviews provides results describing expert participant perceptions about the extent to which they perceive the media as performing a vital role within the working routines of an institution. As described by Donges and Jarren (2014) and Frandsen (2015), this indicator of mediatization evaluates how an organisation perceives the role of the media now and into the future. The indicator assesses

whether they see it as of growing importance, and, if so, how those perceptions influence interactions with others internally and externally in their spheres of influence.

In this study, the results show that most of the interviewees hold an overwhelmingly cynical perception of media. This presents itself as a potential barrier to communications with a low SES public group in Adelaide, for whom, as the results in the previous chapter indicate, the media is an important source of information. Expert participants are pessimistic about the role media will play in the future, but the interview analysis also shows that expert participants perceive that the media will inevitably have a role to play in the process of informing people in Adelaide about climate change and adaptation into the future. Those interviewed who were involved in local government adaptation planning particularly struggled to perceive how media engagement can manifest and grow in importance as a communicative action that could help people from a low SES background in Adelaide learn about climate change and adaptation.

Negative media perceptions

All of the interview participants perceived media in negative terms, and saw barriers to interacting with it. The first of these barriers was a perception that the local professional media in Adelaide was not interested in the issue of climate change and adaptation:

> *The Advertiser*, they won't give a shit about it [adaptation]. You might get a journo, you know that might be a bit interested, but climate change adaptation doesn't sell papers so why bother? (Participant 4, Premier’s Climate Change Council member),

The second is a perception that climate change and adaption are just too complicated, making them topics unconducive to conventional media engagement. For example, Participant 2 (journalist/political advisor) explained she saw little point in trying to interact with the media about adaptation because "they [the media] never look at any great depth of an issue". Another expert participant expressed a similar concern, saying:

> It's hard for the media too, well because I suppose mainstream media likes very simple stories and want something that illustrates it easily, it's probably too many steps for them at the moment to say, climate change has an impact on disability for example (Participant 18, journalist).

Another expert participant explained that, while they had produced some written communications about extreme heat that targeted English as second language (ESL) speaking minority groups in the suburbs that are the focus of this study:

> We didn't go through the media about this stuff [climate change and links with more heat waves] because they probably won't be interested and it would have taken up precious staff time, that we just don't have (Participant 9, health and climate communications).

Participant 8 said their institution had also produced communication materials targeting an ESL population in the Salisbury and Port Adelaide Enfield local government areas. Consideration was given to integrating media into the communication process but this was rejected because:

> Even the local media, like *The Messenger*, will not cover an issue like this. They have never shown any interest in talking about climate change and adapting to it, and if they did, I'm worried that they will either get the information wrong, or find someone else to argue against the points I was trying to make (Participant 8, health and climate communications).

Several participants expressed concern about communicating through the media because they believed there was a high likelihood of unintended, maladaptive consequences[31]. The maxim "once bitten twice shy" was used, with one participant expressing a reluctance to increase the level of media interaction within their organisation because:

> Every time we try and come out with a solution you get an unexpected consequence, an unexpected take-up and we find a majority of people are taking this type of course. We have to say wait, wait, wait, that is not what we meant (Participant 4, Premier's Climate Change Council member).

This has resulted in expert participants becoming very reluctant to engage with media unless they have editorial control over how their information is portrayed. Other participants expressed a reluctance to engage with the media because of the commercial nature of the industry:

[31] Maladaptation is a "process that results in increased vulnerability to climate variability and change, directly or indirectly, and/or significantly undermines capacities or opportunities for present and future adaptation" (Magnan 2014, p. 3). For example, the construction of high energy use desalination plants in South East Australia increasing levels of GHGs and reducing the need for responsible water use.

> The media's role is not to do public education... the media is designed around selling advertising so there are opportunities to use media but not around a long-term communication strategy about climate change adaptation (Participant 10, South Australian political appointment).

Some participants felt the challenge of trying to communicate via media to people of low SES background was compounded by the fact that they assumed such groups would not be engaging with the type of media that would inform them about climate change in a way that they would like anyway:

> I don't think media is a space in which to target poorer people in Adelaide. They are so spread out and probably viewing media such as soap operas and reality TV, not something that we would go out and try and get coverage about (Participant 11, climate change adaptation planner).

This quote highlights that expert participants perceive media as an ineffective arena in which to engage with a low SES target population, an issue that emerged as a sub-theme during analysis with indicator two.

Limited influence of media to influence change

All but one of the expert participants[32] expressed, to some degree, a perception that the mainstream media is a space to avoid when it comes to communicating climate change and

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[32] Expert participant 17 is an IPCC author, academic, independent researcher and comfortable with the mainstream media as he has had extensive experience at engaging with people through it over many years. Other participants who had had experience with the media were very cynical and those who had had no direct media engagement were particularly negative in their views about how the media could affect a person when communicating about climate change and adaptation.

adaptation to people from a low SES background in Adelaide. The basis of this perception is located within their opinions about the *type* of media that they believe such people engage with. Participant 2 (journalist/political advisor) explained:

> There are some things that we will not participate in, you know, *Today Tonight* stories and so on. You know the way that, because often it involves patronising or taking the piss out of an issue.

This quote highlights a typical expert participant perception of certain types and forms of media which makes them less inclined to actively seek out interactions with it. Participants believe that the media will downplay, belittle or overly sensationalise information about adaptation. Participant 10 (South Australian political appointment) provides an illustrative example of this in saying,

> The problem with dealing with and letting the media into our space is that journalists would seek out opposing views to theirs just to make a story more interesting or show conflict when there is none.

Other participants have negative perceptions about communicating through the media because they believe people from a low SES background in Adelaide are consuming media that is sceptical of climate change science. Interviewees who hold this perception feel that this would also mean that people from such groups are equally sceptical and will only want to hear media messaging that asserts climate change is "a load of rubbish and not worth worrying about" (Participant 4, Premier’s Climate Change Council member). This line of thought is echoed in the following quote:

> Sometimes the media is influencing opinion and sometimes they are only reinforcing an existing opinion that exists elsewhere and people tend to want to use the media to try and force their opinion, or reinforce their opinion, and ignore messages that don't align with their current values (Participant 7, South Australian political appointment).

Participant 14 expressed a similar perception about the types of media that people from a low SES background might be consuming, and in turn how that might impact their views about climate change and adaptation. He suggested that such people would "ignore those channels that are against their values... [and] tend to only want to watch those media that reinforce what they think and are very reluctant to watch those that they don't" (Participant 14, climate change and science communication researcher). Participant 17 (IPCC author) offers another example: while he did not say outright that poorer people in Adelaide were more likely to be climate sceptics, he said, "such people will most likely have limited reason to believe in climate change or care about adapting to it because their day-to-day lives are not exposed to such issues". Participant 10 suggests:

> Poorer people that you are talking about will not be good climate change adaptation media targets because they won't have even thought about it so you will be starting from a very low base to try and build that knowledge to make them believe it's an issue they should be worried about (Participant 10, South Australian political appointment).

It is important to note that while these views were strongly asserted by the interviewees, they were assumptions only: none of the participants had conducted research to examine if people

from a low SES background in Adelaide were sceptics, nor whether this meant they actively preferred to consume media that represent denialist views of climate change.

Participant 5 (climate change adaptation researcher) took a slightly different path, arguing that the communications field expects too much from the media in the first place, so lowering expectations about the influence of the media towards people from a low SES background, and taking a longer-term approach, would make all media interactions more effective. Further, the same participant said that engaging with the media about adaptation would never be successful if messages were specifically targeted at a narrow public group within society because it was:

> Impossible to get that sort of targeted media in a mainstream source that those types of people are likely to be engaging with to take adaptation issues seriously enough because they will not see it as a real problem for such people to worry about (Participant 5, climate change adaptation researcher).

Participant 5 instead perceives the role of media communications about climate change and adaptation as one which tries to connect with a broader audience, not a narrow targeted one, with the aim of building public support for helping vulnerable people in Adelaide learn about it. Participant 5 suggests that building broad public support would help to legitimise, in the eyes of the public, the time and money being spent to help such people learn about climate change and adaptation.

The negative perceptions held by expert participants about the current and future role of the media in communicating climate change and adaptation have influenced organisational structures, and the levels of resources dedicated to media communications, as discussed in the next section.

Indicator 3: Structure

The third indicator used for the interview analysis examines whether the structure of an organisation dedicates resourcing to trying to obtain media coverage. The level of resources dedicated to communications, including institutional formal strategies developed for communicating through the media, is an important indication of mediatization. In this study, all the expert participants interviewed expressed a view that resourcing for adaptation itself is needed before dedicating more resources to communication. This view is supported by interview results that indicate that existing policy structures in South Australia impact upon the expert participants' capacity to communicate through the media messages about climate change and adaptation. In particular, policy designed to help vulnerable people cope with extreme heat was identified as having structural problems. Finally, interviewees also hold opinions about a lack of social and economic capacity in low SES communities to respond in any meaningful way to media communications about climate change and adaptation.

The consequence of these results is that the interview participants suggest there is little point in building institutional structures in Adelaide to try to increase media communications about climate change and adaptation targeting people from a low SES background.

Economic and social capital restrictions

This research reveals very low levels of resourcing in Adelaide dedicated to incorporating media communications into climate change and adaptation planning. The interview analysis shows that resourcing is at low levels because expert participants believe that media engagement with people from a low SES background is potentially "pointless" (Participant 9, health and science communications). According to many of the experts interviewed for this research, climate change and adaptation as an issue of concern will always be a long way down in an economically disadvantaged person's list of everyday concerns and priorities:

> We think it is vitally important that everybody knows all this, but really, some people, just getting a meal on the table is really tough and being able to pay their bills. So, climate change might seem an inconvenience or something they are meant to worry about later on, [but] it's what's happening now, and the problems they face now seem to override all those other concerns (Participant 1, climate change adaptation researcher).

Participant 5 (climate change adaptation researcher) echoed this view, noting that it is a perceived wisdom in government circles that people from a low SES background only worry at a deep level about an issue if it affects their "day-to-day bread-and-butter concerns"; and climate change and adaptation is not one of them. Participant 4 (Premier's Climate Change Council member) bluntly suggests that "if people from low socio-economic groupings don't see this as their personal problem, why should they give a rat's arse about it?". Participant 6 (IPCC author) reflected that there is no doubt that vulnerable people are aware that it is getting hotter in Adelaide, but that the day-to-day must come first:

> They are often so very much worried about meeting the day-to-day, week to week requirements of life, have enough food, been able to get the kids to school, providing clothing and shoes that they are very much aware of issues like that, that worrying about how to cope with the next summer or winter or stuff like that is real tough (Participant 6, IPCC author).

Interview analysis also indicates a perception that if adaptation *was* perceived to affect the day-to-day monetary concerns of people from low SES backgrounds, then people would disengage with any climate messages to which they might be exposed because: "if adaptation is going to cost them, then it's not something they will engage with" (Participant 3, climate change and science communication researcher). This "catch twenty-two" situation was also expressed by Participant 1 (climate change adaptation researcher) who said of older vulnerable people in Adelaide that: "finances can be a problem for them [older people] and they just will not turn on those air-conditioners, even if they have one".

This quote indicates that expert participants believe that adaptation will always come at an economic cost, and that this makes it difficult for people with little money to engage with it. Even implementing what would be considered a low-cost action, such as planting a tree for summer shade, is perceived as an unlikely activity by people from a low SES background because:

> Even that sort of [low cost] aspect of adaptation costs money. Because you need money to plant a tree, it costs money to maintain your garden and water your plants and things like that, that sort of stuff is really difficult when you are a disadvantaged community (Participant 6, IPCC author).

Another participant said that:

> You can explain it [adaptation] to them, and they might feel better but you know, there are bigger cancers. For example, I might think I've got through this week with my husband not getting pissed and blowing all his dough and I've got through the medical system that can require me to pay for this and that and the other, and I've got through, and I've got everyone to work on the lousy transport system, so I've got through the week and I've got half a smile on my face and the kids haven't beaten each other up, am I actually gonna sit back and think, fuck the sun's gonna burn me, it ain't gonna happen (Participant 4, Premier's Climate Change Council member).

These comments build on the previously discussed perception that attempting to target climate change communications to people from a low SES background in Adelaide is a fruitless endeavour. As such, these views expressed by the expert participants appear to have disincentivised them to try to increase resourcing to build media communication capabilities, as they argue that these will be redundant anyway. For example, Participants 3 and 7 said that even if a person from a low SES community knew about adaptation, the limited economic resources at their disposal reduced the reason for communicating with them in the first place:

> Their discretionary income is so limited and the issues, the short-term issues, are so really important… getting involved in adaptation, unless there is a clear short-term benefit, it is unlikely to happen (Participant 3, climate change and science communication researcher).

> Do they actually have their hands on any levers that can affect change or are they so disenfranchised that they are always going to be people who are done to rather than participating (Participant 7, South Australian political appointment).

Expert participants indicated that attempts to interact with media were not just premature for this group, but also potentially inappropriate:

> What do we expect these people to do to address climate change adaptation? They are not people with positions, normally, to have a big economic impact on the issue. They don't run factories and emit pollution. Quite often they don't drive cars. So what are we asking of them in terms of climate change adaptation, are we asking them to give up some small part of their life, well I think that's probably not proportionate to the people who are actually causing the problem (Participant 7, South Australian political appointment).

This sense that communicative action about climate change and adaptation would be misdirected was expressed by another participant who argued that long-term media engagement should focus on those in society who *do* have an opportunity to effect change, rather than those who have limited economic or social capital to personally adapt:

> Rather than say this is your problem you must do something about it, it might be well actually, those of us who are causing the problem, have to do something about it and we need to help these people adapt to process, and how we do that I just don't know? (Participant 14, climate change and science communication researcher).

Interview results also show that expert participants are reluctant to progress media activity because of the magnitude of the problem:

> We (*the participant was acting out the role of a person from a low SES background*) can't do anything about this, I can't actually rebuild my house to be climate change friendly. I can't use an air-conditioner, I don't even have an air-conditioner in my house. My house is just like one of these houses in Port Adelaide which are either always hot or cold the whole time. You can't do anything literally in a lot of these buildings (Participant 12, health and science communication researcher).

The same participant suggests that long-term media will be counterproductive unless other social and economic issues are dealt with first and, therefore, communications should be reactive and focused on the short-term, rather than looking at using media for long-term social change because:

> Apart from saying that they drink regularly, that they, that you might actually suggest if they are not well then go to the library or some other cool place like that. That kind of stuff. That would be possible (Participant 12, health and science communication researcher).

This view was also strongly asserted by local government adaptation planners. At the time of the interviews, each South Australian planning region had either completed its adaptation plan, or was in the process of finalising it. Expert participants argue that upon completion of each plan, the whole adaptation process essentially stalls because there is no ongoing funding to pay for adaptation strategies identified in the plan. Thus, from their perspective, long-term

communications about climate change and adaptation are unnecessary because they feel there is little more to contribute to the adaptation process in South Australia:

> We've got a situation where we've got a lot of plans finishing now and are just in limbo almost because there is no funding for anything which is with our plan (Participant 13, climate change adaptation planner).

However, an expert participant from the field of science communications said that if funding solutions could be targeted at specific adaptation projects, media engagement would have something to focus on:

> If you give them [low SES people] something which you can give them anyway, such as improving Housing Trust homes, and the reason we are doing it is because of climate change, that will be a good way of communicating. They will think shit, my house is a bit cooler, that's nice (Participant 3, climate change and science communication researcher).

However, the same participant said that until adaptation funding issues can be resolved, the media will have limited institutional influence in Adelaide. Analysis indicates that the whole issue is caught in a communicative bind because a holistic approach to media engagement would require long-term adaptation options to be accessible to vulnerable groups. Currently, such options appear limited.

Another component of that communicative bind is described below as a sub-theme. Interview analysis shows that adaptation planners, health and climate communication researchers, and a

member of the Premier's Climate Change Council all believe there are problems with existing institutional social policy structures that need addressing before using media communications aimed at helping people from a low SES background learn about climate change and adaptation.

Policy restrictions

A key institutional social policy problem, attributed to limiting the interest of the expert participants in expanding media communications aimed at helping people from a low SES background learn about climate change and adaptation, is the South Australian *Medical Heating and Cooling Concession*. Designed as a policy instrument to encourage people on very low incomes to turn on heating and cooling during extreme weather, expert participants described it as too restrictive to deal with the impacts of a changing climate. The expert participants expressing this view also considered that talking about it in the media might cause confusion in the minds of vulnerable people, rather than facilitating adaptation outcomes. The policy states that for a person to be eligible for the concession that they "must have experienced symptomatic deterioration with temperature change" (Government of South Australia 2015). This means that a person is not able to claim a concession on their utility bills until they have experienced a diagnosed deterioration of their health *due* to extreme weather.

Studies show that those who will find it most difficult to adapt to climate change in Adelaide are people who live in low quality housing and have existing health related conditions (Barnett, G et al. 2013; Sevoyan et al. 2013). The limitation of this policy is clear. People with existing health related conditions are almost certainly taking medication prescribed by doctors, and this is known to at times interact in negative ways with people during extreme

heat (Hansen, A et al. 2008). For example, one participant noted: "if you take antipsychotic medication for mental illness or even for something like Alzheimer's disease, this medication does not let you sweat" (Participant 12, health and climate change communications). As heat waves will become more intense and frequent in Adelaide (Steffen, Hughes & Perkins 2014), a policy like the *Medical Heating and Cooling Concession* is limited in its utility as it currently stands: interviewees (9 and 13) said a clearly defined demographic, who have existing health related conditions and are known to be taking medication that impacts their physiological status, should not have to wait for a deterioration in their condition before a concession is offered. These two participants argued that such policies are compounding the social and economic vulnerabilities of people vulnerable to climate change, and add to the difficulties of conducting climate adaptation communications in media.

Two other participants (4 and 16) talked about how longer-term structural policy issues have limited their motivations to increase the level of resourcing dedicated to institutional media, especially that targeted at people from a low SES background in Adelaide. Participant 4 (Premier's Climate Change Council member) said that until the government imposes climate change friendly policies upon society, there is limited value in communicating with a vulnerable group in society. He said if appropriate policies are developed ("*through a consultation process"*), and then whatever is developed is "imposed upon society", that would establish a foundation for longer-term media engagement with vulnerable people in Adelaide. His logic is explained by the following quote:

> If the government bring something in that says you know, all your future water heaters, it has to be solar, then you have to explain why. And then the poor punter comes along and says my water system has blown up and now you put an extra hundred dollars on it, you say well mate, we told you that would have to happen.

Participants 4 and 16 argue the existing policy limitations are in urgent need of attention, and without them, there will be little point in developing structures in Adelaide aimed at encouraging media interest in the issue of adaptation. Participants 4 and 7 expressed the view that people from low SES backgrounds in Adelaide are unlikely to engage with the issue of climate change and adaptation unless a policy framework is created that, at some level, forces them to engage. The following quote exemplifies this school of thought: “if you are just about giving information to people to try and educate them but if they're not motivated to listen, you are wasting your time" (Participant 4, Premier’s Climate Change Council member). Participant 7 makes a similar case by way of an example about the impact of water pricing in South Australia:

> You have to come back to the position that well what does make people change their behaviour? And, there are all sorts of things but economic messaging is kind of important and you only have to see that in the price of water for example and the impact that is having on their changing behaviour across all sorts of income levels (Participant 7, South Australian political appointment)

This school of thought is countered by two other participants who believe that economic drivers for behaviour change should come in the form of incentives. An example given was the high level of uptake of rooftop solar systems in Adelaide:

> Many of the people that have made the decision to go to rooftop solar are mainly in those regions that you are focusing on and they saw it not so much as a climate change thing, or anything positive for the environment but as a benefit for their bill paying ability (Participant 19, Premier's Climate Change Council member).

> The northern suburbs of Adelaide are the epi-centre of solar power generation in Australia. There might be a reason for that, and its most likely financial incentive rather than for any love of the planet, I mean, you've been out there and seen who lives there (Participant 1, climate change adaptation researcher).

Although rooftop solar systems are popular in the postcode regions with high concentrations of people from low SES backgrounds, it is highly unlikely that the demographic targeted for this study are the ones who are installing and benefiting from them. They are generally not mortgagees, and other studies examining disadvantage in Adelaide show that people in this demographic are almost certainly going to be living in housing of a very low standard (Barnett, G et al. 2013).

These observations demonstrate that expert participants, due to these existing structural social policy limitations, are overall/generally weary of increasing institutional climate change and adaptation media. Many expert participants say that if there are so few policy-based resources available on which vulnerable people can draw, then media engagement is redundant.

The analysis in the last three sections shows that those working in the field, whether as planners, researchers or in government, do not believe that the media is an integral

component of their work. This lack of interest in the media as a mechanism to help them conduct their business helps in part to explain the results in the next section, which shows that although the participants hold positions of responsibility for climate change and adaptation communications, they have little knowledge of, or have never applied, the expansive body of research work examining how best to approach media climate change and adaptations communications. For mediatization research, the following section highlights that at an institutional level in Adelaide, not only are long-term media activities curtailed due to the results described above, but short-term engagement opportunities are also being hindered.

Indicator 4: Mediated forms of communication

The fourth indicator applied to the interview analysis builds on the three presented in Donges and Jarren (2014). As explored in Chapter Two, Hepp, Hjarvard and Lundby (2015) say that when using mediatization theory it is important to consider conventional mediated forms of communication alongside strategic, longer-term media elements. This is to ensure that the power and influence of the media are not overstated, and recognises that other communicative factors influence a person's deliberations upon an issue, such as important third party influencers, marketing, public relations and advertising (Deacon & Stanyer 2014). To get some insight into these factors, expert participants were encouraged to discuss their thoughts and opinions in relation to the expansive body of work examining such matters.

The results show that despite climate change and adaption communications having become "*a booming industry*" (Nerlich, Koteyko & Brown 2010), the expert participants (theoretically people who could be interested in, learn about, are in a position of capacity to and be assumed to apply lessons from this *industry*) have not exposed themselves to the

research investigating the topic. This finding is important, because it is difficult to conceive mediatization at any level in the institutions responsible for communicating climate change if the people responsible for controlling communicative interactions with a group in society are not equipped to do so, and that is the focus of the next section of this chapter.

Climate change and adaptation communication research

The analysis against/using indicator four indicates that most expert participants have limited to no knowledge of media and climate change communication research. Only participants 4, 5, 15 and 17 explicitly said they had drawn from past research in their deliberations about climate change and adaptation media communications. However, upon closer examination of the data, only Participants 15 and 17 referenced published literature from the field of climate change communications, and Participant 4 from the field of media studies. Participant 5 referenced science communication theory more broadly, but it was in the context of publications and reports they had authored. Participants 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18 and 19 had no knowledge of such published works, with the following quote representative of responses when asked about it: “Oh really, I don’t know about any of that” (Participant 13, climate change adaptation planner).

Therefore, to facilitate interview discussions, the expert participants were briefly introduced to academic discussions regarding suggested communicative approaches outlined in the literature review. Based on the overview, expert participants suggested that people were more likely to respond to positively framed messages than negative ones about climate change and adaptation. For example, Participant 18 said, “negativity would help me craft a story, but it will not be picked-up by a poor person because they have more pressing issues to worry

about on a day-to-day basis". Participant 4 (Premier's Climate Change Council member) explains:

> For people like you're talking about, climate change doesn't rank as a problem, they have got much bigger problems, like avoiding the pokies on their way to the shops. That's the cancer in their world, not climate change.

Participant 10 (South Australian political appointment) argued along similar lines:

> For a poor girl in Elizabeth, getting enough food on the table is a scary challenge every day. So, trying to scare her more about how it's gonna get so hot that it could kill her kid if she doesn't adapt, that's pointless.

Participant 6 (IPCC author) presented a slightly different angle to this theme, saying:

> Climate change and adaptation, it needs to be demonstrated that it's relevant and while some parts of the climate change message scare me, there are many options in both adaptation and mitigation which can be presented in a very positive way and around opportunities so stop scaring people, it does not always encourage them to respond.

Participant 16 (climate change adaptation planner) expressed similar views saying, "adapting to climate change could actually be good for poor people, so why muddle it with negativity, stay positive, just focus on the benefits". However, they also say that this presents a problem, because "our local media are not interested in climate change and adaptation at the best of

times, let alone if we were to go out there with a press release and say it's a good thing" (Participant 16). The interview analysis shows that although participants were not inclined to communicate through the media, they hold strong opinions about how they think messages should be framed in the media about it.

Alternative local framing

When discussing alternative media and communication frames suggested in the literature review, expert participants rejected the idea of applying a risk, disaster or emergency communication framework in adaptation media. The rejection emerged in the interview analysis for several reasons: for example, participants 4 and 5 say that at a practical level, risk management terminology is a challenging concept to mediate/present/explain to a poor, urban community because it deals with probability. Participant 5 (climate change adaptation researcher) said it "is too much to expect that a poor person in Adelaide would understand the notion of probability, or be able to prepare for a risk event that might (or might not) occur in the next fifty to one hundred years". Participant 4 (Premier's Climate Change Council member) said "so what does a one hundred-year, fifty-year probability actually mean and how do you explain that to such people?". The same participant suggested that 'everyday risk' meant many different things and communicating the concept of probability to a low SES group "in relation to everyday needs and everyday risks and these longer-term things is a challenge too far" (Participant 4).

Participant 11 (climate change adaptation planner) said: "there is a challenge about how you communicate risk, and that is, is it everyday risk or is it longer term risk". This participant believes that the communication of short-term risk is an achievable media exercise. However,

they also said that because adaptation is not a short-term story, the chances of successful engagement with a low SES person through the media using a longer-term risk theoretical frame are low. Another interviewee indicated:

> People can be drawn to a certain height of the tension for periods of time but if nothing changes all that much, something else comes up all, we seem a little bit distracted and move on to another part of the problem, they just go onto the next thing. So, unless it directly impacts their daily life you will lose them pretty quickly (Participant 7, South Australian political appointment).

Another expert participant said:

> I don't even know what that is. How on earth with this group will they think about how to do risk management, they will say what is this bloke going on about. I mean risk management is this new sexy term that a lot of people use, all love to tap into it to say they are experts but at this level risk management is keep my job (Participant 2, journalist/political advisor).

Participant 19 (Premier's Climate Change Council member) was equally scathing saying: "I don't know who writes the stuff you are talking about, but risk sounds like a load of crap to me. Risk just doesn't mean anything to average people".

Interview results show expert participants hold polarised views when discussing adaptation communications using a disaster management communication perspective. They are either very supportive or totally opposed to this frame being applied in mediated communications

that target low SES people in Adelaide. Those who argued that disaster management contexts were beneficial were attracted to the idea because it encouraged the use of more visual media:

> I think people can relate to disasters, not so much to heat waves, because the media don't really pick up on that so much because it's not a visual thing such as a bushfire or a cyclone. Major storms, you can see that, you can see the effects on people's property or the house floating down the river that sort of thing (Participant 1, climate change adaptation researcher).

However, those expert participants who suggested that disaster management was a useful frame provided a caveat, saying that it would need to be context driven, and would potentially be more productive in a city such as Darwin rather than in Adelaide. This is because in Adelaide, the climatic disaster most likely to confront people from low SES urban groups is extreme heat which, as noted above, is not necessarily conducive to visual media. Another participant expressed a similar view, saying disaster management could be useful for communicating with low SES people because of the visual appeal:

> I would have thought that, like, if you are communicating with people with low literacy, limited time and headspace to consider something or with an intellectual disability, then making things more black-and-white as opposed to you know, it's a very nuanced, like most things you know, most issues are very nuanced but sometimes you have to be very clear (Participant 2, journalist/political appointment).

Other expert participants are firmly opposed to the disaster frame, with one arguing "I wouldn't use it for this group, no way. For a higher socio-economic group maybe, but not that

group" (Participant 3, climate change and science communication researcher). The principle argument underpinning this opposition is that "you cannot sustain disaster media over the long-term" (Participant 7, South Australian political appointment).

Another interviewee was critical of using disaster as a frame to communicate with low SES people about climate change and adaptation, and asserted the uselessness of doing so, saying they are likely to be climate sceptics anyway:

> My gut feeling is don't do that with low socio-economic people because you are working amongst, where a lot of influences start by denying climate change exists as a principle. As soon as you say it’s a disaster or emergency, you can be distracted by that argument over does this exist, was it a beat up or is it political or a scientific bid for money or whatever, whatever... As soon as that happens, you are distracted and derailed (Participant 4, Premier’s Climate Change Council member).

As mentioned above, the interview analysis highlights that expert participants think that people from low SES groups in Adelaide are likely to be consuming media that denies climate change exists, and are themselves likely to be climate sceptics. Consequently, describing something as a disaster or emergency, when the perception is that it is neither, could simply feed into, and reinforce, scepticism that already exists in the media sources such people are likely to be consuming. Further, one expert participant said that framing climate change and adaptation in Adelaide as a disaster *is* appropriate when talking about a bushfire, because people accept that “visual tragedy is part of the evening news” (Participant 4, climate change and science communication researcher), but if they use similar language over a fifty-

year time frame in an adaptation context "that's just not gonna work" (Participant 4, Premier's Climate Change Council member).

Further, for other expert participants, the framing of climate change and adaptation as a disaster needs active managing in an urban context, because it might cause people to switch off from the issue. For example, one expert participant said that the use of disaster as a communicative frame was a potential threat to long-term community engagement because "if the disaster doesn't come tomorrow, people are going to say we are being led on" (Participant 7, South Australian political appointment).

Framing climate change and adaptation as a disaster that needs managing was also perceived as too emotive for a low SES urban audience, with one interviewee arguing "disaster is such an extreme word" (Participant 14, climate change and science communication researcher). Another expert participant said that "they do not think that climate change adaptation *is* a disaster, so the frame would be wrong from the outset" (Participant 6, IPCC author). Participant 11 (climate change adaptation planner) expressed a similar view, explaining "adaptation is not the disaster, climate change is". Another expert said they thought that to a person from a low SES background, a disaster was "getting beaten up at the weekend by their drunk husband, not adapting to climate change" (Participant 9, health and climate communications).

Framing climate change as an emergency was also singled out as a communication framework to avoid. Participant 12 (health and climate communications) stated:

> You want to give people warnings of an impending emergency, but people don't take kindly when the emergency doesn't eventuate. For instance, on catastrophic fire days over on the Eyre Peninsula, people are told not to send their children to school, and then it turns out it was okay, it wasn't that bad after all, people see it as crying wolf and they don't take kindly to that.

Further, the interview analysis shows that expert participants felt that the employment of frames such as risk, disaster or emergency was probably more suited to non-urban target groups. For city audiences, they suggested the presentation of adaptation within a frame of achieving economic and social enhancement was more likely to have longer-term positive outcomes and uptake. This is explained by the following expert participant:

> Climate change adaptation is easier to talk about in the bush and farming areas as a risk or a disaster because that is what it is. Farmers and graziers who make decisions by weighing up risks based on a weather forecast, or get slugged with more frequent heat waves at the wrong time of the season, those frames might resonate (Participant 17, IPCC author).

One interviewee said that talking about climate change and adaptation in negative frames would also play into the current Australian political environment, so framing it in urban contexts as a positive might be beneficial and make it stand out:

> Adaptation is requiring a framing in terms of opportunity, around lifestyle and behaviour and attitudes that is different to the way that the government and many parts of the community are framing life and attitude at present (Participant 6, IPCC author).

Another two expert participants asserted that for an urban low SES group, this point of difference should be pitched at a personal level, not as a contribution to a community or group of people. For example, one interviewee argued the benefits of talking about climate change and adaptation in terms of "what you have to do individually to protect your health, children and power and whatever" (Participant 9, health and climate communications). Another expert participant expressed a similar view about adaptation as "personal advancement, not a community good, because they are in that mindset already" (Participant 15, climate change adaptation planner). If this is appropriate, there are cultural factors that might be exploited to help communicate climate change and adaptation with people from low SES backgrounds in Adelaide and these factors are considered in the next section.

Other cultural influencers

Participants hold strong views about what other cultural factors might exist to enhance the effectiveness of mediated forms of climate change and adaptation communications that target people from a low SES background. A broad consensus was identified in analysis around some shorter-term mediated interactions with the media, such as ensuring messages were communicated in a cultural context, originated from trusted sources and were in outlets consumed by the intended target. However, opinions vary as to what such cultural considerations look like, and how they manifest in the case of people from a low SES background living in Adelaide.

From a mediatization theory perspective, these points emerged in analysis because of the literature identified in Chapter Two about not over-emphasising the role of the media in influencing society over time, and that other factors have to be considered in the long-term process of social change (Deacon & Stanyer 2014; Hepp, Hjarvard & Lundby 2015).

However, the interview results show that expert participants think it is unrealistic over the longer term to avoid engaging with the media, so the identification of appropriate cultural influencers is important. For example, one participant said it was important to use experts in the communication of climate change and adaptation, but defining what an expert was at a cultural level in the context of this study would require "lateral thinking" (Participant 14, climate change and science communication researcher).

The same participant described his experience of thinking laterally when researching nutrition communications, pointing out that for three years, Australia's most trusted nutritionist was the former Commonwealth champion swimmer Lisa Curry, who was paid to advertise muesli bars on television. The public trusted and recognised Curry as a good nutritionist even though she had "no nutritional background" (Participant 14). Her lack of scientific training had no influence over perceptions of her as an expert, and the messaging in clever advertising was convincing enough for people who had viewed the commercials to believe and associate her with good nutrition. The same participant went on to argue that "the word expert is something that your audience tags on to them, rather than something that may have previously existed" (Participant 14). Consequently, Participant 14 said that those people with cultural influence over people from a low SES background in Adelaide will not necessarily have any previous expertise in the climate change and adaptation field.

Individuals who are involved with the science of climate change and adaptation are generally perceived by the expert participants as useful for roles in the production of broad communication and media resources. For example, Participant 5 (climate change adaptation researcher) said "my feeling, with the role I'm in, is that I am a tool to be used depending on circumstance, such as providing advice to a media advisor”. The expert participants involved

with climate change and adaptation research (participants 1, 5 and 15) expressed the view that they would not necessarily carry/exert influence over people from a low SES background in Adelaide because they had limited cultural connections with such people.

The interview data shows that expert participants believe that the cultural orientation of people from a low SES background means they will not be influenced by a traditional climate change and adaptation spokesperson (such as an IPCC author). In fact, a strong sub-theme emerged from the interview analysis against/using indicator four that, when talking about mediated forms of communications, the use of a scientist as a spokesperson should be avoided at all costs. This is because people from a low SES background "are likely to have had no contact with such people" (Participant 2, journalist/political advisor). Another interviewee expressed a similar view, asserting that "scientists trying to communicate adaptation in the media would ultimately fail because those who are the target of the message have no connection with such people, and they hold few aspirations to be such a person" (Participant 12, health and climate communications).

This tone resonated through the interview data, with analysis indicating that expert participants think it is difficult to identify other appropriate cultural influencers who could positively mobilise climate adaptation media, largely because personal aspirations to engage with an issue such as climate change and adaptation are likely to be low. For example, Participant 13 said:

> Although I don't necessarily approach people and ask them where they are from, but you can just tell that people from poor suburbs, look, you just don't see people like that turn up to events we run (Participant 13, climate change adaptation planner).

Another expert participant was equally assertive stating:

> Poor people, they generally have few people in their lives that can influence them in positive ways. The people they are exposed to are the police and social services maybe threatening to take away their kids. So, for them, people from what could be said is an authority on a subject, they will not be trusted so it's really difficult to comprehend if there are other cultural influencers that could hold sway with such people about a topic like climate change adaptation (Participant 10, South Australian political appointment).

Thus, overall the analysis shows that expert participants think that scientific experts, although possessing the appropriate qualifications, will not be listened to by people from a low SES background because they have no experience of interacting with such people and will thus not be trusted by them. This point was reinforced by an expert participant who, in his own experience undertaking focus groups in a research project about science communications, was told to "stop giving us scientists" (Participant 3, climate change and science communication researcher).

The analysis also indicated that participants feel personally uncomfortable at the thought of communicating with low SES groups, either through the media or via other channels: "I don't think that me standing up there in front of a community of vulnerable people would come across very well" (Participant 5, climate change adaptation researcher). Another said that beyond the issues of trust and credibility, "we experts are generally bad at communicating with people from low SES groups because of an educational divide" (Participant 6, IPCC author). Participants note that the language they use in the adaptation field is unlikely to be

understood by people from low SES backgrounds, with one interviewee arguing that they would struggle to connect because "a lot of experts would be seen as speaking too much mumbo-jumbo" (Participant 15, climate change adaptation researcher). Further, another participant said, "having a clever person from a university turn up is more likely to be told to piss off than anything else" (Participant 5, climate change adaptation researcher).

Participant 17 (IPCC author) was less emotive, but said even terms spoken in plain English would be difficult to communicate because people from a low SES group would have had little to no prior exposure to the terms and phrases used in the adaptation field. Another participant said that even working in the field had not made her immune from struggling to understand adaptation in its purest form saying, "people struggle to relate, sometimes [even] I struggle to relate" (Participant 16, climate change adaptation planner).

Participant 2 (journalist/political advisor) suggested that simple and non-controversial communications would be more culturally beneficial to the climate change and adaptation media communication endeavour when targeting people from a low SES background:

> They [scientists] could help design the resources but I think you know if you say to someone with intellectual disabilities, they are much more likely to trust (former Australian cricketer) Glenn McGrath to give them a message than a scientist.

Another expert participant said to: "get a footballer, Port Adelaide footballer, someone that can string four sentences together and make it a cause of theirs" (Participant 4, Premier's Climate Change Council member).

Expert participants from the adaptation planning field in South Australia also have opinions that other cultural factors must be considered when thinking about how to communicate with a low SES urban group. In particular, Indigenous groups were singled out by those participants involved in local adaption planning as representing a difficult group to communicate with about climate change and adaptation and that this task was "not something someone from outside their community should address" (Participant 16, climate change adaptation planner).

Conclusion

Mapping the interview results against the indicators of mediatization has shown that expert participants believe that the media has a limited institutional role in helping people from a low SES background in Adelaide learn about climate change and adaptation. The results indicate that the media is not interwound with the operations of the political institutions responsible for communicating climate change and adaptation. Further, the results show that the expert participants have strong views about people from low SES backgrounds, including perceptions that they are unlikely to ever be concerned with or interested in climate change and adaptation because of other social and cultural issues drawing their attention away from it. The results show that expert participants think people from low SES backgrounds in Adelaide are uninterested in such political issues more broadly, are consumers of climate change sceptical media and are likely to be climate sceptics themselves.

Thus, the interview and survey results provide a rich and challenging source of information from which to discuss what this means from a mediatization theory perspective. The survey results present baseline quantitative data sets on how vulnerable people in Adelaide engage with different types of media and the level of trust they place upon it and the institutions

responsible for mediating information about climate change adaptation. The interview results identify qualitative results that describe how professionals view media use by vulnerable people in Adelaide and the role they think the media can play in helping to inform them about climate change and adaptation. Although the two data sets ask different questions, the methodological design of the thesis means that integration of the two data sets takes place at the point of discussion to provide a platform for an in-depth analysis of the results to highlight where similarities take place, where differences occur and what it might mean. Therefore, the next chapter integrates the results from Chapters Five and Six to discuss their implications and how they can explain whether institutional approaches are helping people from low SES backgrounds in Adelaide learn about climate change and adaptation, and, if not, how they might be enhanced.

Chapter Seven: Discussion

Introduction

In this chapter, the results from Chapters Five and Six are integrated to discuss their implications within the context of the underlying theoretical approach of mediatization. The discussion blends the qualitative and quantitative data sets to answer the overarching research question:

> *Do current political institutional approaches to media communications help people from low SES backgrounds learn about the challenges they face because of climate change, and if not, how can they be enhanced?*

The key finding is that current institutional approaches to communications are not helping people from a low SES background in Adelaide learn about the challenges they face due to climate change. Results show that mediatization has not occurred at an institutional level in Adelaide, and this is hindering institutions' capacity to communicate with people from low SES backgrounds. A lack of mediatization is demonstrated by low levels of media engagement which can be attributed to the existence of dysfunctional relationships between institutions and the media in Adelaide and a lack of knowledge about how to engage with and manage media relations. The result in this study is isolated to managing media relations in order to target a low SES target audience in Adelaide, but, there might be wider implications for how institutions target other groups in society. This lack of mediatization is hindering opportunities for people from a low SES background to learn about climate change and adaptation because the institutions responsible for helping them learn about it are not communicating in fora they engage with and trust.

It is argued that a lack of institutional mediatization is inexpedient because the survey results suggest that people from low SES backgrounds might represent a counter-public that actively engages in public spheres about issues of the day. Hence, there are opportunities for institutions to target and encourage media interactions towards and among this potential counter-public. The results provide some guidance for how institutions might build short-term awareness about climate change and adaptation in the minds of people from a low SES counter-public in Adelaide. However, the results also suggest that long-term engagement about climate change and adaptation with such people would be enhanced if institutions were mediatized, and a process to encourage this is presented in Chapter Eight. The remainder of this chapter focuses on a deeper exploration of the integrated findings.

Dysfunctional media relations

As Chapter Six demonstrates, mediatization appears to have not occurred at a political institutional level in Adelaide. The synthesis and integration of both data sets shows this is due to two principle reasons: the existence of a dysfunctional relationship between the institutions charged with communicating climate change and adaptation in Adelaide and the media, and a perception that people from a low SES background are not a target group that could be targeted through the media. The dysfunctional relationships with the media are illustrated at multiple levels, most notably by the many barriers to media engagement identified by expert participants in Chapter Six. In some cases, relationships are non-existent and the perceptions displayed by interviewees could be interpreted as hostile towards media communications[33].

[33] As a reminder, the following quote illustrates this point well: “The Advertiser, they won't give a shit about it [adaptation]. You might get a journo, you know that might be a bit interested, but climate change adaptation doesn't sell papers so why bother?” (Participant 4, Premier’s Climate Change Council member)

This dysfunction is also shown by the apparent disdain for media sources that is expressed by the expert participants, with only the ABC singled out as having the capacity to cover a climate change and adaptation story in a factual way. For example, Participant 10 (South Australian political appointment) said "God bless the ABC, they are the only media institution in Adelaide as having any brains to capably cover a climate change story factually, and accurately". There is also an overwhelming view held by interview participants that the local media in Adelaide are climate sceptics. Interview participants think this fact will be having a negative impact upon vulnerable people in Adelaide who they think are most likely only consuming media from sceptical sources and are themselves most likely climate change sceptics.

The overwhelmingly negative perceptions about the media might explain why there has been limited media coverage of climate change and adaptation in Adelaide, especially in the sources to which people from a low SES background are most commonly exposed[34]. The low level of coverage is evidenced from a media content search of the preferred media sources of the sample surveyed. Two time frames were selected for the content searches. The first was from June 1, 2014, to March 31, 2015, which allowed for six months' lead-in time to the first stage of the survey[35]. Using the key words "climate change Adelaide" and "climate change adaptation Adelaide" through the database Newspaper Source Plus, the news search engines on the home pages of Yahoo!7 and 9News, and news.google.com revealed the following news coverage:

[34] As demonstrated in Chapter Five, the two main sources of traditional media sources preferred by the sample surveyed are Channel 7 and Channel 9.
[35] A lead-in time was used because mediatization theorists argue that the process is long-term. Therefore, it was decided that a lead-in time would capture that nuance in the theory, because it means media engagement is constant and pervasive, not reactive and non-pervasive.

- *Newspaper Source Plus* revealed five transcripts of stories covering the issue, but none of these were from reports on either Channel 7 or Channel 9. Each was the transcript of a story run by the Australian Broadcasting Corporation and focused on agricultural climate change adaptation issues in South Australia, not urban social adaptation in vulnerable, low SES communities. Just two stories mentioned Adelaide specifically (Australian Broadcasting Corporation 2014, 2015a).
- The search of Yahoo7 yielded 22 stories, but only one of these had specific South Australian content.
- The search of Channel 9 revealed one story about climate change and adaptation that mentioned South Australia.

The news.google.com search engine revealed 33 stories, but just two had South Australian content from Channel 7 and Channel 9. The second media content search using the same key words was conducted between April 1, 2015 and July 31, 2015, to allow for a three-month lead-in period to the second survey collection phase. This search revealed just four stories that included the key words in a South Australian context, but none originated from Channel 7 or Channel 9.

A targeted search for content was also conducted in current affairs programs that are regularly watched by the survey sample, but this yielded few results. A search of Channel 9's *A Current Affair* online program search engine (*A Current Affair* is a program viewed regularly by 36.1% of the survey sample), revealed only one story that mentioned climate change and linked it with an increase in extreme heat events in Australian cities (A Current Affair 2009). However, that story was broadcast in 2009 and, given that mediatization theory emphasises long-term interactions between an institution and a target audience through the

media, a story in isolation such as this is unlikely to have long-term social impact upon an audience. A search of Channel 7's *Today Tonight Adelaide* (which is viewed regularly by 37.1% of this sample) online program search engine showed no coverage of climate change and or adaptation[36]. From a mediatization theoretical perspective, an issue such as this would have to be more pervasive on programs such as *A Current Affair* or *Today Tonight Adelaide* to constitute a meaningful interaction between an Adelaide institution and the target group of this study. Cultural influence cannot be made upon an audience by merely mentioning an issue in a single episode of a program that has climate change and adaptation content.

As highlighted in Chapter Six, some attempts have been made by expert participants and/or their institutions to communicate with vulnerable people in the suburbs targeted in this project. But, as the survey results show, these attempts have not been picked up by the people who participated in the survey. This observation might illustrate the importance of trying to overcome negative perceptions held by the expert participants and the utility of building more functional relationships with the media in Adelaide. Further, these results highlight another key point. As indicated in Chapter Five, despite the limited local media on the subject, 99% of survey participants had nonetheless heard of climate change. This means the media information they have been exposed to about climate change has not originated in local media, but from a wider field.

Most prominent among other information sources might be online media, especially Facebook. However, the dysfunction presented by expert participants is not limited to their relationships with traditional media sources. Social media is also perceived by these participants as a space hostile to climate change and adaptation media communications

[36] The *A Current Affair* and *Today Tonight* online search engines do not allow the user to restrict searches to a specified time-period.

targeting people from a low SES background in Adelaide. This is partly because they believe it simply reinforces existing views, and, as discussed in Chapter Six, they think people from a low SES background in Adelaide are likely to be climate sceptics and thus will only receive information from Facebook that reinforces that scepticism. Consequently, the opinion is expressed that there is little point in trying to communicate with such people via online sources such as Facebook.

However, Chapter Five suggests there is no evidence to support this perception, and that the opposite is more likely; the survey revealed a group of people who are not climate sceptics, are consuming media regularly and are receptive to the idea of learning more about climate change and adaptation. Therefore, if people who participated in the survey sought or were exposed to information about climate change via social media, then supportive information might be directed their way, indicating that if expert participants did distribute information through online media, their message might be received by people from a low SES background.

The dysfunctional relationship between the expert participants and the media was also evident in the communication outputs that the experts said they had personally produced so far in the areas that are the focus of this study. The two examples of communications targeted at ESL speakers in minority communities provided in Chapter Six demonstrate that there has been some effort made at getting a message out to vulnerable groups about the threat of climate change. However, the ongoing strongly held views held by the expert participants towards the media impacts on their ability to communicate with people from a low SES background that access information about a political issue like climate change and adaptation through media.

The reluctance - and even hostility - expressed by expert participants towards engaging with the media is potentially counterproductive because, as discussed in Mazzoleni and Schulz's (1999) seminal paper on the mediatization of political issues, institutions have "the capacity to hold media pressures in check and to maintain the centrality that politics has traditionally held in a nation's life" (Mazzoleni & Schulz 1999, p. 259). The evidence presented here suggests that the experts who participated in this research do not agree with or exercise that capacity. Instead, they perceive that the power of the media is too unwieldy to control. They subscribe to a view that media norms of news story construction will undermine their ability to communicate with a target audience. Thus, it appears that the dysfunctional relationship just discussed has been, in part, formed from a misunderstanding by expert participants of the power and influence of the media in a modern society, and that is the focus of the next section of this discussion.

Structural and perception reform

Chapter Six indicates institutional structures are preventing institutional actors from factoring the media in to their modus operandi. Further, as highlighted above, a perception exists that it is almost pointless to even try to communicate with a low SES person about climate change and adaptation because they are most likely climate change sceptics and that it will never rank as an issue of concern to them. These perceptions are challenged by this research and suggest a need for both structural reform and a change in perceptions when considering the communicative needs of people classed as vulnerable to the impacts of climate change in Adelaide.

From a structural perspective, reform to the institutional approach adopted by the Government of South Australia is needed to enhance how climate change and adaptation is communicated to target audiences. Presently, the state government has devolved all communicative responsibility to the local governments involved in the regional planning process. The approach adopted in that regime is not to direct communicative activity towards smaller, targeted audiences, but at a whole-of-population level: “individuals aren't really the target of those plans, it's more at the population level and economic level, that's our strategy (Participant 7, South Australian political appointment).

Even if attempts were made to alter this approach and use the planning process to help people in Adelaide learn about climate change and adaptation, attempts to communicate via media are potentially compromised from the outset. As shown in Figure 11 on page 138, although local government is perceived by survey respondents as being more trustworthy than state and federal tiers, levels of trust are still very low. With such low levels of trust displayed by the survey respondents, the likelihood of such people paying attention to media initiated by any tier of government in Adelaide is minimal.

Perceptions are immensely important and influence the effectiveness or otherwise of how an institution approaches its relationships with the media. For example, Berger and Luckmann argue in their treatise *The Social Construction of Knowledge* (1969) that:

> What is here and now presented to me in everyday life is the *realissimum* of my consciousness… it is simply there, as self-evident and compelling facticity. It is simply there (Berger, P & Luckmann 1969, pp. 36-37).

Berger and Luckman apply this argument to explain how day-to-day lived realities are an important influencer on how people learn to interpret their surroundings throughout life. Vygotsky (1978, p. 83) conceives the process of learning as one where consciousness of surroundings is informed by more than "the ability to think; it is the acquisition of many specialised abilities for thinking about a variety of things". For those who participated in the survey for this research, their reality appears to be influenced by a strong mistrust in political institutions.

Therefore, it can be argued that structural reform of how institutions in Adelaide approach their media relations might help to overcome these issues of mistrust in government, which are always hard to tackle. For example, the devolved model is not necessarily an inappropriate one. It does offer an opportunity to enact structural reform in communication and creates an entry point for tailored local government based/focussed communications for each adaptation planning area with areas of high concentration of climate-vulnerable people. In particular, the devolved model, if structurally reformed, offers the potential for the development of partnerships between state and local government to facilitate the development of communications that are mapped against the actual communication preferences of people from low SES backgrounds, rather than being developed in line with expert perceptions about those preferences. However, that work is not being undertaken, and the media avoidance approach is not conducive to introducing higher-order strategies.

Structural reform would help address the disconnects revealed by this research, and which are the result of very low levels of trust in political institutions held by people from low SES groups in Adelaide. This needs to be addressed because high levels of misgivings were evident when survey participants were asked about the levels of trust they held in political

institutions, with at least 20% of respondents spontaneously laughing, and half a dozen using swear words to express their views about how they feel about government[37]. This combination of institutional actors trying to avoid the media, coupled with a distrustful audience, minimises the chances of institutions in Adelaide responsible for communicating climate change and adaptation becoming *mediatized*. The result is that those people who most need climate related information may be missing out on it.

This possibility is reinforced by the media behaviour of expert participants (7, 10, 11, 13 and 16), who believe that climate change and adaptation media, when done at all, should be targeted at a cultural influencer who can help direct the flow of information to a vulnerable person. This has similarities with the two-step flow of communication model (Katz 1957; Katz & Lazarsfeld 1955). For example, the logic presented by Participant 7 (South Australian political appointment) was that a vulnerable person, living below the poverty line, might have an influential family member who lives in a higher SES demographic and is therefore more likely to engage with media that is climate change and adaptation "friendly". That family member can then relay information about climate change and adaptation to the vulnerable person in their network.

This approach is commendable, but communicators need to be aware that there is mixed evidence in the literature about the influence cultural influencers have in a modern media-driven society when presenting information about climate change and adaptation. For example, Nisbet and Kotcher (2009) suggest other cultural influencers might have limited influence over others in the exchange of climate change information, whereas Weeks,

[37] The number of respondents is based on a diary maintained during the field work period. Pertinent moments in the research process were recorded including observations of a person's behaviour when it appeared out of the ordinary.

Ardèvol-Abreu and Gil de Zúñiga (2015) argue the opposite, claiming that contemporary versions of opinion leaders still carry political influence over people in their network. Thus, the value of other cultural influencers in a modern media-driven society might be case specific and individual circumstances need to be considered when designing communicative responses that draw from information flow models. This discussion concurs with the evidence presented in Chapter Five which shows mixed levels of trust in other possible social and cultural influencers such as friends, family, SES, universities upon the group who participated in the survey.

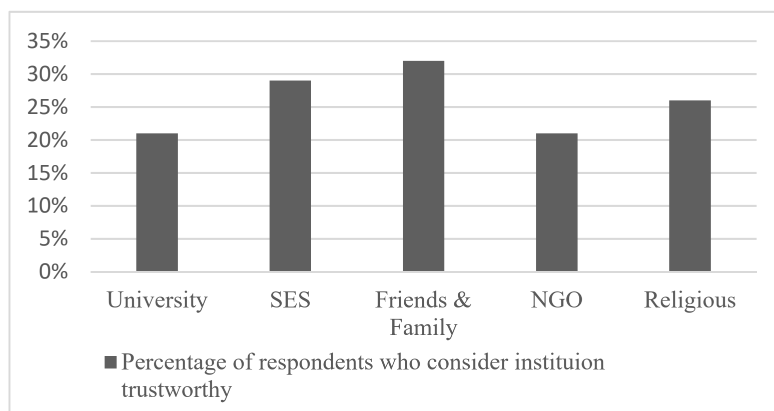

Figure 30: Summary of survey participants trust levels in social and cultural institutions

There is also the danger of unintended consequences if the present approach to media communications in Adelaide is not structurally reformed. A negative feedback loop could develop, where vulnerable citizens may become immune to adaptation messaging if it is generated by institutions in which they have little trust, thus leading to automatic dismissal of the issue, regardless of its actual significance.

Integration of the results suggests that any structural reform will have to proceed concurrently with attempts to generate a change in current expert perceptions about the role of media in climate change and adaptation communications that target a low SES public in Adelaide. It

will also need to invest in building trust relationships between all groups. Such a shift implies that changes in, and adoption of, mediatized approaches to institutional media communication could be beneficial. As Lunt and Livingstone (2016, p. 463) say:

> There is no question that many, even all, dimensions of society are now mediated by digital networked technologies in ways that matter and, many would concur, that matter increasingly.

However, this discussion should not over-emphasise the power and influence of the media upon people from low SES backgrounds in Adelaide. Hepp, Hjarvard and Lundby (2015, p. 316) express caution over emphasising the influence of the media because it can contribute to "a one-sided and media-centric approach to understanding the interplay between media, communications, culture, and society". They argue in a paper that was written as a response to Deacon and Stanyer's (2014) critique of mediatization theory, that a more balanced approach is needed when determining the influence of media upon culture and society. This, they describe as a "media-centred" approach that can illustrate how "various intersecting social forces" (Hepp, Hjarvard & Lundby 2015, p. 316) work at the same time to influence people over time.

In addressing this concern, it is suggested here that as a theoretical contribution, institutional media relations in Adelaide must be contextualised within a holistic communications framework. Mediatization offers this opportunity as it illustrates that a symbiotic relationship can exist between the media and political institutions charged with communicating climate change and adaptation to target publics (Hepp, Hjarvard & Lundby 2015; Mazzoleni & Schulz 1999; Strömbäck, J 2008). Such an approach has benefits, and indicates the

importance of changing institutional perceptions that the media as a communicative space should be avoided. However, as explained in the next section, there is another perception that expert participants must consider changing to help people from a low SES background in Adelaide learn about climate change and adaptation. The perception that needs addressing is that people from such backgrounds do *not* represent a targetable group in society.

A counter-public engaging in public spheres

The survey results highlight a surprise finding and challenge the perceptions held by expert participants that people from low SES backgrounds in Adelaide have no shared characteristics at which to direct media communications. Instead, the survey results suggest the opposite, and indicate the possible existence of a low SES counter-public in the sample surveyed in Adelaide. Contrary to the views expressed by the expert participants in Chapter Six, this counter-public is not only definable, but it is also shown to be engaging with both traditional and modern public spheres.

As illustrated in Chapter Three, a public in a contemporary democratic society can be defined more broadly than initially theorised by Habermas. Asen (2000, p. 429) points out that the concept still supports Habermasian descriptions of a public as a group in society that hold similar characteristics, but adds that the idea of universality must be avoided to advance "affirmations of specificity in relation to gender, race, sexuality, ethnicity, and other axes of difference". Consistent with Aspen (2000), those who took the survey in Adelaide can be advanced as a counter-public as they reflect the following four shared characteristics:

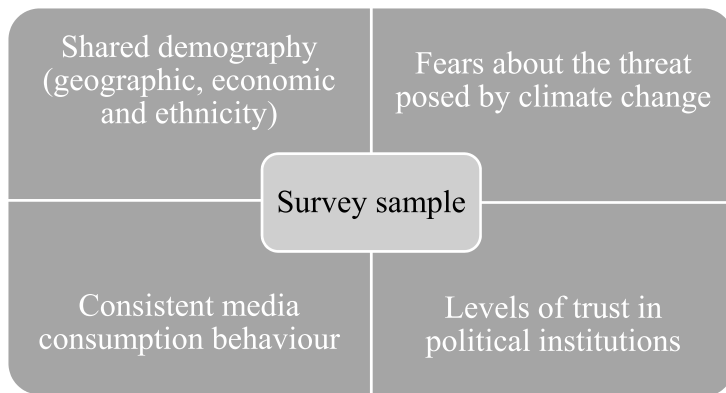

Figure 31: Shared characteristics of the participants identified in the survey results

It is not argued that all people in the case study areas will share the same characteristics, but for the group sampled, the similarities are stark. The most striking are the shared demographic characteristics: all participants live below the poverty line, and a majority who took the survey shared a similar ethnic identity. The participants displayed an active engagement with both traditional and modern public spheres, as evidenced by the fact that most of the sample regularly consumed news and current affairs to find out about issues of the day. The public spheres with which they are engaging to access information about issues of the day are equally consistent, as evidenced in Figure 23, as is their preferred source of information about climate change and adaptation highlighted in Table 15.

The people surveyed use contemporary media sources to access specific information about issues of the day and to access information about current affairs. Importantly, they expressed a high degree of trust in the information they obtained from television and internet based communication sources. These characteristics point not only to the existence of a group of people who share similar characteristics, and at multiple levels, but to one that Grunig (1989) would describe as participating in "active" and or "engaged" public spheres.

This discussion point is significant and has implications for communication practice. It shows that contrary to the views held by expert participants (that those surveyed are a group of people disengaged from the complex issues facing society), the people surveyed may be representative of a wider counter-public, one that is active in multiple public spheres. Expert participant perceptions are further challenged as survey results demonstrate that this counter-public is not climate sceptical; it is concerned about climate change, and would consume media about climate change and adaptation if crafted appropriately by those institutions planning adaptation in Adelaide.

Further, the low-level awareness about climate change adaptation shows that present approaches (as described by expert participants in the interviews) are not working. It would appear from the survey data that writing academic papers, talking to stakeholders or providing advice to community boards and committees is not cutting through to people from low SES backgrounds in Adelaide. Therefore, the next section of this chapter considers a short-term opportunity to respond to these findings. Although structural reform is a long-term process, the results highlight shorter-term opportunities for institutions in Adelaide to help build awareness of climate change and adaptation in a low SES counter-public in Adelaide.

Seasonal mediations

This study has shown that the current approaches to communications that are used (or considered useful by expert participants) are not working, and thus it is argued that a new communicative approach, based on these results, is needed to help a low SES counter-public become more aware about climate change and adaptation. From a localised perspective, the low level of awareness about adaptation is significant because South Australia is perceived as a national leader in the adaptation planning process. For example, the South Australian plan

received a national award for excellence (Government of South Australia, 2012) and the City of Onkaparinga[38] also received a national award for its *Resilient South* planning process (City of Onkaparinga, 2014b) and was described as a "benchmark for local government response to climate change" (City of Onkaparinga, 2014a).

Although the state government said communications will help "underpin successful adaptation responses" (Government of South Australia, 2012, p. 13), it appears that endeavours to inform the citizenry in most need of adapting have so far failed. One way to rectify this problem could be to use short-term mediated communications that draw from the finding in the survey that a person's construction of climate change and adaptation appears to vary with the seasons; the survey showed that climate change as an issue was perceived as more pressing when the weather in Adelaide was hot and vice-versa.

Thus, a mediated approach to communicating adaptation to a low SES counter-public could exploit media norms and be delivered during extreme heat events. Given that "the media plays a powerful role in people's lives by informing, raising awareness and shaping public attitudes" (Wolfinger 2015), political institutions charged with helping people adapt to climate change could exploit extreme heat events to mediate with this counter-public in Adelaide.

Indeed, a key finding from this project is that communication interactions, if held at other times and in other fora outside of the media, such as a stakeholder consultation event, could be a wasted investment, given the limited economic resources available to implement the

[38] A local government area where participants were surveyed.

regional adaptation planning process in South Australia. However, as noted by Wolfinger (2015), this will be no easy task because:

> Highly politicised issues are likely to reflect the ideas of dominant (powerful) groups in society, leaving other (less powerful) groups at risk of stereotyping and devaluing by the media (Wolfinger 2015:4).

Others argue that media communications that target the types of people sampled in the survey are unlikely to yield results at any time. A discourse persists which argues that those who interact primarily through mass media, especially via television, are likely to be a "passivised, individualistic, mindless mass audience" (Couldry, Livingstone & Markham 2010, p. 26). This characterisation of apathy is based on academic study that suggests media interactions have been destructive to democratic and civil engagement between citizens and institutions (Lippmann 1922; Putnam 2000; Schudson 2008; Whipple 2004).

Integrated findings from this project, however, make a case that far from being a disengaged, *passivised* audience, people from a low SES counter-public in Adelaide regularly engage with social and political issues through multiple media sources (see Figure 23). This implies that media has retained and exercises power, reach and influence. Couldry and Markham (2006, p. 256) observed that if " people are facing *the other way*, then no amount of skilled political communication will reach them!". In the sample surveyed for this project, it appears that the participants are facing the *right way*, which implies appropriate media engagement could be a useful method for increasing awareness about climate change and adaptation in the minds of a low SES counter-public in Adelaide.

Part of implementing a short-term mediated response would therefore involve exploiting a seasonal use of media whilst syncing communications with existing media consumption habits. For example, if a person habitually watches the evening news, or checks Facebook on the train at the same time on their way to work, then that is a space in the media spectrum that can be utilised to influence a target audience. Understanding media consumption habits will benefit the purveyors of communicative messages. The linking of seasonal media engagement with consumption habits may facilitate attitude change whilst confounding "conscious and nonconscious processes" (LaRose 2010). This study has identified that opportunities exist to capitalise on the habitual behaviour of people from a low SES background in Adelaide. The analysis of results indicate that the formal integration of media communications into the fabric of institutional processes could create conditions conducive to achieving exposure to and learning about climate change and adaptation in Adelaide.

The success of a short-term seasonal mediated approach, however, would be influenced by the type of frames that are used. The key message in the literature review was that any mediated approach to a target group in society should be consistent with existing practice in relation to the communication of mitigation and the science of climate change; this is to avoid the use of negative messaging and to be sparse with the information deficit model (IDM) (Waschka & Torok, 2013). Further, the literature indicates that adaptation should be presented in a way that localises the issue into relatable contexts for target audiences so that the messaging is salient and replete with efficacious possibilities (Hanson-Easey et al., 2013; Intergovernmental Panel on Climate Change (WGII), 2014; Ungar, 2007).

As Chapter Five indicates, results from the survey sample indicate a slightly stronger preference for a negatively framed message. The deployment of negativity as a

communication motif was quite well received, with more people indicating they would want to seek more information about adaptation when the message was framed in negative terms rather than positive. The negative frame did not, as has been argued in other research (see Futerra 2010 for example), turn people off to receiving the climate change message. Therefore, mediating adaptation to this group as a positive, transformative opportunity might not be the appropriate starting point. This finding is echoed by other research that found, in working with a South Australian Indigenous people, who are identified as a low SES group vulnerable to climate change (Tibby 2012), that positive communications had very little traction (Nursey-Bray et al 2013). However, when the topic was framed negatively, it sparked strong interest and engagement in climate change and adaptation issues facing their community (Palmer 2013).

Conclusion

The use of mediatization theory in this research suggests that current institutional approaches to media communications are not helping people from low SES backgrounds learn about the challenges they face because of climate change. Using the indicators of mediatization in the analysis uncovered a perception that institutional actors think media debates about climate change and adaptation targeting vulnerable people in Adelaide should be avoided; this discussion shows that this perception is potentially wrong. Ultimately, the discussion shows that political institutions in Adelaide responsible for communicating climate change and adaptation are not mediatized and this is problematic in a media-driven society.

The integration of the two data sets highlights that, contrary to expert professional opinion, the media does have a significant role to play in communicating adaptation to people from a low SES background in Adelaide. At this stage, it would be a difficult undertaking to

suddenly introduce institutional change because there is significant dysfunction in the relationships between political institutions and the media. This dysfunction is particularly acute regarding the types of media consumed by vulnerable people in Adelaide. Further, institutional change is needed regarding the views held about vulnerable people by experts. These two disconnects compromise the potential for helping people from low SES backgrounds learn about climate change and adaptation.

Structural reform could help correct these disconnects, particularly by addressing short-comings in the types of media processes imposed by the state government in the roll-out of the regional plans. In this context, a short-term, mediated and seasonally targeted approach to media communications is suggested. The centrality of appropriate framing is also integral to the success of a mediated approach, and negative framing is suggested as a good starting point.

Overall, this integrated discussion of the key findings reveals that there is a need for communication professionals to change their approach and attempt to build knowledge and relations with the media – and with people of low SES backgrounds. The institutions currently involved in climate change and adaptation planning have inhibited their capacity to engage with society on the topic because of their current approach to media relations. If Strömbäck (2008) is correct, and the media is the most important source of political information for a majority of people today, then this situation needs to change. Further, if political information is mainly accessed via the media, then the institutions charged with helping people learn about climate change and adaptation will also have to learn how to build it into the fabric of their institutional communicative activity.

These findings might have applicability in the development of climate change and adaptation communication policy developed elsewhere in urban Australian communities, and in other developed nations with similar concentrations of vulnerable people from low SES backgrounds. Unless perceptions change, and knowledge about climate change and adaptation media communications is enhanced within political institutions, the chances of institutions helping people from a low SES background learn about climate change and adaptation are limited. Consequently, the findings in this thesis research have implications for the future development of media communications that target people from a low SES background in Adelaide and beyond, because if the status quo is maintained, vulnerable people will struggle to learn about their need to adapt to climate change.

In the following chapter, an operational process is suggested to help resolve the longer-term issues identified in this chapter. The overarching suggestion is to establish a process to mediatize local political institutions is proposed to provide a long-term mechanism to help overcome the challenges identified above. An inter-government media focused community of practice (CoP) could provide an enabling framework by which institutions could formally implement appropriate communication approaches, which in turn would develop skills and knowledge and improve relations between institutions and the media. The intention of the suggested CoP is to bind professionals together, pool their limited resources, teach professionals and help them learn from each other (Wenger 2000) about how to better utilise the media that vulnerable people are engaging with and are influenced by.

Chapter Eight: An institutional media focused community of practice

Introduction

While short-term media-centred tactical/practical responses were suggested in the previous chapter, long-term structural reform is also potentially needed. This chapter outlines an approach that could address the long-term issues revealed by this research, through the establishment of an inter-local government media focused community of practice (CoP). The aim of this CoP would be to encourage institutions in Adelaide to become more mediatized by helping to enhance media skills and knowledge, whilst encouraging a greater utilisation of media in day-to-day communications that aim to help people from a low SES background learn about climate change and adaptation. This could have the added advantage of improving relations between political institutions and the media around the topic of communicating knowledge about climate change and adaptation to vulnerable people in Adelaide.

This idea for a CoP in Adelaide aligns with the devolved model for adaptation that the state government has used in the South Australian regional climate change adaptation planning scheme (Government of South Australia 2012). This devolved approach also aligns with the IPCC's approach that encourages localised development of communications that target specific publics, households and individuals (Intergovernmental Panel on Climate Change (WGII) 2014). The localised approach to the communication of adaptation as envisaged by the IPCC has two key objectives. One is the provision of advice to help governments meet localised climate change policy outcomes. The second is the production of locally appropriate communications that target their constituents (Intergovernmental Panel on Climate Change 2010). Appropriate communications include engagement with the media, which is seen as an

important step in the production of politically acceptable responses that will help society adapt to climate change because "if politicians think that the public are significantly influenced, [they] may act" (Gavin 2009, p. 766). Thus, the media-focused CoP model presented in this chapter aims to provide a process that addresses both the structural and perception issues identified in this thesis. It does this by encouraging institutions to make media engagement a more central part of their working practice (mediatization). By so doing, a CoP could help institutions in Adelaide produce locally appropriate ways for communicating with their vulnerable citizenry.

Communities of practice and boundary objects

While the literature around communities of practice is extensive, and has been applied in many contexts, it originated in the work of Etienne Wenger, who defined it as a:

> Community that shares cultural practices reflecting their collective learning: from a tribe around a cave fire, to a medieval guild, to a group of nurses in a ward, to a street gang, to a community of engineers interested in brake design. Participating in these 'communities of practice' is essential to our learning. It is at the very core of what makes us human beings capable of meaningful knowledge (Wenger 2000).

Day (2010) built on Wenger (2000) in defining a CoP as "a community of individuals who voluntarily choose to come together regularly to help each other develop their knowledge of a common work-related practice" (Day 2010, p.3). From a distance, such descriptions sound like a romantic notion in this context of this study. It is hard to imagine how professionals, who perceive themselves as operating in a resource-stretched environment, could be provided

with an opportunity to join together and learn from each other about how to build media and communication capacity to help vulnerable people learn about climate change and adaptation. However, results from this research reveal that in principle, the concept of a CoP in a South Australian local government context aligns with existing working practices. This is based on the observation that the foundation of a CoP already exists within the adaptation planning field in Adelaide. These foundation characteristics are displayed in the regional adaptation planning arrangements for South Australia. Regional planning has created a community for governments to work together, and share information and knowledge about climate change and adaptation in the regions in which they govern:

Regional plan	**Local government partners**
Adapting Northern Adelaide: Planning for our changing climate	City of Salisbury; City of Playford
Resilient South: Strengthening the southern region for changes in our climate	City of Holdfast Bay; City of Marion; City of Onkaparinga; City of Mitcham
AdaptWest: Western Adelaide climate change adaptation plan	Cities of Charles Sturt, Port Adelaide Enfield and West Torrens

Table 18: Local government partners in regional planning

Organisational cooperative foundations are important because, as Wenger (2000) notes, CoPs are not limited to individuals within society, but also manifest at an organisational level. Wenger (2000, p.237) has said that an organisation can act as a:

> Boundary to serve people who need some service, are curious, or intend to become members… [and] many communities have found it useful to create some facilities by which outsiders can connect with their practice in peripheral ways.

Others say that organisations can work together to share the information, experience and knowledge that each one holds to help "satisfy the informational requirements of each of them" (Sapsed & Salter 2004, p. 1518). In CoP research, the idea of a boundary is described as a *boundary object*, where different organisations with shared concerns about an issue can share knowledge and experiences to solve the problem being tackled. Star and Grieemer (1989, p. 393) originally defined boundary objects as:

> Objects which both inhabit several intersecting social worlds … and satisfy the informational requirements of each. Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, and yet robust enough to maintain a common identity across sites.

This is a conceptual, abstract definition where Star and Grieemer (1989) describe a boundary object as knowledge and/or experience of artefacts that are held by different institutions or individuals, but, when brought together, contribute to meeting a shared goal. Thus, boundary objects "constitute a means to cross (knowledge) boundaries in a collaborative process" (Marheineke, Velamuri & Möslein 2016, p. 1110) towards solving a shared problem, to the mutual benefit of all involved (Sapsed & Salter 2004).

Boundary objects are a critical component in the formation of a CoP as they bind groups of people or organisations together with the aim of facilitating an effective transfer of knowledge between members. Antonietta and Manuti (2016, p. 7) say this concept of knowledge transfer is "a precious space of learning and exchange". The exchanges are positive in nature, and assume each organisation or individual involved has a mutual interest in collaborating with each other to solve problems and issues of joint concern (Owens 2015).

Amongst the many areas of CoP research relevant to this project, the concept has been utilised at a governmental communications level. This includes the climate change adaptation field, where the application of CoP research is a suggested method for enhancing local government community engagement, especially in local planning (Coleman & Firmstone 2014; Nursey-Bray, Harvey & Smith 2015).

Coleman and Firmstone's (2014, p. 827) research is based on a hypothesis that governments everywhere are finding it increasingly difficult "to demonstrate that institutional power is rooted in popular sovereignty, thereby casting doubts upon their affirmations of democratic legitimacy". Consequently, they argue that governments are having to communicate with citizens to build new relations that are based on a meaningful engagement where people feel that they are not merely participating, but also have a voice in democratic proceedings (Coleman & Firmstone 2014, pp. 827-828).

That study suggests democratic institutions face several issues as they attempt to engage with their constituents. One of those issues is related to community engagement, and how representatives from a political institution, such as a bureaucrat or a council officer:

> Bring to the table widely varying notions of what it means to engage the public and, while the outcome of their combined – or competing – norms and strategies is sometimes enriched by such conceptual diversity, it is more commonly messy and confused, turning the notion of an 'engaged public' into a moving target that is difficult to evaluate (Coleman & Firmstone 2014, p. 828).

According to Coleman and Firmstone (2014) this messy and confused scenario is caused by contested constructions of what constitutes effective public engagement. In their view, it is important for political institutions to "pause and reflect upon what apparently shared terms and phrases really mean" (Coleman & Firmstone 2014, p. 840). By doing so in collaboration with partners involved in the community, it provides a basis for a constructive synthesis of skills. In their work, they conclude that:

> Engaging and communicating with the public should be seen as one activity, pursued in various ways and employing a range of skills – but shaped by common democratic values. (Coleman & Firmstone 2014, p.841)

In another study, Nursey-Bray, Harvey and Smith (2015) found that the "messy" scenario could be avoided provided an appropriate diversity of individuals from an organisation was invited to participate within a CoP. That study built on Coleman and Firmstone's (2014) conclusions and found that public engagement at an inter-local government level about coastal management in the face of climate change impacts was enhanced when individual CoP membership brought different, but complementary, boundary objects to the process. The complementary nature of the individuals involved in the CoP helped to ensure a cross fertilisation of ideas, knowledge and experience about improving community engagement.

However, Nursey-Bray, Harvey and Smith (2015) argue that it is important that the members of a CoP are self-selected, and supported by senior staff. They say these two factors enhance an inter-local government CoP and encourage support across all levels of council concerned with helping their constituent members learn about coastal management in changing climatic conditions. Gaining senior support and involvement in the development of an inter-local

government level CoP is consequently an important step in making sure a CoP functions effectively.

This literature indicates that a CoP, developed under the right conditions, provides the facility to enhance organisational skills through a process of sharing knowledge in an environment of shared goals. Drawing from that evidence, it is suggested that the concept of developing an inter-local government level CoP in Adelaide with the aim of focusing attention on the development of media expertise has merit. The suggested CoP is focused on local governments in the preliminary stage, but as the results from Chapter 6 show, the implications are much broader and institutional media engagement needs to be enhanced at other levels of government. Therefore, over time, membership could grow. However, a CoP designed with a focus on local governments is a critical first-step as they are essentially on the front-line, so building knowledge of how to develop long-term, locally tailored and appropriate communications targeted at people from a low SES background will have maximum benefit. The evidence presented in this thesis illustrates that the formal structures needed to support the foundation of a CoP are already established through the South Australian regional planning scheme. Yet institutional knowledge about how to communicate climate change and adaptation via media that targets vulnerable citizenries in Adelaide is limited. Therefore, using those existing formal structures could help to develop a long-term mediatized approach. More constituent parts of local government adaptation planning could construct their work under media-related conditions, thus causing mediatization to take place (Krotz 2014). The next section of this chapter describes the elements that would be required to establish a media focused CoP in the climate change adaptation planning field in Adelaide.

Element 1: Organisational membership

At the heart of the proposed Adelaide-based media-focused CoP is its membership base. It is suggested that this CoP should be formed at an organisational level, and co-sponsored by the four relevant local governments that have high concentrations of people living below the poverty line in Adelaide:

- City of Salisbury
- City of Playford
- City of Onkaparinga
- City of Port Adelaide Enfield

Organisational level CoPs, whether intentionally created or organically formed, are described as a "hot topic" in the study of how to improve and enhance organisational performance (Day 2010, p. 52). They are described as a hot topic because organisational level CoPs are increasingly viewed as an effective means of managing how information is moved from one group to another in a way that provides institutional control (Day 2010). Day (2010) provides a context for this observation by using Wenger's (2000) argument that organisational sponsorship is important as institutions are better placed to support a CoP through the provision of resources. The issue of organisational resourcing is important as there is potentially quite a bit of difference in outcomes between a CoP supported at an individual organisational level and one that is controlled by more than one organisation. The existence of several organisations contributing economically to a CoP not only increases the level of resourcing support overall but also potentially enhances outcomes, as multiple organisations will be motivated by the fact they have invested in the CoP. The issue of resourcing is considered further in element two and three of the proposed media focused CoP below.

Other authors have described further benefits of organisational support and these are summarised below in Table 19 extracted from Ling (2014, p. 54)[39].

Reference	**Identified benefit to an organisation supporting a CoP**
Brown & Duguid (1991)	Innovative way for working, learning and innovating.
Gongla & Rizzuto (2001)	Professional development of individuals.
Iriberri & Leroy (2009)	Improve communication and trust, enhance collaboration and access to expert knowledge, and increase productivity.
Lesser & Everest (2001); Lesser & Storck (2001)	Develop long-term organizational memory. Generate ideas for new products and services. Quick responses to customer needs and problems. Re-use of knowledge. Reduce learning curves for new employees.
Millen et al. (2002)	Customer loyalty. Employee communication and trust. Increased access to expert knowledge. Increased idea creation and enhanced problem solving. Increased new business and product innovation. Increased quality of knowledge and advice. Information exchange with highly credible sources. Opportunity to improve customer service. Opportunity to improve reputation. Opportunity to respond to customer requirements. Time saving during information seeking and sharing.
Wenger & Snyder (2000)	Generate ideas for new products and services.

Table 19: Benefits of organisational sponsorship of a community of practice extracted from Ling (2014).

Ling (2014) identifies many benefits of a CoP in a media context, and this proposal builds on them by drawing from the experience and insights from the observations made in Iriberri and Leroy (2009), Lesser and Everest (2001) and Millen et al. (2002), who collectively note that a CoP, when sponsored at an organisational level, enhances communicative activity, whilst also

[39] Ling (2014) examined a case study on organisational sponsorship of CoP and institutional social media governance.

helping to improve levels of trust and enhance reputation in the eyes of a potential customer. While these observations are based on experience with the private sector, how a CoP enhances customer relations is directly relevant to this research as the focus is similar. In local government, customer relations are important, and resources are utilised to provide high level standards of service to local ratepayers and members of the community.

In another study, Millen et al. (2002) identified enhanced communicative benefits within nine organisations due to the existence of an organisational level CoP. They found that a CoP "contributed to successfully executed projects, increased new business, and product innovation" (Millen et al. 2002, pp.71-72). Millen et al. (2002) directly attribute these successes to the functional performance of the CoP, which they argue helped build knowledge and capacity about how to improve communications to/with a target audience.

The collective benefits described above encouraged institutions around the world to develop CoPs in the climate change adaptation field. This extension of the concept into climate change and adaptation planning implies an acceptable tolerance to the idea from professionals, including in a local government context. Table 20 below provides examples of CoPs focused on climate change adaptation and coordinated at an organisational level.

Community of practice	Country of origin	Online or face-to-face	Membership	Goals	Activities	URL
The Ontario Centre for Climate Impacts and Adaptation Resources Climate Change Adaptation Community of Practice	Canada	Online	Canadian provincial and territorial representatives, as well as individuals from the federal and municipal government levels, academia, the non-profit sector, and the private sector	To bring provincial and territorial representatives together with experts in order to disseminate and share information on climate change adaptation, and to encourage the mainstreaming of adaptation into decision-making frameworks.	Monthly webinars; maintain a resource library; discussion forums; a call for knowledge facility; events notice board; recent news; a social media web design to encourage discussion.	https://www.ccadaptation.ca/en/landing
The Global Environment Facility Independent Evaluation Office *Climate-Eval community of practice*	United States of America	Online	A global network of monitoring and evaluation practitioners in government and development cooperation agencies, civil society organizations, and academia.	To establish standards and norms, support capacity development, and share good practices in evaluations of climate change and development and—most recently—natural resource management.	Program evaluations; webinars; online information resources; study commissions.	https://www.climate-eval.org/home
Asia Regional Task Force on Urban Risk Reduction	Japan	Online and face to face	A network of universities, United Nations agencies, World Bank and several peak local government organisations.	To enhance decisive actions to reduce risk and increase community resilience in the urban areas in the Asia region.	Policy and advocacy; knowledge management; promote collaborations.	http://www.preventionweb.net/files/23228_flyerrtfurr1.pdf
The International Community-University Research Alliance: *Canada and the Caribbean Community of Practice*	Canada and Trinidad	Online and face to face	A project collaboration of universities in Canada and the Caribbean that concluded in 2012. Partners included external organisations including local governments, the United Nations, consultancy firms and NGOs.	Identify ways to address the vital need to inform and adapt municipal and private sector capacity to make needed changes to development practices, existing and evolving infrastructure, transportation and utilities, health services, water and sewage distribution and treatment systems, and to the management of resource sectors in agriculture, aquaculture, and fisheries.	Conduct research into climate change adaptation; produce reports. Host meetings; conduct presentations.	http://www.coastalchange.ca
The Climate and Development Knowledge Network	United Kingdom	Online and face to face	Lead organisation is PWC, Fundación Futuro Latinoamericano, LEAD International, LEAD Pakistan, the Overseas Development Institute, and SouthSouthNorth.	Produce climate compatible development strategies and plans; Improve developing countries' access to climate finance; Strengthen resilience through climate-related disaster risk management; Support climate negotiators from the least developed and most vulnerable countries.	Conduct consultancy work associated with the overall aims of the organisations.	www.cdkn.org
Climate Knowledge Brokers	Germany	Online and face to face	An alliance of 50 organisations, including	To improve access to climate information including developing common online information tools and supporting peer	Conduct workshops and host meetings.	http://en.openei.org/wiki/Climate_Knowledge_Brokers_Group

			research institutions and NGOs.	learning: providing opportunities for knowledge brokers to meet each other face-to-face, share the challenges they are facing, and compare experience of which approaches work best.		
weADAPT: Stockholm Environment Institute	Sweden	Online	Organisations and individual adaptation professionals	An online 'open space' designed to facilitate learning, exchange, collaboration and knowledge integration to build a professional community of research and practice on adaptation issues.	Provide access for organisations and individuals to connect with other professionals and organisations to learn about how to implement climate change and adaptation projects.	https://www.weadapt.org/
The Coast Adapt *CoastExchange community of practice*	Australia	Online	Organisations and individual adaptation professionals.	To provide a forum in which users can interact with their peers to share ideas, approaches and opportunities	Provision of an online forum for discussions, tips and news about adaptation.	https://connect.coastadapt.com.au

Table 20: Examples of communities of practice established by climate change adaptation planners and professionals

Table 20 highlights that many organisational level CoPs have been formed in the climate change and adaptation field, with several reporting enhanced knowledge and capacity outcomes for both organisations and individual members. For example, CoastExchange in Australia linked over 250 adaptation practitioners and has reported that participants have built skills and capacity to improve their organisational work outputs (National Climate Change Adaptation Research Facility 2017). In Germany, WeADAPT facilitates knowledge brokering between members that have resulted in improvements to outcomes associated with adaptation planning projects (weADAPT 2015).

However, the proposed CoP membership need not be static, and over time organisations from outside local government could be invited to participate. By expanding the membership, other boundary objects (knowledge/experience/skills artefacts) could be introduced to the CoP. For example, local media organisations could be invited to participate in the CoP, thereby cross-fertilising knowledge between local government and media organisations about how to help people from a low SES background learn about climate change and adaptation.

A benefit of media involvement in the proposed CoP could help address expert participant perceptions that the issue of climate change and adaptation suffers from a credibility problem. The results in Chapter Six show that expert participants think the Adelaide media are not interested in it as a topic to cover in news or current affairs. Inviting media organisations to participate could help address these perceptions by facilitating an exchange of knowledge about the topic from adaptation planners to journalists. Also, because the CoP would have members from all local authorities with high concentrations of people from a low SES background, journalists would be able to see that adaptation was being tackled city-wide by

multiple local authorities, thus potentially enhancing the credibility of adaptation as an issue in the eyes of local media.

However, encouraging media involvement in a CoP would require local government members to explain why it would be of benefit to them to become involved. Several studies highlight such benefits. Hutchins and Boyle (2017) argue that as journalists are under pressure from changes in modern media practices[40], their participation in a CoP can promote collaboration on how to respond to the challenges their industry faces. They found that through collaborating in a CoP, journalists could work together to maintain the principles that “underpin the production of reliable news that, in principle, serves the interests of wider publics” (Hutchins & Boyle 2017, p. 509). A similar observation was made by Yu (2016), who says that media participation in a CoP helps to identify managerial factors inhibiting coverage of stories directed towards a narrow public target[41]. By identifying the issues from within a CoP, organisations could work together to find suitable solutions to help improve coverage of more niche topics (Yu 2016). Therefore, as well as benefiting local government institutions, a CoP could also have potential cross-over benefit to media organisations.

It would require careful coordination and leadership for such a CoP to function in Adelaide. That is the focus of the next section of this chapter, which considers element 2 of the proposed media focused CoP.

[40] Hutchins and Boyle (2017) say journalists are under pressure because of mutually reinforcing changes in mobile and digital media technologies, journalistic routines and institutional relations.
[41] In Yu (2016), the ideas of a CoP are discussed in the context of gaining greater institutional recognition and representation of ethnic Korean journalists in newsrooms.

Element 2: Rotational leadership

In their paper '*The life cycle of a community of practice*', Millen et al. (2002) argue that leadership is an important component of a CoP. They say it is important because the leadership role coordinates the acquisition of "funding, convening [of] events, boundary management and networking" (Millen et al., 2002, p. 70). Boundary management is also more effective if leadership creates a permeable environment to allow outside knowledge and experience to enter a CoP (Antonietta & Manuti 2016). Antonietta and Manuti (2016, p.7) argue that this can only occur when effective leadership is in place within a CoP that "allows [knowledge, skills and information] nourishment to be drawn from the outside".

This is consistent with Wenger's (2000) view that the leadership role within a CoP is key to managing boundaries between multiple organisations that are part of the same CoP. Effective management of boundaries within a CoP will not only help develop the commonalities described above, but will also encourage the development of collective action (Wenger 2000). Further, a successfully functioning CoP depends not only on internal leadership, "but a community needs multiple forms of leadership… and this may be concentrated on one or two members or widely distributed" (Wenger 2000, p.231).

Boundary management is crucial in the context of this study because of the membership of the proposed CoP. Due to the inter-organisational membership of the proposed CoP, strong leadership could help ensure the boundaries within each organisation were managed effectively and enhanced, rather than acting as a negative influence upon the functioning of the proposed CoP. The leadership role in this case could help to develop a common approach to the use of language, policies and protocols on developing media knowledge and

relationships with the aim of helping people from a low SES target audience in Adelaide learn about climate change and adaptation.

Therefore, it is suggested that a possible media-focused CoP in Adelaide should embed a rotational leadership role instead of leadership being held in the hands of a single local authority. This could help address another issue, which is that of funding, both in-kind and real, that would be required for managing the CoP (for example, providing administration support, information technology management, face-to-face meetings costs, time investment in external networking). Expecting one institution to carry such a burden would be both unreasonable and unrealistic. Establishing mechanisms to reduce costs is therefore a critical consideration. One mechanism could be to rotate the leadership between the four lead institutions which would encourage a sharing of resources, thus reducing the overall burden.

Further, as noted previously, the organisations involved in the proposed CoP have already invested resources in the adaptation planning scheme in South Australia. This means there should be a knowledge bank at a local government level available to draw from. Wenger (2000) argues that such a knowledge bank is a powerful element of a CoP, and rotation of the leadership could encourage information entrenched within this knowledge bank to be distributed and disseminated more widely.

Another benefit of rotational leadership is that it could aid in the monitoring of the influence of media upon people from a low SES background in Adelaide. Researchers agree that longer-term evidence of institutional mediatization in influencing social and cultural change over time is required (Couldry 2014; Deacon & Stanyer 2014; Hepp, Hjarvard & Lundby 2015). Therefore, a unified approach, based on a rotational leadership model, could help to

pool the resources required to monitor whether the mediatization of institutions in Adelaide does influence a target public. A local government acting in isolation might not only continue to struggle with media relations about adaptation, but would also only be able to construct part of the picture as to how influential/helpful the mediatization of its institution was at influencing social and cultural change related to climate change and adaptation learning. An inter-governmental media focused CoP could help to ensure that knowledge obtained about media coverage was shared to assess the influence information presented in media was having upon people from a low SES background. This could provide a more holistic picture of the impact of institutional mediatization in Adelaide and whether it helps people from a low SES background learn about climate change and adaptation.

Additionally, it might be the case that because many people from a low SES background live in rented accommodation, there could be some population movement between local government areas. This is most likely the case in the northern suburbs, where people who live in the Salisbury or Elizabeth areas might move into the Port Adelaide Enfield local government catchment, or vice versa. Therefore, the proposed CoP could help to ensure that when this movement from one local government area to another occurred, a consistent media approach to communication was maintained.

However, to implement this suggested model, the ongoing sustainability of a CoP would need to be assured. The construction of a CoP that would have longevity and not suffer the fate of many other climate change and adaptation projects (that disappear after the initial investment is made) is the focus of the final element of a proposed inter-local government media focused CoP in Adelaide.

Element 3: A virtual and face-to-face CoP

An inter-local government media focused CoP in Adelaide would not be an overly expensive entity to coordinate. However, any expense might be prohibitive given expert participants in this study have expressed concern about how fiscal constraints hinder climate change adaptation engagement work. One way of trying to manage the expense of coordinating a CoP in Adelaide would be to suggest that it operate online. Through the utilisation of project management tools, reducing the need to travel to different sites and minimising face-to-face expenditure costs, an online CoP could reduce the amount of funding required over time.

The utility of online CoPs has been studied as a way of sharing knowledge and aiding problem solving (Megele 2015). An online CoP has also been referred to as a virtual community of practice (VCoP) where "due to geographical and boundary restrictions, technology-driven digital platforms serves as a [communication] bridge" (Adedoyin & Christson 2016, p. 357).

In a technologically driven society, it is important to consider a VCoP concept in Adelaide. As has been said by others, the "rapid public increase in use of online synchronous (Skype) and asynchronous (Facebook) communication systems… has demanded the conceptualization of new communication structures" (Valaitis et al. 2011, p. 1275). One such project found that a VCoP utilising such technologies had helped with the "research-to-practice gap… [and] importantly, contribute to improved quality of care for consumers" (Lewis et al. 2010).

However, there is research that suggests that where multiple organisations spread over different geographical locations try to manage a CoP in a virtual-only environment, their interactions are ineffectual (Sapsed & Salter 2004, p. 1517):

> Face-to-face interaction appears to play a key role in facilitating the transfer of complex knowledge as well as building trust, commitment and social capital… and conversely, where there is no opportunity for face-to-face interaction, local coalitions tend to become hostile and distrust their remote partners.

These authors argue that the more effective way to proceed is to introduce an element of face-to-face activity that establishes the boundaries, agreed processes and project mangement tools needed to run a virtual community more effectively (Sapsed & Salter 2004, p.1524). Therefore, given the proposed CoP is centred in Adelaide, and not across vast geographical distances, it is suggested that any CoP in Adelaide should be both virtual and face-to-face. As stated at the start of this section, basing a vast majority of the work in a virtual community could save on running costs, but incorporating an element of face-to-face engagement could also help build trust and commitment to the process. By incorporating both options, the CoP might have an enhanced chance of success and longevity.

Conclusion

This chapter has presented a conceptual model for how to mediatize the institutions charged with communicating adaptation in Adelaide. It has shown that multiple organisations could share knowledge about how to use media more effectively to engage in public spheres in which people from low SES backgrounds in Adelaide are participating. Importantly, the aim of mediatizing institutions in Adelaide is to remedy structural and perception problems identified in this study that constitute long-term constraints to engaging with such groups in society. Establishment of a media focused CoP, based on the three elements described above,

could help concentrate minds, facilitate the sharing of resources, build internal and external credibility and make monitoring of communicative activity more effective.

Local governments have an enormous challenge in communicating adaptation to vulnerable people in Adelaide due to issues of trust and the existence of dysfunctional media relations. By perpetuating present approaches, the chances of institutions in Adelaide helping vulnerable people learn about climate change and adaptation, are low. A media-focused CoP may not be the only option available to local governments. However, from the perspective of answering the questions posed by this research, a CoP could help institutions in Adelaide learn how to produce and implement locally appropriate adaptation communications aimed at helping people from a low SES background learn about climate change and adpatation. The results presented in Chapter Five and Chapter Six, and the discussion in Chapter Seven, illustrate that a lack of mediatization might hinder efforts to help vulnerable people in Adelaide learn about this topic. Further, given the evidence that institutions are currently not mediatized, and that vulnerable people are not engaged with adaptation, the CoP process could also help theorists monitor empirical data measuring the influence of institutional media on a social issue. The next chapter summarises the research findings, describes the research constraints and presents recommendations for future research as a follow up to this study.

Chapter Nine: Conclusion

This thesis has used mediatization theory to examine whether institutional approaches to communicating climate change and adaptation are helping vulnerable people in Adelaide learn about the need to adapt. This study concludes that the present institutional approaches to communicating climate change and adaptation are not helping people from vulnerable communities in Adelaide learn about the subject.

Adelaide was selected due to the high concentrations of people classified as being vulnerable to climate change. Their vulnerability was brought into stark focus during the 2009 and 2014 extreme heat waves that killed some and left others sick and distressed. These events in-part prompted this study to investigate: how institutions communicate with vulnerable people; how those communications are perceived and understood by vulnerable people; the barriers to those communications; and what/if improvements can be established.

The project assumed that engagement with media is an important part of the communicative process employed by political institutions responsible for helping vulnerable people in Adelaide learn about climate change. However, the results reveal that media-institutional relations are largely absent in the arena of climate change and adaptation communications in Adelaide, and are avoided for multiple reasons. These reasons include: negative perceptions about the role of the media; a view that communicating with people from a low SES background is pointless because they have too many other pressing social issues to deal with on a day-to-day basis; a view that poor people in Adelaide do not have the capacity to deal with an issue like climate change and adaptation; and a view that people from low SES backgrounds only consume media that is sceptical about climate change science, and that they too are likely to be climate sceptics.

These views contrasted with the survey results which demonstrated: that an active counter-public exists amongst people of low SES backgrounds in Adelaide; that they are not climate sceptics; that they are actively concerned about climate change; and that they are regular and interested consumers of traditional and new forms of media. The results also show that the people who participated in the survey know nothing about climate adaptation indicating all attempts to help a vulnerable population learn about the issue have to-date not been successful.

No claims are being made that the data is reflective of views held by all the people in Adelaide living below the poverty line, but the strength and consistency in results provides valuable baseline information and insights applicable to other parts of Australia and potentially elsewhere.

This study concludes that the present institutional approaches to communicating climate change and adaptation are not helping people from vulnerable communities in Adelaide learn about the subject. Findings provide a rationale for a case that argues for the mediatization of the institutions responsible for helping people of low SES background to learn about climate change and adaptation. Media consumption is a *socially stratified* process, and an effective way to hold influence or make a difference to people is to embed it at an habitual level (Couldry, Livingstone & Markham 2011). Therefore, implementation of a process of mediatization could help to build responsible responses to the structural issues identified in this thesis. Reform of this structural element via the utilisation of a more sophisticated media approach could be beneficial, and could encourage the political system to be more agile and responsive to the different communicative requirements of different sections of the community.

One immediate and practical short-term response could be to utilise a seasonal use of media communications in recognition of the finding that people seem to respond more or less favourably to communications based on their experience of the weather. The thesis concludes with the presentation of a suggested process for mediatization of institutions in Adelaide that are responsible for helping people from a low SES background learn about climate change and adaptation.

Mediatization theory has provided a valuable and useful framework in which to ground the investigation into climate change and adaptation communications explored throughout and presented within this thesis. Although the theory is in its infancy and is open to ongoing critique, it has helped to reveal that although political institutions in Adelaide are not mediatized, there would potentially be major benefits in them becoming so. Given the consistency of findings in the survey, these conclusions have the potential to be applied in other Australian cities. In particular, Brisbane, Sydney and Melbourne could make good sites for mediatisation research. This is because as noted in Chapter 4, Barnett et al. (2013) have identified regions of those cities with high concentrations of climate vulnerable people from low SES backgrounds. Further, due to low levels of understanding about how to communicate climate change and adaptation to urban people in developed nations more generally, the findings made in this thesis might also have relevance at an international level.

Research constraints

In undertaking this study, the main constraints were encountered during the collection of survey responses due to random statistical sampling techniques. Approaching strangers on the streets is extremely challenging, with many people avoiding eye contact and mistaking the collection of surveys as a sales pitch or a charity fundraiser. In those circumstances, it was impossible to engage with some people

At Elizabeth Shopping Centre, data collection was constrained by the conditions imposed by the shopping centre management staff. The researcher was not permitted to leave the desk or approach customers visiting the store as they passed, meaning that very few people participated. Only five surveys were collected in those conditions and no further attempts were made to collect data in Elizabeth Shopping Centre, because, again, people mistook the survey as a sales pitch and would avoid stopping to talk.

It is also emotionally challenging to engage with a potential participant by asking them if they are a person from a low SES background living below the poverty line. A person's socio-economic background is immensely personal, so asking a random stranger if they are poor, and potentially vulnerable to the impacts of climate change, was a challenging exercise. A further constraint with data collection was the weather. As described in Chapter Five, the summer collection phase was stiflingly hot, which made data collection during busier times of the day physically challenging – some potential participants may have been missed due to disinclination to take a survey in the heat.

From the perspective of the survey itself, the original delimitations could have included an open-ended question about how participants form networks and exchange information through their social media use.

Another constraint stems from the fact that expert professionals during interviews exhibited a very low level of background media knowledge. This was contrary to researcher expectations that they would hold higher levels of individual and corporate knowledge about contemporary media theory and the work produced in the field of climate change and adaptation communications research. It was not expected that they would have detailed knowledge about mediatization theory, or access to information from journals only available from university databases. However, given many of the expert participants were employed in high ranking positions, and several in academic or research related appointments, more knowledge about the field had been expected.

A final constraint resulted from the fact that although the study focussed on vulnerable communities in Adelaide, interview results might have benefited from including local government interview participants from higher socio-economic areas of Adelaide. Obtaining information about the extent of mediatization in those local government areas might have revealed interesting data to contrast and compare.

Future research requirements

These research constraints highlight opportunities for further research that could build on the findings of this study. First, formal research that explores how people from a low SES background use social media to access information about issues of the day would help institutions fine-tune potential future communications utilising new media sources. Second, research that documents the extent of mediatization within other institutions in Adelaide that are undergoing regional adaptation planning would provide insights to compare with those that participated in this study. Although two expert participants who took part in the study were journalists, a future study that focuses solely on how the professional media industry

perceive their role in helping vulnerable people in Adelaide learn about climate change and adaptation would provide important information.

Finally, long-term research to observe if any of the recommendations made in this thesis are adopted will help monitor the effect of mediatization at an institutional level in Adelaide. Understanding if institutional mediatization helps people learn about climate change and adaptation could provide empirical evidence of mediatization in action to see if its effects directly influences social and cultural change over time.

Final Summary

This thesis makes an original contribution to the field of mediatization theory research. The use of mediatisation theory in the context of climate change and adaptation communications has not been explored in Australia before. Using the institutional indicators of mediatization in the analysis has helped to establish that currently, institutions in Adelaide responsible for communicating climate change and adaptation are not mediatized, and that this is negatively impacting their chances of helping vulnerable people learn about the topic. Using the indicators of mediatization in the analysis of a qualitative data set has enabled the documentation of barriers and provided a suitable framework for identifying possible communication enhancements.

Most mediatization research has so far attempted to demonstrate how the media and its infusion within social and political apparatus can shape cultural change over time. This study has demonstrated that its application can also help to uncover evidence that shows that when and where the media is excluded, social and cultural information exchange about an issue as serious as climate change and adaptation can be impeded.

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Appendix 1:

Publications during candidature

Palmer, R, Bowd, K, Griffiths, M, 2017*, Media preferences, low trust and seasonal adjustment: Communicating climate change adaptation to vulnerable, low socio-economic groups in Adelaide*, Global Media Journal (Australia Edition), Vol. 11, No. 2, http://www.hca.westernsydney.edu.au/gmjau/?p=3276.

Conference presentations during candidature

Palmer, R, *Low trust, media preferences and seasonal adjustment: Understanding the challenge of communicating climate change adaptation to low socio-economic groups in Adelaide*, Climate Change 2016, National Climate Change Adaptation Research Facility, Adelaide, July 5-7, 2016.

Appendix 2: The survey

1. What is your postcode? *

2. What is your ethnic background? You can choose more than one.

Australian

Indigenous Australian

European

African

Middle eastern

Asian

Pacific Islander

Other

3. What is the highest level of education that you have completed?

Completed Year 10

Completed Year 12

University degree

Post graduate university degree

Vocational course

Trade apprenticeship

Did not go to school

Finished after primary school

4. Have you heard about climate change? *

Yes

No

5. Have you heard about climate change adaptation? If you have not heard about climate change adaptation please go to Question 8 *

Yes

No

6. If you have heard about climate change adaptation, in your own words can you describe what it means?

7. Where have you heard about climate change adaptation? You can choose more than one if you have heard about it from different places.

TV

Radio

Newspaper

Twitter

Facebook

Blog

Hospital/Medical Centre

Friends

Family

State Emergency Service

Red Cross

State government

Federal government

Other

8. Climate change is said to pose a serious threat to people from lower socio-economic areas because of poor housing and higher levels of existing poor health. Adapting to the threat

posed by climate change is therefore described as urgent. Does this sound like an emergency to you?

Yes

No

9. How trustworthy would you find local government as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

10. How trustworthy would you find the state government as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don't know

11. How trustworthy would you find the federal government as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don't know

12. How trustworthy would you find academics as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

13. How trustworthy would you find journalists as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

14. How trustworthy would you find the State Emergency Services as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

15. How trustworthy would you find your friends and family as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don't know

16. How trustworthy would you find the internet as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

17. How trustworthy would you find newspapers as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

18. How trustworthy would you find the TV as a source of information about climate change adaptation?

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

19. How trustworthy would you find the radio as a source of information about climate change adaptation? Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

20. How trustworthy would you find non-government organisations as a source of information about climate change adaptation? (an example of a non-government organization is the South Australian Council of Social Services)

Very trustworthy

Trustworthy

Not trustworthy

Sometimes trustworthy

Don’t know

I’m going to read two fictional examples of communicating climate change adaptation. On a scale, tell me how likely you are to respond and want to find out more information after hearing each message. 1 will be to ignore what is said and not seek any further information, 5 indicates you will find out more information urgently.

21. Climate change is predicted to have a big impact on people from low socio-economic areas. People could suffer serious illness or even death unless people take urgent action to adapt to these changes.

0 1 2 3 4 5 6 7

22. Adapting to climate change will create a more liveable community where you and your family will be happy, healthy and safe reducing the impacts of climate change.

0 1 2 3 4 5 6 7

23. Adapting to climate change is an emergency, you must take action now.

0 1 2 3 4 5 6 7

24. I'm going to show you a list of TV channels, can you tell me which you regularly watch (you can choose more than one):

ABC 1

ABC 2

ABC 3

ABC News 24

SBS 1

SBS 2

SBS 3

Ch 7

7 Two

7 Mate

TEN

11

Go!

Gem

Ch 9

ONE HD

4ME

Fresh Ideas

NITV

Tvs

TV SN

Spree TV

Extra

Extra 2

None

Other

25. I'm going to show you a list of pay TV channels, can you tell me which you regularly watch (you can choose more than one):

ALA

RAI

Antenna

UKTV

Arena

Life Style Channel

FOX 8

E

MTV

FOX +2

Premier HD

Showcase HD

Action HD

Comedy HD

Fox Sports 1

Fox Sports 2

Fox Sports 3

ESPN

Eurosport

Sky Racing

Discovery

National Geographic

BBC Knowledge

Sky News Australia

Sky News Business

Fox News

CNN

BBC World News

Bloomberg

Al Jazerra

Nickelodean

Disney

None

Other

26. Do you regularly watch any of the following news and current affairs programs to find out about issues of the day (you can choose more than one):

ABC News

7.30

Q&A

The Drum

Lateline

SBS World News

NITV News

Seven News

Today Tonight

Nine news

A Current Affair

TEN Eyewitness News

BBC World News

The Five

Reporting Live with Stan Grant

Richo

None, I do not watch news or current affairs programs

Other

27. What time of the day do you generally watch the TV?

Breakfast (between 6am and 9am)

Mornings (between 9am and 12pm)

Afternoons (between 12pm and 4pm)

Evenings (between 4pm and 9pm)

Night time (between 9pm and 1am)

28. I'm going to show you a list of radio stations, can you tell me which you regularly listen to (you can choose more than one):

ABC 891

ABC Newsradio

Five Double A

Life FM

Fresh FM

Coast FM

Mix 102.3

Nova 91.9

SBS Radio

TAB Radio

Triple J

Double J

ABC Radio National

ABC Classic FM

Magic 105.9

Triple M

Three D

Cruise 1323

5EBI

RPH Adelaide

SA FM

Radio Adelaide

None

Other

29. What time of the day do you generally listen to the radio?

Breakfast (between 6am and 9am)

Mornings (between 9am and 12pm)

Afternoons (between 12pm and 4pm)

Evenings (between 4pm and 9pm)

Night time (between 9pm and 1am)

30. How often do you read a newspaper?

Daily

Weekdays only

Saturday only

Sunday only

Never

Other

31. If you do read a newspaper, which do you regularly read (you can choose more than one):

The Adelaide Advertiser

In Daily

Sunday Mail

The Adelaide Review

The Age

Herald Sun

The Sydney Morning Herald

The Courier Mail

The West Australian

The Mercury

Northern Territory News

News Review Messenger

Portside Messenger

Southern Times Messenger

The Australian

The Australian Financial Reviews

Green Left Weekly

The Weekly Times

The Monthly

The Conversation

Other

32. Do you use the internet to access information about issues of the day?

Yes

No

33. If yes, what type of web site do you use to access information (you can choose more than one):

Blogs

Facebook

Twitter

Myspace

Other social media

ABC News

Commercial news website

Other

34. Do you think text messaging would be a good way to communicate with you about climate change adaptation?

Yes

No

Don't know

35. Can you name a project designed to help people from low socio-economic areas adapt to climate change? if not, got to Question 37.

Yes

No

36. If yes, can you name it for me?

37. Are you familiar with a plan called “Prospering in a changing climate: A climate change adaptation framework for South Australia”? If not, please go to Question 40.

Yes

No

38. If yes, where did you hear about it?

39. Do you think advertising is an effective way of communicating climate change to people from low socio-economic communities?

Yes

No

40. Have you ever seen an advertisement about climate change adaptation? If not, go to Question 43.

Yes

No

41. If yes, can you remember what is said?

42. How would you like to be communicated with about climate change adaptation? You can choose more than one:

TV

Radio

Newspaper

Advertisement

Posters

Leaflets

Talk in a community centre

Talk in a religious institutions

Friends and family

Government mailout to local residents

Non-government organisations

Doctor or health worker

State Emergency Service

Red Cross

Blog

Facebook

Twitter

Government website

Do not want to be communicated with

Other

43. Is there anything else you would like to add about communicating climate change adaptation?

Thank you for taking our survey. Your response is very important to us.

Appendix 3: Survey sample selection tool

Income Unit	Including Housing $ per week
Head in workforce	
Couple	673.82
Couple plus 2	946.11
Single person	503.71
Single parent plus 2	782.72
Head not in workforce	
Couple	578.55
Couple plus 2	850.84
Single person	408.44
Single person plus 2	687.44

Appendix 4: Interview request email

From: Robert Palmer <robert.palmer@adelaide.edu.au>
Date: Tuesday, 13 January 2015 11:51 am
To: XXXXX
Subject: PhD interview request

Dear xxxx

My name is Rob Palmer and I'm a PhD student in the discipline of media at the University of Adelaide.

I am conducting a study examining how climate change adaptation has been communicated to-date in low socio-economic communities in Australia, what reach this might have had and what lessons can be learned to communicate information more appropriately to target vulnerable communities. Your amazing work in this field will be very valuable to my research.

The project will collect information from two sources. Firstly, I will be conducting semi-structured interviews with professionals like you to identify what (if any) specific strategies and communication methodologies have been trialled to-date and the second will be from a survey that will collect specific communication information from people with a low socio-economic background.

I have identified a suite of professionals from the health sector (including here at UoA), government employees from the three tiers, parliamentarians with a climate change adaptation interest, media/journos and NGO staff to participate. I will be collecting quantitative data in Port Adelaide, Onkaparinga and Salisbury/Elizabeth.

Although the research will take place in three regions in Adelaide with high levels of low socio-economic communities, I hope the research plan I have designed will be applicable to other urban centres in Australia allowing communication professionals (those inclined to do so), to conduct area specific research for other target communities of interest.

Please contact me on xxxxxxx or send me an email to this address.

The ethics approval code is: H-2014-235.

I am conducting my interviews in March and if you agree to participate, I was hoping to interview you on **March 5 at 1400hrs**.

Regards

Rob Palmer

PhD Candidate
University of Adelaide
North Terrace Campus

Appendix 5: Informed consent form for participant involvement in the semi-structured interviews

CONSENT FORM – INTERVIEW PARTICIPANTS

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	Adapting communication conventions: Communicating climate change adaptation to Australians from low socio-economic backgrounds
Ethics Approval Number:	H-2014-235

2. I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.
3. Although I understand the purpose of the research project it has also been explained that involvement is voluntary.
4. I have been informed that, while information gained during the study may be published, personal information regarding my name and address is not required for the purpose of the study.
5. I understand that I am free to withdraw from the project at any time.
6. I agree to the interview being audio recorded. Yes No ☐ ☐
7. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Participant to complete:

Name: ………………………………………… Signature: …………………………………. Date:

Researcher/Witness to complete:

I have described the nature of the research to *(print name of participant)*

and in my opinion she/he understood the explanation.

Signature:___________________________Position:__________________________________Date:

____

Appendix 6: Interview guide for semi structured interviews

Theme	Prompts
Past experience	Internal and external?
	Thoughts on contemporary theory on communicating climate change?
	Thoughts on the most effective way for communicating adaptation to people from low socio-economic communities?
The low SES community	What do you consider the level of understanding is about the issue of climate change adaptation in low socio-economic communities?
	How has you or your organization specifically targeted adaptation communications to people from low socio-economic communities and if so which community have you targeted and how has the success or otherwise been measured?
Strategic communications	What strategies do you consider effective for communicating climate change adaptation to urban poor people?
Role of the media	The media plays an important part in the formation of public opinion, have you contributed to or produced any stories in relation to climate change adaptation and if so, can you tell me about it?
	Do you consider the media to be an effective tool for communicating adaptation to people from lower socio-economic communities and if you do, which media do you think the focus should be?
	Have you considered the role of the expert in climate change adaptation communications?
	Do you consider the terms disaster, risk and emergency management as useful communication strategies for communicating climate change adaptation with Australia's urban poor? Why?

The South Australian climate change adaptation framework is the overarching instrument for planning on how to deal with climate change impacts – how has this framework influenced your thinking for how to communicate adaptation in South Australia?

Do you see any barriers to communicating adaptation to people from low socio-economic communities and if yes, what are they?

What other factors do you consider important with regards to communicating climate change adaptation to urban Australians from low socio-economic communities?

Appendix 7: Ethics Approval

RESEARCH BRANCH
OFFICE OF RESEARCH ETHICS, COMPLIANCE AND INTEGRITY

LEVEL 7, 115 GRENFELL STREET
THE UNIVERSITY OF ADELAIDE
SA 5005 AUSTRALIA

TELEPHONE +61 8 8313 5137
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CRICOS Provider Number 00123M

29 October 2014

Dr K Bowd
School of Humanities

Dear Dr Bowd

ETHICS APPROVAL No: **H-2014-235**

PROJECT TITLE: **Adapting communication conventions: Communicating climate change adaptation to Australia's urban poor**

The ethics application for the above project has been reviewed by the Low Risk Human Research Ethics Review Group (Faculty of Humanities and Social Sciences and Faculty of the Professions) and is deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research (2007)* involving no more than low risk for research participants. You are authorised to commence your research on **29 Oct 2014**.

Ethics approval is granted for three years and is subject to satisfactory annual reporting. The form titled *Project Status Report* is to be used when reporting annual progress and project completion and can be downloaded at http://www.adelaide.edu.au/ethics/human/guidelines/reporting. Prior to expiry, ethics approval may be extended for a further period.

Participants in the study are to be given a copy of the Information Sheet and the signed Consent Form to retain. It is also a condition of approval that you **immediately report** anything which might warrant review of ethical approval including:

- serious or unexpected adverse effects on participants,
- previously unforeseen events which might affect continued ethical acceptability of the project,
- proposed changes to the protocol; and
- the project is discontinued before the expected date of completion.

Please refer to the following ethics approval document for any additional conditions that may apply to this project.

Yours sincerely

PROFESSOR RACHEL A. ANKENY
Co-Convenor
Low Risk Human Research Ethics Review Group (Faculty of Humanities and Social Sciences and Faculty of the Professions)

ASSOCIATE PROFESSOR PAUL BABIE
Co-Convenor
Low Risk Human Research Ethics Review Group (Faculty of Humanities and Social Sciences and Faculty of the Professions)