

**Confronting the Climate Crisis in New Zealand:  
News Representation and Problems of Political Action**

**Saing Te**

A thesis submitted to  
Auckland University of Technology  
in fulfilment of the requirement for the degree of  
Doctor of Philosophy (PhD)

2020

School of Communication Studies

## **Attestation of Authorship**

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”

October 15, 2020

## **Acknowledgements**

I am grateful to my primary supervisor, Professor Wayne Hope, for his guidance and support in completing this project. I would also like to extend my thanks to Associate Professor Vijay Devadas, Emeritus Professor Anthony Endres, Jane Scott, and the journalists who participated in this research. I also want to acknowledge Auckland University of Technology for helping to fund this research with the Vice-Chancellor's Doctoral Scholarship. I am also appreciative of the support from my family.

## **Abstract**

In 2017, a series of events and publications affirmed that the world is no closer to averting a climate disaster and that the problems of global warming were becoming more entrenched. This reality leads one to ask: If social action is to stem the existential threat of a hotter planet, then how should the lack of political will and personal inaction be addressed? I argue that the failure to attend to the climate crisis is not merely due to inadequate governance but that it is also driven by vested interests and cued by ideological constructions that debase ecological perspectives. Therefore, the news media, a primary conduit for imparting and framing information, is a key area of critical inquiry. Journalism discerns facts from falsities and makes known to the public the prevailing state of affairs. In providing news audiences with information to help make decisions, news institutions can potentially highlight the need for fast system-level change to stem rising levels of greenhouse gases. However, journalists' ability to represent the events and issues unfolding and their underlying causes is complicated by the growing impacts and potential consequences of a warmer world (as well as associated effects on an individual's socio-psychological consciousness). So, how can the public debate about global warming be reshaped so that it catalyses solutions?

In order to address the above question, this thesis considers the scientific evidence for, the economic causes of, the ideological struggle over, and the communication of, global warming in an international and local context. Then, it

selects New Zealand's two leading digital news publishers, *Stuff* and *The New Zealand Herald*, as case studies to analyse how journalists told the story of the climate breakdown in 2017. Using critical discourse analysis, it investigates whether news representations were effective in raising awareness of global warming and in facilitating change. The news analysis is supplemented by semi-structured interviews with journalists writing on the issue.

The findings show that the two newsrooms failed to aptly depict the complex realities of a warmer world and the need for climate action. There were four key structural absences in the digital news reportage of the climate crisis: a long chronological view; the underlying causes of rising greenhouse gas emissions; differential suffering; and solution-focused approaches. So, I argue that journalists will need to expand their representation of the crisis beyond scientific facts. They can attest to the urgency of global warming by emphasising its historical context, scrutinising the economic and political power relations involved, and providing a broad picture of what it means to live in a warming world. At the same time, they will need to be wary about the audience's level of exposure to negative stories and not overemphasise emotional appeals as this can lead to disengagement, distress, and dejection. Providing news coverage of global warming and climate change is not a simple matter, it is complicated by ever-increasing technical data, unequal harm, an unrelenting news cycle, and an uncertain future. However, if journalists can evoke more nuanced representations of the climate crisis, audiences will be in a better position to weigh its consequences and risks.

## Contents

Acknowledgements .....	iii
Illustrations .....	ix
Abbreviations.....	x
<b>Introduction: Researching the Climate Crisis in New Zealand .....</b>	<b>1</b>
The Scientific Evidence for Global Warming.....	1
New Zealand’s Changing Climate .....	7
New Zealand’s Expanding Greenhouse Gas Inventory .....	10
Informing and Engaging News Audiences.....	13
Research Objectives .....	16
Theoretical Considerations.....	19
Critical Theory .....	20
Critical Discourse Analysis.....	23
Frames and Narratives .....	28
Capitalism .....	29
Power, Ideology, and Hegemony .....	31
Overview of Thesis .....	34
<b>Chapter One: Conceptualising the Climate Crisis.....</b>	<b>38</b>
The Political Impasse on Climate Change.....	39
An Unequal Exchange .....	44
Climate Change Now .....	51
A New Geological Epoch? .....	55
Historicising Global Warming.....	58
The Consumer Society .....	66
The Obfuscation of Nature .....	75
Conclusion .....	82
<b>Chapter Two: Communicating and Contesting the Climate Crisis.....</b>	<b>83</b>
Communicating Climate Science in a Mediated Environment.....	84
The “Disinformation” Campaign .....	96
Big Business: The Fallacies of Fossil Fuels .....	100

Public Perception of Global Warming and Climate Change .....	111
Psychological Challenges to Climate Action.....	114
Effective Climate Change Communication Approaches .....	127
Conclusion .....	134
<b>Chapter Three: Representations of the Climate Crisis in New Zealand</b>	
<b>from 1990 to 2017 .....</b>	<b>135</b>
New Zealand’s Climate Change Policy: Narratives and Challenges .....	135
Political Discourse: New Zealand’s Commitments and Targets .....	145
The Earth Summit.....	147
The Kyoto Protocol.....	149
The Doha Amendment .....	164
The Paris Accord.....	167
The Public Sentiment on Global Warming and Climate Change .....	172
Conclusion .....	183
<b>Chapter Four: The Social Production of Climate Science News .....</b>	<b>185</b>
Understanding News .....	186
Defining Journalism and the Craft of Making News .....	186
Audience Metrics and News Production.....	193
Dissipating Interest: Bad News Stories .....	199
Climate Science in the News .....	206
Research on Climate Communication in New Zealand .....	226
Conclusion .....	239
<b>Chapter Five: News Coverage of the Climate Crisis in <i>Stuff</i> and <i>The New Zealand Herald</i>: 2017 .....</b>	<b>240</b>
Rationale, Objectives, and Methodology .....	241
The Digital News Market in New Zealand .....	244
Sample .....	247
Critical Discourse Analysis.....	250
Source Typology .....	252
Theme and Frame Categories .....	253
News Content and Empirical Findings .....	255
Keyword Patterns .....	263

Analysis of Cited Sources.....	269
Frame Analysis .....	280
Discussion and Implications.....	294
Conclusion .....	300
<b>Chapter Six: Semi-structured Interviews with Science and Environmental Journalists.....</b>	<b>301</b>
Qualitative Interviews: Purpose and Process.....	302
Findings.....	307
Defining Journalism.....	310
The Practicality of Making Climate News .....	311
Understanding the Global Warming and Climate Change .....	321
Communicating the Climate Emergency .....	323
Discussion and Implications.....	328
Conclusion .....	332
<b>Conclusion: Covering the Climate Crisis: The Urgency of Now .....</b>	<b>333</b>
Understanding Global Warming and Climate Change .....	333
Climate Politics in New Zealand.....	338
The News Media’s Understanding of the Climate Emergency .....	340
Online News Coverage of the Climate Breakdown .....	341
The Values and Practices of Environmental and Science Journalists .....	347
Appendices.....	354
Bibliography .....	360

## Illustrations

### Figures

Figure 1: Web homepage of <i>NZH</i> as at July 20, 2018 .....	258
Figure 2: Web homepage of <i>Stuff</i> as at July 20, 2018 .....	259

### Tables

Table 1: Key narratives shaping New Zealand's climate policy .....	137
Table 2: Studies on public and business perceptions of climate change in New Zealand.....	180
Table 3: Studies of the news reportage of global warming-related matters.....	217
Table 4: Studies related to environment and climate communication in New Zealand.....	233
Table 5: Typology of global warming and climate change news frames .....	254

## Abbreviations

AAUs	Assigned Amount Units
ACCC	Australian Competition and Consumer Commission
API	American Petroleum Institute
AR2	The IPCC's Second Assessment Report (1995)
AR4	The IPCC's Fourth Assessment Report (2007)
AR5	The IPCC's Fifth Assessment Report (2014)
AWG	Anthropocene Working Group
CDA	Critical Discourse Analysis
CH <sub>4</sub>	Methane
CO <sub>2</sub>	Carbon dioxide
COP	The Conferences of the Parties
COP 1	First session of the Conference of the Parties (Berlin, 1995)
COP 3	Third session of the Conference of the Parties (Kyoto, 1997)
COP 21	Twenty-first session of the Conference of the Parties (Paris, 2015)
COP 24	Twenty-fourth session of the Conference of the Parties (Katowice, 2018)
COP 26	Twenty-sixth session of the Conference of the Parties (Glasgow, 2021)
CP1	First commitment period (2008–2012) of the Kyoto Protocol
CP2	Second commitment period (2013-2020) of the Kyoto Protocol
CTTs	Conservative Think Tanks
DDT	Dichlorodiphenyltrichloroethane

EIT	Economies in Transition
ERUs	Emission Reduction Units
EU	European Union
G20	Group of Twenty
GCC	Global Climate Coalition
GDP	Gross Domestic Product
GHG	Greenhouse gas
GHGs	Greenhouse gases
GPC	The Greenhouse Policy Coalition
Gt CO <sub>2</sub> eq	Gigatonnes of carbon dioxide equivalent
GTS	Geological Time Scale
IPCC	The Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
Kt CO <sub>2</sub> -e	Kilotonnes of carbon dioxide equivalent
MBIE	The Ministry of Business, Innovation and Employment
MfE	Ministry for the Environment
Mt CO <sub>2</sub> -e	Million tonnes of carbon dioxide equivalent
N <sub>2</sub> O	Nitrous oxide
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NDCs	Nationally Determined Contributions
NIWA	National Institute of Water and Atmospheric Research
NGOs	Non-government Organisations
NZCC	New Zealand Climate Commission

NZCCP	New Zealand Climate Change Programme
NZ ETS	The New Zealand Emissions Trading Scheme
NZH	The New Zealand Herald
NZIER	The New Zealand Institute of Economic Research
NZUs	The New Zealand Units
OECD	Organisation for Economic Co-operation and Development
PCE	The Parliamentary Commissioner for the Environment
RCPs	Representative Concentration Pathways
RMUs	Removal Units
SLAPPs	Strategic Lawsuits Against Public Participation
UCS	Union of Concerned Scientists
US	The United States of America
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF NZ	United Nations International Children's Emergency Fund New Zealand
UNWTO	World Tourism Organization
WMO	The World Meteorological Organisation

## **Introduction**

### **Researching the Climate Crisis in New Zealand**

The climatic future is already upon us, at least in violent spurts.

–Stephen H. Schneider, *Science as a Contact Sport*, 2009

In this introductory chapter, I encapsulate the enormity and complexity of the climate problem and highlight the need for ways to better communicate the issues at stake. I begin by briefly detailing the scientific evidence for global warming and explain the global implications of the findings. Next, I shift my focus to New Zealand. I outline the projections for climate change and discuss the composition of the country's greenhouse gas (GHG) emissions profile. Then, I outline my areas of research, explicating my interest, rationale, theoretical framework, and key concepts before providing an overview of the remaining chapters. In this thesis, I emphasise the issue of power in relation to the climate crisis. As such, my main methodological approach is Norman Fairclough's conceptualisation of critical discourse analysis (CDA). This chapter aims to underscore the urgency of the climate crisis. I go on to advance that New Zealand can no longer drift from one international conference to the next, or from one amendment to another, without lowering emissions.

### **The Scientific Evidence for Global Warming**

Studies of the composition of the Earth's atmosphere date back to the early nineteenth-century. However, early climatic studies were limited by the

available data, resources, and technology. Over time, computer modelling and satellite data advanced. This, coupled with longer-term records, enabled scientists to develop a fuller view of the changes throughout the Earth system. In general, it was observed that the Earth's climate was transforming because of human activities, such as the burning of fossil fuels, deforestation, and agricultural activities.<sup>1</sup> Such actions were found to increase the concentration of greenhouse gases (GHGs) in the atmosphere, leading to the enhancement of the greenhouse effect and the raising of the Earth's average temperature.<sup>2</sup>

Today, the scientific evidence for the warming of the Earth's atmosphere is unequivocal.<sup>3</sup> The Intergovernmental Panel on Climate Change (IPCC) first asserted that human activities affect the climate in its second report (AR2) published in 1996.<sup>4</sup> Since then, more empirical evidence has been obtained about

---

<sup>1</sup> H Le Treut et al., "Historical Overview of Climate Change," in *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. S Solomon et al., (Cambridge: Cambridge University Press, 2007), <https://www.ipcc.ch/site/assets/uploads/2018/03/ar4-wg1-chapter1.pdf>.

<sup>2</sup> In brief, the Earth's climate is driven by the incoming energy from the sun, the outgoing energy from the Earth, and the role of gases and aerosols in the atmosphere. The energy that flows from the Sun is either absorbed by the atmosphere or at the surface. Then, some of this energy is reemitted back as heat radiation. However, there are GHGs in the atmosphere that prevents this radiation from escaping back to outer space and, as a result, it keeps the Earth warmer than it would otherwise be. This atmospheric "blanketing" is referred to as "the natural greenhouse effect". This process is a natural phenomenon; however, population growth coupled with more production and consumption of natural resources have increased the level of GHG emissions in the atmosphere.

<sup>3</sup> See Naomi Oreskes, "The Scientific Consensus on Climate Change," *Science* 306, no. 5702 (2004), <https://doi.org/10.1126/science.1103618>; James Lawrence Powell, "Climate Scientists Virtually Unanimous," *Bulletin of Science, Technology & Society* 35, no. 5-6 (2015), <https://doi.org/10.1177/0270467616634958>; John Cook et al., "Consensus on Consensus: A Synthesis of Consensus Estimates on Human-Caused Global Warming," *Environmental Research Letters* 11, no. 4 (2016), <https://doi.org/10.1088/1748-9326/11/4/048002>.

<sup>4</sup> D Albritton et al., "Technical Summary," in *Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change*, ed. J Houghton et al., (Cambridge: Cambridge University Press, 1996), 39, [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_sar\\_wg\\_I\\_full\\_report.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf). See also Ehsan

the human influences on the changing composition of the Earth's atmosphere.<sup>5</sup>

The IPCC's latest climate assessment report (AR5) stated:

It is certain that Global Mean Surface Temperature has increased since the late 19<sup>th</sup> century. Each of the past three decades has been successively warmer at the Earth's surface than all the previous decades in the instrumental record, and the first decade of the 21<sup>st</sup> century has been the warmest.<sup>6</sup>

More recently, in a special report, entitled *Global Warming of 1.5°C*, the IPCC proclaimed: "Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C."<sup>7</sup>

The IPCC further observed that global emission levels were the highest so far, reaching  $49 \pm 4.5$  gigatonnes of carbon dioxide equivalent (Gt CO<sub>2</sub>eq) (for the year 2010). It was found that the growth rate of global GHG emissions had also increased. From 2000 to 2010, global emissions grew on average by about 2.2%

---

Masood, "Climate Report 'Subject to Scientific Cleansing,'" *Nature*, June 13, 1996, <https://doi.org/10.1038/381546a0>.

<sup>5</sup> See The Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. Core Writing Team, R.K Pachauri, and L.A. Meyer (Geneva: The Intergovernmental Panel on Climate Change, 2015), [https://www.ipcc.ch/site/assets/uploads/2018/05/SYR\\_AR5\\_FINAL\\_full\\_wcover.pdf](https://www.ipcc.ch/site/assets/uploads/2018/05/SYR_AR5_FINAL_full_wcover.pdf).

<sup>6</sup> D. L. Hartmann et al., "Observations: Atmosphere and Surface.," in *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. T. F Stocker et al., (Cambridge: Cambridge University Press, 2013), 161, [https://www.ipcc.ch/site/assets/uploads/2017/09/WG1AR5\\_Chapter02\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2017/09/WG1AR5_Chapter02_FINAL.pdf). See also World Meteorological Organization, "2019 Concludes a Decade of Exceptional Global Heat and High-Impact Weather," news release, December 3, 2019, <https://public.wmo.int/en/media/press-release/2019-concludes-decade-of-exceptional-global-heat-and-high-impact-weather>.

<sup>7</sup> According to the IPCC, "pre-industrial" refers to the onset of large-scale industrial activity around 1750 and the period 1850–1900 is used to approximate the pre-industrial global mean surface temperature. V Masson-Delmotte et al., "Summary for Policymakers," in *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*, eds. V Masson-Delmotte et al., (Geneva: Intergovernmental Panel on Climate Change, 2018), 6, [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf).

per year, up from 1.6% on average per year for the period between 1970 and 2000. The United Nations Environment Programme's (UNEP) *Emissions Gap Report 2018* noted the total annual GHG emissions (excluding land-use change) for 2017 had reached a record high of 49.2 Gt CO<sub>2</sub>eq.<sup>8</sup> Thus, from the climate science data, the amount of GHGs in the atmosphere are at unprecedented levels and, as a result, the Earth is warmer.

The impacts from GHG emissions—from the pre-industrial period to the present—have already and will continue to bring about changes in the climate system. In this sense, even if global GHG emissions were arrested, the impacts of global warming, albeit less severe, would still occur.<sup>9</sup> Examples of the effects of rising global surface temperature include heavy precipitation events, more droughts and heatwaves, and more frequent and intense hurricanes. Such impacts of global warming can pose a threat to people's safety, water and food supply, and health. There are also other less understood effects, such as positive (self-reinforcing) feedback; which is where climate change itself amplifies warming.<sup>10</sup>

---

<sup>8</sup> United Nations Environment Programme, *Emissions Gap Report 2018* (Nairobi: United Nations Environment Programme, 2018), 6, 19-21, <https://www.unenvironment.org/resources/emissions-gap-report-2018>.

<sup>9</sup> For example, the oceans have absorbed some of the extra emissions of GHGs in the atmosphere, and this has changed its circulation and chemistry. The result has been, among other changes, a warming of the water's temperature, rising sea levels, melting polar ice, acidification, higher salinity, and erosion. Moreover, oceans not only affect human life, but they also support many diverse and unique ecosystems such that, any changes to the ocean can affect their ecosystem survival.

<sup>10</sup> See Will Steffen et al., "Trajectories of the Earth System in the Anthropocene," *Proceedings of the National Academy of Sciences* 115, no. 33 (2018), <https://doi.org/10.1073/pnas.1810141115>.

Moreover, the harms of a warming planet are disproportionately spread. Certain populations are at a higher risk of the adverse consequences of global warming. These are disadvantaged and vulnerable populations, including children, the elderly, persons with disabilities, and indigenous peoples (who are often dependent on agriculture or coastal and marine resources for their livelihood).<sup>11</sup> Those living in Arctic ecosystems regions, dryland regions, small-island developing states, and least developed countries are also at higher risk from climate change. Country examples include Haiti, Nigeria, Yemen, the Philippines, and Kiribati. Additionally, many of these nations have ineffective governments and/or are war-torn (conflict-prone). It is important to point out that these poor and marginalised populations have contributed the least to rising emissions but have few resources to escape, militate against, and adapt to climate change.<sup>12</sup>

For this research, the distinction between “climate” and “weather” needs to be clarified. Generally, climate is defined as “the average weather,” or more rigorously, it is referred to as “the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years.”<sup>13</sup> In contrast, weather is referred to as atmospheric conditions that occur locally over a shorter period of time, ranging from minutes, hours, or days. As such, here, “climate change” is defined as “a

---

<sup>11</sup> V Masson-Delmotte et al., "Summary for Policymakers," 9.

<sup>12</sup> The issue of climate change, emissions inequality, and social life will be discussed in detail in chapter one.

<sup>13</sup> The Intergovernmental Panel on Climate Change, *Climate Change 2014*, 119-20.

change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.”<sup>14</sup> So, climate parameters are not defined by a weather event, but by averages over a given period (normally between 20 and 30 years).<sup>15</sup>

“Global warming” has often been used interchangeably with “climate change”; however, the two terms are not synonymous.<sup>16</sup> Here, global warming is defined as “the gradual increase, observed or projected, in global surface temperature, as one of the consequences of radiative forcing caused by anthropogenic emissions.”<sup>17</sup> In short, global warming results in climate change. In addition, I use a range of terms to describe the predicament that is facing the world, including “climate crisis,” “climate emergency,” “climate collapse,” and “climate breakdown.”

---

<sup>14</sup> Ibid., 120.

<sup>15</sup> Andy Reisinger, *Climate Change 101: An Educational Resource: Science, Impacts, Adaptation, Mitigation, Decision-Making Challenges* (Wellington: Institute of Policy Studies and New Zealand Climate Change Research Institute 2009), 12-13, [https://www.wgtn.ac.nz/sgees/research-centres/documents/front\\_matter.pdf](https://www.wgtn.ac.nz/sgees/research-centres/documents/front_matter.pdf).

<sup>16</sup> Anthony Leiserowitz et al., *What's in a Name? Global Warming vs. Climate Change* (New Haven: Yale University and George Mason University, 2014).

<sup>17</sup> The Intergovernmental Panel on Climate Change, *Climate Change 2014*, 124. According to the Head of the Climate Impacts at the Met Office Hadley Centre, Professor Richard Betts, “global heating” is technically a more correct term than global warming to describe the changes in the world’s climate. In this thesis, I prefer the term global warming. See Jonathan Watts, “Global warming should be called global heating, says key scientist,” *The Guardian*, December 13, 2018, <https://www.theguardian.com/environment/2018/dec/13/global-heating-more-accurate-to-describe-risks-to-planet-says-key-scientist>.

## New Zealand's Changing Climate

New Zealand has not escaped the effects of cumulative GHG emissions. Over the past century, the temperature on average around the country has increased by about 1°C. In *Environment Aotearoa: 2019*, the Ministry for the Environment (MfE) and Stats NZ reported: “The average annual temperature has not been this warm in the past 10,000 years, which is likely to be near or already outside the range that humans and current ecosystems have experienced here.”<sup>18</sup> Around the coastline, ocean surface temperatures have seen a similar but smaller average rise of 0.7°C, sea-level measurements have risen 14 to 22 centimetres, and ocean acidification was recorded off the coast of Otago. Additionally, from 1977 to 2016, glacier ice volumes have declined by about 25% or 13.3 cubic kilometres. There were also observed changes in the level of rainfall, with increases in the southwest of the South Island and decreases in the north of the North Island. Other significant variations included changes in the number of frost days (< 0°C), warm days (> 25°C), the level of soil moisture, extreme wind, and sunshine hours.<sup>19</sup>

The climate breakdown also leads to the intensification of other pressing national trends. For instance, it reinforces inequalities and inequities in health. The cultural and social group differences are substantial, with Māori, Pasifika,

---

<sup>18</sup> Ministry for the Environment and Stats NZ, *Environment Aotearoa 2019* (Wellington: Ministry for the Environment and Stats NZ, 2019), 99, <https://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/environment%20-aotearoa-2019.pdf>.

<sup>19</sup> *Ibid.*, 99-100.

and low-income groups at a higher risk of adverse health impacts.<sup>20</sup> There are also wide-ranging yet less explored secondary effects from global warming. For example, on tourism, infrastructure, socio-cultural attitudes, and lifestyle.

Against this background, the risks and consequences of global warming for New Zealand are not minor.

Detailed projections of New Zealand's future climate in both a low and high-carbon world can be found on the National Institute of Water and Atmospheric Research's (NIWA) website.<sup>21</sup> In general, the future climatic changes around New Zealand will reflect worldwide changes (as summarised earlier). However, there are some slight differences. For instance, it is expected that the national temperature rise will be less than the global average because of the surrounding ocean acting as a buffer. As such, the temperature is projected to rise within the range of 0.7 to 1.0°C (from a low to high-emissions scenario) by 2040 and 0.7 to 3.0°C by 2090 (relative to the 1986-2005 period).<sup>22</sup> In terms of

---

<sup>20</sup> See Hayley Bennett et al., "Health and Equity Impacts of Climate Change in Aotearoa-New Zealand, and Health Gains from Climate Action," *New Zealand Medical Journal* 127, no. 1406 (2014), <http://www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2014/vol-127-no-1406/6366>; Rhys Jones et al., "Climate Change and the Right to Health for Māori in Aotearoa/New Zealand," *Health and Human Rights Journal* 16, no. 1 (2014), <https://www.jstor.org/stable/10.2307/healhumarigh.16.1.54>; The Royal Society of New Zealand, *Human Health Impacts of Climate Zealand Change for New Zealand: Evidence Summary*, (Wellington: The Royal Society of New Zealand, 2017), <https://www.royalsociety.org.nz/assets/documents/Report-Human-Health-Impacts-of-Climate-Change-for-New-Zealand-Oct-2017.pdf>. Also, young people may encounter more mental health and stress issues, such as anxieties for potential future outcomes, while those aged 65 and over are more likely to suffer from heat-related illness and injury and illness from extreme weather events.

<sup>21</sup> "Climate Change Scenarios for New Zealand," NIWA, accessed December 25, 2019, <https://niwa.co.nz/our-science/climate/information-and-resources/clivar/scenarios>.

<sup>22</sup> Ministry for the Environment, *Climate Change Projections for New Zealand: Atmosphere Projections Based on Simulations from the IPCC Fifth Assessment*, 2<sup>nd</sup> ed (Wellington: Ministry for the Environment, 2018), 13, <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/Climate-change-projections-2nd-edition-final.pdf>.

sea-level rise, the surrounding waters will be about 10% higher than the global average. If more of the Antarctic ice sheets collapse then this percentage will be substantially higher.<sup>23</sup> Rainfall patterns, given New Zealand's topography, will vary across different parts of the country. It is expected that annual average rainfall will decrease in the east and north, and an increase in other parts of the country.<sup>24</sup>

More comprehensively, the impacts of global warming on New Zealand can be outlined as follows: more coastal flooding and erosion; changes to the availability of and demand for water resources; heightened risk of extreme fire conditions; increased vulnerability to native flora and fauna; a rise in new exotic pests, weeds, and diseases; possible loss of cultural sites (e.g., early settlement sites and burial grounds); changes to the marine environment; adverse effects on urban areas and infrastructure; changes to the agriculture, horticulture, and tourism sectors; and a need to adapt and find new opportunities for economic development.<sup>25</sup> The MfE has also remarked that estimates of the potential consequences of global warming will improve over time but that there will always be some natural variability and gaps in knowledge. Nevertheless, if GHGs continue to rise unabated, the risks from extreme weather events like

---

<sup>23</sup> *New Zealand's Seventh National Communication - Fulfilling Reporting Requirements under the United Nations Framework Convention on Climate Change and the Kyoto Protocol* (Wellington: Ministry for the Environment, 2017), 157, <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/21-12-17%20Web%20FINAL%20-%20Seventh%20National%20Communication%202017.pdf>.

<sup>24</sup> The Royal Society of New Zealand, *Climate Change Implications for New Zealand* (Wellington: The Royal Society of New Zealand, 2016), 20-22, <https://www.royalsociety.org.nz/assets/documents/Climate-change-implications-for-NZ-2016-report-web3.pdf>.

<sup>25</sup> Ministry for the Environment and Stats NZ, *Environment Aotearoa 2019*, 100-02.

storms, heat waves, and droughts will be elevated. And as the MfE observed, “Stopping further emissions will not return us to a normal climate.”<sup>26</sup>

### **New Zealand’s Expanding Greenhouse Gas Inventory**

The MfE reported, “Part of the New Zealand warming trend is probably due to natural variability, but a significant contribution to the warming can be attributed to greenhouse gas increases.”<sup>27</sup> Accordingly, in 1990, national gross emissions were 65,668.3 kilotonnes of carbon dioxide equivalent (kt CO<sub>2</sub>-e) and by 2017, that figure grew to 80,853.5 kt CO<sub>2</sub>-e.<sup>28</sup> This represents an increase of 23.1% or 15,185.2 kt CO<sub>2</sub>-e.<sup>29</sup> For this period, the average annual growth in gross emissions was 0.8%.<sup>30</sup> Overall, New Zealand’s total national emissions account for less than 0.2% of global emissions.<sup>31</sup> However, its per capita emissions are high. In 2015, of the 43 Annex I countries, New Zealand had the sixth highest per-person rate of GHG emissions (17.5 kt CO<sub>2</sub>-e).<sup>32</sup>

---

<sup>26</sup> Ibid., 100.

<sup>27</sup> Ministry for the Environment, *Climate Change Projections for New Zealand*, 19-20.

<sup>28</sup> For clarification, “net emissions” are total emissions minus sequestration.

<sup>29</sup> Gross emissions are the total emissions from the energy, industrial processes and product use, agriculture, and waste sectors. It does not include net removals from the land use, land-use change, and forestry sector.

<sup>30</sup> Ministry for the Environment, *New Zealand’s Greenhouse Gas Inventory 1990–2017* (Wellington: Ministry for the Environment, 2019), 55, <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/nz-greenhouse-gas-inventory-2019.pdf>.

<sup>31</sup> New Zealand Productivity Commission, *Low-Emissions Economy: Final Report* (Wellington: New Zealand Productivity Commission, 2018), 2, [https://www.productivity.govt.nz/assets/Documents/4e01d69a83/Productivity-Commission\\_Low-emissions-economy\\_Final-Report.pdf](https://www.productivity.govt.nz/assets/Documents/4e01d69a83/Productivity-Commission_Low-emissions-economy_Final-Report.pdf).

<sup>32</sup> Ministry for the Environment and Stats NZ, *Environment Aotearoa 2019*, 94. The average was 13.2 kt CO<sub>2</sub>-e. Annex I Parties were nations committed to pursuing national policies and measures with the non-legally binding aim of returning their GHG emissions level to 1990 levels by 2000.

In 2017, the national gross emissions were mainly composed of near equal proportions of carbon dioxide (CO<sub>2</sub>) (44.6% or 36,023.7 kt CO<sub>2</sub>-e) and methane (CH<sub>4</sub>) (42.2% or 34,132.1 kt CO<sub>2</sub>-e).<sup>33</sup> In 1990, CH<sub>4</sub> was the largest emitted GHG, accounting for 49.0% of gross emissions (32,150.0 kt CO<sub>2</sub>-e), while CO<sub>2</sub> accounted for 38.8% (25,455.2 kt CO<sub>2</sub>-e). Based on this data, both CH<sub>4</sub> and CO<sub>2</sub> have increased over time, reflecting the growth in population and the economy. Of the two gases, CO<sub>2</sub> emissions have increased dramatically, which is attributable to human activities from the energy sector.

In comparison to other developed economies, New Zealand's GHG inventory has a high proportion of the biological gases of CH<sub>4</sub> and nitrous oxide (N<sub>2</sub>O) (11.3% or 9,116.5 kt CO<sub>2</sub>-e). These two gases combined comprise over half of the gross national emissions. The prominence of these gases underscores the key role that the agriculture sector plays in the nation's economy.<sup>34</sup> Most of these emissions are by-products of pastoral farming; CH<sub>4</sub> is mostly emitted when ruminant livestock—dairy cattle, non-dairy cattle, sheep and deer—belch, while most of the emitted N<sub>2</sub>O comes from the interaction of animal urine with microbes in the soil.

Since 1990, emissions from the energy sector have increased by 38.2%, reaching 32,876.6 kt CO<sub>2</sub>-e in 2017. Of the total, “road transportation” and

---

<sup>33</sup> Ministry for the Environment, *New Zealand's Greenhouse Gas Inventory 1990–2017*, 5.

<sup>34</sup> See Stats NZ, *Global New Zealand International Trade, Investment, and Travel Profile: Year Ended December 2017* (Wellington: Ministry of Foreign Affairs and Trade and Stats NZ, 2018), <https://www.stats.govt.nz/reports/global-new-zealand-year-ended-december-2017>.

“public electricity and heat production” were the main emitting categories, accounting for 44.0% (14,456.7 kt CO<sub>2</sub>-e) and 10.9% (3,596.2 kt CO<sub>2</sub>-e).<sup>35</sup> Much of the country’s energy requirements are met by domestic production. However, New Zealand is still reliant on the importation of crude oil and coal. Overall, its energy self-sufficiency was 76.4%.<sup>36</sup>

The sectors of industrial processes and product use (IPPU) and waste also contribute to the nation’s GHG inventory. For 2017, these sectors accounted for 6.1% (or 4,968.6 kt CO<sub>2</sub>-e) and 5.1% (or 4,124.7 kt CO<sub>2</sub>-e) of gross emissions.<sup>37</sup> From 1990 to 2017, New Zealand’s gross emissions have been largely emitted by the agriculture and energy sectors. More specifically, the main contributors to the nation’s gross emissions were the categories: enteric fermentation from dairy cattle, road transportation, agricultural soils, product uses as substitutes for ozone-depleting substances, and manufacturing industries and construction.<sup>38</sup>

In general, the scientific data shows that New Zealand has contributed and continues to contribute, to global GHG emission levels. However, its GHG portfolio differs from many countries, with a higher proportion of CH<sub>4</sub> emissions,

---

<sup>35</sup> Ministry for the Environment, *New Zealand’s Greenhouse Gas Inventory 1990–2017*, 72-3.

<sup>36</sup> Ministry of Business Innovation and Employment, *Energy in New Zealand 2018* (Wellington: Ministry of Business, Innovation & Employment, 2018), 14-15, <https://www.mbie.govt.nz/assets/d7c93162b8/energy-in-nz-18.pdf>. According to MBIE, self-sufficiency is calculated as domestic production divided by total primary energy supply. Total primary energy supply is the amount of energy available for use in New Zealand. It is calculated as: Total primary energy supply = Production + Imports – Exports – Stock change. See also Ministry of Business, Innovation & Employment, *Energy in New Zealand 2019*, (Wellington: Ministry of Business, Innovation & Employment, 2019), <https://www.mbie.govt.nz/assets/energy-in-new-zealand-2019.pdf>.

<sup>37</sup> Ministry for the Environment, *New Zealand’s Greenhouse Gas Inventory 1990–2017*, 115-16.

<sup>38</sup> *Ibid.*, 3.

reflecting how agriculture underpins a lot of the country's prosperity. Still, like other nations, it cannot escape the ramifications of a warmer planet. Therefore, it cannot absolve itself of its obligations to citizens, residents, and other national inhabitants.

### **Informing and Engaging News Audiences**

It is clear then that the interval between the establishment of scientific consensus on global warming and efficacious climate action continues to widen, and climate change continues to destabilise and destroy the environment.<sup>39</sup> This raises questions about how the complex, technical issues have been publicly communicated and if improvements in public communication can incite the necessary political will to adopt climate action. Communication researchers know that audiences rarely sustain interest in complex events and issues for long periods. Either more recent incidents usurp attention or “same-as-it-ever-was” reporting leads to a sense of anxiety, dread, and/or melancholia about resolving the situation, assuming people believe that there is a problem.<sup>40</sup> This, then, prompts the questions of how popular attention can ever be held? If social action is to stem the advancement of global warming, how should the realities of political and personal climate inaction be addressed?

---

<sup>39</sup> Efficacious climate action is taken to mean action that addresses the causes and not the symptoms of global warming. Correspondingly, it is action that lowers the levels of GHG emissions.

<sup>40</sup> See Susan D. Moeller, *Compassion Fatigue: How the Media Sell Disease, Famine, War, and Death* (New York: Routledge, 1999); Suzanne Franks, *Reporting Disasters: Famine, Aid, Politics and the Media* (London: Hurst & Company, 2013).

News, it is argued, can keep the public informed on matters of pertinent concern.<sup>41</sup> This presupposes that journalists can discern (signs of) injustices and abuses of power. It follows that without a free press, information and debate suffers, limiting the vibrancy of the public sphere.<sup>42</sup> For that reason, the news media industry has been viewed as a vital pillar of democracy, holding those in power to account on behalf of society (the Fourth Estate).<sup>43</sup> But in this new era—characterised by the consolidation, growth and influence of transnational conglomerates, and the ascendancy of digital platforms—many news institutions have resorted to what critics see as “superficial” and “sensational” content in an effort to succeed.<sup>44</sup> Arguably, the political culture of the news industry has eroded, bringing into question its function and nature. This makes research into its operations more pressing.

---

<sup>41</sup> See Maxwell E McCombs and Donald L Shaw, "The Agenda-Setting Function of Mass Media," *Public Opinion Quarterly* 36, no. 2 (1972), <https://doi.org/10.1086/267990>; Herbert J Gans, *Deciding What's News: A Study of CBS Evening News, NBC Nightly News, Newsweek, and Time* (Illinois: Northwestern University Press, 1979); Todd Gitlin, *The Whole World Is Watching: Mass Media in the Making and Unmaking of the New Left* (Berkeley: University of California Press, 1980); Bill Kovach and Tom Rosenstiel, *The Elements of Journalism*, 3 ed. (New York: Three River Press, 2014).

<sup>42</sup> Jürgen Habermas, *The Structural Transformation of Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger (Cambridge, MA: MIT Press, 1989).

<sup>43</sup> See Nicholas Carah and Eric Louw, *Media & Society: Production, Content & Participation* (London: SAGE Publications, 2015).

<sup>44</sup> See Jürgen Krönig, "Elite Versus Mass: The Impact of Television in an Age of Globalisation," *Historical Journal of Film, Radio and Television* 20, no. 1 (2000), <https://doi.org/10.1080/014396800100026>; Matthew Baum, "Sex, Lies, and War: How Soft News Brings Foreign Policy to the Inattentive Public," *The American Political Science Review* 96, no. 1 (2002), <https://doi.org/10.1017/S0003055402004252>; Markus Prior, "Any Good News in Soft News? The Impact of Soft News Preference on Political Knowledge," *Political Communication* 20, no. 2 (2003), <https://doi.org/10.1080/10584600390211172>; Morten Skovsgaard, "A Tabloid Mind? Professional Values and Organizational Pressures as Explanations of Tabloid Journalism," *Media, Culture & Society* 36, no. 2 (2014), <https://doi.org/10.1177/0163443713515740>; Robert McChesney, *Rich Media, Poor Democracy: Communication Politics in Dubious Times*, (New York: The New Press, 2015), ProQuest Ebrary.

Generally, there are two prevailing concepts of journalism: journalism as serving the public interest and journalism as a corporate good (especially since the late 1970s following the rise of media conglomerates). The former sees journalism as defending the basic principles of freedom and transparency and voicing truth to power. News institutions are often lauded as one of the few mechanisms that can draw people into the political system. Today, though, journalism everywhere is in varying degrees of crisis, which gives credence to the latter view of journalism. Here, attention is drawn to the business of news production and the impact of the internet on journalism. For such reasons, it is difficult to construct a convincing definition of journalism. These issues and ideas will be developed further in chapter four. For now, in a broad sense, I take journalism to be the practice of making news for broadcast or publication.

Admittedly, news institutions are not the sole definers of unfolding events or issues. Traditionally, the media was viewed as being all-encompassing, where its messages, images, and ideas flew directly from the sender to the receiver.<sup>45</sup> However, later studies found the process of communication to be more complex and challenged the understanding that the media had a powerful or universal influence.<sup>46</sup> For instance, in *Encoding/ Decoding*, Stuart Hall wrote that

---

<sup>45</sup> Denis McQuail, *McQuail's Mass Communication Theory*, 4th ed. (London: SAGE Publications, 2000); Jennings Bryant and Dolf Zillmann, "A Retrospective and Prospective Look at Media Effects," in *The SAGE Handbook of Media Processes and Effects*, eds. Robin Nabi and Mary Beth Oliver (Thousand Oaks: SAGE Publications, 2009).

<sup>46</sup> See Shearon Lowery and Melvin DeFleur, *Milestones in Mass Communication Research: Media Effects* (New York: Longman, 1995); Matthew Nisbet and John Kotcher, "A Two-Step Flow of Influence? Opinion-Leader Campaigns on Climate Change," *Science Communication* 20, no.3 (2009), <https://doi.org/10.1177/1075547008328797>.

“decodings do not follow inevitably from encodings.”<sup>47</sup> He went on to hypothesise three ways that the audience can take the connoted meaning from a televisual discourse: the dominant-hegemonic position, the negotiated code, and an oppositional code. Here, he suggests that how an individual consumes media content is not a given. Put differently, media power can vary.

Questions about the levels and kinds of media effects still persist.<sup>48</sup>

Nevertheless, today’s news organisations have a public platform that can reach a mass audience in a matter of seconds. Moreover, their structured relationships with social actors give them a crucial role in arbitrating information. They can represent and/or reproduce particular understandings of reality to members of the public.<sup>49</sup> Against this setting, I argue that the news media, now more than ever, are an important conduit of information in the challenge to avert an ever-growing climate collapse.

## Research Objectives

For a long time now, there has been a basic understanding of what climate actions need to be taken, yet the world is no closer to averting an ecological and

---

<sup>47</sup> Stuart Hall, “Encoding/ Decoding,” in *Media and Cultural Studies: Keywords*, eds. Meenakshi Gigi Durham and Douglas M Kellner (Malden, MA: Blackwell Publishing, 2006), 171.

<sup>48</sup> I leave the issue of media effects and audience reception largely unexplored. For a discussion on the influence and effects of the media see Janet Staiger, *Media Reception Studies* (New York: New York University Press, 2005); David Gauntlett, *Moving Experiences: Media Effects and Beyond*. 2<sup>nd</sup> ed. (Eastleigh: John Libbey, 2005); Jennings Bryant and Mary Beth Oliver, eds. *Media Effects: Advances in Theory and Research* (New York: Routledge, 2009); Magriet Pitout, “Media Audience Theory,” in *Media Studies: Media Content and Media Audiences*, ed. Pieter Fourie (Cape Town: Juta & Co Ltd, 2009).

<sup>49</sup> See Stuart Hall et al., *Policing the Crisis: Mugging, the State and Law and Order* (London: The Macmillan Press, 1978); Gaye Tuchman, *Making News: A Study in the Construction of Reality* (New York: The Free Press, 1978).

social disaster. However, the causes of inaction are multifaceted. It can result from unequal power relations, be cued by ideological constructions, arise out of the convolutions of climate change governance, and is deeply embedded within socio-psychological consciousness.<sup>50</sup> The nature and scale of change, as well as the demand for cooperation and action, are unparalleled. This makes it difficult to capture, motivate, and/or retain people's interest and action. Still, many of these barriers to action have been identified and in view of the work done in the area, this research will provide a basis for assessing how the New Zealand digital news media have represented global warming-related issues in 2017 and advance ways to improve their performance.

In this thesis, it is advanced that the communication of global warming-related issues and events takes place across a fragmented mediascape and in highly politicised and polarised rhetorical environments. For these reasons, considerations need to be given as to whether the perspectives and interpretative frameworks presented are informed and comprehensive. Against this background, this thesis seeks to answer four questions:

1. How is the climate crisis to be understood and represented?
2. What encourages and impedes action against global warming and its causes?
3. How have New Zealand's two leading digital news publishers, *Stuff* and *The New Zealand Herald (NZH)*, told the story of global warming and climate change?
4. Are these news representations effective for raising awareness of the climate crisis and in facilitating change?

Addressing these questions, it is argued, will lead to more awareness about the social production of knowledge through language and its role in perpetuating

---

<sup>50</sup> See Susanne C. Moser, "Communicating Climate Change: History, Challenges, Process and Future Directions." *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 1 (2010), <https://doi.org/10.1002/wcc.11>.

power relations that help to sustain and advance the warming of the Earth. As Fairclough wrote, “consciousness is the first step towards emancipation.”<sup>51</sup>

The empirical components of this thesis are drawn from digital news content and interviews with journalists. The publications from *Stuff* and *NZH* dominate, to a large extent, the print and online news market in New Zealand.<sup>52</sup> From the news texts, the issue of communicative power—the power of language in news to identify the climate crisis and set forth approaches to climate action—is explored. However, in doing so, other wider societal issues are brought to the fore, namely, power and ideology. It is also crucial to acknowledge that global warming brings a stark realisation of how the future has been pulled into the present. Current human decisions will chart how the future will likely unfold. For that reason, it is important to examine how a pollution problem evolved into an existential crisis.

It also needs to be mentioned that the content of a news text often entails a multitude of forces that go beyond the contemporary event or issue itself. Meaning is constructed on multiple scales and is embedded in macro-relations and micro-processes such that the ability of journalists to fulfil their role of informing the public can be tapered. For that reason, interviews with journalists will provide a more complete understanding of the processes of making news.

---

<sup>51</sup> Norman Fairclough, *Language and Power* (Essex: Pearson Education Limited, 1989), 1.

<sup>52</sup> See David Levy and Robin Foster, *Impact of the Proposed NZME/Fairfax Merger on Media Plurality in New Zealand: Expert Review of the Commerce Commission’s Draft Determination Document*, November 16, 2016, [https://comcom.govt.nz/\\_\\_data/assets/pdf\\_file/0031/77575/Expert-report-on-Commissions-draft-determination-on-NZME-Fairfax-authorisation-16-November-2016.pdf](https://comcom.govt.nz/__data/assets/pdf_file/0031/77575/Expert-report-on-Commissions-draft-determination-on-NZME-Fairfax-authorisation-16-November-2016.pdf).

From this study, the challenges and opportunities for journalists to communicate global warming matters to news audiences can be identified. My observations here lead to the development of more nuanced approaches to encapsulate the enormity of the issue and pave ways for the system-wide solutions needed to confront the crisis.

### **Theoretical Considerations**

To provide answers to the four research questions, I investigate the production and representation of the climate crisis through the theoretical framework of critical theory and use the methodological approach of critical discourse analysis. As stated earlier, the long-lasting environmental and social effects of accumulating GHG emissions are well known, yet there is still little progress on climate mitigation (and adaptation). This raises the following questions: Why has the Earth's atmosphere continued to warm? Why has action on climate change been largely deferred? And, on these matters, who influences key decisions and outcomes?

Everyone contributes to rising GHG emissions, so we all have a role to play in averting more destruction and devastation. But certain individuals and groups—the wealthy (the top 10% of the global population) and some 100 corporations—have gained more from the despoliation and commodification of nature.<sup>53</sup> They are, therefore, more culpable and should be liable for the climate

---

<sup>53</sup> See Lucas Chancel and Thomas Piketty, *Carbon and Inequality: From Kyoto to Paris Trends in the Global Inequality of Carbon Emissions (1998-2013) & Prospects for an Equitable Adaptation Fund* (Paris: Paris School of Economics, 2015), <http://piketty.pse.ens.fr/files/ChancelPiketty2015.pdf>; Timothy Gore, "Extreme Carbon

problem. Put simply, people's ability to cause and effect change is not evenly distributed. Against this setting, this research sets out to critique the climate crisis in its totality, identifying its political, economic, social, and ecological causes and related problems. Then, I situate the role of New Zealand journalism within the struggle to make known the issues and events connected to global warming. In other words, I explore the roles it has performed and can perform primarily through its use of language.

### *Critical Theory*

“Critical theory” has a long history. Its traditional concern was the advancement and entrenchment of capitalism and its effects on human consciousness. It drew heavily from Marxist traditions, as exemplified by the writings that came from the Frankfurt School.<sup>54</sup> It needs to be mentioned that these early works were criticised for their limited interpretative framework.<sup>55</sup> Still, in essence, their goal was the development of analyses and concepts of society that could transform the world into a more desirable place. The newer conceptual approaches to critical theory have continued this pursuit of better

---

Inequality: Why the Paris Climate Deal Must Put the Poorest, Lowest Emitting and Most Vulnerable People First," news release, December 2, 2015, <https://www.oxfam.org/en/research/extreme-carbon-inequality>; Paul Griffin, *CDP Carbon Majors Report 2017* (London: Carbon Disclosure Project, 2017), <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772>.

<sup>54</sup> See Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (Abingdon: Routledge, 1964); Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment*, trans. J Cummings (London: Verso, 1997).

<sup>55</sup> See Christian Fuchs, *Critical Theory of Communication: New Readings of Lukács, Adorno, Marcuse, Honneth and Habermas in the Age of the Internet*, (London: University of Westminster Press, 2016), <http://dx.doi.org/10.16997/book1>; Raymond Williams, *Marxism and Literature* (Oxford: Oxford University Press, 1977).

social outcomes, calling for a rethinking of knowledge and power that goes beyond standard traditional explanations.<sup>56</sup>

Scholars Raymond Morrow and David Brown argued that critical theory is a slippery practice with numerous definitions. The “critique” in critical theory can be used to unmask the ideological constructions of social relations, unveil the “presupposition of approaches to the nature of reality, knowledge, and explanation,” and interpret the linguistic foundations of representation.<sup>57</sup> But it is also associated with the researcher.<sup>58</sup> In this respect, the authors explained that despite the “totalising unification and anarchic fragmentation” of this form of inquiry it allows for a re-envisioning of the world.

Similarly, political theorist Stephen Bronner wrote, “Critical theory refuses to identify freedom with any institutional arrangement or fixed system of thought. It questions the hidden assumptions and purposes of competing theories and existing forms of practice.”<sup>59</sup> He added that “theorists learned to interpret the particular with an eye on the totality.”<sup>60</sup> In this context, critical theory is integrated with a transformative agenda. It seeks to clarify the conditions and activities that keep individuals and factions of society oppressed.

---

<sup>56</sup> See Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences*, trans. Tavistock Publications (London: Routledge, 1970).

<sup>57</sup> Raymond Morrow and David Brown, *Critical Theory and Methodology* (California: SAGE Publications, 1994), 7.

<sup>58</sup> Ibid.

<sup>59</sup> Stephen Eric Bronner, *Critical Theory: A Very Short Introduction*, (New York: Oxford University Press, 2011), 18, ProQuest Ebrary.

<sup>60</sup> Ibid.

This will awaken the intellect in people and pave the way to “solidarity, resistance, and freedom.”<sup>61</sup>

Bronner also found that “critical theory has new conditions to confront: the world has grown larger, new encounters with old civilizations have taken place, identities have multiplied, and—perhaps for the first time—it is possible to speak about a global economy and cultural system.”<sup>62</sup> In view of this, power and political activities and their influence on social transformation are continually evolving. Therefore, the work of critical theory never ceases, nor can it have a fixed approach. Its interpretations and meanings can differ depending on the context and the social phenomena it seeks to change. Sociologist Christian Fuchs also noted this point: “Critical theory is itself dialectical, which means that each new contribution relates to older contributions and sublates them in a constructive manner. A [*sic*] critical theory is therefore not a closed universe, but an open endeavour that cross-references other critical approaches.”<sup>63</sup>

However, none of this suggests that critical inquiries lack rigour or objectivity; rather, the purpose and motivation of the research is made explicit. Against this setting, I define critical theory by its negative dialectical position. That is, I view it as an attempt to free society from the constraints of vested interests and ideas that advance or entrench domination and exploitation. Here, the focus is on how to stop the expanding ecological and social cost of global

---

<sup>61</sup> Ibid., 91.

<sup>62</sup> Ibid., 90.

<sup>63</sup> Fuchs, *Critical Theory of Communication*, 3.

warming. By “dialectical”, I mean that the different workings of society relate to each other. Alternatively, as political scientist Courtney Jung explained, “Engaging in the practice of critical theorizing involves taking a hard look at the things we ourselves believe in, and in trying to uncover where those beliefs come from, why we buy into them, and what work they are doing.”<sup>64</sup> In order to understand more fully how the exercise of power makes the problems of global warming more intractable, power as such needs to be reconsidered in terms of its realities and contradictions.<sup>65</sup>

### *Critical Discourse Analysis*

In *The Archaeology of Knowledge*, Michel Foucault explained that “discourse” cannot be understood only in terms of what is “already-said”, it also must consider the categories and practices that are *a priori* to its construction or its mode of existence. By studying various institutions, such as prisons and clinics, Foucault came to view discourse as containing a series of “signs” that drew from a particular “episteme.” An episteme projects a certain dynamic onto the set of “signifiers” that governs it. This led him to define discourse in its various manifestations: “as the group of statements that belong to a single system of formation.”<sup>66</sup> As such, the emphasis is placed on the rules and practices governing the production of the discursive formations. It is, therefore,

---

<sup>64</sup> Courtney Jung, "Critical Theory and Practice: Bridging the Global and the Personal. A Lecture," in *Globalization, Critique and Social Theory: Diagnoses and Challenges*, ed. Harry Dahms (West Yorkshire: Emerald Publishing Limited, 2015), 167, ProQuest Ebrary.

<sup>65</sup> Fuchs, *Critical Theory of Communication*, 10-13.

<sup>66</sup> Michel Foucault, *The Archaeology of Knowledge and the Discourse of Language* (New York: Vintage Books, 2000), 107.

in the Foucauldian usage that discourse comes to entail not language *per se* but the material practices and structures that determine its power.<sup>67</sup>

Rhetoric and linguist academic Barbara Johnstone explained that “calling what we do ‘discourse analysis’ rather than ‘language analysis’ underscores the fact that we are not centrally focused on language as an abstract system. We tend instead to be interested in what happens when people draw on the knowledge they have about language.”<sup>68</sup> However, there are many ways to realise ideas and information, so each discourse vies for attention. Thus, the understanding of the social world and reality is struggled over; it is not a given. Researchers Maarten Hajer and Wytse Wersteeg also pointed this out: “The basic assumption of discourse analysis is that language profoundly shapes one’s view of the world and reality, instead of being only a neutral medium mirroring it.”<sup>69</sup>

Generally, in discourse analysis, language is understood as having an important role. It gives individuals a way to communicate and understand issues of social concern. As such, it is of central importance in power struggles. However, this is not to imply that power is only a matter of language, but rather that language is not an arbitrary medium. Fairclough argued that language is

---

<sup>67</sup> Saing Te, "The Battle for Happy Valley: News Media, Public Relations, and Environmental Discourse" (master's thesis, Auckland University of Technology, 2010), 10-12.

<sup>68</sup> Barbara Johnstone, *Discourse Analysis* (New Jersey: John Wiley & Sons, 2018), 3.

<sup>69</sup> Maarten Hajer and Wytse Versteeg, "A Decade of Discourse Analysis of Environmental Politics: Achievements, Challenges, Perspectives," *Journal of Environmental Policy & Planning* 7, no. 3 (2005): 176, <https://doi.org/10.1080/15239080500339646>.

first, a part of society, second, a social process, and third, a social practice.<sup>70</sup> He explained, “A text is a product rather than a process—a product of the process of text production.”<sup>71</sup> Or as writer Thomas Huckin noted, “The meaning of text derives not just from the words-on-the-page but also from how those words are used in a particular context.”<sup>72</sup> This means that discourse refers to the text, the practices that create and interpret that text, and the wider social context that enables it.

In collocating “critical” with discourse analysis, closer attention is drawn to the contours of power. Linguist Ruth Wodak wrote, “CDA may be defined as fundamentally concerned with analysing opaque as well as transparent structural relationships of dominance, discrimination, power and control as manifested in language.”<sup>73</sup> Meanwhile, scholar Teun van Dijk observed that it “is a type of discourse analytical research that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced, and resisted by text and talk in the social and political context.”<sup>74</sup> These comments imply that the nature of social relationships is not necessarily apparent, nor is it decent. It

---

<sup>70</sup> Fairclough, *Language and Power*, 22-27.

<sup>71</sup> *Ibid.*, 24.

<sup>72</sup> Thomas Huckin, "Critical Discourse Analysis," in *Functional Approaches to Written Text: Classroom Applications*, ed. Tom Miller (Washington D.C: United States Information Agency, 1997), 79-80.

<sup>73</sup> Ruth Wodak, "What CDA is About - A Summary of its History, Important Concepts and its Developments," in *Methods of Critical Discourse Analysis*, ed. Ruth Wodak and Michael Meyer (London: SAGE Publications, 2001), 2.

<sup>74</sup> Teun van Dijk, "Critical Discourse Analysis," in *The Handbook of Discourse Analysis*, ed. Deborah Schiffrin, Deborah Tannen, and Heidi Hamilton (Massachusetts: Blackwell Publishers, 2003), 352.

is clear, then, that this approach considers discourse not as a pure reflection or representation of society, but rather as a construction or constitution of society.

Accordingly, there are varying approaches to CDA. In this thesis, I follow the works of Norman Fairclough.<sup>75</sup> I view his incorporation of discourse into analyses of social theoretical issues as being pertinent for the topic under consideration. In 1995, he remarked:

By ‘critical’ discourse analysis I mean discourse analysis which aims to systematically explore often opaque relationships of causality and determination between (a) discursive practices, events and texts, and (b) wider social and cultural structures, relations and processes; to investigate how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power; and to explore how the opacity of these relationships between discourse and society is itself a factor securing power and hegemony.<sup>76</sup>

More recently, in a 2013 publication, he wrote that “critical analysis seeks to provide explanations of the causes and development of the crisis, identify possible ways of mitigating its effects and to transform capitalism in less crisis-prone, more sustainable and more socially just directions.”<sup>77</sup> So, CDA attempts to reconcile what society is with what it should and could be.<sup>78</sup> Simply put, it has an emancipatory agenda.

---

<sup>75</sup> For a more detailed discussion of important theoretical approaches to CDA research, see Ruth Wodak and Michael Meyer, eds., *Methods of Critical Discourse Analysis* (London: SAGE Publications, 2001); Norman Fairclough, *Analysing Discourse: Textual Analysis for Social Research*, 2nd ed. (London: Routledge, 2003); Teun A Dijk, *Discourse Studies: A Multidisciplinary Introduction*, 2nd ed. (London: SAGE Publications, 2011).

<sup>76</sup> Norman Fairclough, *Critical Discourse Analysis: The Critical Study of Language* (Essex: Pearson Education Limited, 1995), 132-33.

<sup>77</sup> *Critical Discourse Analysis: The Critical Study of Language*, 2nd ed. (New York: Routledge, 2013), 18-19.

<sup>78</sup> *Analysing Discourse*, 207.

It needs to be underscored that discourse and power are not synonymous. Fairclough stated that “power is not simply discourse, it is not reducible to discourse; ‘power’ and ‘discourse’ are different elements in the social process (or in a dialectical terminology, different ‘moments’).”<sup>79</sup> He explained that “in terms of ‘power in discourse’, discourse is the site of power struggles, and, in terms of ‘power behind discourse’, it is the stake in power struggles—for control over orders of discourse is a powerful mechanism for sustaining power.”<sup>80</sup> Put differently, textual analysis does not supersede a social analysis and critique but rather complements it. So, a micro analysis of the text is linked to a macro analysis of the social relations of power.

According to Fairclough, there are three general stages of doing CDA. These are description, interpretation, and explanation. Of the stages, description involves the identification of formal features of a text. The remaining two stages draw upon qualitative social analysis but can also include quantitative analysis. In the two latter stages, the researcher offers, in a broad sense, an understanding of the situation. As such, Fairclough cautioned that knowledge about what is there will always be limited and partial. Consequently, analytical categories are provisional and are likely to evolve.<sup>81</sup> Still, Fairclough advanced that these approaches can “extend and improve” knowledge. As such, textual analysis and social research can be used to further knowledge on the climate crisis and its possible transformation into a less uncontrollable problem.

---

<sup>79</sup> *Critical Discourse Analysis*, 2nd ed, 4.

<sup>80</sup> *Language and Power*, 74.

<sup>81</sup> *Analysing Discourse*, 14-15.

### *Frames and Narratives*

The definitions of “frames” and “narratives” need to be explained. Sociologist Erving Goffman argued that people actively organise and interpret their social world using frames. He advanced the idea that frames act as a bridging concept between cognition and culture.<sup>82</sup> More recently, communication scholar Stephen Reese described frames as “*organizing principles* that are socially shared and persistent over time, that work *symbolically* to meaningfully *structure* the social world” (italics in original).<sup>83</sup> Thus, framing analysis draws attention to the power of newsrooms to tell audiences how to think about a particular issue or event. As such, news content is not a reflection of reality, that is, a mirror held up to society, rather it is a socio-cultural construct.

Narratives are tales or tellings as a way of knowing. Often the narrative relies on human interest and emotion.<sup>84</sup> Stories that are brought up to evoke some form of sentiment or advance some interest. Scholars D. Jean Clandinin and M. Shaun Murphy argued that narratives relate to the “understanding of experience as a storied phenomenon.”<sup>85</sup> They went on to add, “Lives are lived, told, retold, and relived in storied ways on storied landscapes.”<sup>86</sup> Similarly,

---

<sup>82</sup> Erving Goffman, *Frame Analysis: An Essay on the Organisation of Experience* (Harmondsworth: Harper & Row, 1974), 10-11.

<sup>83</sup> Stephen D. Reese, "Prologue—Framing Public Life: A Bridging Model for Media Research," in *Framing Public Life: Perspectives on Media and Our Understanding of the Social World*, eds. Oscar H. Gandy, August E. Grant, and Stephen D. Reese (Mahwah, NJ: Lawrence Erlbaum Associates, 2001), 11.

<sup>84</sup> Cathy Coulter and Mary Lee Smith, "The Construction Zone: Literary Elements in Narrative Research," *Educational Researcher* 38, no. 8 (2009): 577, <https://doi.org/10.3102/0013189X09353787>.

<sup>85</sup> D. Jean Clandinin and M. Shaun Murphy, "Relational Ontological Commitments in Narrative Research," *Educational Researcher* 38, no. 8 (2009): 598, <https://www.jstor.org/stable/25592174>.

<sup>86</sup> *Ibid.*

communication scholar Bronwen Thomas stated, “Narrative is also often explicitly concerned with worldbuilding and imagining social structures and ways of organising culture and society that may act as a critique of what exists in the real world.”<sup>87</sup> This implies that there are varying degrees of truth to narratives.

Both practices, therefore, can be employed to arrange information and knowledge. Since there are multitudes of possible frames and narratives, the one selected will encourage the audience to understand and react in a particular way. Moreover, certain references, practices, and stories are used more often or are better known than others. So, the selection of a frame or a narrative can privilege certain definitions and reconstructions of social reality over another. This casts a critical spotlight on social relationships, leading to the question of why some frames and narratives are favoured over others. If some positions, ideas, or tales have resonance or are deeply embedded in social consciousness, the material practices and structures involved are brought to the fore. In these settings, language, whether written or spoken, is an important tool in the construction of knowledge and understanding.

### *Capitalism*

This thesis does not analyse “capitalism” per se. It is important to point out that over time, economic transformations, especially since the mid-twentieth century have seen changes to the fabric of the global economy and the Earth’s

---

<sup>87</sup> Bronwen Thomas, *Narrative: The Basics* (New York: Routledge, 2016), 62, ProQuest Ebrary.

climate system.<sup>88</sup> In certain parts of the world, a large number of people as owners, workers, and consumers have become deeply embedded within a system that is predicated on the extraction and commodification of the Earth's natural resources for use and monetary gain. Thus, the nature and function of these economic activities have expanded. Now, they extend beyond the production of goods and the customisation of services to the staging of experiences (e.g., the growth of tourism).<sup>89</sup>

Capital, according to scholar David Harvey, "is not a thing but a process in which money is perpetually sent in search of more money."<sup>90</sup> Accordingly, I view capitalism as the system that characterises this process. Against this setting, I use a broad notion of "consumption." I view it as the action of using up resources, including human resources. Within the bounds of this definition falls the use of goods, services, and/or experiences. In turn, a "consumer" is defined as an individual who purchases commodities for personal use and/or the experience. Therefore, it needs to be underscored that capitalism is not solely an economic system. It is also a political, social, and cultural system.

In general, analyses of capitalism and debates about its reform or the development of an alternative remain controversial. However, this has fed into

---

<sup>88</sup> Jan Zalasiewicz et al., "When did the Anthropocene Begin? A Mid-Twentieth Century Boundary Level is Stratigraphically Optimal," *Quaternary International* 383 (2015), <https://doi.org/10.1016/j.quaint.2014.11.045>.

<sup>89</sup> B. Joseph Pine II and James Gilmore, "The Experience Economy: Past, Present and Future" in *Handbook on the Experience Economy*, eds. Jon Sundbo and Flemming Sørensen (Cheltenham: Edward Elgar, 2013).

<sup>90</sup> David Harvey, *The Enigma of Capital: And the Crises of Capitalism* (London: Profile Books, 2011), 40. In this definition, "credit" can be used interchangeably with money.

discussions about what is being consumed, how, by whom, why, and with what implications.<sup>91</sup> Answers to these questions will be broached in the next chapter. In this thesis, the focus is on a broad social critique of “the treadmill of capitalist accumulation” in relation to the unfolding climate crisis. So far, the international climate governance agenda has involved setting binding targets for nation-states but this has often precluded an understanding of the contradictions of unrestrained capitalism.<sup>92</sup> In largely bracketing out an analysis of power in international negotiations on the global response to climate change, the main perpetrators of global warming—the wealthy, large corporations, and large nations—are absolved of their culpability for bringing about rising global average temperature. The lack of consideration given to power also occurs at the state level, an issue I will attend to in more detail in chapter three.

### *Power, Ideology, and Hegemony*

The notion of “power” has many sources. In 1977, in a conversation with Alain Grosrichard and others, Foucault expressed the view that “in reality power means relations, a more-or-less organised, hierarchical, co-ordinated cluster of relations.”<sup>93</sup> Sociologist Anthony Giddens later advanced that, in a general sense, “‘power’ refers to the transformative capacity of human action” and in a narrower sense, it “may be defined as the capability to secure outcomes where the

---

<sup>91</sup> See also Fredric Jameson, *Postmodernism, or, the Cultural Logic of Late Capitalism* (Durham, NC: Duke University Press, 1991), ProQuest Ebrary; Jean Baudrillard, *The Consumer Society: Myths and Structures* (London: SAGE Publications, 1998).

<sup>92</sup> James O'Connor, "Capitalism, Nature, Socialism: A Theoretical Introduction," *Capitalism Nature Socialism* 1, no. 1 (1988), <https://doi.org/10.1080/10455758809358356>.

<sup>93</sup> Michel Foucault, *Power/ Knowledge: Selected Interviews and Other Writings 1972-1977*, trans. Colin Gordon et al., (New York: Pantheon Books, 1980), 198.

realization of these outcomes depends upon the agency of others...this is power as domination.”<sup>94</sup> The production of society, he went on to argue, “is always and everywhere a skilled accomplishment of its members.”<sup>95</sup> Against this background, power is also a historical phenomenon.<sup>96</sup>

“Ideology” and “hegemony” are two concepts commonly associated with power. The former is usually identified with symbolic forms (spoken or inscribed expressions) of domination and the latter with how a social group (ruling elites) achieves and sustains its supremacy over others through domination, intellectuality, and moral leadership. According to sociologist John Thompson, ideology structures and sustains relations of domination. Descriptively speaking, ideology is a system of social beliefs, values and ideas which form the basis of either a social, economic, or political philosophy. It can have a neutral or critical conception.<sup>97</sup>

Writer and politician Antonio Gramsci argued that ideology was an essential component of hegemony. Hegemony is used to describe the domination of one class over others. It is sustained through force and consent, although the latter is the favoured method. In instances where force is required it should wherever possible be portrayed as consent. In this context, the dominant group’s

---

<sup>94</sup> Anthony Giddens, *New Rules of Sociological Method: A Positive Critique of Interpretative Sociologies* (Cambridge: Polity Press, 1993), 117-18, ProQuest Ebrary.

<sup>95</sup> *Ibid.*, 133.

<sup>96</sup> E. P. Thompson, Preface to *The Making of the English Working Class* (New York: Vintage Books, 1963). See also Betty Dobratz et al., *Power, Politics, and Society: An Introduction to Political Sociology* (Oxon: Routledge, 2016), ProQuest Ebrary.

<sup>97</sup> John B Thompson, *Ideology and Modern Culture* (Stanford: Stanford University Press, 1990), 53.

ideology needs to be expressed in terms of advancing the general interest, making it seem like “common sense.” In doing so, it can make it appeal to other groups. Moreover, the hierarchical order is not guaranteed, so the ruling class must constantly reassert itself.<sup>98</sup> Therefore, power can extend beyond politics. The questions then become: Who has power? Where does that power come from? And how is it sustained?

Attempts to answer the above questions have tended to centre on three areas: access to resources, social positions, and the use of language.<sup>99</sup> Often the contestations for power are not fair for all the people involved. A point noted by communication researcher Eric Louw:

Power is not automatic, it is the outcome of struggle. However, such struggles are not fought on level playing fields because certain players are advantaged (or disadvantaged) by having more (or less) access to the sources of power at the start of play. Pre-existent access to power is necessarily an advantage in the next round of the struggle over power.<sup>100</sup>

Similarly, Giddens noted that power can be “stored up” for future use.<sup>101</sup>

Generally, those with more resources, higher social status, and a good command of the communication process are better positioned to obtain power. In this context, analyses of power prying open the socio-economic order, political rhetoric, and historical knowledge.

---

<sup>98</sup> Antonio Gramsci, *Selections from the Prison Notebooks* (New York: International Publishers, 1971), 57-58.

<sup>99</sup> Eric Louw, *The Media and Cultural Production* (London: SAGE Publications, 2001), 8.

<sup>100</sup> *Ibid.*, 9.

<sup>101</sup> Giddens, *New Rules of Sociological Method*, 118.

The linkages between power and the communication process need to be elaborated upon. Louw remarked that “meanings do not just exist—they are actively made as people encounter and think about the world, and then try to find ways to tell others what they are thinking. Meanings are also re-made as circumstances change.”<sup>102</sup> Accordingly, those with access to power have a disproportionate influence on the meanings that circulate in society. In cases where power does not determine meaning, it is still linked by the framework within which meaning is constructed, contested, and circulated. The institutionalisation and professionalisation of the communication process, evidenced by the growth of public relations personnel and press secretaries, the proliferation of advertising materials, and the commercialisation of news, illustrate the importance of making and circulating ideas and information.<sup>103</sup> Against this background, the focus turns to the potential for communication to be distorted and/ or restricted.

## Overview of Thesis

The chapters ahead seek to analyse from a communication studies perspective some of the reasons why the problems arising from global warming appear intractable and suggest avenues of resolution. In chapter one, *Conceptualising the Climate Crisis*, I build upon the introductory observations about scientific knowledge regarding the climate system and the influence of human activities on its functioning. I show that the debate is not exclusively

---

<sup>102</sup> Louw, *The Media and Cultural Production*, 1.

<sup>103</sup> Sociologist Leon Mayhew termed this the rise of “the New Public Sphere.” See Leon Mayhew, *The New Public* (Cambridge: Cambridge University Press, 1997).

scientific but contested by political and commercial interests. In this chapter, I argue for a longer chronological view of the climate collapse. Adopting this vantage point will allow for a more holistic approach to identifying the causes of global warming and a more efficacious approach to rectifying the problem.

Chapter two, *Communicating and Contesting the Climate Crisis*, foregrounds the ongoing difficulties of conveying the climate breakdown. My starting point concerns the actions of vested interests in slowing political and public engagement with climate science. I show that ExxonMobil and others have deliberately worked to deceive the public about the existence, consequences, and risks of global warming. This chapter also outlines the psychological barriers to, first, grasping the totality of the climate crisis, and second, the difficulties of transforming knowledge and concern into climate action. It concludes by providing more effective ways of communicating global warming and climate change-related matters to audiences.

In chapter three, *Representations of the Climate Crisis in New Zealand: 1990 to 2017*, I detail the common narratives that have been used to justify New Zealand's approach to global warming and climate change. I look at successive governments' participation in the international governance of climate change and offer an interpretation of its political responses to the threat of global warming. The chapter ends by surveying the data collected from the New Zealand public about global warming and climate change. My purpose is to show that the marketed image of New Zealand as "clean, green" and "100% Pure" is

flawed. Successive governments have attempted, in varying degrees, to address the risks of global warming but all have failed to implement any effective measures to curb the nation's emission levels.

In chapter four, *The Social Production of Climate Science News*, I review the literature on news representations of global warming-related issues. I begin by considering the definitions of journalism. I show that the changing commercial pressures of news production and the rise of the internet have affected newsroom practices and news output. Then, I discuss the challenges of sustaining audience engagement with negative news. Lastly, I detail earlier studies concerning the New Zealand news media's representation of the environment and global warming matters. The analysis of this chapter provides a background to my research findings in the subsequent two chapters.

In chapter five, *News Coverage of the Climate Crisis in Stuff and The New Zealand Herald during the year 2017*, I explore how New Zealand's two leading digital news organisations constructed the climate crisis in 2017. I discuss critical discourse analysis and outline my methodological approach in terms of sampling and categories of analysis. A close examination of news texts looks at keywords, news sources, and news frames. I also consider some of the organisational norms and constraints in the making of climate science news. The results show that news concerning global warming and related matters centres around science, leaving other key areas such as political and economic power structures largely unexplored. Accordingly, to better encapsulate the climate

crisis, this chapter calls for a more comprehensive discussion about global warming and climate change.

In chapter six, *Semi-structured Interviews with Science and Environmental Journalists*, the experiences and insights of reporters are detailed. This material is used to complement and clarify the research findings of chapter five. I start by outlining my approach to semi-structured interviews and sample selection. In this chapter, I show that journalists are keenly aware of the need to inform and engage audiences about global warming matters. However, the practice of producing digital news content is still constricted by institutional practices and pressures, as well as waning audience interest. Against this setting, I argue that conventional approaches to making news favour certain understandings of what is unfolding over others. This helps to maintain the status quo and limits the exploration of alternate understandings and approaches to the climate crisis.

The thesis conclusion, *Covering the Climate Crisis: The Urgency of Now*, summarises the arguments which have arisen from my research. It reiterates the view that powerful forces, which are not necessarily easily discernible, exert influence over the content of climate messages. I point out four key structural absences within digital representations of climate news and explain how the communication on global warming and climate change matters can be rethought and expanded upon.

## Chapter One

### Conceptualising the Climate Crisis

In this interregnum between energy regimes, we are living on borrowed time—borrowed from the past and from the future.

—Rob Nixon, *Slow Violence and the Environmentalism of the Poor*, 2011

This chapter looks more critically at who bears culpability for the warming of the Earth. I start by providing a descriptive account of the political discussions on global warming and its effects. Next, I discuss the appropriation of nature for the satisfaction of human needs and wants. Then, I reflect on the political, ethical, and ideological struggles associated with reining in rising GHG emissions. In general, discussions about the geochronological changes to the Earth have overlooked the realities of differentiated culpability and vulnerability. This approach precludes a full consideration of the socio-economic, political, cultural, and ideological factors underpinning the climate crisis. Against this background, I argue that the impending climate collapse represents a direct challenge to the supremacy of the human species. I aim to show how conventional discourses on the climate crisis have largely failed to understand the critical role of vested interests in bringing about and advancing global warming.

## The Political Impasse on Climate Change

In 1979, the World Meteorological Organisation (WMO) initiated the first international conference on global warming but at the time, the issue of rising GHG emissions did not receive much attention. From the mid-1980s, there were a series of international conferences that referenced climate change, but the focus was largely around the depletion of stratospheric ozone, preservation, and/or conservation. Here, it is important to recall in 1988, before a United States of America (US) Senate committee, National Aeronautics and Space Administration's (NASA) scientist James Hansen testified that "the greenhouse effect has been detected, and it is changing our climate now."<sup>104</sup> The IPCC was also established in the same year. Over time, as the deterioration of the environment grew, coupled with more research, and the occurrence of environmental disasters there was a renewed focus on the well-being of citizens and the planet.<sup>105</sup>

---

<sup>104</sup> James Hansen, "Statement of Dr James Hansen, Director, Nasa Goddard Institute of Space Studies" (paper presented at the United States Senate Committee on Energy and Natural Resources, Washington D.C, 1988), 39-80, <https://babel.hathitrust.org/cgi/pt?id=uc1.b5127807&view=1up&seq=45>. Also of note is British Prime Minister Margaret Thatcher's speech at the 1988 Conservative Party Conference in Brighton, which warned of the unintended consequences of taking nature for granted and referred to the greenhouse effect. See Margaret Thatcher, *Prime Minister's Speech at the 1988 Conservative Party Conference* (Brighton), Speech, <https://www.margaretthatcher.org/document/107352>.

<sup>105</sup> See James Hansen et al., "Climate Impact of Increasing Atmospheric Carbon Dioxide," *Science* 213, no. 4511 (1981), <https://doi.org/10.1126/science.213.4511.957>; National Research Council, *Changing Climate: Report of the Carbon Dioxide Assessment Committee* (Washington D.C: The National Academies Press, 1983), <https://doi.org/10.17226/18714>; Rachel Carson, *Silent Spring*, 40th ed. (Florida: Houghton Mifflin Harcourt, 2002). Examples of environmental disasters include the 1984 Union Carbide's chemical disaster in India, the 1986 Chernobyl disaster in the Ukraine, and the 1989 ExxonMobil Valdez oil spill off the coast of Alaska.

Consequently, negotiations prior to and at the end of the 1992 Earth Summit in Rio de Janeiro, Brazil, highlighted the growing political interest in pursuing economic development in conjunction with the goals of sustainability.<sup>106</sup> However, as the discussions unfolded, it was clear that international cooperation was challenging. There were conflicts around diverging interests and incentives between industrialised nations, developing countries, and small island states.<sup>107</sup> For instance, industrialised countries saw the need for a comprehensive convention that compelled every nation to reduce emissions, but this was opposed by the developing countries. They viewed industrialised countries as being more culpable for rising GHG emissions and for that reason, developing nations had a “historical responsibility” to address the climate crisis (also referred to as “climate debt”). Additionally, developing nations had pressing issues of poverty, so the proposal of binding reduction targets could put in jeopardy their socio-economic development. Given the developing nations’ position, some developed nations (such as the US) recoiled from binding commitments, fearing a competitive disadvantage if they were to reduce emissions. On the other hand, small island nations feared inundation from sea level rise, so they voted in favour of binding reduction targets. However, they had limited influence.<sup>108</sup>

---

<sup>106</sup> In the late 1980s, the term “sustainability” was appropriated by the notion of “sustainable development”. This locution views economic growth and environmental protection as manageable through the application of technology. See Michael Redclift, “Sustainable Development (1987–2005): An Oxymoron Comes of Age,” *Sustainable Development* 13 (2005), <https://doi.org/10.1002/sd.281>.

<sup>107</sup> See David Cipler and J. Timmons Roberts, “Splintering South: Ecological Unequal Exchange Theory in a Fragmented Global Climate,” *Journal of World-Systems Research* 23, no. 2 (2017), <http://doi.org/10.5195/jwsr.2017.669>.

<sup>108</sup> The European Union had also argued in favour of binding targets.

Towards the end of the political gathering, despite fears that an international environmental treaty would not eventuate, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted and signed by 50 countries in December 1993.<sup>109</sup> Article 2 of the agreement stated that the main objective was the:

...stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.<sup>110</sup>

The treaty was not legally binding but rather signalled a commitment to reduce emission levels to 1990 levels by the year 2000.<sup>111</sup> From 1995, parties to the convention have tried to meet annually at the two-week summit (also referred to as the conference of the parties [COP]) to negotiate approaches to the issue of global warming.<sup>112</sup>

The first COP (COP 1) took place in Berlin, Germany but it did not achieve any new commitments to reduce emissions. Furthermore, it became

---

<sup>109</sup> Under the UNFCCC, an annual meeting takes place where international delegates attempt to reach a global response to the climate crisis. By 2020, 197 countries have ratified the Convention; they are referred to as “Parties to the Convention.”

<sup>110</sup> United Nations, *United Nations Framework Convention on Climate Change* (New York: United Nations, 1992), 9, [https://unfccc.int/files/essential\\_background/background\\_publications\\_htmlpdf/application/pdf/conveng.pdf](https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf).

<sup>111</sup> Gordon Wilson et al., "Module 1: Introduction to Climate Change in the Context of Sustainable Development," in *T869 Climate Change: From Science to Lived Experience* (The Open University, 2012), 112-14, [https://www.open.edu/openlearncreate/pluginfile.php/129461/mod\\_resource/content/1/LEChE\\_Module1\\_Textbook\\_2012.pdf](https://www.open.edu/openlearncreate/pluginfile.php/129461/mod_resource/content/1/LEChE_Module1_Textbook_2012.pdf). The principle of “common but differentiated responsibilities” was stated in Article 3 of the agreement. This phrase recognised the differing capabilities of nations to address climate change.

<sup>112</sup> Due to the COVID-19 pandemic COP 26 was postponed. It will now take place in Glasgow from November 1, 2021.

apparent that many signatories could not meet the earlier commitment of reducing emissions to 1990 levels by 2000. The next notable international climate conference was held in Kyoto, Japan in 1997 (COP 3). The resulting agreement, the Kyoto Protocol, eventually came into force in 2005 after years of negotiations. It committed industrialised nations, such as those in the European Union (EU) and New Zealand, to reduce their emissions by setting targets. However, developing countries, such as China and India, were not required to commit to any reductions. Russia, a nation categorised under “economies in transition” (EIT), was also excluded from binding commitments. At the time, critics argued that the Protocol did not go far enough, lacked proper enforcement mechanisms, and that the concessions made had weakened it. Consequently, as events unfolded, the larger emitter nations, Australia and the US, failed to ratify the agreement. In the end, the Kyoto Protocol would have little effect on curbing rising emissions.<sup>113</sup>

Following the end of the Kyoto Protocol’s first commitment period (CP1), another agreement was reached at the 2015 UNFCCC in Paris (COP 21). The resulting Paris Accord was hailed as “a landmark” and “historic” for producing a legally binding agreement, as opposed to its predecessors, which were viewed as being mired in politics.<sup>114</sup> The agreement committed nations to keeping global

---

<sup>113</sup> See Philip Bedall and Christoph Görg, "The Climate Justice Coalition Viewed in Light of a Theory of Societal Relationships with Nature," in *Routledge Handbook of the Climate Change Movement*, eds. Matthias Dietz and Heiko Garrelts (Abingdon, UK: Routledge, 2014).

<sup>114</sup> See United Nations Framework Convention on Climate Change, "Historic Paris Agreement on Climate Change: 195 Nations Set Path to Keep Temperature Rise Well Below 2 Degrees Celsius," news release, December 13, 2015, <https://cop23.unfccc.int/news/finale-cop21>; Melissa Denchak, "Paris Climate Agreement: Everything You Need to Know," Natural Resources Defense Council,

average temperature rise this century to well below 2°C above pre-industrial levels. They would also “pursue efforts” to limit the temperature increase to 1.5°C.<sup>115</sup> However, critics pointed out that the nature of the obligations differed, with some binding and others not.<sup>116</sup> Moreover, the legal document relied on a “transparency framework” to hold parties accountable for their commitments. This is where peer and public pressures, as opposed to legal obligations, are used to ensure that parties achieve what they agreed to.<sup>117</sup>

In 2016, following the conclusion of the negotiations, scholar Daniel Bodansky reflected on the Agreement:

Countries were able to agree only to the basic structure of the new climate change regime—the cycle of [nationally determined contributions] NDCs, reporting, review, stocktaking, and updating. Now, they must elaborate more detailed rules for how the Paris Agreement will work in practice. This process of elaboration will reveal the degree to which the Paris Agreement reflects a new political equilibrium or merely papered over long-standing differences. Moreover, the Paris Agreement could still be undermined by a host of exogenous factors: elections in the United States, turmoil in the European Union, an economic downturn in China.<sup>118</sup>

Then, in 2017, following the inauguration of Donald Trump, the US withdrew from its Paris commitments. This had implications for other parties’ emission

---

December 12, 2018, <https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know>.

<sup>115</sup> The Climate Institute, *Policy Brief: The Paris Climate Agreement and Implications for Australia* (Sydney: The Climate Institute, 2015), [http://www.climateinstitute.org.au/verve/\\_resources/Post-Paris-Brief-14122015.pdf](http://www.climateinstitute.org.au/verve/_resources/Post-Paris-Brief-14122015.pdf). In addition, by 2025, wealthier nations should set a financial aid goal “from a floor of \$100bn per year” to assist poorer nations with climate action.

<sup>116</sup> See Oliver Milman, “James Hansen, Father of Climate Change Awareness, Calls Paris Talks ‘A Fraud,’” *The Guardian*, December 12, 2015, <https://www.theguardian.com/environment/2015/dec/12/james-hansen-climate-change-paris-talks-fraud>.

<sup>117</sup> Daniel Bodansky, “The Paris Climate Change Agreement: A New Hope,” *The American Journal of International Law* 110, no. 2 (2016): 311, <https://doi.org/10.5305/amerjintelaw.110.2.0288>.

<sup>118</sup> *Ibid.*, 318-19.

allocation, costs, and climate aid.<sup>119</sup> It also highlighted the problematic and contentious nature of global climate cooperation as well as the importance of national and local levels of government and the need for bipartisan support.<sup>120</sup> So, despite the aspirations and optimism of COP21, the intervening years have seen global emissions rise, reaching record levels.<sup>121</sup>

### **An Unequal Exchange**

On the international stage, the conflict between the interests of individual states and global collective interests has been difficult to resolve. The onset of global warming has heightened the realisation of uneven distribution of economic gain and social and environmental harm, bringing to the fore the structural relationships between countries (namely between rich and poor nations). However, knowledge of and inquiries into the unequal transactions that

---

<sup>119</sup> In response to the US withdrawal from the Paris Agreement, other nations, such as China, France, and New Zealand, reaffirmed their commitment to carbon reduction. Additionally, many US city mayors and governors have pursued climate policies without federal government involvement. See Hai-Bin Zhang et al., "U.S. Withdrawal from the Paris Agreement: Reasons, Impacts, and China's Response," *Advances in Climate Change Research* 8 (2017), <https://doi.org/10.1016/j.accre.2017.09.002>; Jonathan Watts and Kate Connolly, "World Leaders React after Trump Rejects Paris Climate Deal," *The Guardian*, June 2, 2017, <https://www.theguardian.com/environment/2017/jun/01/trump-withdraw-paris-climate-deal-world-leaders-react>; "World Reacts to Trump's Paris Climate Accord Withdrawal," *Al Jazeera*, June 3, 2017, <https://www.aljazeera.com/news/2017/06/170602051722262.html>.

<sup>120</sup> Or in the case of the US, the Senate requires a two-thirds majority to ratify international legal agreements.

<sup>121</sup> It was notable that at the 2018 UNFCCC (COP 24) held in Poland, the US and Australia promoted coal, while Brazil expressed scepticism about global warming. Thus, nation-states are not the only actors in international climate politics. These stances further signal the challenges of sustaining the global effort to avert the risks of global warming. See Fiona Harvey, "What Was Agreed at COP24 in Poland and Why Did It Take So Long?," *The Guardian*, December 16, 2018, <https://www.theguardian.com/environment/2018/dec/16/what-was-agreed-at-cop24-in-poland-and-why-did-it-take-so-long>; Raphael Heffron, "COP24 Shows Global Warming Treaties Can Survive the Era of the Anti-Climate 'Strongman'," *The Conversation*, December 17, 2018, <https://theconversation.com/cop24-shows-global-warming-treaties-can-survive-the-era-of-the-anti-climate-strongman-107786>.

take place between developing countries and wealthy, powerful nations are long-standing.<sup>122</sup>

In 1985, sociologist Stephen G. Bunker published, *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*. In it, he detailed how the regions of America and Europe exploited Brazil and left behind adverse developmental and ecological effects. From this analysis, he advanced the idea of an “ecologically unequal exchange”. Bunker reported:

Decisions about production, extraction, and exchange are in fact based on anthropocentric value systems which subordinate nature and nonhuman energy to human strategies for enhancing power and control over other humans for increasing the effective productivity of human labour. These strategies tend to short-term maximisation of return to labour and capital with little concern for long-term social reproduction.<sup>123</sup>

His observations led him to advocate for the delineation of “the ‘chains of historical causation’ in ways which permit simultaneous references to both global and regional units of analysis as historically continuous systems.”<sup>124</sup> He went on to observe, “We will only understand the inequalities inherent in the geographical separation of the different parts of the total process by which materials in nature are finally transformed for human use and profit when we

---

<sup>122</sup> See Emmanuel Arghiri, *Unequal Exchange: A Study of the Imperialism of Trade* (London: New Left Books, 1972). See also the Prebisch-Singer hypothesis.

<sup>123</sup> Stephen G. Bunker, *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State* (Champaign, IL: University of Illinois Press, 1985), 48.

<sup>124</sup> Ibid. The concepts of a “North-South divide” and “othering” are often used to describe the geopolitical relations of power. See also Giovanni Arrighi, Beverly J. Silver, and Benjamin D. Brewer, “Industrial Convergence, Globalization, and the Persistence of the North-South Divide,” *Studies in Comparative International Development* 38, no. 1 (2003), <https://doi.org/10.1007/BF02686319>.

account for these differential costs to the various regions involved in the world system.”<sup>125</sup>

The uneven burden of responsibility has also gained political attention. For example, at the 1997 Kyoto Conference, a representative from China was recorded as remarking: “In the developed world only two people ride in a car, and yet you want us to give up riding on a bus.”<sup>126</sup> The tone of this remark suggests a deep antipathy towards developed countries. The reason for this, it can be assumed, is the hypocrisy, given the large inequalities in the emissions of GHGs.<sup>127</sup> Generally, there are two parameters by which to determine collective emission levels: population and quantity emitted per capita. It is also common for the former parameter to be calculated in measures of production-based, consumption-based, or annual CO<sub>2</sub> emissions over time (cumulative or historical emissions). The result of each can yield different outcomes, posing critical and (largely unresolved) questions about distributive justice.

Scholars Hannah Ritchie and Max Roser illustrated the dilemma of reconciling everyone’s emissions level. Through gathered data, they showed that from 1751 to 2017, the world emitted approximately 1.5 trillion tonnes of CO<sub>2</sub>. Of this number, the US was the largest contributor, accounting for 25% (or 399 billion tonnes) of global CO<sub>2</sub> emissions. In comparison, China accounted for

---

<sup>125</sup> Bunker, *Underdeveloping the Amazon*, 54.

<sup>126</sup> As cited in Joseph Aldy, “Per Capita Carbon Dioxide Emissions: Convergence or Divergence?” *Environmental & Resource Economics* 33 (2006): 2, <https://doi.org/10.1007/s10640-005-6160-x>.

<sup>127</sup> It needs to be stressed that calculating global and per capita footprints are complex and contentious.

12.7% (or 200 billion tonnes).<sup>128</sup> In 2007, China overtook the US as the biggest producer of CO<sub>2</sub>.<sup>129</sup> In 2017, China remained the world's biggest emitter of CO<sub>2</sub>.<sup>130</sup> However, this was attributed, in part, to its large production centres and manufacturing industries.<sup>131</sup>

In 2017, China's average per capita carbon footprint was recorded at 6.9 tonnes, which was higher than the global average of 4.8 tonnes. But generally, fossil fuel producing countries were the world's largest per capita CO<sub>2</sub> emitter with Qatar having the highest average per capita footprint of 49 tonnes, followed by Trinidad and Tobago with 30 tonnes. By way of comparison, the carbon footprint of an Australian was about 17 tonnes, an American was 16.2 and a New Zealander was 7.7—all of which were higher than a Chinese person.<sup>132</sup> This realisation was also underscored by economists Lucas Chancel and Thomas Piketty: "China is the world's highest emitter today, but its emissions per head

---

<sup>128</sup> Hannah Ritchie and Max Roser, "CO<sub>2</sub> and Greenhouse Gas Emissions," *Our World in Data*, last modified August 2020, <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>. The figures are based on production-based CO<sub>2</sub> emission (from fossil fuel combustion and cement). It is not adjusted for trade and does not include emissions from international travel.

<sup>129</sup> PBL Netherlands Environmental Assessment Agency, "China Now No. 1 in CO<sub>2</sub> Emissions: USA in Second Position," news release, June 19, 2007, <https://www.pbl.nl/en/Chinanowno1inCO2emissionsUSAinsecondposition>; Yuli Shan et al., "China CO<sub>2</sub> Emission Accounts 1997–2015," *Scientific Data* 5, 170201 (2018), <https://doi.org/10.1038/sdata.2017.201>.

<sup>130</sup> Ritchie and Roser, "CO<sub>2</sub> and Greenhouse Gas Emissions."

<sup>131</sup> Also, in 2017, the UN reported that China was the world's most populous country with over 1.41 billion inhabitants. India's population is expected to surpass China around 2027. United Nations, *World Population Prospects: 2017 Revision* (New York: Department of Economic and Social Affairs, Population Division 2017), [https://population.un.org/wpp/Publications/Files/WPP2017\\_DataBooklet.pdf](https://population.un.org/wpp/Publications/Files/WPP2017_DataBooklet.pdf). See also United Nations, *World Population Prospects 2019: Highlights* (New York: Department of Economic and Social Affairs, Population Division 2019), [https://population.un.org/wpp/Publications/Files/WPP2019\\_Highlights.pdf](https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf).

<sup>132</sup> However, these facts do not absolve poorer nations of their part in cleaning up the environment and developing a cleaner and more sustainable (regenerative) economy. See Kate Raworth, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist* (London: Random House Business Books, 2017), ProQuest Ebrary.

are still below those of most of western European countries and the USA. It is essential to go beyond national totals in order to get a sense of how CO<sub>2</sub>e is distributed among humans.”<sup>133</sup>

Moreover, if emissions are aggregated in terms of a country’s income or by world region, another picture also forms. Using these data sets, rich nations and individuals emit more than their poorer counterparts. In a 2015 study for Oxfam, researcher Timothy Gore stated:

The average emissions of someone in the poorest 10% of the global population is 60 times less than that of someone in the richest 10%. While estimates at the extreme top and bottom of the global income distribution are more difficult to make, there is no question the gap is much wider still: the richest 1% may emit 30 times more than the poorest 50%, and 175 times more than the poorest 10%. What is more, the poorest half of people on the planet live overwhelmingly in countries that are considered the most vulnerable to climate change.<sup>134</sup>

Similarly, Ritchie and Roser found that, for 2016, those classified in the high-income bracket accounted for 16% of the world population but made up 38% of global CO<sub>2</sub> emissions. Those in the low-income bracket, comprised about 9% of the world population and contributed less than 1% of global CO<sub>2</sub> emissions (about 0.5%).<sup>135</sup> Relatedly, the two researchers also observed that, by region, the population of North America accounted for about 5% of the world population and emitted 18% of global emissions. In contrast, 49% of global emissions were attributed to Asia but the region made up about 60% of the population.<sup>136</sup>

---

<sup>133</sup> Chancel and Piketty, *Carbon and Inequality*, 15.

<sup>134</sup> Gore, "Extreme Carbon Inequality," 4-5.

<sup>135</sup> Ritchie and Roser, "CO<sub>2</sub> and Greenhouse Gas Emissions." The income groupings were based on the World Bank’s classification.

<sup>136</sup> Ibid.

Additionally, a recent publication by sociologist Andrew Jorgenson found similar results. Drawing from the earlier works on the unequal exchange, Jorgenson assessed the per capita CO<sub>2</sub> emissions from the international trade between high-income nations and low-income nations (the “vertical flow of exports”). His findings support the ecologically unequal exchange theory’s main proposition that wealthier regions exploit lower-income countries. Jorgenson wrote that “the magnitude of effect of the percentage of exports to high-income nations on emissions in lower-income countries grew through time, in tandem with the increasing focus on export-oriented production in developing and less-developed nations.”<sup>137</sup> Thus, high-income nations have not only continued but also exacerbated their externalisation of ecological (and social) harms to lower-income nations.

Furthermore, the disparities are not only between borders, they are also between social and cultural groups and between households. Rural development scholar Seema Arora-Jonsson stated that “women in the global South will be affected more adversely by climate change than men in those countries and that men in the global North pollute more than their female counterparts.”<sup>138</sup> Similarly, Gore reported that “inequalities are horizontal as well as vertical—with women facing greater risks than men, rural communities often more exposed than urban ones and groups marginalized because of race, ethnicity or

---

<sup>137</sup> Andrew K. Jorgenson, "The Sociology of Ecologically Unequal Exchange and Carbon Dioxide Emissions, 1960-2005," *Social Science Research* 41 (2012): 250, <https://doi.org/10.1016/j.ssresearch.2011.11.011>.

<sup>138</sup> Seema Arora-Jonsson, "Virtue and Vulnerability: Discourses on Women, Gender and Climate Change," *Global Environmental Change* 21 (2011): 744, <https://doi.org/10.1016/j.gloenvcha.2011.01.005>.

other factors likely to be disproportionately affected.”<sup>139</sup> And often, these populations are absent or marginalised from, overlooked during, and/or struggle to partake in the decision-making process.<sup>140</sup>

In short, those who are disadvantaged socially, economically, and in less dominant cultural positions have tended to also be disadvantaged politically. It needs to be reiterated that these populations are generally less culpable for and less able to evade or address the effects of global warming. Yet, often owing to their geographical location, many poor and marginalised communities are more susceptible to climate change. Complicating their plight are pressing issues of poverty and conflict. In this context, climate change is a “threat multiplier”. In *The Politics of the Earth: Environmental Discourses*, scholar John S. Dryzek wrote that “environmental problems tend to be interconnected and multidimensional; in a word, complex. Complexity refers to the number and variety of elements and interactions in the environment of a decision system.”<sup>141</sup> Thus, the problem of safeguarding the “commons” goes beyond the problem of the relationship between countries; there is also the problem of the relations between groups, classes, and cultures (as well as between the individual and the group).<sup>142</sup>

---

<sup>139</sup> Gore, "Extreme Carbon Inequality," 5.

<sup>140</sup> Geraldine Terry, "No Climate Justice without Gender Justice: An Overview of the Issues," *Gender & Development* 17, no. 1 (2009), <https://www.jstor.org/stable/27809203>; Patricia Figueiredo and Patricia Perkins, "Women and Water Management in Terms of Climate Change: Participatory and Inclusive Processes," *Journal of Cleaner Production* 60 (2013), <https://doi.org/10.1016/j.jclepro.2012.02.025>.

<sup>141</sup> John S. Dryzek, *The Politics of the Earth: Environmental Discourses*, 3rd ed. (Oxford: Oxford University Press, 2013), 8.

<sup>142</sup> For a more in-depth discussion on the intersectionality of the issues and values that global warming brings forth, see Anna Kaijser and Annica Kronsell, "Climate Change through the Lens

## Climate Change Now

Recently, some publications have added weight to the argument that the 2015 Paris collective target of 2°C was inadequate.<sup>143</sup> During the negotiations, there was discontent among officials over how ambitious the collective target ought to be. Towards the end of the conference and despite hostilities and reservations, the focus centred on either a target of 1.5°C or 2°C. Eventually, negotiators settled on the latter, higher goal. Both targets would see extreme warming of temperatures in many regions. For example, in some regions, there will be increases in the frequency, intensity, and/or amount of heavy precipitation.<sup>144</sup> But even a small difference of 0.5°C in temperature would lessen the adverse impacts.

A few years after the Paris Agreement, the IPCC published a special report outlining the impacts of global warming of 1.5 °C above pre-industrial levels. What was notable was the reference to the lower target of 1.5°C as opposed to the agreed goal of 2°C. In the report, the IPCC called for urgent and wide-scale action to avert the risks of extreme heat, drought, floods, and poverty.<sup>145</sup> In short, mitigation action could no longer be deferred. According to the WMO, if the 2°C target is to be met, GHG emissions will need to be reduced

---

of Intersectionality," *Environmental Politics*, 23, no. 3 (2014), <https://doi.org/10.1080/09644016.2013.835203>; Unai Pascual et al., "Valuing Nature's Contributions to People: The IPBES Approach," *Current Opinion in Environmental Sustainability* 26-27 (2017), <https://doi.org/10.1016/j.cosust.2016.12.006>.

<sup>143</sup> For example, see James Hansen et al., "Young People's Burden: Requirement of Negative CO<sub>2</sub> Emissions," *Earth System Dynamics* 8 (2017), <https://doi.org/10.5194/esd-8-577-2017>.

<sup>144</sup> V Masson-Delmotte et al., "Summary for Policymakers," 8-11.

<sup>145</sup> Ibid.

by about 45% from 2010 levels by 2030.<sup>146</sup> Put differently, there is now only about 10 years left to cut global emissions by about half or face more dire climate change outcomes.

However, research has found that the world is not on target to achieve the international goal of limiting temperature rise to 2°C.<sup>147</sup> For example, Climate Transparency reported that “in 15 of the [Group of Twenty] G20 countries, energy-related CO<sub>2</sub> emissions increased again in 2017, and 82% of the G20 energy supply still comes from fossil fuels.”<sup>148</sup> Moreover, the UNEP found that even if signatories to the Paris Agreement met their first nationally determined contributions (NDCs) for the period 2021 to 2030, the warming trend is predicted to exceed 2°C.<sup>149</sup> For these reasons, countries will need to strengthen their 2030 climate commitments.

For 2017, the global mean temperature was 1.1 °C ± 0.1 °C above the pre-industrial baseline, making it at the time “one of the three warmest years on record.”<sup>150</sup> The UNEP data for 2017 showed that the world is off-target to achieve

---

<sup>146</sup> World Meteorological Organisation, *WMO Statement on the State of the Global Climate in 2019* (Geneva: World Meteorological Organisation, 2020), 4, [https://library.wmo.int/doc\\_num.php?explnum\\_id=10211](https://library.wmo.int/doc_num.php?explnum_id=10211).

<sup>147</sup> See United Nations Environment Programme, *Global Environment Outlook – Geo-6: Healthy Planet, Healthy People*, ed. Paul Ekins, Joyeeta Gupta, and Pierre Boileau (Cambridge: Cambridge University Press, 2019), file:///C:/Users/em10878/Downloads/GEO6\_2019.pdf.

<sup>148</sup> Climate Transparency, *Brown to Green: The G20 Transition to a Low-Carbon Economy* (Berlin: Humboldt-Viadrina Governance Platform, 2018), 7, <https://www.climate-transparency.org/wp-content/uploads/2019/01/2018-BROWN-TO-GREEN-REPORT-FINAL.pdf>.

<sup>149</sup> World Meteorological Organisation, *WMO Statement on the State of the Global Climate in 2018* (Geneva: World Meteorological Organisation, 2019), xviii, [https://library.wmo.int/doc\\_num.php?explnum\\_id=5789](https://library.wmo.int/doc_num.php?explnum_id=5789).

<sup>150</sup> World Meteorological Organisation, *WMO Statement on the State of the Global Climate in 2017* (Geneva: World Meteorological Organisation, 2018), 4-5, [https://library.wmo.int/doc\\_num.php?explnum\\_id=4453](https://library.wmo.int/doc_num.php?explnum_id=4453).

the Paris goal of limiting warming to below 2°C by about 11 to 13.5 Gt CO<sub>2</sub>eq.<sup>151</sup> The following year the “emissions gap” grew to be about 13 to 15 Gt CO<sub>2</sub>eq.<sup>152</sup> This suggests that there has been little progress on averting a climate emergency. Also notable, the UNEP warned that, by 2020, global GHG emissions will need to peak and then begin a sharp downward trajectory if nations are to hold the increase in global average temperature to below 2°C. It follows that the faster emission levels are reduced, the less severe the climate-related consequences and risks will be.

According to the IPCC, addressing global warming will require attention to the immediate drivers, underlying drivers, and policies and measures. Immediate drivers directly affect GHG emissions, which include population, gross domestic product (GDP) per capita, energy intensity, and carbon intensity. Underlying drivers relate to the processes, mechanisms, and characteristics that affect emission levels including structural and technological developments, trade, and behavioural choices. Policies and measures such as those directed by political governance can influence the immediate and underlying drivers and vice versa.<sup>153</sup> But it needs to be understood that human activities result from

---

<sup>151</sup> United Nations Environment Programme, *Emissions Gap Report 2017* (Nairobi: United Nations Environment Programme, 2017), 15, [https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR\\_2017.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf?sequence=1&isAllowed=y).

<sup>152</sup> *Emissions Gap Report 2018*, 20.

<sup>153</sup> Gabriel Blanco et al., "Drivers, Trends and Mitigation," in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* ed. O. Edenhofer et al., (Cambridge: Cambridge University Press, 2014), 364-85, [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_full.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_full.pdf).

complex systems of exchanges, so isolating a clear cause-and-effect through scientific insights is not a simple matter.

The future, therefore, is still to be determined insofar as it depends on the action taken. The complexity of the Earth system also adds to the difficulty of predicting how the future may unfold. For that reason, the IPCC has developed four “representative concentration pathways” (RCPs). The models of the future range from limited to more dire consequences and are referred to as RCP 2.6, 4.5, 6.0 and 8.5. Of note also, the IPCC developed standard terms to express their level of confidence in being correct and to define the likelihood of an outcome or result.<sup>154</sup>

From the preceding discussion, many futures are still possible. But as global GHG emission levels continue to grow unabated, what lies ahead is likely to be catastrophic. While the science is clear—the Earth is warming—the specifics of these changes are complex. Initially, scientists struggled to record and convey clearly what is happening, but now attention has shifted to the consequences and potential effects of global warming. And here, the enormity of the crisis—the need to focus on long-term outlooks and cooperate with others—makes it difficult not only to understand and communicate but also to act.

---

<sup>154</sup> Le Treut et al., "Historical Overview of Climate Change," 120-1. The measures range from very high confidence ( $\geq 90\%$  probability) to very low confidence ( $<10\%$  probability) and from virtually certain ( $> 99\%$  probability) to exceptionally unlikely ( $< 1\%$  probability).

## A New Geological Epoch?

Recently, in recognition of the gravity of the changes taking place, the focus has turned to the emergence of a new epoch, the Anthropocene (or the “human recent”). Over the past 250 years, geologists have gathered evidence to construct a 4.6-billion-year history of Earth, which is formalised as the “Geological Time Scale” (GTS). The work is ongoing, but it consists of four Eons, which are then subdivided into Eras, Periods, Epochs, and Ages.<sup>155</sup> In 2000, scientists Paul Crutzen and Eugene Stoermer formally proposed the Anthropocene epoch to encapsulate the central role humankind has on the Earth’s geology and ecology. They noted:

The expansion of mankind, both in numbers and per capita exploitation of Earth’s resources has been astounding...Considering these and many other major and still growing impacts of human activities on earth and atmosphere, and at all, including global, scales, it seems to us more than appropriate to emphasize the central role of mankind in geology and ecology by proposing to use the term ‘anthropocene’ for the current geological epoch. The impacts of current human activities will continue over long periods.<sup>156</sup>

In contending that during the Holocene epoch, the cumulative activities of humans have grown into a “major geological force,” these scientists viewed the force of human activities on the planet as being as transformative as past events.

---

<sup>155</sup> See Jan Zalasiewicz et al., “Chronostratigraphy and Geochronology: A Proposed Realignment,” *GSA Today* 23, no. 3 (2013), <http://doi.org/10.1130/GSATG160A.1>; Simon L Lewis and Mark A Maslin, *Human Planet: How We Created the Anthropocene* (Great Britain: Pelican Books, 2018).

<sup>156</sup> Paul J Crutzen and Eugene F. Stoermer, “The “Anthropocene,”” *The International Geosphere - Biosphere Programme (IGBP) Newsletter* 41 (May 2000): 17, <http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf>.

In 2009, the Anthropocene Working Group (AWG) was established and tasked with evaluating the geological case for the Anthropocene.<sup>157</sup> According to the AWG, “the Anthropocene refers to a time interval marked by rapid but profound and far-reaching change to the Earth’s geology, currently driven by various forms of human impact.”<sup>158</sup> In the beginning, members of the AWG were uncertain if the Anthropocene, once scrutinised, would emerge as a distinct and defensible geological time unit.<sup>159</sup> However, following their research, they declared, “overall assessment suggests that the changes are at least as great as took place when the Pleistocene Epoch of the Ice Ages gave way to the Holocene Epoch.”<sup>160</sup>

The process of formalising the Anthropocene at the level of an epoch involves the identification of a signal to represent when it began. At present, it is still ongoing. Once this has been completed, a formal proposal will be submitted to the International Commission of Stratigraphy, which will make a final decision on whether to recognise the Anthropocene as a new geological unit. So,

---

<sup>157</sup> The AWG is also referred to as the Working Group on the ‘Anthropocene’. The group is composed of geologists, archaeologists, historians, geographers, Earth System scientists, oceanographers, and an international lawyer.

<sup>158</sup> Jan Zalasiewicz et al., "The Working Group on the Anthropocene: Summary of Evidence and Interim Recommendations," *Anthropocene* 19 (2017): 56, <https://doi.org/10.1016/j.ancene.2017.09.001>.

<sup>159</sup> The geochronologic view of the Earth’s history is premised on the study of its rocks. Geologists use data stored in rocks to denote the timing of and relationship between past events. In this sense, geological time units are based on stratigraphic signatures, which indicate a signal, layer, or “golden spike” in sediments and ice that can be demarcated from a previous time. For example, past events, such as extra-terrestrial impacts, volcanic eruptions, and tectonic movements, altered the Earth’s climate and evidence of this has been encased in rocks (as a new stratum).

<sup>160</sup> Jan Zalasiewicz et al., "The Anthropocene," *Geology Today* 35, no. 5 (2018), <https://doi.org/10.1111/gto.12244>.

as of now, the Anthropocene remains an undefined unit under active investigation by the AWG.<sup>161</sup>

If it is accepted that the Holocene is over and the Anthropocene has begun then, a new boundary will need to be demarcated. The AWG suggested three possible signals for the beginning of the Anthropocene: (1) an early Anthropocene that reflects early events such as the rise and spread of agriculture; (2) the beginning of the Industrial Revolution, which saw a dramatic rise in human population levels and the development of large-scale coal burning, steam engines, and industry; and (3) from the mid-twentieth century when there was a post-1950 acceleration of the human imprint on the Earth System (the “Great Acceleration”).<sup>162</sup> According to Jan Zalasiewicz et al., of the three signals, the third option of the mid-twentieth century is likely to become accepted as the beginning of the Anthropocene. They remarked:

Humans started to develop an increasing, but generally regional and highly diachronous, influence on the Earth System thousands of years ago. With the onset of the Industrial Revolution, humankind became a more pronounced geological factor, but in our present view it was from the mid-20th century that the worldwide impact of the accelerating Industrial Revolution became both global and near-synchronous.<sup>163</sup>

---

<sup>161</sup> On 21 May 2019, the AWG released the results of a binding vote to affirm some of the issues surrounding their work. This included votes on two key questions: (1) “Should the Anthropocene be treated as a formal chrono-stratigraphic unit defined by a [Global Boundary Stratotype Section and Point] GSSP?”; and (2) “Should the primary guide for the base of the Anthropocene be one of the stratigraphic signals around the mid-twentieth century of the Common Era?” For both questions, 29 voted in favour, 4 voted against, and there were no abstentions. Since both votes exceeded the 60% threshold required to be agreed by the AWG, it will now be used as a guide for their subsequent analysis. See Working Group on the 'Anthropocene', "Results of Binding Vote by AWG," news release, May 21, 2019, <http://quaternary.stratigraphy.org/working-groups/anthropocene/>.

<sup>162</sup> Zalasiewicz et al., "When Did the Anthropocene Begin?" 198-99.

<sup>163</sup> *Ibid.*, 201.

It is important to emphasise that the root word “Anthropos” conveys a geophysical change to the Earth that would not have occurred if humans were not involved. Activist and scholar Ian Angus remarked that while the term is not perfect, the use of Anthropos “distinguishes changes that are caused by human action from those that would have occurred whether or not humans were involved.”<sup>164</sup> Therefore, scientists are determining if the cumulative impacts of human activities are aligned with other past planetary-scale geological events. If the changes comport with other geological events, then the use of the Anthropocene would signal the convergence of natural and human temporalities. However, none of these insights should imply that all of humanity is equally responsible for the changes to the Earth system. Rather, as Crutzen noted, “For the past three centuries, the effects of humans on the global environment have escalated...So far, these effects have largely been caused by only 25% of the world population.”<sup>165</sup>

### **Historicising Global Warming**

The proposed Anthropocene brings into question how the natural sciences should integrate with history and politics. As psychologist Matthew Adams warned, “The danger in scientising the Anthropocene lies in the reframing of a social problem as a physical one.”<sup>166</sup> He went on to write, “If the inextricable

---

<sup>164</sup> Ian Angus, *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System* (New York: NYU Press, 2016), 232.

<sup>165</sup> Paul J Crutzen, "Geology of Mankind," *Nature* 415, no. 6867 (2002): 23, <https://doi.org/10.1038/415023a>.

<sup>166</sup> Matthew Adams, *Ecological Crisis, Sustainability and the Psychosocial Subject: Beyond Behaviour Change* (London: Palgrave Macmillan, 2016), 26.

interconnections between livelihoods, lifestyles, behaviour and culture matter then climate change is not simply a scientific issue. It is an economic, societal, political problem of the highest order, demanding levels of change in which the psychological and the social are mutually implicated.”<sup>167</sup> But because discussions on the ecological crisis have resided in a range of scientific fields, it is the scientists who have not only defined the crisis but also prescribed the remedies that are required. This leads to the rhetorical question of whether scientists are equipped to delve into the socio-economic, political, and cultural underpinnings of the ecological crisis. In this respect, scientific historians Christophe Bonneuil and Jean-Baptiste Fressoz noted:

Whole books can now be written on the ecological crisis, on the politics of nature, on the Anthropocene and the situation of Gaia without so much as mentioning capitalism, war or the United States, even the name of one big corporation (one figure here, however: ninety corporations are responsible for 63 per cent of the cumulative emissions of carbon dioxide and methane between 1850 and today).<sup>168</sup>

For them, the mainstream conceptualisation of the Anthropocene lacks a historical critique and perpetuates the idea of global warming as an “accident” or an “awakening,” even though discussions about a warming planet and its implications have long been communicated.<sup>169</sup> Overall, the scientific historians argued that the Anthropocene should be conceptualised as a geohistorical event, underpinned by “powerful symbolic and material systems” and driven by “the metabolism of energy and matter.”<sup>170</sup> That is, the development of the capitalist

---

<sup>167</sup> Ibid., 29.

<sup>168</sup> Bonneuil and Fressoz, *The Shock of the Anthropocene: The Earth, History and Us* (London: Verso Books, 2016), 68.

<sup>169</sup> For instance, in 1965, US President Lyndon B. Johnson was warned by his science advisers of the harmful effects of fossil fuel emissions. See The Environmental Pollution Panel, *Restoring the Quality of Our Environment* (Washington D.C: President's Science Advisory Committee, 1965), <https://babel.hathitrust.org/cgi/pt?id=uc1.b4116127&view=1up&seq=13>.

<sup>170</sup> Bonneuil and Fressoz, *The Shock of the Anthropocene*, 288-91.

world system is premised upon technological contingencies, colonialism (imperialism), conflict, and commodification.

The idea of capitalism as a system that is ridden with crises was observed by political economist James O'Connor back in 1988. He advanced the idea that there is another contradiction beyond the traditional contradiction between “productive forces and production relations.” This second contradiction of capitalism is between forces/relations and their conditions of existence. In a seminal article, O'Connor listed examples of how capitalist accumulation impairs or destroys capital's own socio-ecological conditions: “The warming of the atmosphere will inevitably destroy people, places, and profits, not to speak of other species [*sic*] life. Acid rain destroys forests and lakes and buildings and profits alike. Salinization of water tables, toxic wastes, soil erosion, etc. impair nature and profitability.”<sup>171</sup> Simply put, there are “external barriers” to capital accumulation.<sup>172</sup>

More recently, environmental sociologists John Bellamy Foster, Brett Clark, and Richard York used the Marxist theoretical construct of “the metabolic rift” to argue that the ever-expanding capitalist system is not only exploitative but also unsustainable. They wrote, “This ecological rift is, at bottom, the product of a social rift: the domination of human being by human being. The driving force is a society based on class, inequality, an acquisition without

---

<sup>171</sup> O'Connor, "Capitalism, Nature, Socialism," 25-28.

<sup>172</sup> Ibid., 33. See also "On the Two Contradictions of Capitalism," *Capitalism Nature Socialism* 2, no. 3 (1991), <https://doi.org/10.1080/10455759109358463>.

end.”<sup>173</sup> The scholars went on to state that “capital seeks to play a shell game with the environmental problems it generates, moving them around rather than addressing the root causes.”<sup>174</sup> In this context, capital advances without answering for the repercussions of its activities.

The preceding observations also denote the Marxist ideas of “a double alienation” and “reification”. In brief, the former concept draws attention to the estrangement of humanity from nature in social practices and from the institutions of capital itself. Simply put, domination is concealed and impersonal.<sup>175</sup> The latter argument focused on how constitutive elements like labour and nature were reduced to “thing–” or “object–” like statuses.<sup>176</sup> So, as “the treadmill of capitalist accumulation” advances, it leads people to perceive things differently from what they really are.

Political theorist Norman Geras also broached this point about illusion and reality in “Essence and Appearance: Aspects of Fetishism in Marx’s Capital.” In the article, he explored the Marxist formulation about how things appear against what they are. He explained, “It is not that something imaginary has been endowed with the quality of reality. The mechanism of mystification consists in the collapsing of social facts into natural ones. In this way, the value

---

<sup>173</sup> John Bellamy Foster, Brett Clark, and Richard York, *The Ecological Rift: Capitalism’s War on the Earth* (New York: Monthly Review Press, 2010), 47.

<sup>174</sup> *Ibid.*, 74.

<sup>175</sup> Norman Geras, “Essence and Appearance: Aspects of Fetishism in Marx’s *Capital*,” *New Left Review* 1, no. 65 (1971): 72-74, <https://newleftreview.org/issues/I65/articles/norman-geras-essence-and-appearance-aspects-of-fetishism-in-marx-s-capital>.

<sup>176</sup> See Martin Jay, ed. *Reification: A New Look at an Old Idea* (New York: Oxford University Press, 2012).

form is fetishized.”<sup>177</sup> For instance, in some of Marx’s writings the words “guise”, “illusion”, and “mysterious” appear but are not necessarily used synonymously with “falsehood”. Rather, these terms bring into question the foundations of reality. Geras would later point out that “in *Capital* [*sic*]the distinction between essence and appearance is, as well as everything else, a distinction also between the totality and its parts.”<sup>178</sup> Thus, discerning what is visible in one can also elucidate its manifestations in the other.

Relatedly, ecological philosopher Andreas Malm stressed the need to trace the social origins of economic development and juxtapose these against the ecological crisis. This approach, he argued, will aptly depict the driving force behind planetary changes. Accordingly, for Malm, the responsibility for climate change lies with Western capitalists, beginning in Britain during the early decades of the 1800s when the rise of steam engines started to supplant water power.<sup>179</sup> His historical reconstruction of energy transitions showed that the origins of “fossil capital” were driven not only by commercial incentives but also by a struggle for power, namely power over human capital (sociogenic).<sup>180</sup> The success of fossil capital is exemplified by the energy industry’s self-expanding value and global warming. Over time, this appropriation of nature has become naturalised, to the extent that deterioration of the environment becomes expendable. Put differently, the future and current use-value of nature and its

---

<sup>177</sup> Geras, “Essence and Appearance,” 78.

<sup>178</sup> *Ibid.*, 85.

<sup>179</sup> Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York: Verso Books, 2016), 267.

<sup>180</sup> *Ibid.*, 221-22, 38-44, 72-78.

resources are overruled by its immediate exchange-value. Malm went on to conclude that “this is the geology not of mankind, but of capital accumulation.”<sup>181</sup>

Taking these arguments further, researcher Jason Moore asserted that it is more appropriate to term this unfolding epoch as “the Capitalocene”.<sup>182</sup> He proclaimed:

The Anthropocene sounds the alarm—and what an alarm it is! But it cannot explain how these alarming changes came about. Questions of capitalism, power and class, anthropocentrism, dualist framings of ‘nature’ and ‘society,’ and the role of states and empires—all are frequently bracketed by the dominant Anthropocene perspective.<sup>183</sup>

This lack of focus on the historical narrative of power results in what he termed “historical myopia”. In failing to realise that “anthropogenic arguments obscure capitalogenic realities,” the exploitative underpinnings of the social world are largely unnoticed, allowing capitalism to expand and test the ecological limits of the planet.<sup>184</sup>

---

<sup>181</sup> Ibid., 391.

<sup>182</sup> Some have argued against the emphasis placed on the capitalist mode of production in debates around the ecological crisis. For example, Dipesh Chakrabarty in his widely cited essay *The Climate of History: Four Theses*, wrote that “the whole crisis cannot be reduced to a story of capitalism. Unlike in the crises of capitalism, there are no lifeboats here for the rich and the privileged (witness the drought in Australia or recent fires in the wealthy neighborhoods of California).” This among other remarks has drawn widespread criticism. Critics, including Slavoj Žižek, Malm and Hornborg, derided his assertion. In general, they argued that Chakrabarty’s views were analytically flawed and inimical to climate action. See Dipesh Chakrabarty, “The Climate of History: Four Theses,” *Critical Inquiry* 35, no. 2 (2009): 221, <https://www.jstor.org/stable/10.1086/596640>; Slavoj Žižek, *Living in the End Times* (London: Verso, 2010); Andreas Malm and Alf Hornborg, “The Geology of Mankind? A Critique of the Anthropocene Narrative,” *The Anthropocene Review* 1, no. 1 (2014), <https://doi.org/10.1177/2053019613516291>. See also Robert Emmett and Thomas Lekan, eds., *Whose Anthropocene? Revisiting Dipesh Chakrabarty’s “Four Theses”* (Munich: Rachel Carson Center for Environment and Society, 2016).

<sup>183</sup> Jason W. Moore, ed. *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (Oakland, CA: PM Press, 2016), 5.

<sup>184</sup> “The Capitalocene Part I: On the Nature and Origins of Our Ecological Crisis,” *The Journal of Peasant Studies* 44, no. 3 (2017): 602, <https://doi.org/10.1080/03066150.2016.1235036>.

For Moore, human relations within “the web of life” are largely viewed as being “cascades of consequences” rather than “constitutive relations.”<sup>185</sup> This abstraction, further, constrains people’s ability to analyse and address the ecological crisis. So, according to Moore, it is more appropriate to view capitalism as a “human organisation” that dates back to the mid-fifteenth century to coincide with the modern agricultural revolution in England and Holland, and the colonisation of Latin America by the Iberian nations.<sup>186</sup> In identifying this turning point, Moore underscored the Euro-centric and technocratic determinants of this developing epoch.<sup>187</sup>

In view of the foregoing, the problems arising from capital’s use and exploitation of nature, including human nature, is apparent but more attention needs to be given to political power. The economic system does not operate in a system unto itself. Arguably, if the capitalist system is premised on an opportunity for a profit then, with the right incentives (e.g., tax or regulations), entrepreneurs will adapt to the demands. It is also important to underline that the origins of global warming and what propels it are not synonymous. Nor can

---

<sup>185</sup> Ibid., 595-98.

<sup>186</sup> Moore argued that European imperialism and the advancements in science and technology allowed for the identification, appropriation, and commodification of “Cheap Nature”. He identified these as being food, labour, energy, and raw materials. In using the term “Cheap”, Moore focused attention on how the pursuit of capitalism reduces the inputs of labour, energy, and biophysical utility to below the system-wide average. “The Rise of Cheap Nature,” in *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*, ed. Jason W. Moore (Oakland, CA: PM Press, 2016). See also Raj Patel and Jason W Moore, *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet* (Carlton, VIC: Black Inc, 2018), ProQuest Library.

<sup>187</sup> Foster et al. and Moore are engaged in a debate around the issue of whether nature and capitalism are separate entities. See Andreas Malm, *The Progress of the Storm: Nature and Society in a Warming World* (London: Verso, 2018).

the two factors—the cause of global warming and runaway global warming—be simply reduced to rising GHG emissions.

Anthropologist Alf Hornborg wrote:

This incapacity to evade catastrophe has two basic aspects that are intricately interrelated. One is that our way of thinking and talking about the world prevents us from grasping or at least efficaciously questioning the mechanisms propelling this development. The other is that there are extremely powerful interests at stake. We are not all sitting in the same boat, as the metaphor goes. We are sitting in at least two different boats, but one is pulling us all toward disaster. There are definitely powerful social groups who have very much to gain—at least within the anticipated time-frame of their own lifetimes—from the current organisation of global society.<sup>188</sup>

To reiterate, people's understandings of the world are also shaped by those with power. While today more people have a better chance at a reasonable life than in the past, prosperity and harm are not evenly shared.<sup>189</sup> There have been shifts in wealth and power, but the burden of the climate crisis still falls upon an elite fraction of society. Today this group has more members dispersed across the planet.<sup>190</sup>

As the above critical enquiries attest, history is constructed. Over time, with modern insights, past events, ideas, and historical figures can gain new

---

<sup>188</sup> Alf Hornborg, "Zero-Sum World: Challenges in Conceptualizing Environmental Load Displacement and Ecologically Unequal Exchange in the World-System," *International Journal of Comparative Sociology* 50, no. 3-4 (2009): 238, <https://doi.org/10.1177/0020715209105141>.

<sup>189</sup> See Hans Rosling, Ola Rosling, and Anna Rosling Rönnlund, *Factfulness: Ten Reasons We're Wrong About the World - and Why Things Are Better Than You Think* (New York: Flatiron Books, 2017); World Bank, *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*, (Washington D.C: World Bank, 2018), <https://openknowledge.worldbank.org/bitstream/handle/10986/30418/9781464813306.pdf>.

<sup>190</sup> See Jeffrey Wasserstrom, *China in the 21st Century: What Everyone Needs to Know* (New York: Oxford University Press, 2010); Chrystia Freeland, *Plutocrats: The Rise of the New Global Super-Rich and the Fall of Everyone Else* (New York: Penguin Press, 2012); Linda McQuaig and Neil Brooks, *The Trouble With Billionaires* (London: One World Publications, 2013).

relevance or lose prominence (as other insights, events, ideas, and historical figures come into view). And as the past shifts further beyond reach, new records are added, generating new markers of change and invoking new ways to reckon the past. Simply put, what took place never changes but how it is interpreted can. An argument which I will revisit later.

### **The Consumer Society**

In *Work, Consumerism and The New Poor*, sociologist and philosopher Zygmunt Bauman proclaimed: “Ours is a consumer society.”<sup>191</sup> He explained that “to consume” is to “[use] things up” and “to destroy,” whether literally or aesthetically (that is, it no longer appeases an individual’s desire or purpose).<sup>192</sup> For Bauman, modern society has shifted from a “producer” to a “consumer” society. The difference between then and now, he observed, is a matter of emphasis—now, society engages with its members largely through their purchasing power. Against this background, Bauman declared that “the brute unquestionable fact is that one needs to be [*sic*] consumer first, before one can think of becoming anything in particular.”<sup>193</sup> Following on from his insights is the question of what is consumption?

In general, critical reflections on consumption and the consumer society often juxtaposed authentic life against a world of superfluous goods and

---

<sup>191</sup> Zygmunt Bauman, *Work, Consumerism and the New Poor* (Berkshire: McGraw-Hill Education, 2005), 23.

<sup>192</sup> *Ibid.*

<sup>193</sup> *Ibid.*, 26.

services.<sup>194</sup> In many of these accounts, the focus extends beyond the consumer to explore the external factors that drive consumption. Over time, commodities have become deeply embedded in the socio-cultural fabric of society, and this has given rise to the question of whether consumerism can be dismissed as being merely superfluous. It is to these critiques and questions that I now turn.

It should be made clear from the outset that attention is not on “mundane consumption” but “consumerism,” to use the words of sociologist Barry Smart. Consumerism, according to Smart, “is a way of living that revolves around the wanting of things, the longing for things, the purchasing of things, a way of life in which having, desiring, and wishing for more and more things have become significant preoccupations for late modern subjects whose identities are increasingly bound up with what and how they consume.”<sup>195</sup> His explication evokes the terms “needs” and “wants”, with the former considered a basic necessity or a routine part of an individual’s life and the latter is not. Political economist Robert Skidelsky and philosopher Edward Skidelsky stated, “A need for  $x$  establishes a moral claim to  $x$ , whereas merely wanting  $x$  does not.”<sup>196</sup> The scholars further observed, “The man with three houses is not thought to be in dire straits, however urgent his desire for a fourth.”<sup>197</sup> The problem, then, which the authors also identified is that “we, are all, in principle, capable of limiting

---

<sup>194</sup> See Juliet Schor and Douglas Holt, eds., *The Consumer Society Reader* (New York: The New Press, 2000), ProQuest Ebrary.

<sup>195</sup> Barry Smart, *Consumer Society: Critical Issues and Environmental Consequences* (London: Sage Publications, 2010).

<sup>196</sup> Robert Skidelsky and Edward Skidelsky, *How Much Is Enough? Money and the Good Life* (New York: Other Press, 2012), 89.

<sup>197</sup> *Ibid.*, 13.

our wants to our needs; the problem is that a competitive, monetized economy puts us under pressure to want more and more.”<sup>198</sup> This propensity for more suggests that there is a transformative power to consumption.

The complexity of commodity exchange has not been neglected by scholars. Notable amongst them is a political philosopher and political economist, Karl Marx. In the first volume of *Das Kapital*, he wrote:

A commodity is a use-value or object of utility, and a value. It manifests itself as this twofold thing, that it is, as soon as its value assumes an independent form—viz., the form exchange value. It never assumes this form when isolated, but only when placed in a value or exchange relation with another commodity of a different kind.”<sup>199</sup>

Value, he went on to point out, “does not stalk about with a label describing what it is. It is value, rather, that converts every product into a social hieroglyphic.”<sup>200</sup> Here, he brings to attention the comparative and subjective social value of a commodity.

Also, central to Marx’s argument is the idea that an individual’s relationships with “things” overshadow their social and ecological relationships. He coined the term “fetishism” to describe how a commodity—a “mysterious thing”—has qualities that “are at the same time perceptible and imperceptible by the senses.”<sup>201</sup> His use of “imperceptible” brings into question the objective and

---

<sup>198</sup> Ibid.

<sup>199</sup> Karl Marx, "Commodities and Money," in *Das Kapital: A Critique of Political Economy*, ed. Friedrich Engels (Washington D.C: Regnery Publishing, 2012), ProQuest Ebrary. Marx used “use-value” to refer to how an object or thing fulfils a human need and “exchange value” to describe its abstraction from use-value vis-à-vis money and social prestige.

<sup>200</sup> Ibid., 62.

<sup>201</sup> Ibid., 60.

subjective measures of a commodity. Accordingly, for Marx, there is “a definite social relation between men that assumes, in their eyes, the fantastic form of a relation between things.”<sup>202</sup> So, as individuals become more immersed with commodities, they can fail to fully comprehend and appreciate the nature of their relationship with things and others. Consequently, money and prestige are further venerated.<sup>203</sup>

Of note, too, is the work of economist and sociologist Thorstein Veblen. In his 1899 publication, *The Theory of the Leisure Class*, he explored the performative nature of consumption. His observations led him to develop the concepts of “conspicuous leisure” and “conspicuous consumption” to depict how the accumulation of products and experiences are not solely borne out of material necessity. They also act as evidence of an individual’s reputability. He explained that “the consumption of these more excellent goods is an evidence of wealth, it becomes honorific; and conversely, the failure to consume in due quantity and quality becomes a mark of inferiority and demerit.”<sup>204</sup> Veblen’s work showed that the “person-object” relation can structure social difference and hierarchy and that these understandings are widely shared.

Also pertinent is the work of critical theorists Theodor Adorno and Max Horkheimer. They observed that many areas of American life were increasingly

---

<sup>202</sup> Ibid.

<sup>203</sup> See also Axel Honneth, ed. *Reification: A New Look at an Old Idea* (Oxford: Oxford University Press, 2008); Sean Sayers, *Marx and Alienation: Essays on Hegelian Themes* (Hampshire: Palgrave Macmillan, 2011).

<sup>204</sup> Thorstein Veblen, *The Theory of the Leisure Class* (New York: Dover Publications, 1994), 46.

commodified and viewed this as the regression of enlightenment. In their 1947 publication, *Dialectic of Enlightenment*, they argued that ideology, expressed through the culture industry (e.g., cinema and radio) was taking hold of individual consciousness. Here, “genuine” demands were “evoked and manipulated” to satisfy profit-driven industries.<sup>205</sup> The theorists lamented:

The most intimate reactions of human beings have been so thoroughly reified that the idea of anything specific to themselves now persists only as an utterly abstract notion...The triumph of advertising in the culture industry is that consumers feel compelled to buy and use its products even though they see through them.<sup>206</sup>

This suggests that consumer preferences and behaviours are largely constructed and influenced by the strategies and techniques of advertising (and marketing).

Relatedly, in his 1958 publication, *The Affluent Society*, economist John Kenneth Galbraith wrote, “One cannot defend production as satisfying want if that production creates the wants.”<sup>207</sup> Here, he brought into question where economic authority lies. In the introduction to the fortieth-anniversary edition of his work, Galbraith reflected that, over time, those who spoke for consumer sovereignty, had subsided. He judges that it is now accepted that “the consumer is, in fact, less than sovereign.”<sup>208</sup> This implies that it has become more common to recognise the force of producers and advertisers.

---

<sup>205</sup> Horkheimer and Adorno, *Dialectic of Enlightenment*. See also David Held, “The Culture Industry: Critical Theory and Aesthetics,” in *Introduction to Critical Theory* (Cambridge: Polity Press, 2004).

<sup>206</sup> Horkheimer and Adorno, *Dialectic of Enlightenment*, 167.

<sup>207</sup> John Kenneth Galbraith, *The Affluent Society*, 40th ed. (London: Penguin Books, 1999), 124.

<sup>208</sup> *Ibid.*, ix.

If producers can easily impose their products upon consumers, this is largely achieved with the aid of other professionals, namely those working in advertising and marketing. According to French philosopher and sociologist Jean Baudrillard, the consumer society is ideological because objects have a “symbolic value.” In his early writings, he claimed that the consumer society is dominated by the “hierarchies of products and objects.” That is, an object or a product is first and foremost, a sign of power, influence, and or responsibility.<sup>209</sup> Baudrillard explicated that “you never consume the object in itself (in its use-value); you are always manipulating objects (in the broadest sense) as signs which distinguish you either by affiliating you to your own group taken as an ideal reference or by marking you off from your group by reference to a group of higher status.”<sup>210</sup> In this regard, social and/or cultural distinction comes prior to emulation.

Later, Baudrillard proclaimed:

Consumption is a myth. That is to say, it is *a statement of contemporary society about itself*, the way our society speaks itself. And, in a sense, the only objective reality of consumption is the *idea* of consumption; it is this reflexive, discursive configuration, endlessly repeated in everyday speech and intellectual discourse, which has acquired the force of *common sense*. Our society thinks itself and speaks itself as a consumer society. As much as it consumes anything, it consumes *itself* as a consumer society, as *idea*. Advertising is the triumphal paean to that idea (italics in original).<sup>211</sup>

From this perspective, the consumer society is more than just happenstance. It is constructed, manufactured, and structured around a reduplication of a

---

<sup>209</sup> Jean Baudrillard, *System of Objects*, trans. James Benedict (London: Verso, 2005), 208.

<sup>210</sup> *The Consumer Society*, 61.

<sup>211</sup> *Ibid.*, 193.

“prophetic language,” to use Baudrillard’s words.<sup>212</sup> In short, to sell a commodity the creative industries promote the “socialised exchange of signs.” The success of which illustrates the heightened subjectivity of the consumer society.

More recently, professors Robert Goldman and Stephen Papson explained that “ads ask us to choose and construct our identities out of our consumption choices,” adding that there is a “voracious” appetite for “the commodity sign industry.”<sup>213</sup> Advertisers, they argued, are constantly engaged in “sign wars,” seeking ways to “hail” consumers.<sup>214</sup> Similarly, Bauman remarked, “To embrace the modality of the consumer means first and foremost falling in love with choice; only in the second, and not at all indispensable place, does it mean consuming more.”<sup>215</sup> He went on to explicate, “The prime significance of wealth and income is in the stretching of the range of consumer choice.”<sup>216</sup> In this context, it is not merely the acquisition of a good or service, but it is the appearance of being in control or having power.

In *Why Consumption Matters*, cultural anthropologist Betsy Taylor and writer Dave Tilford pointed out: “In one sense, we have been ‘buying on credit’ these past few decades: charging our current lifestyles on resources necessary for

---

<sup>212</sup> Ibid., 127.

<sup>213</sup> Robert Goldman and Stephen Papson, “Advertising in the Age of Accelerated Meaning,” in *The Consumer Society Reader*, ed. Juliet Schor and Douglas Holt (New York: The New Press, 1996), ProQuest Ebrary.

<sup>214</sup> Ibid., 85-6, 95-7.

<sup>215</sup> Bauman, *Work, Consumerism and the New Poor*, 25.

<sup>216</sup> Ibid., 31.

the well-being of future generations.”<sup>217</sup> It is worth recalling that, over time, the human appetite for materials and energy has increased exponentially, largely driven by those living an industrial-level urban life in high-income nations.<sup>218</sup> In parallel with this is the destruction of the Earth system, which is visible through the exploitation of raw materials, deforestation, increased pollution, accumulation of waste (and e-waste), loss of biodiversity, and global warming.<sup>219</sup>

Writer Gary Gardner added that “if developing countries achieve a level of affluence similar to that of modern wealthy countries, scholars estimate that *global material use will grow to three to five times its current level*” (italics in original).<sup>220</sup> The range of social and environmental effects suggest that consumption patterns cannot expand, nor continue. It is hard, though, to do away with and deny others the luxuries that have been experienced by a fraction of the population. But if more people emulate modern lifestyle behaviours and patterns, in particular the American culture of consumption, then the current climate crisis will worsen.

---

<sup>217</sup> Betty Taylor and Dave Tilford, "Why Consumption Matters," in *The Consumer Society Reader*, ed. Juliet Schor and Douglas Holt (New York: The New Press, 2000), 464, ProQuest Ebrary.

<sup>218</sup> According to Taylor and Tilford, culpability lies with the top 20%, who they term the “consumer class”. Classified in this class are those living in most parts of North America, West Europe, Japan, Australia, the oil sheikdoms of the Middle East, and a small percentage of the population in other regions. See also Fridolin Krausmann et al., "Growth in Global Materials Use, GDP and Population During the 20<sup>th</sup> Century," *Ecological Economics* 68, no. 10 (2009), <https://doi.org/10.1016/j.ecolecon.2009.05.007>; Charles A. S. Hall and Kent A. Klitgaard, *Energy and the Wealth of Nations: Understanding the Biophysical Economy* (New York: Springer 2012).

<sup>219</sup> See Richard Maxwell and Toby Miller, “Greening Media Studies,” in *Media and the Ecological Crisis*, edited by Richard Maxwell, Jon Raudalen, and Nina Lager-Vestberg, 87-98, (New York: Routledge, 2015).

<sup>220</sup> Gary Gardner, "Cities in the Arc of Human History: A Materials Perspective," in *State of the World: Can a City Be Sustainable?* The Worldwatch Institute (Washington, D.C: Island Press, 2016), 23, [https://doi.org/10.5822/978-1-61091-756-8\\_2](https://doi.org/10.5822/978-1-61091-756-8_2).

Bauman has also observed that economic growth is dependent upon “the zest and vigour of its consumers.”<sup>221</sup> However, this is problematic, as economist

Tim Jackson explicated:

...growth has us caught between the desire to maintain economic stability and the need to reduce resource use and emissions. This dilemma arises because environmental impacts ‘scale with’ economic output: the more economic output there is, the greater the environmental impact—all other things being equal. Of course, other things aren’t equal.<sup>222</sup>

Against this setting, economic growth fuelled by consumption is a double-edged sword. On the one hand, it has brought about vast advances in some people’s material conditions, but, at the same time, it is ecologically destructive and socially exploitative and continues to have these impacts.

More recently, in 2020, communications scholar Wayne Hope reflected upon the role of commodity fetishism and consumption. He explained, “Commodity status is not intrinsic, but assigned.”<sup>223</sup> Hope also observed that “consumer culture induces myopia as well as amnesia.” This takes place at multiple levels and elides critical appreciation of the past and the future. For example, the act of purchasing, gaining (fleeting) pleasure from, and/or discarding a consumable can repress the realisation that workers and natural resource extraction made such activities possible.<sup>224</sup> Consequently, the atemporal present is the focus of consciousness.

---

<sup>221</sup> Bauman, *Work, Consumerism and the New Poor*, 27.

<sup>222</sup> Tim Jackson, *Prosperity without Growth: Economics for a Finite Planet* (London: Earthscan, 2009), 120, ProQuest Ebrary.

<sup>223</sup> Wayne Hope, “Time, Globality and Commodity Fetishism,” in *Political Economy of Media Industries: Global Transformations and Challenges*, ed. Randy Nichols and Gabriela Martinez (New York: Routledge, 2020), 262.

<sup>224</sup> *Ibid.*, 263.

From the preceding discussion, consumption is not simply the purchasing of an item or experiencing a service, there are also intangible functions.<sup>225</sup> But it is important to be wary of homogenising culture or overgeneralising about consumers. Nevertheless, consumption choices have large implications, not just socially or psychologically but also ecologically. The advancement of global warming has heightened the problems growing out of the fetishised world of commodity production and exchange. However, under the prevailing economic order, these matters are largely unacknowledged or rendered invisible. As such, producers give little consideration to the life cycle of the consumable; from its raw material extraction, manufacturing and assembly, product use, and end of life. In short, there is little incentive to protect or factor in the environment. Consequently, we are in the midst of a climate crisis.

### **The Obfuscation of Nature**

Discussions on the geological evidence for the Anthropocene and the consumer society have sparked a wider debate around humankind's place in the Earth system. Some scholars have criticised the discussions for perpetuating long-standing misconceptions about the relationship between society and the natural world. For instance, sociologist Eileen Crist and physicist Helen Kopnina asserted:

---

<sup>225</sup> Research has continued to support this point about commodities being markers of social standings and that these significations of difference are widely acknowledged. See Robert H. Frank, *Luxury Fever: Weighing the Cost of Excess* (New York: Free Press, 1999); Yiannis Gabriel and Tim Lang, *The Unmanageable Consumer*, 2nd ed. (California: SAGE Publications, 2006); Naomi Klein, *No Logo: No Space, No Choice, No Jobs*, 10th ed (London: Fourth Estate, 2010).

...herein lies the ultimate irony of the anthropocentric worldview: while it wagered on reaping power by elevating civilized humanity as the apex of creation, and turning the world into its oyster, it has so conditioned human existence that the possibility of an alternative way of life—abundant in diverse beings and rife in mutual flourishing—is virtually beyond thinkable.<sup>226</sup>

Moore has also written about how “Humanity” and “Nature” are constructed as abstractions, which limits people’s ability to understand the origins of the ecological crisis.<sup>227</sup> The heart of the problem, he asserted, “is that Nature/Society dualism not only poses analytical barriers but reproduces ‘real world’ systems of domination, exploitation and appropriation.”<sup>228</sup>

Additionally, philosopher Matthew Calarco, in reflecting upon the binary distinctions separating humans from animals, warned that “it is through the process of placing the human in the centre of beings and using the human as the standard and measure for all other beings, that anthropocentrism leads to the anthropomorphisation of other beings.”<sup>229</sup> The dualist Human/ Animal ontology, similar to the Humanity/Nature abstraction, elevates human beings above all else and, in doing so, reduces the value of the lifeworld and denies the existence of non-human others. Such privileging of humanity can help to insulate humans from the discomfort of their actions. Moreover, the “human exceptionalism” paradigm can limit the conceptualisation of an alternate world order, an order that is more sustainable and equitable.

---

<sup>226</sup> Eileen Crist and Helen Kopnina, "Unsettling Anthropocentrism," *Dialectical Anthropology* 38, no. 4 (2014): 392, <https://doi.org/10.1007/s10624-014-9362-1>.

<sup>227</sup> Moore, "The Capitalocene Part I," 595-600.

<sup>228</sup> *Ibid.*, 601.

<sup>229</sup> Matthew Calarco, "Being toward Meat: Anthropocentrism, Indistinction, and Veganism," *Dialectical Anthropology* 38, no. 4 (2014): 416, <https://doi.org/10.1007/s10624-014-9349-y>.

These realisations were also explicated by linguist and cognitive scientist, George Lakoff. He pointed out that the phrase “protecting the environment” is problematic because it “assumes that there is an external threat. It does not say that the threat is us.”<sup>230</sup> Similarly, Foster et al. stressed that anthropocentric views about “the order of things” reinforced the flawed perception that modern science and technology will enable human beings to transcend nature’s general rule.<sup>231</sup> That is, proposed technocratic solutions to the ecological crisis still regarded nature as amenable to human designs and assumed that society is a realm constructed apart from nature. But the biosphere is irreplaceable. This is a point that analysts and environmentalists Amory Lovins, L. Hunter Lovins, and Paul Hawken highlighted: “In the industrial system, we can easily exchange machinery for labour. But no technology or amount of money can substitute for a stable climate and a productive biosphere. Even proper pricing can’t replace the priceless.”<sup>232</sup>

The assumption of nature as a tool for human benefit, thus subordinate to human purposes, is not new. In the penultimate chapter to *The Wisdom of Frugality: Why Less Is More - More Or Less*, philosopher Emrys Westacott noted that early Christian theologians, as well as Aristotelians, regarded nature as

---

<sup>230</sup> Green Alliance, *From Hot Air to Happy Endings: How to Inspire Public Support for a Low Carbon Society*, ed. Sylvia Rowley and Rebekah Phillips (London: Green Alliance, 2010), 12-13, <https://www.green-alliance.org.uk/resources/From%20hot%20air%20to%20happy%20endings.pdf>.

<sup>231</sup> Foster et al., *The Ecological Rift*, 33, 74.

<sup>232</sup> Amory B. Lovins, L. Hunter Lovins, and Paul Hawken, "A Road Map for Natural Capitalism," in *Understanding Business: Environments*, ed. Michael Lucas (London: Taylor and Francis, 2005), 263.

being “created for humanity’s benefit.”<sup>233</sup> This view of nature as raw material for human purposes persisted for many centuries, but over time, questions were raised about the natural threshold of the earth (or the concept of limits). Such is evident in Thomas Malthus’ 1792, *Essay on the Principle of Population* and, more recently, in the 1972 report, *The Limits to Growth*. While the connections and concerns postulated from these works proved to be flawed, it became increasingly clear that the environment was deteriorating.<sup>234</sup>

However, some scholars have been ardent in their view that growth is still compatible with ecological goals. For example, Skidelsky and Skidelsky argued that “sentiment, not science, has driven and continues to drive the environmentalist movement.”<sup>235</sup> They also remarked, “It is not self-evident, to dispassionate eyes, that global warming requires us to abandon growth. It might rather require us to *preserve* with growth, so as to finance the technologies needed to mitigate its consequences” (italics in original).<sup>236</sup> But challenging this point, Jackson stated that “global emissions and resource use are still rising...efficiency hasn’t outrun scale and shows no signs of doing so.”<sup>237</sup> Here, he used the lack of historical evidence to challenge the assertion that growth will

---

<sup>233</sup> Emrys Westacott, *The Wisdom of Frugality: Why Less Is More - More or Less*, (Princeton: Princeton University Press, 2016), 249-74, <https://muse.jhu.edu/book/56699>.

<sup>234</sup> Thomas Robert Malthus, *An Essay on the Principle of Population: The 1803 Edition* (New Haven, CT: Yale University Press, 2018), ProQuest Ebrary; Donella H. Meadows et al., *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (New York: Universe Books, 1972).

<sup>235</sup> Skidelsky and Skidelsky, *How Much Is Enough?* 136.

<sup>236</sup> *Ibid.*, 124.

<sup>237</sup> Jackson, *Prosperity without Growth?* 76.

induce the technological efficiency needed to address the adverse impacts and risks of global warming.

Other scholars have suggested that the violation of nature signals the “sixth extinction”.<sup>238</sup> For instance, the authors of *Global Environment Outlook – Geo-6* cautioned:

Biodiversity is in crisis. There is *well-established* evidence indicating an irrevocable and continuing decline of genetic and species diversity, and degradation of ecosystems at local and global scales. Scientists are increasingly concerned that, if anthropogenic pressures on Biodiversity continue unabated, we risk precipitating a sixth mass extinction event in Earth history, with profound impacts on human health and equity (italics in original).<sup>239</sup>

Additionally, data from the International Union for Conservation of Nature show that to date there are about 120,372 species on the *Red List*, of which some 32,441 are threatened with extinction and 959 are possibly extinct.<sup>240</sup> The loss of species will have repercussions throughout the Earth system. Nature, as Taylor and Tilford reminded us, “does have its own draconian system of adjustments and substitutions.”<sup>241</sup>

---

<sup>238</sup> See David B Wake and Vance T Vredenburg, "Are We in the Midst of the Sixth Mass Extinction? A View from the World of Amphibians," *Proceedings of the National Academy of Sciences* 105 (2008), <https://doi.org/10.1073/pnas.0801921105>; Anthony D. Barnosky et al., "Has the Earth's Sixth Mass Extinction Already Arrived?" *Nature* 471 (2011), <https://doi.org/10.1038/nature09678>.

<sup>239</sup> United Nations Environment Programme, *Global Environment Outlook – Geo-6*, 142.

<sup>240</sup> "The IUCN Red List of Threatened Species. Version 2020-2," IUCN, accessed September 10, 2020, <https://www.iucnredlist.org/statistics>. See also S Díaz et al., *IPBES: Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (Bonn: IPBES Secretariat, 2019), [https://ipbes.net/sites/default/files/2020-02/ipbes\\_global\\_assessment\\_report\\_summary\\_for\\_policymakers\\_en.pdf](https://ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf).

<sup>241</sup> Taylor and Tilford, *Beyond Consumption*, 470.

If the sixth extinction is precipitated, it would be viewed as being biotic. That is, it breaks away from the previous five mass extinctions (“the Big Five”) that are attributed to natural and physical causes.<sup>242</sup> Journalist Elizabeth Kolbert has also drawn attention to how the events unfolding is unprecedented. In *The Sixth Extinction: An Unnatural History*, she suggested that the world is heading towards “a no-analog future” whereby the past can no longer be used as a basis for the future. It is important to note that this violation against expectancies can disorient people. The next chapter returns to this aspect concerning the psychological challenges of engaging with the climate crisis. So, while scientists might be able to use the advances in knowledge and technology to model the likely effects of climate change, the departure from expectedness can create a sense of trepidation about the frequency and severity of change. Put differently, humanity might view itself as having more power in its relation to nature, but, in reality, the relationship is inverse.

Against this background, the climate crisis can also be viewed as an ethical and relational crisis. This is a matter that has been emphasised by psychoanalyst and philosopher Donna Orange. According to her, “what has gone so wrong in our relation to the earth” is that people have become “so embedded in the cultures that have created the climate problem.”<sup>243</sup> That is, the historical origin of the climate emergency and what keeps it intractable is “moral

---

<sup>242</sup> Smithsonian palaeontologist Doug Erwin argued against the idea that there is currently a sixth mass extinction underway that is on par with the previous mass extinctions. See Peter Brannen, “Earth Is Not in the Midst of a Sixth Mass Extinction,” *The Atlantic*, June 13, 2017, <https://www.theatlantic.com/science/archive/2017/06/the-ends-of-the-world/529545/>.

<sup>243</sup> Donna M. Orange, *Climate Crisis, Psychoanalysis, and Radical Ethics* (London: Routledge, 2016), 8, 64.

individualism.” Orange reasoned that this characteristic “prevents us from noticing both what we are doing to each other and to our planet as well as to the ways we are beneficiaries of the slave system, of colonialism, and of carbon-dependent industrialism.”<sup>244</sup> She called, therefore, for a new relation to the earth where everyone is “treasured,” and to achieve this “everything” needs to be recontextualised “with a connectedness and complexity mentality.”<sup>245</sup>

To summarise the discussions around the politics of the climate debate, media scholars Risto Kunelius and Elisabeth Eide wrote that:

...the idea of the Anthropocene puts our notions of politics into new light. The fact that human activity has become a major, systemic driver of global natural mechanisms means that we are no longer merely ‘part of nature’ but also increasingly a dominant factor of the nature in which we live in. In this situation, it is essential not to remain stuck on earlier confrontations.<sup>246</sup>

In general, there is this propensity towards placing humanity as an agent separate if not above nature. But as the world warms, it becomes more apparent that the natural world is less obliging than previously thought. Simply put, the idea of human primacy over nature appears to be a fallacy. The inability or reluctance to concede this point, sees humanity pull deeper into a precarious future that is set to overwhelm all the systems in place. The slower the response, the worse the outcome will be.

---

<sup>244</sup> Ibid., 13.

<sup>245</sup> Ibid., 101.

<sup>246</sup> Risto Kunelius and Elisabeth Eide, "The Problem: Climate Change, Politics and the Media," in *Media and Global Climate Knowledge: Journalism and the IPCC*, ed. Risto Kunelius et al., (New York: Palgrave Macmillan, 2017), 13.

## **Conclusion**

In summary, the climate breakdown cannot simply be perceived as a scientific problem, nor can it be left solely to political institutions to resolve. Hostility and competing interests, coupled with a failure to understand the historical and economic precedents for global warming, is likely to see the continual deferment of climate action. The critiques of the common conception of the climate crisis and the Anthropocene concept itself are not just concerned with the scientific evidence of rising average temperature or geological timescales. Rather focus also centres on global warming as a symptom of the principle of accumulation without end. Such critiques also call for the adoption of multi-time scale vantage points and the identification of the socio-economic processes involved in the prevailing economic system to better account for the risks and harm. The next chapter delves deeper into the factors that make the climate emergency an intractable problem.

## Chapter Two

### Communicating and Contesting the Climate Crisis

The problem is not changing people's consciousness—or what's in their heads—but the political, economic, institutional régime of the production of truth.

—Michel Foucault, *Power/Knowledge*, 1980

In this chapter, the focus shifts from the historical context of the scientific truths about global warming to the communication of these truths amidst a mediated world of distorted rhetoric, ideological framing, and public relations. I begin by outlining the challenges of communicating technical data and draw attention to the manufacturing of scientific dissent. Next, I focus on the fossil fuel industry's response to the scientific evidence for global warming. The energy and chemical corporation ExxonMobil is put forth as a case study that exemplifies some of the tactics designed to dissuade the public from taking an interest in climate change matters. Then, I explore the scholarship on climate change communication and identify the key psychological barriers which undermine mass mobilisation against rising emissions. Lastly, I identify ways in which practitioners and journalists tasked with the communication of climate change-related matters can proceed. In this chapter, I show that global warming is a complex crisis with multiple trigger points, making it challenging for individuals to recognise, comprehend, and/or prioritise.

## Communicating Climate Science in a Mediated Environment

Outside the scientific community, very few people consume scientific information regularly. Given the language and numerical detail involved in scientific research, scholars have questioned the public's capacity for comprehension. It was often assumed that the public's apprehension of and opposition towards scientific information resulted from a lack of information or understanding (commonly referred to as the "information deficit model" or "deficit model"). However, research has found that this assumption is simplistic.<sup>247</sup> Environmental communication scholars Susanne Moser and Lisa Dilling wrote:

While knowledge about the causes of climate change is moderately correlated with appropriate behavioural response, and deeper understanding of systems primes audiences to more readily understand the magnitude of the required response, there is also evidence that better knowledge about climate change does not necessarily raise concern, and even better understanding about possible solutions does not necessarily result in efficacious behaviour.<sup>248</sup>

So, people can be aware of the science but for various reasons disagree or disengage with the information.<sup>249</sup>

For science communicators who seek to inform, engage, and motivate audiences about climate action, the complex nature of global warming and its

---

<sup>247</sup> See Paul Kellstedt, Sammy Zahran, and Arnold Vedlitz, "Personal Efficacy, the Information Environment, and Attitudes toward Global Warming and Climate Change in the United States," *Risk Analysis* 28, no. 1 (2008), <https://doi.org/10.1111/j.1539-6924.2008.01010.x>; Brigitte Nerlich, Nelya Koteyko, and Brian Brown, "Theory and Language of Climate Change Communication," *WIREs Climate Change* 1 (2010), <https://doi.org/10.1002/wcc.2>.

<sup>248</sup> Susanne C. Moser and Lisa Dilling, "Communicating Climate Change: Closing the Science - Action Gap," in *Oxford Handbook of Climate Change and Society*, eds. John S. Dryzek, Richard B. Norgaard, and David Schlosberg (Oxford: Oxford University Press 2011), 4.

<sup>249</sup> National Academies of Sciences Engineering and Medicine, *Communicating Science Effectively: A Research Agenda* (Washington D.C: The National Academies Press, 2017), 3, 30-31, <https://doi.org/10.17226/23674>.

effects make this a difficult task. Writing in 2011, researcher Richard Somerville and communicator Susan Hassol observed:

Scientists typically fail to craft simple, clear messages and repeat them often. They commonly overdo the level of detail, and people can have difficulty sorting out what is important. In short, the more you say, the less they hear. And scientists tend to speak in code...Many words that seem perfectly normal to scientists are incomprehensible jargon to the wider world. And there are usually simpler substitutes.<sup>250</sup>

They went on to note, “Scientists often fail to put new findings into context...Another common mistake made by scientists is leading with what they do not know, instead of what they do know.”<sup>251</sup> In addition, physics professor Shaun Hendy wrote, “Scientists’ desire to stay on message and their reluctance to be drawn out when the science was so uncertain sometimes conveyed the impression that information was being tightly controlled.”<sup>252</sup> From these observations, the linguistic style adopted by scientists and effective communication were at odds. Now, scientists and scientific bodies are making better communication choices about their research, but decisions about how to explain future climate scenarios can still be improved by better communication of scientific concepts.

A key challenge for the communication of global warming and its effects is that there are limits to knowledge. Put simply, knowledge is not fixed. Scientific research is often a work in progress with constraints that include existing knowledge, natural variability, methodology, sample, and time. For these

---

<sup>250</sup> Richard Somerville and Susan Hassol, "Communicating the Science of Climate Change," *Physics Today* (2011): 50-51, <https://doi.org/10.1063/PT.3.1296>.

<sup>251</sup> *Ibid.*, 51.

<sup>252</sup> Shaun Hendy, *Silencing Science* (Wellington: Bridget Williams Books, 2016), 31.

reasons, climate change science involves “uncertain” scientific data and “risk assessments”. The qualified nature of these outcomes, therefore, has impaired efficacious action concerning rising emissions. Social scientist Sabine Marx and psychologist Elke Weber found that:

...humans have a great need for predictability. It makes up an important part of our need for safety and security...Uncertainty means that there may be unknown outcomes, unknown probabilities, and immeasurable components, leading to a real or perceived lack of control...Whether perceived or real, lack of control raises anxiety, individually and socially.<sup>253</sup>

Other researchers have reported that uncertainty can “trigger confusion, disengagement, defensiveness and denial” in people.<sup>254</sup> However, an incomplete understanding of the process(es) under investigation and incomplete determination of particular value(s) or result(s) is inherent in science.<sup>255</sup>

Biologist Stephen Schneider explained that “the best tradition of science” requires that:

...you draw conclusions based on what you think at the time, making all your assumptions explicit; then you re-examine the assumptions in light of new evidence; you recalculate; and then you publish the revisions without any shame. That’s how science proceeds. The real science is in how good the assumptions are—and that is where empirical testing and peer debate comes in.<sup>256</sup>

---

<sup>253</sup> Sabine M. Marx and Elke Weber, "Decision Making Under Climate Uncertainty: The Power of Understanding Judgment and Decision Processes," in *Climate Change in the Great Lakes Region: Navigating an Uncertain Future*, eds. Thomas Dietz and David Bidwell (Michigan: Michigan State University Press, 2012), 100.

<sup>254</sup> Thomas A. Morton et al., "The Future That May (or May Not) Come: How Framing Changes Responses to Uncertainty in Climate Change Communications," *Global Environmental Change* 21 (2011): 104, <https://doi.org/10.1016/j.gloenvcha.2010.09.013>.

<sup>255</sup> See H Kunreuther et al., "Integrated Risk and Uncertainty Assessment of Climate Change Response Policies.," in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. O Edenhofer et al., (Cambridge: Cambridge University Press, 2014), [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_chapter2.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter2.pdf).

<sup>256</sup> Stephen H Schneider, *Science as a Contact Sport: Inside the Battle to Save Earth's Climate* (Washington D.C: National Geographic Books, 2009), 43.

Furthermore, he wrote that in science, “truth is not precisely known, and sometimes not even fully knowable. ‘Truth’ is approximated by increasing refinements via a series of subjective probabilities and possibilities, updated by new data and theories assessed by a community of those informed on the issues—because that’s all science can offer about the future.”<sup>257</sup> In this context, scientific work provides probabilistic assessments of the consequences of global warming, which can aid future climate decisions. That is, it generates new insights and adds to existing ones so that individuals and officials can better respond to a given situation.

Uncertainty has also been confounded by those with high stakes in climate action.<sup>258</sup> In an interview with social scientist Daniel Yankelovich, author James Hoggan and columnist Grania Litwin commented: “The scientific community assumes the same rules of communication are always applicable and rational, that people are attentive, open-minded, persuaded by facts and believe that those who are presenting information are people of goodwill, and not deliberately trying to manipulate them. But none of those things are true.”<sup>259</sup> This points to

---

<sup>257</sup> Ibid., 120.

<sup>258</sup> Uncertainty has often been conflated with risk. However, the two terms are not synonymous. The former is immeasurable, whereas the latter is measurable in probabilistic terms. See David Hillson, “Extending the Risk Process to Manage Opportunities,” *International Journal of Project Management* 20, no. 3 (2002), [https://doi.org/10.1016/S0263-7863\(01\)00074-6](https://doi.org/10.1016/S0263-7863(01)00074-6); Olga Perminova, Magnus Gustafsson, and Kim Wikström, “Defining Uncertainty in Projects – A New Perspective,” *International Journal of Project Management* 26, no. 1 (2008), <https://doi.org/10.1016/j.ijproman.2007.08.005>.

<sup>259</sup> James Hoggan and Grania Litwin, eds., *I'm Right and You're an Idiot: The Toxic State of Public Discourse and How to Clean It Up* (British Columbia: New Society Publishers, 2016), 8.

the changing landscape in which scientific debate and contention take place. But attacks on and scepticism about science is not new.<sup>260</sup>

Because the fields of science play an important role in informing public policy, it is a site of contention. Illustrative of this was the response towards marine biologist Rachel Carson's 1962 *Silent Spring*. Carson raised concerns about the health and dangers of pesticides (e.g., dichlorodiphenyltrichloroethane, commonly known as DDT). In response, her opponents launched a campaign to discredit the scientific evidence and to limit government intervention in the marketplace ("paternalism"). She was labelled variously as a hysterical woman, a communist, and a radical. More recently, her critics have charged her with being a "mass murderer," responsible for the misery of millions of people suffering from malaria (because, in some instances, DDT can be used to alleviate malaria).<sup>261</sup> They also used the unfolding events as an exemplar against regulatory intervention and to highlight the importance of competitive capitalism.

In terms of global warming, early proponents of the "disinformation campaign" deliberately publicised scientific data or works that they viewed to be ambiguous, anomalous, and incongruous to create the impression that there

---

<sup>260</sup> See Shawn Otto, *The War on Science: Who's Waging It, Why It Matters, What We Can Do About It* (Minnesota: Milkweed Editions, 2016).

<sup>261</sup> See Tina Rosenberg, "What the World Needs Now Is DDT," *The New York Times Magazine*, April 11, 2004, <https://www.nytimes.com/2004/04/11/magazine/what-the-world-needs-now-is-ddt.html>; Sonia Shah, "Don't Blame Environmentalists for Malaria," *The Nation*, March 31, 2006, <https://www.thenation.com/article/archive/dont-blame-environmentalists-malaria/>; Clyde Haberman, "Rachel Carson, DDT and the Fight against Malaria," *The New York Times*, January 22, 2017, <https://www.nytimes.com/2017/01/22/us/rachel-carson-ddt-malaria-retro-report.html>.

were widespread disagreements in the scientific community over the evidence for global warming.<sup>262</sup> For instance, co-opted scientists, such as Frederick Seitz and Richard Lindzen, selected data out of context and used it to promote the agenda of their financiers.<sup>263</sup> But as the scientific evidence of global warming and its potential consequences advanced, this approach became difficult to maintain or defend.<sup>264</sup> Instead, the focus shifted to the extent of change and the range of effects. The “wait and learn” strategy was developed and advanced against the “act now” position. Simply put, “doubt mongering” and the misrepresentation of science was replaced by “delay” tactics, which sought to trivialise the problems of global warming.<sup>265</sup>

---

<sup>262</sup> The terms of “disinformation” (deliberate deception) and “misinformation” (mistake) have at times been conflated. John Cook found that there were five broad categories of climate misinformation, summarising them simply as: “it’s not real, it’s not us, it’s not bad, the experts are unreliable, and climate solutions won’t work.” See John Cook, “Understanding and Countering Misinformation About Climate Change,” in *Handbook of Research on Deception, Fake News, and Misinformation Online*, ed. Innocent Chilwa and Sergei Samoilenko (Pennsylvania: IGI-Global, 2019), 281-306, <http://doi:10.4018/978-1-5225-8535-0.ch016>. See also Peter Herson, “Disinformation and Misinformation through the Internet: Findings of an Exploratory Study,” *Government Information Quarterly* 12, no. 2 (1995), [https://doi.org/10.1016/0740-624X\(95\)90052-7](https://doi.org/10.1016/0740-624X(95)90052-7).

<sup>263</sup> This strategy of casting doubt over the reliability of the information to forestall climate action has been widely publicised and will be elaborated on in the following section.

<sup>264</sup> In 2002, Republican pollster and strategist Frank Luntz advised the administration of George W. Bush that the term climate change should be used in public discourse. His research showed that members of the public viewed global warming as having “catastrophic connotations” attached to it. See Frank Luntz to George W. Bush, memorandum, *Straight Talk* (Luntz Research Companies, 2002), 131-46, <https://www.the-republican-reversal.com/uploads/1/2/0/2/120201024/luntzresearch.memo2.pdf>.

<sup>265</sup> In a recent interview with *The Observer*, climate expert Michael Mann advanced that the battle between deniers and advocates of climate change has entered what he termed “a new, pernicious phase.” He found that attention has shifted away from policy reforms and moved towards individual behavioural change, which he argued exploits the lifestyle change movement. See Robin McKie, “Climate Change Deniers’ New Battle Front Attacked,” *The Guardian*, November 9, 2019, <https://www.theguardian.com/science/2019/nov/09/doomism-new-tactic-fossil-fuel-lobby>.

It was found that those who rejected climate science were strongly associated with the endorsement of a laissez-faire view of unregulated free markets or conspiracist ideations.<sup>266</sup> According to psychologists Stephan Lewandowsky, Klaus Oberauer, and Gilles Gignac, personal ideology had a “pivotal role” in the rejection of climate science.<sup>267</sup> In another study, Joseph Uscinski, Karen Douglas, and Stephan Lewandowsky stated that in climate change discourse, conspiracy theories tend to be premised on the ideas that data was faked to obtain research funds, the scientific consensus on global warming was based on flawed evidence, and climate change was a hoax perpetrated by leftist radicals to undermine the power of the state.<sup>268</sup> It is clear, therefore, that an individual’s approach to science can be influenced by numerous factors.

It should also be acknowledged that the scientific community has made mistakes in communicating the significance of global warming and its risks. For instance, Somerville and Hassol reported that the much-publicised errors in the AR4 and the 2009 “Climategate” undermined the reputations of the IPCC and climate scientists.<sup>269</sup> It also added to public confusion over the issue. Although

---

<sup>266</sup> Stephan Lewandowsky, Klaus Oberauer, and Gilles E Gignac, "NASA Faked the Moon Landing—Therefore, (Climate) Science is a Hoax: An Anatomy of the Motivated Rejection of Science," *Psychological Science* 24, no. 5 (2013), <https://doi.org/10.1177/0956797612457686>. A conspiracy theory is “accusatory and suspect, rather than as accepted knowledge” and usually for someone’s own benefit or against the common good. See Joseph E Uscinski, Karen Douglas, and Stephan Lewandowsky, "Climate Change Conspiracy Theories," in *Oxford Research Encyclopedia of Climate Science* (2017), <http://doi.org/10.1093/acrefore/9780190228620.013.328>.

<sup>267</sup> Lewandowsky, Oberauer, and Gignac, "NASA Faked the Moon Landing,” 630.

<sup>268</sup> Uscinski, Douglas, and Lewandowsky, "Climate Change Conspiracy Theories," 3. See also Karen M. Douglas and Robbie M. Sutton, "Climate Change: Why the Conspiracy Theories Are Dangerous," *Bulletin of the Atomic Scientists* 71, no. 2 (2015), <https://doi.org/10.1177/0096340215571908>.

<sup>269</sup> In 2009, the server at the University of East Anglia was hacked and emails and documents were copied. Some of the stolen content was used to show that scientists manipulated data and that global warming was a conspiracy.

the errors were minor and investigations into the emails did not find any fraud or misconduct, the accusations were heavily reported in the news media with little attention given to the trivial nature of the claims.<sup>270</sup> Scholars have also argued that the IPCC failed to adequately address the accusations. The fallout has been described as “catastrophic” and a “public relations disaster.”<sup>271</sup> These examples illustrate the fraught environment in which the debate over climate change takes place.

Over time, it became evident that the “counterattack” on science used any means possible to obfuscate the problem of rising CO<sub>2</sub> emissions. A common strategy was to discredit and discourage scientists from conducting and publicising their findings.<sup>272</sup> For instance, following the publication of the AR2, climate researcher Ben Santer was accused of “politically motivated tampering” and “scientific cleansing.”<sup>273</sup> The IPCC assessment report contained one of the earliest scientific acknowledgements that human activities affected the climate. It stated: “the balance of evidence suggests a discernible human influence on

---

<sup>270</sup> Somerville and Hassol, "Communicating the Science of Climate Change," 49-50.

<sup>271</sup> See Fred Pearce, "Climategate: Anatomy of a Public Relations Disaster," *Yale Environment* 360, December 10, 2009, [https://e360.yale.edu/features/climategate\\_anatomy\\_of\\_a\\_public\\_relations\\_disaster](https://e360.yale.edu/features/climategate_anatomy_of_a_public_relations_disaster); Damien Carrington, "IPCC Vice-Chair: Attacks on Climate Science Echo Tobacco Industry Tactics," *The Guardian*, October 28, 2010, <https://www.theguardian.com/environment/2010/oct/28/ipcc-climate-science-attacks-tobacco>; Anthony Leiserowitz et al., "Climategate, Public Opinion, and the Loss of Trust," *American Behavioural Scientist* 57, no. 6 (2013), <https://doi.org/10.1177/0002764212458272>.

<sup>272</sup> See Andrew C. Revkin, "Climate Expert Says NASA Tried to Silence Him," *New York Times*, January 29, 2006, <https://www.nytimes.com/2006/01/29/science/earth/climate-expert-says-nasa-tried-to-silence-him.html>; Schneider; Otto, *The War on Science*.

<sup>273</sup> Fred Pearce, "Victory for Openness as IPCC Climate Scientist Opens up Lab Doors," *The Guardian*, February 9, 2010, <https://www.theguardian.com/environment/2010/feb/09/ipcc-report-author-data-openness>.

global climate.”<sup>274</sup> Santer, as the lead convening author of “Chapter 8: Detection of Climate Change and Attribution of Causes,” became a prime target for denialists. In 2006, in an interview with journalist Paul Thacker, Santer remarked:

I thought that our 1995 statement was very cautious and entirely justified by the then-available science. But even that cautious statement caused some pretty healthy ripples in the ponds of science, politics, and the media. And it caused me a number of problems. I’d guess that about a year of my life was spent defending that scientific conclusion and my own personal scientific reputation.<sup>275</sup>

This series of events and Santer’s reflections demonstrate how demoralising and time consuming it can be for scientists to push back against disinformation. It can divert attention and resources away from other matters of concern, as well as make others more cautious in their day-to-day work and communication.

Overall, in the climate debate, opponents of climate action have sought to bring the scientific field into disrepute. In their interview with philosopher Jason Stanley, Hoggan and Litwin proclaimed:

Public discourse has deteriorated to such an extent that the traditional debating model—based on accuracy, evidence and proof—isn’t happening, so the typical fallback position is to tarnish another person’s reputation. When it comes to climate change, for instance, the new technique is to first criticise the research and scholarship, then undermine and discredit scientists.”<sup>276</sup>

These tactics have ranged from aggressive to illegal. Scientists have reported audits of their work, bans on speaking to journalists, aggressive picketing, harassment, intimidation, and open threats.<sup>277</sup> The targeting and isolating of

---

<sup>274</sup> The Intergovernmental Panel on Climate Change, "Climate Change 1995," 4.

<sup>275</sup> Paul Thacker, "The Many Travails of Ben Santer," *Environmental Science & Technology*, October 1, 2006, 5387, <http://doi.org/10.1021/es063000t>.

<sup>276</sup> Hoggan and Litwin, *I'm Right and You're an Idiot*, 97.

<sup>277</sup> See Michael Mann, *The Hockey Stick and the Climate Wars: Dispatches from the Front Lines* (New York: Columbia University Press, 2013); Schneider, *Science as a Contact Sport*.

given scientists can deter other professionals from publicising their research and/or engaging in the public dialogue on scientific matters (for fear of the repercussions it can have on their career).<sup>278</sup>

For scientists, scientific integrity is paramount. It can influence how research is received and the likelihood of future funding. But as the National Academy of Sciences (NAS) remarked, “No organizations, institutions, or experts are universally trusted on all issues. People often make judgements about trustworthiness in relation to the information being conveyed, and they will not necessarily deem a particular source to be trustworthy and competent across topics.”<sup>279</sup> In other words, trust and credibility are ascribed by the audience. As such, the attacks on scientists can affect the level of attention members of the public or political figures give to scientific data (as well as its interpretation).

Relatedly, political scientist Tom Nichols observed that the fraught environment of public debate is not new per se, rather the modern era has brought about the “death of the ideal of expertise.” He found that there was a growing conflation of information, knowledge, and experience. This led him to lament that “never have so many people had so much access to so much knowledge and yet have been so resistant to learning anything.”<sup>280</sup> Nichols argued that this occurred partly because of misguided notions of democratic

---

<sup>278</sup> Hendy, *Silencing Science*, 47.

<sup>279</sup> National Academies of Sciences Engineering and Medicine, *Communicating Science Effectively*, 43.

<sup>280</sup> Tom Nichols, *The Death of Expertise: The Campaign against Established Knowledge and Why It Matters* (New York: Oxford University Press, 2017), 2, ProQuest Ebrary.

equality, the commercialisation of higher education, the proliferation of “information” on the internet, poor journalism, and the rise of “fake news”.

Similarly, Hoggan and Litwin stated, following their interview with philosopher Bruno Latour, that “transparent, unmediated, undisputed facts’ have become so rare today that to offer a public proof—big enough and certain enough to convince the whole world of the presence of a phenomenon or of a looming danger—seems now almost beyond reach.”<sup>281</sup>

In America, under certain administrations, political interference with science was ardent. The Union of Concerned Scientists (UCS) reported that science was “side-lined” during George W. Bush and Donald Trump’s terms. Examples of these challenges included: scientists being shut out; top science advisory positions remaining vacant or understaffed; the disbandment of several agency-level science advisory committees and panels; interference with scientific input by soliciting outside “experts”; studies being suppressed or halted; and calls for reviews of scientific grants and contracts.<sup>282</sup> Such actions illustrate how political pressure can be applied to scientific research. But as the UCS remarked, “The evidence is clear: when policymakers undermine science, the public is left with laws and regulations that leave them exposed to unnecessary danger.”<sup>283</sup>

---

<sup>281</sup> Hoggan and Litwin, *I’m Right and You’re an Idiot*, 56.

<sup>282</sup> Jacob Carter et al., *The State of Science in the Trump Era: Damage Done, Lessons Learned, and a Path to Progress* (Union of Concerned Scientists, 2019), <https://www.ucsusa.org/sites/default/files/attach/2019/01/ucs-trump-2yrs-report.pdf>.

<sup>283</sup> Gretchen Goldman et al., *Preserving Scientific Integrity in Federal Policymaking: Lessons from the Past Two Administrations and What’s at Stake under the Trump Administration* (Union of Concerned Scientists, 2017), 2, <https://www.ucsusa.org/sites/default/files/attach/2017/01/preserving-scientific-integrity-in-federal-policymaking-ucs-2017.pdf>.

In this context, the performance of the news media is fundamental in preserving the ideals of a democratic culture. Journalists serve an important role in society, an issue I will attend to in more detail in chapter four. Here, it is worth mentioning that the news media keeps audiences informed of societal events and issues by simplifying complicated matters into short, comprehensible news pieces. They do this largely by transforming someone else's account into a news item. So, journalists have a responsibility to do due diligence and verify that their news sources are trustworthy and authoritative. All of this must take place without sacrificing speed, accuracy, and balance. And given the hypercompetitive media environment, especially following the rise of digital platforms, there are a lot of pressures placed upon journalists. But it is not just journalists who have to adjust to the changing environment of making news; scientists, as a common primary news source, must also engage with the criteria of what makes news. In general, the more an issue or event satisfies the taxonomy of newsworthiness, the more likely it will be transformed into a news item.<sup>284</sup> Thus, scientists need to consider when and how they respond to journalists.

Overall, the attacks on scientists and scientific bodies highlight the fraught and complex relationship science has with political power. Scientists seek to inform the public and policymakers about what they know and how it can be used to improve, advance, and safeguard society. However, at times, scientific findings can have consequences or deleterious effects on certain individuals and

---

<sup>284</sup> The taxonomies of newsworthiness might vary from one organisation to another.

organisations. For that reason, there have been concerted efforts to deny or question the validity of science. As such, the communication of science is more complex than relaying scientific data in a readily accessible manner that the public can understand and use. It is troubled by competing commercial interests, ideas, and ideologies. And as Hoggan and Litwin wrote, “It is hard to know who and what to believe, because our polarised world is driven by so much mistrust; PR campaigns are also waging a war on objectivity and sincerity. The public is being shown a picture of a world where everyone is trying to manipulate everyone else for their own gain, where no one can believe what they hear and where there is no possibility of objectivity.”<sup>285</sup>

### *The “Disinformation” Campaign*

Professor Sheila Jasanoff observed that “science *represents* rather than mirrors reality” (italics in original).<sup>286</sup> She argued that science attempts to detach “fact-making” from “meaning-making” but that this is complicated by the fact that science is situated within an established “order of things.” Put differently, if science becomes inconvenient to the commercial interests of those in power, there can be a push back. This also applies to counter-ideas and ideologies that threaten the established order. Illustrative of this is the lengthy disinformation and public relations campaign of Big Tobacco.<sup>287</sup> The success of

---

<sup>285</sup> Hoggan and Litwin, *I'm Right and You're an Idiot*, 216.

<sup>286</sup> Sheila Jasanoff, “A New Climate for Society,” *Theory, Culture & Society* 27, no. 2-3 (2010): 234, <https://doi.org/10.1177/0263276409361497>.

<sup>287</sup> It is important to acknowledge that the subsequent discussion around corporate public relations, corporate greenwashing, and climate change denialism largely centres around American politics.

their campaign to limit the incursions of restrictions and regulations on tobacco smoke has been emulated by many opponents of environmental and public health regulations, including the fossil fuel industry. For that reason, it is important to detail some of the strategies used to influence public and policymakers' understanding of the harmful health effects of tobacco smoke.

From about the 1930s, scientific evidence for the harmful effects of smoking was growing; by the 1950s, scientists were certain of the link between tobacco smoke and various kinds of cancer and carbon monoxide poisoning.<sup>288</sup> These insights compelled tobacco companies to pursue a campaign to align public and political opinion in their favour. Large tobacco companies proclaimed that they were being vilified and that there was “no sound scientific basis for the charges” that tobacco smoke was a health risk.<sup>289</sup> In unison, they advanced research that supported their stance, while suppressing and or criticising research that challenged their position.<sup>290</sup> In general, the campaign tactics involved creating interest groups (coalitions), recruiting scientists, hiring attorneys, employing media and public relations consultants, establishing front groups, mobilising citizens, and targeting local communities and children.<sup>291</sup>

---

<sup>288</sup> Otto, *The War on Science*, 262.

<sup>289</sup> Examples of companies include American Tobacco, Benson and Hedges, and Philip Morris. Naomi Oreskes and Erik M Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (New York: Bloomsbury Press, 2011), 15.

<sup>290</sup> Lisa A. Bero, "Tobacco Industry Manipulation of Research," *Public Health Reports* 120, (2005), <http://doi.org/10.1177/003335490512000215>.

<sup>291</sup> See John Stauber and Sheldon Rampton, *Toxic Sludge Is Good for You: Lies, Damn Lies, and the Public Relations Industry* (Monroe, ME: Common Courage Press, 1995).

According to the UCS, there were five key tactics employed:

1. manufacturing uncertainty
2. information laundering
3. promoting scientific spokespeople
4. recasting the debate
5. cultivating close ties with government officials<sup>292</sup>

These tactics were developed to cloud public and official opinion over the scientific data concerning the harm of tobacco smoke.<sup>293</sup> Here, it needs to be pointed out that the tobacco industry did not need to prove that tobacco smoke was harmless, it only needed to “maintain doubt” over the scientific evidence of the adverse health effects of smoking.<sup>294</sup> With that, doubt could be used to reason that action based on insufficient knowledge would be unwise. Consequently, the “merchandising of doubt” helped to delay regulations and legislative action.

The fifth tactic identified by the UCS, cultivating close ties with government officials, draws attention to the relationship between wealth and political power. Here, companies use their financial resources to embark on a relationship-building practice with officials. The success of this can help to sway regulatory agendas and/or provide more access to information on the latest political developments. This has also been pointed out by the co-editors of PR Watch, John Stauber and Sheldon Rampton: “The tobacco industry’s campaign is

---

<sup>292</sup> Union of Concerned Scientists, *Smoke, Mirrors & Hot Air: How ExxonMobil Uses Big Tobacco’s Tactics to Manufacture Uncertainty on Climate Science* (Union of Concerned Scientists, 2007), 7, [https://www.ucsusa.org/sites/default/files/2019-09/exxon\\_report.pdf](https://www.ucsusa.org/sites/default/files/2019-09/exxon_report.pdf). See also Kathy Mulvey, Seth Shulman, Dave Anderson, Nancy Cole, Jayne Piepenburg, and Jean Sideris. *The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation* (Union of Concerned Science: 2015).

<sup>293</sup> See David Michaels and Celeste Monforton, "Manufacturing Uncertainty: Contested Science and the Protection of the Public’s Health and Environment," *American Journal of Public Health* 95, no. S1 (2005), <https://doi.org/10.2105/AJPH.2004.043059>.

<sup>294</sup> Union of Concerned Scientists, *Smoke, Mirrors & Hot Air*, 7.

not really about swaying public opinion, a battle which the industry has already lost. Even half of smokers favour stricter government regulation of their habit. The industry's goal is not to win good PR, but to avoid political and legal battles."<sup>295</sup>

Another important tool for tobacco companies was the news media industry. News items allowed the tobacco industry a platform to communicate their points of view to the wider public. Thus, through journalists, tobacco companies could allay public concerns about the harm of tobacco smoke. In the twentieth century, journalists commonly assumed that news pieces had to provide "a balanced account" of what was taking place and/or known. Or, simply stated, both sides of the argument had to be expressed. However, as historians Naomi Oreskes and Erik M Conway explained, "Balance was interpreted, it seems, as giving *equal* weight to both sides, rather than giving *accurate* weight to both sides" (italics in original).<sup>296</sup> This statement highlights that, while balance and accuracy are not interchangeable, the two principles can be conflated.<sup>297</sup> This conflation saw journalists give more credence to the position of Big Tobacco than what was scientifically established.

---

<sup>295</sup> Stauber and Rampton, *Toxic Sludge Is Good for You*, 31-32.

<sup>296</sup> Oreskes and Conway, *Merchants of Doubt*, 19.

<sup>297</sup> Relatedly, Brüggemann and Engesser explained that in news coverage "applying the norm of balance amplifies the views of contrarians (which may attract audience attention) and distorts coverage of the issue. By quoting contrarian voices out of context, journalists gave them legitimacy and 'media standing' that might also translate into political power." Michael Brüggemann and Sven Engesser, "Beyond False Balance: How Interpretive Journalism Shapes Media Coverage of Climate Change," *Global Environmental Change* 42, (2017): 59, <https://doi.org/10.1016/j.gloenvcha.2016.11.004>.

For its part, the tobacco industry managed to weather the crisis well. It was only from the mid-1960s that the US Congress required warning labels on tobacco. And it would take a few decades longer for the legal ramifications to catch-up with the tobacco industry's conduct.<sup>298</sup> The time lag from scientific concerns over the health risks of tobacco smoke to effective political action highlights the power and influence of the industry. The preceding paragraphs shed light on the lengths big business will go to safeguard their commercial interests. Put differently, as Oreskes and Conway have, "If you believe in capitalism, you had to attack science, because science had revealed the hazards that capitalism had brought in its wake."<sup>299</sup> Essentially, the purpose of merchandising doubt was to obfuscate the facts and delay corrective action. The historians went on to write that in the years which followed, these strategies were adapted by the fossil fuel industry to obfuscate the biggest hazard of them all—global warming.

### *Big Business: The Fallacies of Fossil Fuels*

The petroleum industry has long been warned about the global warming risks of burning fossil fuels.<sup>300</sup> According to scholar Benjamin Franta in 1959,

---

<sup>298</sup> See Steven A. Schroeder, "Tobacco Control in the Wake of the 1998 Master Settlement Agreement," *The New England Journal of Medicine* 350, no. 3 (2004), <https://doi.org/10.1056/NEJMSr031421>; Gavin Haynes, "The Dirty Story of How Big Tobacco Was Brought Down to Size," *VICE*, November 6, 2018, [https://www.vice.com/en\\_nz/article/vba4zm/the-dirty-story-of-how-big-tobacco-was-brought-down-to-size](https://www.vice.com/en_nz/article/vba4zm/the-dirty-story-of-how-big-tobacco-was-brought-down-to-size); *United States v. Philip Morris USA, Inc.*, 310 F. Supp. 2d 58 (Columbia 2004), <https://www.justice.gov/civil/united-states-v-philip-morris-supporting-file-archive-index>.

<sup>299</sup> Oreskes and Conway, *Merchants of Doubt*, 167.

<sup>300</sup> See "Smoke & Fumes," Center for International Environmental Law, accessed December 30, 2019, <https://www.smokeandfumes.org/fumes>; Jonathan Watts et al., "Half a Century of Dither and Denial – a Climate Crisis Timeline," *The Guardian*, October 8, 2019, <https://www.theguardian.com/environment/ng-interactive/2019/oct/09/half-century-dither-denial-climate-crisis-timeline>.

nuclear weapons physicist Edward Teller spoke at a conference organised by the American Petroleum Institute (API) and the Columbia Graduate School of Business. During his presentation, he cautioned:

Carbon dioxide has a strange property. It transmits visible light but it absorbs the infrared radiation which is emitted from the earth. Its presence in the atmosphere causes a greenhouse effect...It has been calculated that a temperature rise corresponding to a 10 per cent increase in carbon dioxide will be sufficient to melt the icecap and submerge New York. All the coastal cities would be covered, and since a considerable percentage of the human race lives in coastal regions, I think that this chemical contamination is more serious than most people tend to believe.<sup>301</sup>

Similarly, in 1968, in a report for the API, scientists Elmer Robinson and R.C.

Robbins warned:

It is clear that we are unaware as to what our long-lived pollutants are doing to our environment; however, there seems to be no doubt that the potential damage to our environment could be severe...the abundant pollutants which we generally ignore because they have little local effect, CO<sub>2</sub> and submicron particles, may be the cause of serious world-wide environmental changes.<sup>302</sup>

Thus, the fossil fuel industry should have heeded scientists' warnings about the climate risks of CO<sub>2</sub>.

Sociologists Riley Dunlap and Aaron McCright described what had occurred as "organised climate denial."<sup>303</sup> They went on to explain, "Describing the climate change denial machine is difficult, because it is both a complex and ever-evolving labyrinth and because many of its components intentionally mask

---

<sup>301</sup> Benjamin Franta, "On Its 100th Birthday in 1959, Edward Teller Warned the Oil Industry About Global Warming," *The Guardian*, January 1, 2018, <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jan/01/on-its-hundredth-birthday-in-1959-edward-teller-warned-the-oil-industry-about-global-warming>.

<sup>302</sup> E Robinson and R. C Robbins, *Sources, Abundance, and Fate of Atmospheric Pollutants. Final Report* (New York: American Petroleum Institute, 1968), 110, <https://www.smokeandfumes.org/documents/16>.

<sup>303</sup> Riley Dunlap and Aaron McCright, "Organized Climate Change Denial," in *Handbook of Climate Change and Society*, eds. John S. Dryzek, Richard B. Norgaard, and David. Schlosberg, Oxford (Oxford: Oxford University Press 2011).

their efforts and sources of support.”<sup>304</sup> At this point, it is important to distinguish between “climate denialism” and “climate scepticism”. In certain instances, individuals need more time to consider and evaluate the claims put forth by professionals, such as scientists and politicians. The impulse to look upon expertise with a critical eye is a crucial part of the checks and balances on those in higher positions of power or those with definitive knowledge. But when the scientific consensus and consilience are discounted or challenged, then this is a move away from scepticism towards denialism.

The reach of climate change denial has been driven to a significant degree by key actors, such as ExxonMobil, who used conservative think tanks (CTTs) to push for laissez-faire economics and front groups and astroturf campaigns to promote industry interests. ExxonMobil, as one of the largest publicly traded companies, has attempted to influence public opinion on global warming matters since the 1980s. Initially, the oil and gas company opted for an outright denial of the scientific evidence about the link between rising GHG emission levels and a warmer world. But as scientific data advanced that position became more untenable, so the company adapted its approach towards mudding the public’s perception of the issues. Or said differently, the UCS wrote, “ExxonMobil’s cynical strategy is built around the notion that public opinion can be easily manipulated because climate science is complex, because people tend not to

---

<sup>304</sup> Ibid., 145.

notice where their information comes from, and because the effects of global warming are just beginning to become visible.”<sup>305</sup>

Investigative reports into ExxonMobil have documented the extent to which they misled and manipulated public opinion. Late in 2015, following an eight-month investigation into the company, *Inside Climate News* produced a five-part series that detailed its disinformation campaign. Using official documents and interviews, which spanned over 35 years, journalists uncovered that ExxonMobil had been investigating the “carbon problem” since 1977. The journalists found that by 1982, the company’s own research had confirmed the emerging scientific consensus that global warming could be potentially harmful.<sup>306</sup> However, it decided to continue to cast doubt over climate science.<sup>307</sup> Similarly, a joint investigation by the Columbia University Graduate School of Journalism’s Energy and Environmental Reporting Project and the *Los Angeles Times* showed that ExxonMobil had made a strategic decision in the late 1980s to publicly emphasise the doubt and uncertainty over climate change science, even though its internal research and corporate planning had embraced the scientific evidence on global warming.<sup>308</sup>

---

<sup>305</sup> Union of Concerned Scientists, *Smoke, Mirrors & Hot Air*, 2.

<sup>306</sup> See also Geoffrey Supran and Naomi Oreskes, "Assessing Exxonmobil’s Climate Change Communications (1977–2014)," *Environmental Research Letters* 12, (2017), <https://doi.org/10.1088/1748-9326/aa815f>.

<sup>307</sup> “Exxon: The Road Not Taken,” *Inside Climate News*, September 16-December 22, 2015, <https://insideclimatenews.org/content/Exxon-The-Road-Not-Taken>.

<sup>308</sup> Sara Jerving et al., "What Exxon Knew About the Earth's Melting Arctic," *Los Angeles Times*, October 9, 2015, <https://graphics.latimes.com/exxon-arctic/>; Katie Jennings, Dino Grandoni, and Susanne Rust, "How Exxon Went from Leader to Skeptic on Climate Change Research," *Los Angeles Times*, October 23, 2015, <https://graphics.latimes.com/exxon-research/>; Amy Lieberman and Susanne Rust, "Big Oil Braced for Global Warming While It Fought Regulations," *Los Angeles Times*, December 31, 2015, <https://graphics.latimes.com/oil-operations/>.

Underpinning ExxonMobil's manufacturing of doubt, uncertainty, and scientific dissent were its related aims of advancing free-market capitalism and limiting the incursion of government into industrial activities. In the 1970s, the US conservative movement opposed environmentalism, environmental science, and environmental policy decisions. Following the movement's success, the oil and gas company formed alliances with former competitive rivals to push forward a similar anti-regulatory agenda. The promotion of a smaller and less intrusive role for the government has been a vital part of the corporate assault of environmentalism. To that end, the Centre for Public Integrity reported that from about 1998 to 2003 the oil and gas industry spent over US\$420 million "on politicians, political parties and lobbyists in order to protect its interests in Washington" and of that "over 73 percent of the industry's campaign contributions have gone to Republican candidates and organizations."<sup>309</sup> They went on to point out that "ExxonMobil, was the industry's leader in lobbying expenditures, spending \$51 million."<sup>310</sup> More recently, in November 2019, researcher Mark Maslin found that the oil and gas company's annual expenditure on climate lobbying was USD\$41 million.<sup>311</sup> By financing conservative candidates and causes, they help to fend off environmental and business regulations.

---

<sup>309</sup> Aron Pilhofer, "Industry Spends Hundreds of Millions on Lobbying, Elections," *The Center for Public Integrity*, last modified May 19, 2014, <https://publicintegrity.org/environment/big-oil-protects-its-interests/>.

<sup>310</sup> *Ibid.*

<sup>311</sup> Mark Maslin, "The Five Corrupt Pillars of Climate Change Denial," *The Conversation*, March 29, 2019, <https://theconversation.com/the-five-corrupt-pillars-of-climate-change-denial-122893>.

The UCS has also reported that through the Freedom of Information Act it was found that ExxonMobil successfully lobbied Bush's administration to oust the then chair of the IPCC, Robert Watson, in 2001.<sup>312</sup> They also revealed:

Shortly after President Bush's inauguration, ExxonMobil, like other large corporate backers in the energy sector, participated in Vice President Dick Cheney's Energy Task Force to set the administration's goals for a national energy plan. ExxonMobil successfully urged the Bush administration to renege on the commitments to the Kyoto Protocol made by previous administrations.<sup>313</sup>

Here, domestic political influence also extended into the governance of worldwide politics.

The industry also exerted its influence in less obvious ways such as through the participation in numerous coalitions, CTTs, or groups that deny climate science, promote climate scepticism, downplay the importance of environmental policies, and advance the principles of laissez-faire economics.<sup>314</sup> More specifically, ExxonMobil has been linked to numerous CTTs, such as the American Enterprise Institute, the Competitive Enterprise Institute, the Cato Institute, George C. Marshall Institute, Heartland Institute, and The Pacific Research Institute.<sup>315</sup> CTTs, scholars Peter Jacques, Riley Dunlap, and Mark Freeman explained:

---

<sup>312</sup> Union of Concerned Scientists, *Smoke, Mirrors & Hot Air*, 20.

<sup>313</sup> *Ibid.*, 19-20.

<sup>314</sup> See also Jane Mayer, "Covert Operations: The Billionaire Brothers Who Are Waging a War against Obama," *The New Yorker*, August 23, 2010, <https://www.newyorker.com/magazine/2010/08/30/covert-operations>.

<sup>315</sup> See "Exxonsecrets," Greenpeace USA, accessed September 7, 2019, <https://exxonsecrets.org/html/index.php>.

...are non-profit, public policy research and advocacy organisations that promote core conservative ideals such as 'free enterprise', 'private property rights', 'limited government' and 'national defence'. Unlike traditional think tanks that aim to provide reasonably 'objective' policy analyses, CTTs are 'advocacy' organisations that unabashedly promote conservative goals.<sup>316</sup>

As such, they also provide an institutional base for climate change

contrarians.<sup>317</sup>

Similarly, front groups have been used to promote the fossil fuel industry's agenda. Front groups, according to communication scholar Sue Jansen, are "organisations with hidden agendas that deceptively present themselves as independent brokers of information or protectors of cherished social values, while concealing their true purposes and sources of funding."<sup>318</sup> An example of a front group supported by ExxonMobil is the now disbanded, Global Climate Coalition (GCC). Dunlap and McCright described the GCC as "an early front group designed to combat evidence of climate change and climate policy making."<sup>319</sup> The success of CTTs and front groups are partly determined by the reach of their information. A point underscored by academic Sharon Beder: "A major focus of the new corporate activism has been to ensure that corporate-funded people are the ones that the media turn to for comment, be they scientists, think-tank 'experts' or front group spokespeople."<sup>320</sup>

---

<sup>316</sup> Peter Jacques, Riley Dunlap, and Mark Freeman, "The Organisation of Denial: Conservative Think Tanks and Environmental Scepticism," *Environmental Politics* 17, no. 3 (2008): 355, <https://doi.org/10.1080/09644010802055576>.

<sup>317</sup> For example, Patrick Michaels of the Cato Institute and Fred Singer of the Heartland Institute.

<sup>318</sup> Sue Curry Jansen, *Stealth Communications: The Spectacular Rise of Public Relations* (Cambridge: Polity Press, 2016), 103.

<sup>319</sup> Dunlap and McCright, "Organized Climate Change Denial," 150.

<sup>320</sup> Sharon Beder, *Global Spin: The Corporate Assault on Environmentalism* (Victoria: Australian Print Group, 1997), 196-97.

Another closely related tactic employed by CTTs and front groups is astroturf campaigns, designed to challenge climate science and policymaking. Hoggan and Littlemore advanced that an astroturf group is “a fake grassroots organisation animated by a clever public relations campaign and a huge budget.”<sup>321</sup> Typically, members of the local community are recruited to give the wider public the impression that there is a social movement in favour of the company. For that reason, this tactic is also referred to as “synthetic” local activism and “democracy for hire”.<sup>322</sup> The astroturf campaigns associated with ExxonMobil include the National Association of Neighbourhoods and the Frontiers of Freedom Institute.<sup>323</sup> By using CTTs, front groups, and astroturf organisations to produce, distribute, and maintain a steady flow of supposedly dispassionate information, the oil and gas company creates the impression that its stance is broadly supported. This tactic, therefore, helps to cast doubts in the mind of the public over the scientific consensus on anthropogenic global warming.

Also, over time, there has been a growing emphasis on the purported social role of corporations. ExxonMobil’s philanthropic activities extend worldwide and provide them with a presence in local communities and society. This can help to foster trust and credibility between them and ordinary

---

<sup>321</sup> James Hoggan and Richard Littlemore, *Climate Cover-Up: The Crusade to Deny Global Warming* (Vancouver: Greystone Books, 2009), 36.

<sup>322</sup> Stauber and Rampton, *Toxic Sludge Is Good for You*.

<sup>323</sup> "Exxonsecrets," Greenpeace USA; "The Global Climate Coalition: Big Business Funds Climate Change Denial and Regulatory Delay," Climate Investigations Center, accessed September 28, 2019, <https://climateinvestigations.org/wp-content/uploads/2019/04/The-Global-Climate-Coalition-Denial-and-Delay.pdf>.

citizens.<sup>324</sup> A corporation's image and reputation are important because they can translate into attitudinal and behavioural outcomes which favour its corporate initiatives.<sup>325</sup> In regard to corporate social responsibility, scholar Jacquie L'Etang pointed out that "the corporation determines the playing field and referees the game."<sup>326</sup> For example, internal documents obtained by the Climate Investigations Center revealed that, in the 1990s, recipients of (Exxon)Mobil Foundation grants had to meet four criteria: (1) Descriptions of Activities and Programs; (2) Purpose of Grant; (3) Effectiveness of Program/ Organization; and (4) Benefits to Mobil.<sup>327</sup> So, the motives behind corporate activism can range from a moral or utilitarian framework to something more superficial and exploitive, and ultimately self-serving.

Sometimes, regardless of the philanthropic or benevolent efforts of the corporation, the public consensus falls against them. In this situation, a tactic available to the company is to create a climate of fear. Corporate organisations can dissuade citizens from speaking out on matters of public interest and discourage activists from partaking in civil disobedience by intimidation. A well-

---

<sup>324</sup> Beder, *Global Spin*, 162-74.

<sup>325</sup> In this respect, it is notable that ExxonMobil shifted from referring to itself as an oil and gas company to that of an energy and chemical corporation. The latter is a more neutral classification, reflecting the current socio-political environment. Also see Sharon Beder, "bp: Beyond Petroleum?," in *Battling Big Business: Countering greenwash, infiltration and other forms of corporate bullying*, ed. Eveline Lubbers (Devon: Green Books, 2002).

<sup>326</sup> Jacquie L'Etang, "Corporate Responsibility and Public Relations Ethics," in *Public Relations: Critical Debates and Contemporary Practice*, eds. Jacquie L'Etang and Magda Pieczka (Mahwah, NJ: Lawrence Erlbaum Associates, 2006), 421.

<sup>327</sup> "1993 Mobil Foundation Grant Recommendations for 1994 Budget," The Climate Investigations Center, accessed September 29, 2019 <http://www.climatefiles.com/exxonmobil/1993-mobil-foundation-grant-recommendations-for-1994-budget/>.

publicised technique is Strategic Lawsuits Against Public Participation (SLAPP suit or SLAPPs). For instance, recently, the EarthRights International reported, “The day after Trump’s election, Exxon subpoenaed over ten environmental organizations and individuals working on climate change, as part of a campaign to burden, intimidate, and chill their First Amendment rights.”<sup>328</sup> SLAPPs are considered an effective mechanism to censor or silence the opposition since litigation is often a costly and time-consuming process for many grassroots organisations and individuals. However, to maintain the benign impression of a corporation that upholds the “highest standards of integrity,” such strategies must be largely covert to wield any influence.

Over time, with increased knowledge, political acumen, and insights into the past behaviour of ExxonMobil, many cities and states are attempting to hold the oil and gas company accountable for its role in global warming. Since 2015, the company has been investigated by the attorney generals of New York, Massachusetts, and the US Virgin Islands to determine whether they fraudulently misled investors about the potential adverse effects of climate change. Following the public announcements of the investigation results, ExxonMobil countered with its own litigation arguing that the investigations were conducted out of “improper political bias.”<sup>329</sup> This is akin to SLAPPs. As a

---

<sup>328</sup> Ali Borochoff-Porte, "Exxon's Campaign of Intimidation against Climate Defenders Ushers in a New McCarthy Era," EarthRight International (blog), December 21, 2016, <https://earthrights.org/blog/exxons-campaign-of-intimidation-against-climate-defenders-ushers-in-a-new-mccarthy-era/>.

<sup>329</sup> David Hasemyer, "U.S. Supreme Court Refuses to Block Exxon Climate Fraud Investigation." *Inside Climate News*, January 7, 2019, <https://insideclimatenews.org/news/07012019/exxon-climate-fraud-investigation-supreme-court-ruling-massachusetts-attorney-general-healey>.

result, the US Virgin Islands capitulated, but the two remaining attorney generals continued with their investigations.<sup>330</sup> In New York, on December 10, 2019, Justice Ostrager found that Attorney General Letitia James failed to prove that ExxonMobil broke the law and added that “this is a securities fraud case, not a climate change case.”<sup>331</sup> At the time of writing, action by the Massachusetts attorney is still ongoing.

This snapshot of ExxonMobil’s campaign against global warming illustrates the influence of power and money at the national and international levels of politics. Or as author Naomi Klein remarked, “corporations are much more than purveyors of the products we want; they are the most powerful political forces of our time.”<sup>332</sup> By co-opting scientific spokespeople, misinterpreting scientific research, manufacturing support, lobbying political representations, and by employing other less well-known tactics, ExxonMobil has sought to impose doubt on the prevailing science.<sup>333</sup> But they are only one of several corporations that have tried to forestall action on the climate crisis.

ExxonMobil is part of a powerful, well-financed cohort that have mobilised to

---

<sup>330</sup> For an account of the legal proceedings between the States and ExxonMobil see David Hasemyer, “Fossil Fuels on Trial: Where the Major Climate Change Lawsuits Stand Today,” *Inside Climate News*, January 17, 2020, <https://insideclimatenews.org/news/04042018/climate-change-fossil-fuel-company-lawsuits-timeline-exxon-children-california-cities-attorney-general>.

<sup>331</sup> Laurel Wamsley, “Exxon Wins New York Climate Change Fraud Case,” *NPR*, December 10, 2019, <https://www.npr.org/2019/12/10/780317799/exxon-wins-new-york-climate-change-case>.

<sup>332</sup> Naomi Klein, *No Logo: No Space, No Choice, No Jobs*, 10th ed. (London: Fourth Estate, 2010), 339.

<sup>333</sup> In general, some of ExxonMobil’s corporate responses to global warming constitute an appropriation of environmental values, that is, green public relations via “greenwashing”. This can take many forms, although it is essentially the art of engineering environmental optimism. See Tom Althanasiou, “The Age of Greenwashing,” *Capitalism Nature Socialism* 7, no. 1 (1996), <https://doi.org/10.1080/10455759609358660>.

misdirect and allay public concerns over the environment.<sup>334</sup> However, the nature and the complexity of the climate breakdown itself is also a serious impediment to climate action. It is to this matter that I now turn my attention to.

### **Public Perception of Global Warming and Climate Change**

Much research on the public perceptions of climate change has been conducted in developed regions, such as North America, Europe, and Oceania. For that reason, the inferences made from these studies will be geographically, socio-economically, politically, and culturally specific. Here, it should be underlined that there are external influences on the individual, so individual values, beliefs, and behaviours should be contextualised. Thus, it is important to employ a tripartite framework when analysing social attitudes; with the other two levels being institutional and societal.

According to psychologists Lorraine Whitmarsh and Stuart Capstick's review of 33 studies on public perceptions of climate change, four key periods can be identified: (1) the 1980s to the early 1990s; (2) the mid-1990s to mid-2000s; (3) the mid-2000s to late-2000s; and (4) the late 2000s to the 2010s. The first period is classified as a time of widespread growth in knowledge, awareness, and concern about global warming and its risks. Following that was a period of "sustained overall growth" in public concern about the issues; however, there

---

<sup>334</sup> See Matthew Taylor and Jonathan Watts, "Revealed: The 20 Firms Behind a Third of All Carbon Emissions," *The Guardian*, October 9, 2019, <https://www.theguardian.com/environment/2019/oct/09/revealed-20-firms-third-carbon-emissions>.

were inter-and intra-national variations. The psychologists found that “overall growth in concern mirrors a rise in media attention to climate change, in turn, linked to growing scientific evidence and political attention.”<sup>335</sup> This correlation will be explained in more detail in chapter four.

Curiously, the researchers noted that from about the mid-to late-2000s, in many western nations, public awareness of and concern over global warming and its effects plateaued or declined.<sup>336</sup> The unexpected growth in public doubt and scepticism about the reality and severity of global warming called for a rethinking of the assumption that more scientific information would result in greater belief and or concern. Additionally, several studies on US public opinion reported that political affiliations were an important determinant for views on climate change, with the presidency of Barack Obama being described as a “litmus test.”<sup>337</sup> Whitmarsh and Capstick went on to cite that in 2001, the difference between US liberals and conservatives who believed that climate change had begun was 18% but by 2010, this increased to 45%.<sup>338</sup> In other

---

<sup>335</sup> Lorraine Whitmarsh and Stuart Capstick, "Perceptions of Climate Change," in *Psychology and Climate Change: Human Perceptions, Impacts, and Responses*, eds. Susan Clayton and Christie Manning (London: Academic Press, 2018), 17, <https://doi.org/10.1016/B978-0-12-813130-5.00002-3>.

<sup>336</sup> See also Beate Ratter, Katharina Philippa, and Hans von Storch, "Between Hype and Decline: Recent Trends in Public Perception of Climate Change," *Environmental Science & Policy* 18, (2012), <https://doi.org/10.1016/j.envsci.2011.12.007>; Tien Ming Lee et al., "Predictors of Public Climate Change Awareness and Risk Perception around the World," *Nature Climate Change* 5, no. 11 (2015), <https://doi.org/10.1038/nclimate2728>.

<sup>337</sup> Whitmarsh and Capstick, "Perceptions of Climate Change," 19. See also Riley Dunlap, Aaron McCright, and Jerrod Yarosh, "The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.," *Environment: Science and Policy for Sustainable Development* 58, no. 5 (2016), <https://doi.org/10.1080/00139157.2016.1208995>.

<sup>338</sup> Whitmarsh and Capstick, "Perceptions of Climate Change," 19. In 2001, 67% of liberals and 49% of conservatives regarded that climate change had already begun, by 2010, the percentage of liberals rose to 75% and for conservatives, it fell to 30%.

regions, such as Latin America and sub-Saharan Africa, the number of individuals who considered climate change as a threat rose. The international variations and diverging trends in opinions suggest that factors, such as physical, political, socio-economic, and cultural contexts are significant.

Lastly, from the late 2000s to the 2010s, Whitmarsh and Capstick noticed that there were still cross-national divergences in public opinion trends.<sup>339</sup> They found that in America and Europe the observed decline in public concern in the 2000s had arrested.<sup>340</sup> However, for developing countries the trends were mixed. Some countries, such as China, Mexico, and Kenya, saw a decline in public concern over the issues. So, this led the psychologists to argue that when projecting forward, the likely direction of future trends was “unclear.” They underscored that multiple factors influence an individual’s perception of global warming and its risks, which makes predicting how opinions will unfold “very difficult.”<sup>341</sup>

Other studies of public opinion found that concern about the risks of global warming waxed and waned. For instance, researchers Tien Ming Lee, Ezra Markowitz, Peter Howe, Chia-Ying Ko, and Anthony Leiserowitz wrote, “Despite the widespread scientific conclusion that global climate change is happening,

---

<sup>339</sup> Ibid., 20.

<sup>340</sup> Between 1998 and 2012, there was an apparent lack of warming. This was commonly referred to as “global warming hiatus” and was used by opponents of climate action to downplay the risks of global warming. However, short-term data is unlikely to overturn the long-term projections of the magnitude of change that is taking place. See Iselin Medhaug et al., “Reconciling Controversies About the ‘Global Warming Hiatus’,” *Nature* 545 (2017), <https://doi.org/10.1038/nature22315>.

<sup>341</sup> Whitmarsh and Capstick, “Perceptions of Climate Change,” 22.

mostly human-caused, and a serious risk, public understanding of these facts and support for climate change policies is more equivocal worldwide.”<sup>342</sup> In another review of the literature around public understandings about, perceptions of, and engagement with climate change, environmental social scientists Johanna Wolf and Susanne Moser observed that there were “systematically varying levels of concern, the presence of sceptical views in all societies studied, and some degree of acceptance, ranging from solid to tempered.”<sup>343</sup> In their article, psychologists Elke Weber and Paul Stern stated that “the trajectory of public understanding frustrates many climate scientists and educators who see climate risks growing, understand that delayed action will increase the risks further, and believe that concerted action is needed now to reduce them.”<sup>344</sup> Thus, it raises the commonly asked question of what more can be done to communicate and explain the climate crisis.<sup>345</sup>

### **Psychological Challenges to Climate Action**

Psychologists Janet Swim et al. argued that psychological insights can aid people’s understanding of the causes, impacts, and risks of global warming. These insights can inform effective responses to the problems.<sup>346</sup> But because individuals process and experience the climate crisis differently, various

---

<sup>342</sup> Lee et al., "Predictors of Public Climate Change Awareness and Risk Perception around the World," 1014.

<sup>343</sup> Johanna Wolf and Susanne C Moser, "Individual Understandings, Perceptions, and Engagement with Climate Change: Insights from in-Depth Studies across the World," *Wiley Interdisciplinary Reviews: Climate Change* 2, no. 4 (2011), <https://doi.org/10.1002/wcc.120>.

<sup>344</sup> Elke U Weber and Paul C Stern, "Public Understanding of Climate Change in the United States," *American Psychologist* 66, no. 4 (2011): 323, <https://doi.org/10.1037/a0023253>.

<sup>345</sup> This question will be addressed at the end of this chapter and in the thesis conclusion.

<sup>346</sup> Janet Swim et al., "Psychology's Contribution to Understanding and Addressing Global Climate Change," *American Psychologist* 66, no. 4 (2011), <http://doi.org/10.1037/a0023220>.

techniques are needed to communicate the issues. For some, the threats of climate change do not induce any strong reactions, while in others, they create feelings of uncertainty and distress. Still, many psychologists would agree that the complexity and gravity of global warming present society with an unparalleled task and raise many issues for individuals to confront. Psychologist Robert Gifford explained:

Environmental or climate-related inaction seems to have three broad phases. Genuine ignorance certainly precludes taking action. Then, if one is aware of a problem, a variety of psychological processes can interfere with effective action. Finally, once some action is taken, it can be inadequate because the behaviour fades away, has little difference in the person's own carbon footprint, or is actually counterproductive.<sup>347</sup>

So, given that the problems are “super-wicked”, scientists and communication practitioners have struggled to convey the need for structural policy shifts and behavioural change.<sup>348</sup> Nevertheless, psychological insights can aid communication practitioners, so it is worth examining the literature.

Over the past few decades, research on the communication of climate change has burgeoned; while it continues to take shape across disciplines, sectors, and geographic boundaries, there was a general consensus about the

---

<sup>347</sup> Robert Gifford, "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation," *American Psychologist* 66, no. 4 (2011): 291, <https://doi.org/10.1037/a0023566>.

<sup>348</sup> The term “super-wicked” was used by Kelly Levin et al. to describe the new class of global environmental problems facing society. They identified four key challenging features of global warming: “time is running out; those who cause the problem also seek to provide a solution; the central authority needed to address it is weak or non-existent; and, partly as a result, policy responses discount the future irrationally.” See Kelly Levin et al., "Playing It Forward: Path Dependency, Progressive Incrementalism, and the “Super Wicked” Problem of Global Climate Change." *IOP Conference Series: Earth and Environmental Science* 6 (2009). <https://doi.org/10.1088/1755-1307/6/0/502002>; "Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change," *Policy Sciences* 45, (2012), <https://doi.org/10.1007/s11077-012-9151-0>.

communication challenges. In *The American Psychological Association (APA) Climate Change Task Report*, 13 psychological obstacles to climate action were identified:

1. ignorance
2. uncertainty
3. mistrust and reactance
4. denial
5. judgement discounting
6. place attachment
7. habit
8. perceived behavioural control
9. perceived risks from behavioural change
10. tokenism and the rebound effect
11. social comparison, norms, conformity, and perceived equity
12. conflicting goals and aspirations
13. belief in solutions outside of human control<sup>349</sup>

In the report, the authors emphasised that not all barriers will be present in a given situation and that they are subject to variability depending upon contextual factors (such as time, available resources, and cultural habits).

Similarly, Moser identified seven challenging traits that can make anthropogenic global warming a difficult issue to engage with. These include:

1. the invisibility of causes
2. distant impacts, lack of immediacy, and lack of direct experience of its effect
3. lack of gratification for taking mitigative actions
4. disbelief in human's ability to have a global influence
5. complexity and uncertainty of anthropogenic global warming
6. inadequate signals indicating the need for change
7. perceptual limits and self-interest<sup>350</sup>

From the lists of identified psychological factors, it is apparent that the obstacles to climate action are not only psychological. There are institutional and societal

---

<sup>349</sup> Janet Swim et al., *Psychology & Global Climate Change: Addressing a Multifaceted Phenomenon and Set of Challenges* (Washington D.C: American Psychology Association, 2011), 65-68, <https://www.apa.org/science/about/publications/climate-change-booklet.pdf>.

<sup>350</sup> Moser, "Communicating Climate Change," 31.

influences, such as those pointed out in this and preceding chapters, which can interact with psychological obstacles to impede public engagement with the crisis. These influences, for example, can be physical, economic, cultural, socio-political, ideological, and structural. However, given the complexity of some of the identified psychological issues, it is worth delving into a few of them.

Uncertainty in global warming and its effects, according to the National Academies of Sciences, Engineering, and Medicine, “can arise when predicting future outcomes using probabilistic evidence (risk) or when deciding about the degree to which scientific evidence applies to a particular context or has personal significance. Continued research can resolve some uncertainty by providing additional evidence, but in other cases, and especially with complex problems involving science, uncertainty will persist.”<sup>351</sup> Here, it is worth recalling that these factors are confounded by the concerted efforts of climate action opponents, ineffective past communication on the severity of global warming issues, and the failures of scientists and communicators to conceive of how their messages could be misinterpreted.<sup>352</sup>

Weber and Stern remarked that “nonscientists respond to uncertainty in ways that are more emotional than analytic and in qualitatively different ways

---

<sup>351</sup> National Academies of Sciences Engineering and Medicine, *Communicating Science Effectively*, 27.

<sup>352</sup> As discussed in the introductory chapter, the IPCC have streamlined the approach and calibrated the language to communicate the degree of certainty in their assessment processes and communications. See Michael D. Mastrandrea et al., *Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties* (Intergovernmental Panel on Climate Change 2010).

depending on whether the uncertain events are perceived as favourable or adverse.”<sup>353</sup> Relatedly, researchers Debika Shome et al. wrote that “humans have a great need for predictability, uncertainty can be uncomfortable. Predictability helps people feel safe and secure, whereas uncertainty can lead to anxiety.”<sup>354</sup> In this regard, uncertainty can create a sense of abstractness, complexity, and trepidation about the future, which adds to the challenge of prioritising the issue. Added to this, Moser found that many individuals have a “tendency to discount the distant future” and focus more “on the here and now.”<sup>355</sup> Thus, the emphasis on the future can be challenging for people to process.

Author George Marshall has also discussed how, for many individuals, the impacts and potential threats of global warming “lack salience.” He observed that the problem with climate change:

...is that the signals it supplies to our other emotional brain are far too ambiguous to galvanise us into action. Climate change is here and now, but it is also there and then. It does have causes and impacts, but these are widely distributed. It refuses to fit into any single category and, as a result, fits into none. It is exceptionally multivalent and, as a result, it invites us to apply our confirmation bias and to ‘believe what we want to believe.’<sup>356</sup>

Gifford also found that “climate change is like...a phenomenon outside immediate attention because it is not causing any immediate personal difficulties.

Mitigative and adaptive behaviours are unlikely when this is the case.”<sup>357</sup> Thus,

---

<sup>353</sup> Weber and Stern, "Public Understanding of Climate Change in the United States," 319.

<sup>354</sup> Debika Shome et al., *The Psychology of Climate Change Communication: A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public* (New York: Center for Research on Environmental Decisions, 2009), 24, [http://guide.cred.columbia.edu/pdfs/CREdguide\\_full-res.pdf](http://guide.cred.columbia.edu/pdfs/CREdguide_full-res.pdf).

<sup>355</sup> Moser, "Communicating Climate Change," 34.

<sup>356</sup> George Marshall, *Don't Even Think About It: Why Our Brains Are Wired to Ignore Climate Change* (New York: Bloomsbury, 2014), 97.

<sup>357</sup> Gifford, "The Dragons of Inaction," 292.

the problems from global warming can have little resonance for some, making mitigative action seem unnecessary or premature.<sup>358</sup>

For Leiserowitz, if people sense that global warming “lacks a sense of urgency” then attention needs to focus on how the national, regional, and local impacts from global warming are communicated to the public. In his national, representative survey of the US public from November 2002 to February 2003, he discovered that people tended to view global warming as a moderate risk that did not require urgent attention. He noted that many individuals were in favour of national and international efforts to curb emission levels, but they were less inclined towards direct restrictions on consumption, such as a tax on fossil fuel-based energy.<sup>359</sup> This led Leiserowitz to point out:

Global warming and the policies proposed to mitigate or adapt to it occur within a rich and complex socio-political context, in which groups of individuals are socio-politically predisposed to select, ignore and interpret risk information in different ways. Risk perceptions are thus socially constructed, with different groups predisposed to attend to, fear and socially amplify some risks, while ignoring, discounting or attenuating others.<sup>360</sup>

It should be reiterated that accompanying behavioural change is some comprehension of “perceived risks.” Gifford, Karine Lacroix, and Angel Chen argued that individuals are likely to perceive either functional, physical, financial, social, psychological, and or temporal risks attached to making a

---

<sup>358</sup> People can also be misled by their own personal experiences. See Weber and Stern, "Public Understanding of Climate Change in the United States".

<sup>359</sup> Anthony Leiserowitz, "Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values," *Climatic Change* 77, (2006): 62-3, <https://doi.org/10.1007/s10584-006-9059-9>.

<sup>360</sup> *Ibid.*, 64.

behavioural change to address the threats of global warming.<sup>361</sup> This implies that the perceived risks from global warming have to be weighed against the benefits of inaction and there are different ways to weigh risks.<sup>362</sup> Moreover, individuals tend to be “risk-averse.”<sup>363</sup> The work of Amos Tversky and Daniel Kahneman found that for many people, the “losses loom larger than the gains.”<sup>364</sup> In his subsequent book, Kahneman stated: “Loss aversion is a powerful conservative force that favours minimal changes from the status quo in the lives of both institutions and individuals. This conservatism helps keep us stable in our neighbourhood, our marriage, and our job; it is the gravitational force that holds our life together near the reference point.”<sup>365</sup>

Also, unlike other environmental harm, such as air pollution or water contamination, GHGs are “invisible” to the human eye. So, knowledge is required to understand the link between invisible gases and the observed changes, such as extreme weather events and rising sea levels.<sup>366</sup> Furthermore, as discussed in the introduction, it takes time for the cumulative build-up of GHGs to be

---

<sup>361</sup> Robert Gifford, Karine Lacroix, and Angel Chen, "Understanding Responses to Climate Change: Psychological Barriers to Mitigation and a New Theory of Behavioral Choice," in *Psychology and Climate Change: Human Perceptions, Impacts, and Responses*, ed. Susan Clayton and Christie Manning (London: Academic Press, 2018).

<sup>362</sup> See Sven Ove Hansson, "Weighing Risks and Benefits," *Topoi* 23, no. 2 (2004), <https://doi.org/10.1007/s11245-004-5371-z>.

<sup>363</sup> Other notable explanations for the gap between the acceptance of the scientific findings of anthropogenic global warming and the need to prioritise its consequences and risks include optimism; environmental numbness; a belief in free-market capitalism; technocratic solutionism; and religious salvation. See Gifford, "The Dragons of Inaction."

<sup>364</sup> Amos Tversky and Daniel Kahneman, "The Framing of Decisions and the Psychology of Choice," *Science* 211, no. 4481 (1981): 456, <http://doi.org/10.1126/science.7455683>. See also Daniel T. Gilbert, "If Only Gay Sex Caused Global Warming," *Los Angeles Times*, July 02, 2006, <https://www.latimes.com/archives/la-xpm-2006-jul-02-op-gilbert2-story.html>.

<sup>365</sup> Daniel Kahneman, *Thinking, Fast and Slow* (London: Penguin Books, 2011), 305.

<sup>366</sup> Moser, "Communicating Climate Change," 33.

experienced, with certain regions like Africa, small island nations, and Asian mega-deltas, encountering the effects more.<sup>367</sup> Relatedly, Moser pointed out that many modern, urbanised individuals are insulated from the climate and the physical environment. That is, they reside, work, and interact in settings that limit their confrontation with the harsh realities of the changing climate. For instance, individuals work in air-conditioned offices, visit climate-controlled shopping spaces, and drive technologically advanced vehicles.<sup>368</sup> Researchers Ezra Markowitz and Meaghan Guckian also stated that global warming issues are “deeply *un-relatable* at the personal level for most individuals” (italic in original).<sup>369</sup> Here, the scholars allude to how, from a communication and public engagement perspective, the features of the climate crisis—a “slow-moving, long-term, complex, abstract phenomenon”—makes it difficult for individuals to connect with.<sup>370</sup> Thus, global warming and its impacts are not viewed as an omnipresent, immediate threat.

If the realities of the climate crisis are acknowledged and people understand that there is a connection between rising emissions of GHGs, a warmer global average temperature, and adverse climate effects, they would need to modify their output of GHG emissions. Individuals would need to scrutinise their lifestyle choices, such as energy use, air travel, dietary habits,

---

<sup>367</sup> Swim et al., *Psychology & Global Climate Change*, 21.

<sup>368</sup> Moser, "Communicating Climate Change," 34.

<sup>369</sup> Ezra Markowitz and Meaghan Guckian, "Climate Change Communication: Challenges, Insights, and Opportunities," in *Psychology and Climate Change: Human Perceptions, Impacts, and Responses*, ed. Susan Clayton and Christie Manning (London: Academic Press, 2018), 38.

<sup>370</sup> *Ibid.*

and consumptive behaviours. However, this can be confronting for some as it compels them to reconsider who they are. If an individual accepts global warming, academic Dan Kahan explained that it “could drive a wedge between them and their peers, [and so] they have a strong emotional predisposition to reject it.”<sup>371</sup> Here, he underscored the importance of group ties. Kahan noted that “cultural cognition”—“the influence of group values...on risk perceptions and related beliefs”—can lead people to resist scientific evidence if it conflicts with their group’s values.<sup>372</sup> Additionally, humans, according to Gifford, “are very social animals; comparing one’s situation with that of others is a deeply ingrained tendency.”<sup>373</sup> So, often people are trapped by the judgments of others.

But for some individuals, realising that global warming is anthropogenically driven does not lead them to take any personal responsibility. Psychologists Joseph Reser and Janet Swim found that:

Even if people agree that climate change is anthropogenically forced, they may not take personal responsibility for adjusting to current consequences or for preventing future impacts. Indeed, research findings suggest that many may perceive global and distant others to be largely responsible for this global and distant environmental problem instead of attributing personal or collective responsibility.<sup>374</sup>

These observations suggest that individuals can find ways to explain or justify their response to the problems. Moser also contended, “Part of the reason for the absence of clear signals, of course, is the self-interest of many powerful forces in

---

<sup>371</sup> Dan Kahan, "Fixing the Communication Failure," *Nature* 463 (2010): 296, <https://doi.org/10.1038/463296a>.

<sup>372</sup> *Ibid.*, 297.

<sup>373</sup> Gifford, "The Dragons of Inaction," 294.

<sup>374</sup> Joseph Reser and Janet Swim, "Adapting to and Coping with the Threat and Impacts of Climate Change," *American Psychologist* 66, no.4, 2010: 283, <https://doi.org/10.1037/a0023412>.

society that insist on the status quo. This self-interest ranges from the unintentional, unconscious intent of the vast majority of people in western and westernized societies to defend the comforts of their modern lifestyles.”<sup>375</sup>

Alternatively, Gifford has found that some individuals do engage in action but that these actions are minimal or easy with little impact on curbing rising emission levels. He termed this “tokenism”, which is also known as “the low-cost hypothesis.”<sup>376</sup> Gifford reported that, at times, mitigating efforts can be undone by subsequent actions. For instance, individuals may use energy-efficient light bulbs but leave the light on for longer.<sup>377</sup> Also, if action is taken to mitigate emissions, there could be little immediate gratification. A point that Swim et al. underscored: “Much of the risks of climate change and thus the benefits of mitigating it lie many years into the future and are distant also geographically.”<sup>378</sup> Therefore, it can be difficult to see the effects of mitigation efforts and with little immediate positive reinforcement from taking action, there is little incentive to do so.

Of note, also, is how the climate crisis vies for public and political attention alongside other prescient issues, such as inequality, political conflict, government transparency, and economic uncertainty.<sup>379</sup> Markowitz and Guckian

---

<sup>375</sup> Moser, "Communicating Climate Change," 36.

<sup>376</sup> Gifford, "The Dragons of Inaction," 296.

<sup>377</sup> Ibid., 296-97. This phenomenon is known as “the rebound effect” or “the Jevons paradox.”

<sup>378</sup> Swim et al., *Psychology & Global Climate Change*, 24.

<sup>379</sup> See A. H. Maslow, "A Theory of Human Motivation," *Psychological Review* 50, no. 4 (1943), <https://doi.org/10.1037/h0054346>.

wrote that climate change “is perceived as a low-importance issue relative to nearly all other challenges facing society, from economic development to global political instability to public health to most other environmental problems.”<sup>380</sup> This suggests that individuals prioritise certain issues over others. Also, if the risks from global warming are largely seen to be “distant” or “in the future”, judgmental discounting—the undervaluing of distant or future risks—can occur.<sup>381</sup> Similarly, Marx and Weber reminded us that individuals have a “finite pool of worry”; thus, concern about one hazard leaves little room for individuals to think about other hazards.<sup>382</sup>

Relatedly, in *States of Denial: Knowing about Atrocities and Suffering*, sociologist Stanley Cohen explained that “observers are prone not to information overload, but to *demand* overload. We can receive any amount of information as long as it does not make moral or psychological demands, especially not the nagging demand to ‘do something’” (italics in original).<sup>383</sup> For Cohen, there are three possible forms of denial: literal, interpretive, and implicatory. The first type of denial is also referred to as factual or blatant denial. Here, people perceive that “nothing is happening.” While in the second type of denial, people acknowledge that something has happened. However, their view of “what’s happening is really something else.” Lastly, with implicatory denial, the facts or the prevailing interpretation is not denied or downplayed, rather its

---

<sup>380</sup> Markowitz and Guckian, "Climate Change Communication," 38.

<sup>381</sup> Gifford, "The Dragons of Inaction," 292.

<sup>382</sup> Marx and Weber, "Decision Making Under Climate Uncertainty," 29.

<sup>383</sup> Stanley Cohen, *States of Denial: Knowing About Atrocities and Suffering* (Cambridge: Polity Press, 2001), 189.

psychological, political, and moral effects are. Put simply, people accept that “what’s happening is justified.”<sup>384</sup> From his observations, Cohen went on to declare that “the problem is not to explain how anyone ‘denies’, but how anyone’s attention is ever held.”<sup>385</sup>

Similarly, applied social scientist Renee Lertzman argued that it is not an absence or a lack of concern about the ecological decline that matters, but rather that people are unable to manage their fears and anxieties about the future. While some scholars have argued that people were numb, apathetic, weary, or fatigued about the world’s problems, especially given the relentless information and coverage about “bad” events or issues, like war and famine, Lertzman has rejected this idea as “a myth.”<sup>386</sup> She pointed out that, “people can care a whole lot and still do very little.”<sup>387</sup> Using psychoanalytic and psychosocial insights, including Sigmund Freud’s work on unresolved mourning, she developed the term “environmental melancholia” to describe people’s engagement and non-engagement with environmental issues. Environmental melancholia, Lertzman wrote, is “a condition in which even those who care deeply about the well-being of ecosystems and future generations are paralyzed to translate such concern to action.”<sup>388</sup> So, the issue is not a lack of concern but the inverse.

---

<sup>384</sup> Ibid., 7-9, 103-12.

<sup>385</sup> Ibid., 13.

<sup>386</sup> See Charles R. Figley, *Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized* (New York: Brunner/Mazel, 1995); Katherine N. Kinnick, Dean M. Krugman, and Glen T. Cameron, "Compassion Fatigue: Communication and Burnout toward Social Problems," *Journalism and Mass Communication Quarterly* 73, no. 3 (1996), <https://doi.org/10.1177/107769909607300314>; Moeller, *Compassion Fatigue*.

<sup>387</sup> Renee Lertzman, *Environmental Melancholia: Psychoanalytic Dimensions of Engagement* (East Sussex: Routledge, 2015), 5.

<sup>388</sup> Ibid., 4.

Sociologist Kari Norgaard, too, has challenged the assumed links between having knowledge and acting. For her, global warming is “an issue about which people cared and had considerable information, but one about which they did not really want to know.”<sup>389</sup> She termed this disjuncture between knowledge and action as a “double reality” and proposed that separation occurs because people’s “view shifts from one in which *understanding* of climate change and *caring* about ecological conditions and our human neighbours are in short supply to one whereby these qualities are acutely present but actively muted in order to protect individual identity and sense of empowerment and to maintain culturally produced conceptions of reality” (italics in original).<sup>390</sup> Thus, the fundamental problem is not a denial of the facts or a lack of awareness, it is that people do not feel inclined to become involved with combating rising emissions.<sup>391</sup>

In summary, studies of climate change communication have found that the climate crisis is unprecedented in its nature, scale, and the need for unparalleled cooperation to confront it. Much of the work in psychology has looked at how individuals process information and make decisions about the consequences and risks of global warming. It has been found that information can destabilise or effect “the self.” But it is important to stress that individuals inhabit a shared space, with prevailing ideals and norms; thus, a spotlight needs to be cast over organisations, social intuitions, and society as a whole. The

---

<sup>389</sup> Kari Norgaard, ““We Don't Really Want to Know” Environmental Justice and Socially Organised Denial of Global Warming in Norway,” *Organization & Environment* 19, no. 3 (2006): 365, <https://doi.org/10.1177/1086026606292571>.

<sup>390</sup> *Living in Denial*, 207.

<sup>391</sup> *Ibid.*, 209-11.

explanations, so far, of the failure of individuals and society to respond to climate change highlight the different elements in the communication process. Let us now consider the approaches journalists, communicators, and others can employ to discuss the climate crisis.

### **Effective Climate Change Communication Approaches**

From my discussion thus far, it is apparent that there are multiple explanations for why climate action has stalled. Traditionally, the topic of global warming has been dominated by the fields of natural science and economics but now there is growing interdisciplinary conversation. The findings across disciplines showed that there are diverse barriers to public engagement involving physical, psychological, social, economic, and cultural factors. Some scholars thereby have concluded that further socio-ecological breakdown is inevitable.<sup>392</sup> However, by addressing the likely explanations as to why and how individuals respond or fail to respond, practitioners can still find better ways to inspire the public to engage with climate change activism.

In 2008, several environmental and global warming organisations started work on a document to provide effective communication tools “to put global warming back in the conversation.”<sup>393</sup> The guide was later entitled *Climate*

---

<sup>392</sup> Steven Brechin, "Ostriches and Change: A Response to 'Global Warming and Sociology'," *Current Sociology* 56, no. 3 (2008), <https://doi.org/10.1177/0011392107088239>; Terry Leahy, Vanessa Bowden, and Steven Threadgold, "Stumbling Towards Collapse: Coming to Terms with the Climate Crisis," *Environmental Politics* 19, no. 6 (2010), <https://doi.org/10.1080/09644016.2010.518676>.

<sup>393</sup> The Topos Partnership, Cara Pike, and Meredith Herr, *Climate Crossroads: A Research Based Framing Guide* (2009), <https://climateaccess.org/system/files/Climate%20Crossroads%20Guide.pdf>.

*Crossroads: A Research Based Framing Guide* and is detailed at length below. In the guide a “Common Message Platform” was advanced. This is where an “overarching narrative” is established and lays the foundation for national dialogues about the issues. It evokes shared stories, ideas, values, and principles, and can be drawn upon by all global warming advocates. Six communication points were identified to aid practitioners in developing a common message:

1. Communicators should use the current economic and energy context to develop lasting support for addressing global warming;
2. Communicators should emphasize the role of “too much carbon” in creating the problem, and should frame solutions in terms of how we handle/ manage carbon;
3. Communicators should expand the relevance of the issue beyond an environmental (plants and animals) concern by emphasizing a broader and more concrete picture of what it means for the climate to change;
4. Communicators should emphasize that we are at a crossroads, a moment of choice;
5. Communicators should balance discussions of problems and impacts with a vivid picture of the actions we can and will take; and
6. Communicators can foster a new relationship to the problem by connecting the issue with supporters’ identities.<sup>394</sup>

Also outlined in the guide were nine “best practices” for how to frame global warming and its related issues:

1. Setting the terms of the debate – always be deliberate about the organizing frames that are shaping your communications and avoid repeating the opposition’s message;
2. Focusing on “winning the series,” not each “play” – ask whether a specific communication on any given topic really supports the ultimate goals related to global warming;
3. Teaching and persuading – don’t forget the importance of clearing up misconceptions, filling in basic knowledge gaps;
4. Forefronting “solutions” – use discussions of action steps to engage and inform;
5. The value of novelty – when possible, offer a new insight;
6. Making common sense –translate unfamiliar ideas into terms that are “easy to think”;
7. Clarity – check communications for terms, references that may not be understood;
8. First principles – begin with core ideas and shared values, and come back to them repeatedly; and
9. Stage of change – pay attention to where your audience is on this issue.<sup>395</sup>

---

<sup>394</sup> Ibid., 9-12.

<sup>395</sup> Ibid., 13-20. There are five stages of change: disinterest, deliberation, design, doing, and defending.

The authors also found that conversations about global warming can be hindered by several prominent obstacles, which are referred to as “the stakes” and “the solutions.” The former relates to how the issues are constructed and the latter concerns the means of dealing with these constructions and the problems they create. Five stakes were mentioned:

1. The Terrarium Problem – While people care about the environment, it is common for many to subconsciously view the environment as consisting of plants and animals that need protecting, not a broader system of which we are part and that is foundational to our existence.
2. “Long list of impacts” – The most common tactic designed to increase priority has been to highlight lots of examples of frightening impacts. However, an emphasis on impacts does not necessarily increase issue priority. In addition, some research has demonstrated that an emphasis on impacts does nothing to increase support for action.
3. The Weather Problem – We’ve all heard the phrase, “you can’t do anything about the weather.” Absent [is] an understanding of the mechanism of global warming, many cannot understand how any action they could take would influence the weather. In addition, most people do not immediately see how a change in climate patterns can fundamentally disrupt human life and existence.
4. The Warming Problem – Over the years, communicators have largely defined the problem as “warming” and referred to temperature change as “proof” that global warming is occurring. The result is that many people, including environmental group supporters, have a very narrow interpretation of what is meant by global warming. It is easily thought of as simply a (slight) rise in average temperatures.
5. Charismatic Critters and Priority Places – Messages that point to the impacts of global warming on special places and species often have an immediately compelling quality. The challenge for communicators is to convey impacts in ways that reinforce the big picture, that help people better understand what global warming is and how it works. That means widening the view beyond isolated compelling impacts to include the causes and solutions as well as connecting the dots to the broad systems that affect human life.<sup>396</sup>

Common among these challenges is the application of a specific or broad interpretation of the significance of global warming. This suggests that communication practitioners need to strike a balance between underplaying and overselling the problems. Practitioners need to be careful about how they present

---

<sup>396</sup> Ibid., 21-24. See also Cara Pike, Bob Doppelt, and Meredith Herr, *Climate Communications and Behavior Change: A Guide for Practitioners*, (The Climate Leadership Initiative, 2010), <http://hdl.handle.net/1794/10708>.

information; at one end of the spectrum people can become less inclined to act, and, at the other end, they are too weighed down by the emotional burden to act.

Overall, six possible “solutions” were cited as challenges in engaging and mobilising people:

1. The “Someday” Problem – the “Someday” picture decreases active engagement because it does not offer a way of thinking about how we reach this visionary future, nor does it imply that we must achieve this future quickly. The fact that people like messages about the future does not mean people are motivated to act proactively to reach that future. The future can feel like an imaginary place, disconnected from the present. Or it can be felt as a destination that is reached more or less automatically, in its own time and at its own pace.
2. “Leaders are taking care of it” – At its worst, common sense logic suggests that such a serious and urgent problem must already have the attention of experts and the government. And if the government is not acting, then either it is not a pressing problem, or no solutions exist.
3. “Technology will save us” – Related to the prior two traps is the notion that a technological solution is just around the corner, i.e., scientists are working on some solution that will be available in the future.
4. “Little things make a difference” – It is genuinely important that people make changes in their daily lives to shrink their carbon footprint in direct and indirect ways. On the other hand, it is clear that making these small changes is not enough, and there are things [individuals] need to do collectively, as citizens, most centrally putting pressure on leaders to make big-picture changes.
5. Kitchen Sink Environmentalism – Environmental group supporters often conclude that every environmental problem and solution relates to global warming in some way. The lack of clarity about what global warming is, what causes it and what can solve it, distracts concerned people from seeing the right actions to take, and can make the whole problem seem vaguer and more overwhelming.
6. The Perfection Problem – Those who are committed to and knowledgeable about the environment can become paralyzed by their knowledge, as they criticize solutions that are not environmental enough...The end result is a reluctance to embrace completely any solution that is not “perfect,” leaving them stuck in the status quo and waiting for a more perfect solution.<sup>397</sup>

These insights draw attention to how the communication of global warming can unintentionally, create inaction or provide a false sense of efficacy around likely

---

<sup>397</sup> The Topos Partnership, Pike, and Herr, *Climate Crossroads*, 24-27; Pike, Doppelt, and Herr, *Climate Communications and Behavior Change*, 10, 16-17.

responses. Therefore, communicators need to take efforts to avoid falling into these traps or pitfalls.

Additionally, research from the Center for Research on Environmental Decisions found that climate change policies need to be publicly supported. They wrote, “Ensuring that people feel both a personal connection with climate change and a desire to take action to mitigate its impact, without becoming overwhelmed by the scale of the problem, is key.”<sup>398</sup> As such, they identified seven key principles of climate change communication:

1. know your audience;
2. get your audience’s attention;
3. beware of the overuse of emotional appeals;
4. address scientific and climate uncertainties;
5. tap into social identities and affiliations;
6. encourage group participation; and
7. make behaviour change easier.<sup>399</sup>

They also pointed out that there is not a “one-size-fits-all” approach to the challenges of communicating global warming and its effects.<sup>400</sup>

In 2012, the UCS and the Erb Institute for Global Sustainable Enterprise jointly convened a conference entitled “Increasing Public Understanding of Climate Risks and Choices: What We Can Learn from Social Science Research and Practice.” Many of the experts in attendance stressed the importance of understanding and illustrating the link between the climate crisis and the audience’s core values. For example, one of the remarks was that “providing

---

<sup>398</sup> Shome et al., *The Psychology of Climate Change Communication*, 39.

<sup>399</sup> *Ibid.*, 3-38.

<sup>400</sup> *Ibid.*, 39.

climate science ‘knowledge’ to specific audiences is necessary, but ultimately insufficient if that audience’s emotions, values, ideology, and overall belief system are not accounted for and addressed.”<sup>401</sup> Overall, four key themes emerged from the interdisciplinary workshops that took place:

1. We have a scientific consensus on climate change, but not a social consensus;
2. Define the target audience for communication strategies;
3. Meet the audience members where they are; and
4. Focus on risks versus rewards.<sup>402</sup>

Of note, after the event, attendees were polled for the next course of action to follow. Suggestions included: “Development of a social science rapid response team; Creation of a best practices document to advise practitioners and help them speak to the media; Creation of a web-based clearinghouse for such information; Convening of more forums for interdisciplinary collaboration among social scientists; and Generation of more public-facing communications to help address social barriers to climate change.”<sup>403</sup>

For Moser, a better understanding of the challenges facing the public’s view of climate change will provide communicators more tools to engage them in climate messages. According to her, there are seven basic questions that communicators need to consider:

---

<sup>401</sup> Arielle Balbus, *Increasing Public Understanding of Climate Risks & Choices: Learning from Social Science Research and Practice*, (Erb Institute/ Union of Concerned Scientists, 2012), 35, <https://www.ucsusa.org/sites/default/files/attach/2018/01/gw-Increasing-Public-Understanding-of-Climate-Risks-and-Choices.pdf>.

<sup>402</sup> *Ibid.*, 7.

<sup>403</sup> *Ibid.*, 19.

1. What are the goals (scope and purpose) of the communication?
2. Who is the audience (individuals, specific sub-populations, particular interest groups or socioeconomic sectors, etc.)?
3. How is the issue framed? What language, metaphors, images, etc. are used?
4. What messages, what information is conveyed and how can the content be made most useful and accessible? Content also relates to questions about the sources of information on climate change and their credibility [e.g., government, media, scientists – directly or scientific institutions, non-governmental organizations (environmental or other civic groups), or industry]?
5. Who are the messengers (e.g., politicians, scientists, advocates, pundits, businesspeople, celebrities, people of different ethnic or socioeconomic background and of different ages)?
6. Through which channels and through which media and modes does the communication occur?
7. How do we know the communication had the intended effect?<sup>404</sup>

In a subsequent work, Moser surveyed communication research and practice since the first decade of the twenty-first century and found that important progress had been made concerning the earlier identified challenges. But she also observed that persistent barriers remained. Practitioners, she contended, need to find ways to transition individuals out of awareness and concern, and into an environment of active engagement. This pursuit, she noted, would take place in a deeply politicised and polarised atmosphere that could create an overwhelming sense of hopelessness among many audiences.<sup>405</sup> She went on to summarise, “Much of this work goes against social instincts, ideological preferences, professional norms, institutional incentives, time and the tide of proliferating information that threaten to overwhelm us all.”<sup>406</sup> Despite the challenges Moser implored everyone to engage in unpacking the deeper and larger questions that global warming and its implications ask of us.

---

<sup>404</sup> Moser, "Communicating Climate Change," 37.

<sup>405</sup> Susanne C. Moser, "Reflections on Climate Change Communication Research and Practice in the Second Decade of the 21<sup>st</sup> Century: What More Is There to Say?" *Wiley Interdisciplinary Reviews: Climate Change* 7, no. 3 (2016), <https://doi.org/10.1002/wcc.403>.

<sup>406</sup> *Ibid.*, 360.

## Conclusion

This overview of features that direct behaviour and public engagement illustrate the enormous task of reining in rising GHG emissions. There are many hypotheses about why the recognition and politicisation of the climate crisis have not inspired the kind of behaviour change in individuals expected. The obstacles discussed here need to be extended. Nevertheless, the literature suggests that the denial of, or apprehension about, the effects and risks of global warming are largely mediated by the nature of the crisis, cultural values and beliefs, and by how the issues and events are communicated. Generally, in developed regions, if global warming is accepted, its implications are still not easily detected by personal experience. This leads some to view its risks as being uncertain, geographically distant, and/or situated in the future. In contrast, the implications and costs associated with mitigation and adaptation activities would be incurred in the present or immediate future. Moreover, these psychological challenges operate in tandem with structural barriers—institutional, cultural, and economic—to hinder people's ability to come to terms with the climate crisis. In the next chapter, I use the observations gathered in this and preceding chapters to address the New Zealand case.

## Chapter Three

### Representations of the Climate Crisis in New Zealand from 1990 to 2017

Globalisation makes a joke of claims that sustainability can be achieved in one country.

–Ton Bührs, *Climate Change Policy and New Zealand’s ‘National Interest’: The Need for Embedding Climate Change Policy Into a Sustainable Development Agenda*, 2008

In what follows, my concern shifts from broad global and historical discussions towards New Zealand. In this chapter, I highlight the political, socio-economic and cultural challenges of transitioning to a more just society by drawing attention to the climate policy narratives. I begin by focusing on the different ways in which successive governments have used language to advance their agenda. Then, I detail the country’s contribution to the global efforts to fight climate change by looking at their involvement in the UN’s international conferences in Rio de Janeiro, Kyoto, Doha, and Paris. Lastly, I trace the public’s perceptions about the potential consequences of and action on global warming. In this chapter, I show that more is needed to prioritise such matters in the public domain and argue that aspirations for climate action remain largely unfulfilled.

#### **New Zealand’s Climate Change Policy: Narratives and Challenges**

My concern in this section is with the common narratives that have helped to determine political and public attitudes, behaviours, and outcomes towards

the climate crisis in New Zealand. Language, as stated in the introduction, is an important process in the workings of politics and governance. Here, the focus is on the explanations used by successive governments to legitimise their approaches to climate policy and the justifications for the country's failure to reduce GHG emissions. Given the work that has already been done in this area, I shall be largely updating the research.

In summarising the narratives that have shaped New Zealand's climate policy thus far, Ian Bailey and Tor Inderberg identified six common narratives:

1. New Zealand is a small country
2. New Zealand has an unconventional emissions profile
3. New Zealand is a growing country with a specialised economic base
4. New Zealand's electricity sector is already low carbon
5. Tackling transport emissions is problematic
6. Emissions trading is all that is needed<sup>407</sup>

The scholars observed that these six lines of political narrative are accurate, but that "they do not constitute a full and balanced account of the stakes facing New Zealand on climate change" (see Table 1).<sup>408</sup> Overall, they found that the country's approach to climate policies "score strongly on cost-effectiveness but have struggled to incentivise emissions reductions within New Zealand."<sup>409</sup>

---

<sup>407</sup> The authors explained that "we use the term 'narratives' rather than 'factors' to describe these issues because, like any political discourse, they represent lines of argument used by political actors to legitimate New Zealand's current approach to climate policy." Ian Bailey and Tor Inderberg, "New Zealand and Climate Change: What Are the Stakes and What Can New Zealand Do?" *Policy Quarterly* 12, no. 2 (2016): 4-5, <https://doi.org/10.26686/pq.v12i2.4598>.

<sup>408</sup> *Ibid.*, 7.

<sup>409</sup> *Ibid.*, 10.

Table 1: Key narratives shaping New Zealand's climate policy

Narrative	Description
New Zealand is a small country	New Zealand produces only about 0.2% of global emissions, so it can do little to influence climate change. <sup>410</sup> This makes economic sacrifices futile in climate or welfare terms, and leadership should instead come from larger countries, with New Zealand playing a respectable following role.
New Zealand has an unconventional emissions profile	Agriculture contributes over 42% of national GHG emissions, unlike in most Organisation for Economic Co-operation and Development (OECD) countries where the average is 9%. <sup>411</sup> Current technologies to cut biological emissions are problematic and/or costly. New Zealand agriculture is also economically and emissions efficient, so pricing emissions without feasible abatement technologies may damage the economy by shifting production overseas without producing climate benefits.
New Zealand is a growing country with a specialised economic base	Sustained population growth creates serious obstacles to absolute emissions reduction and leaves New Zealand reliant on overseas credits to meet international targets. Higher targets and carbon prices also risk undermining New Zealand's specialised and export-oriented economy until trading partners introduce economy-wide carbon pricing.
New Zealand's electricity sector is already low carbon	New Zealand has limited capacity to reduce emissions from electricity generation because 82% of electricity already comes from renewable sources. <sup>412</sup>
Tackling transport emissions is problematic	Cutting transport emissions is challenging because New Zealand's sparse population outside its major cities restricts economies of scale in low-carbon transport systems.
Emissions trading is all that is needed	Emission trading scheme (ETS) as a cost-effective way of meeting emissions targets but has also prompted an aversion to complementary measures on the grounds of avoiding regulatory 'double jeopardy' and reduced economic efficiency within climate policy.

Source: Ian Bailey and Tor Inderberg. "New Zealand and Climate Change: What Are the Stakes and What Can New Zealand Do?" *Policy Quarterly* 12, no. 2 (2016): 3-12, <https://doi.org/10.26686/pq.v12i2.4598>.

<sup>410</sup> Collectively, small emitters (i.e., < 1% of global total) account for about a quarter of global emissions, see New Zealand Productivity Commission, *Low-Emissions Economy*, 2.

<sup>411</sup> I updated Bailey and Inderberg's figures with data for 2017. New Zealand's agricultural emissions changed from 50% to more than 42% and the OECD average changed from 11% to 9%. See The Organisation for Economic Co-operation and Development, *Environment at a Glance Indicators: Climate Change*, Paris: The Organisation for Economic Co-operation and Development, 2019, <https://doi.org/10.1787/ac4b8b89-en>.

<sup>412</sup> I updated the original figure with data for 2017. It changed from 80% to 82%, see Ministry of Business Innovation and Employment, *Energy in New Zealand 2018* (Wellington: Ministry of Business, Innovation & Employment, 2018), <https://www.mbie.govt.nz/assets/d7c93162b8/energy-in-nz-18.pdf>.

Three key issues need to be elaborated. These are the effect of New Zealand's trading relationships on its climate policies; New Zealand's growing dependence on tourism; and New Zealand's energy profile. Firstly, New Zealand's key trading partners show no signs of pricing biological emissions. Here, it is worth mentioning Australia's climate policy. Initially, the New Zealand government had sought to align the two emission trading schemes. Economists Catherine Leining and Suzi Kerr observed:

Official discussions of trans-Tasman linking of ETSs began early in the process of NZ ETS design, and were supported by the establishment of formal working groups. However, the initial beacon of an Australian ETS became a shadow as Australia struggled politically to implement an ETS, chose in late 2012 to modify some of the design features of the Carbon Pricing Mechanism and link it to the EU ETS, and finally abandoned its ETS in 2014.<sup>413</sup>

In Australia, under Tony Abbott's coalition government, climate initiatives were repealed and dismantled. Both the leaderships of Malcolm Turnbull and Scott Morrison continued the conservative lack of belief in the urgency of global warming. Researchers Rory Sullivan and Andy Gouldson explained that "the dependence of the Australian economy on the mining and minerals industries and on relatively low cost energy have been a huge influence on climate change policy in Australia and, in turn, on Australian corporate responses to climate change."<sup>414</sup> Also notable is that the fossil fuel industry and other carbon-intensive corporations are large donors to the Liberal Party, who have been in

---

<sup>413</sup> Catherine Leining and Suzi Kerr, *Lessons Learned from the New Zealand Emissions Trading Scheme* (Wellington: Motu Economic and Public Policy Research 2016), 10, [http://motu-www.motu.org.nz/wpapers/16\\_06.pdf](http://motu-www.motu.org.nz/wpapers/16_06.pdf).

<sup>414</sup> Rory Sullivan and Andy Gouldson, "The Governance of Corporate Responses to Climate Change: An International Comparison," *Business Strategy and the Environment* 26 (2017): 420, <https://doi.org/10.1002/bse.1925>. See also Kate Crowley, "Up and Down with Climate Politics 2013–2016: The Repeal of Carbon Pricing in Australia," *WIREs Climate Change* 8, no. e458 (2017), <https://doi.org/10.1002/wcc.458>.

government since 2013. The interconnectedness of the two countries brings into question the feasibility of mutual collaboration to combat global warming. For this reason, there is political pressure to continue or delay the agriculture sector's exclusion from the New Zealand Emissions Trading Scheme (NZ ETS). But if the agricultural sector fails to account for its share of emitted emissions, it begs the question, who will? The burden will most likely fall on other emitters and the New Zealand taxpayer.

Secondly, the tourism industry is a serious obstacle to the nation's emissions reduction efforts. However, this matter has received less attention. Ironically, there is growing concern about how the degradation of the local environment will impact New Zealand's brand of "clean, green" and "100% Pure New Zealand."<sup>415</sup> Tourism is the country's largest foreign exchange earner and about one in seven jobs in the country is related to the sector.<sup>416</sup> But as Hopkins et al. wrote, "Tourism emissions related in part, to the 'elephant in the room' of global air travel emissions. There is a clear need to consider the air travel emissions arising from arrival to and departures from New Zealand, which demand extreme long haul travel for most key markets."<sup>417</sup> Over time, the

---

<sup>415</sup> PA Consultants, *Our Clean Green Image: What's It Worth?* (The Ministry for the Environment, 2001), <https://www.mfe.govt.nz/sites/default/files/clean-green-aug01-final.pdf>.

<sup>416</sup> Tourism New Zealand, *Optimising Tourism New Zealand's Future Role and Contribution to New Zealand* (Ministry for the Environment: 2019), <https://www.mbie.govt.nz/dmsdocument/6974-the-tourism-new-zealand-report>.

<sup>417</sup> Debbie Hopkins et al., "Climate Change and Aotearoa New Zealand," *WIREs Climate Change* 6 (2015): 575, <https://doi.org/10.1002/wcc.355>. The researchers also pointed out that the marketing of the country as 'clean, green' and '100% Pure New Zealand' is at odds with the high carbon intensity of travel. This discrepancy is expected to become more apparent over the coming years.

emission intensity per passenger has decreased, but the expansion of tourism outweighs these advances. The World Tourism Organization (UNWTO) reported:

Tourism has grown continuously over the past few decades and now represents 10% of global employment and 10% of global gross domestic product (GDP). With the number of domestic and international arrivals forecast to reach 15.6 billion and 1.8 billion by 2030 respectively, tourism is expected to continue generating significant benefits in terms of both socioeconomic development and job creation worldwide.<sup>418</sup>

They also stated that in 2016, emissions from transporting tourists accounted for about 5% of all energy-related CO<sub>2</sub> emissions.<sup>419</sup>

Thirdly, the second-highest component of New Zealand's emission portfolio is energy. According to the Ministry of Business, Innovation and Employment (MBIE), "In 2017, the latest year for which data is available, New Zealand's energy intensity was the sixth highest of Organisation for Economic Co-operation and Development (OECD) member countries and 18 per cent higher than the OECD average."<sup>420</sup> Simply put, this is the amount of energy required to produce each dollar of GDP. Much of the country's energy requirements are met with domestic production of natural gas, renewables, and waste heat through indigenous production. But New Zealand is a net importer of crude oil. Of the crude oil produced in the country, it is incompatible with current refining capabilities and so is exported. As such, all domestic oil needs are met by imports, making the nation susceptible to changes in global commodity prices.

---

<sup>418</sup> World Tourism Organization and International Transport Forum, *Transport-Related CO<sub>2</sub> Emissions of the Tourism Sector – Modelling Results* (Madrid: UNWTO, 2019), 9, 11, <https://www.e-unwto.org/doi/pdf/10.18111/9789284416660>.

<sup>419</sup> Additionally, the sector is under significant threat from the effects of global warming (e.g., extreme weather events, loss of biodiversity, and rising insurance costs).

<sup>420</sup> Ministry of Business Innovation and Employment, *Energy in New Zealand 2019*, 6.

In terms of coal, there are extensive resources in the Waikato and Taranaki regions of the North Island, and the West Coast, Otago, and Southland regions of the South Island. Much of the bituminous coal from the West Coast is exported.<sup>421</sup> Despite the country's vast supply of coal, some large users are reliant on the importation of coal because of its quality and relative cost. The domestic coal supply is used to provide heat, drive turbines that generate electricity, act as a reagent in a chemical reaction, and as a back-up energy supply when the industry faces challenging weather conditions.<sup>422</sup>

As an aside, on February 13, 2018, Genesis Energy, an energy company that the government has a majority shareholding (about 51%), announced a plan to phase out coal use completely by 2030.<sup>423</sup> However, following the Sixth Labour Government's banning of offshore oil and gas exploration permits, the company reported that "the recent Government announcement to ban oil and gas exploration will make plans to remove coal more complicated and makes [*sic*] the conversation more pertinent. As an industry, we must together address the

---

<sup>421</sup> The Electricity Authority, *Electricity in New Zealand* (Wellington: The Electricity Authority, 2018), 33.

<sup>422</sup> For example, Dunedin Hospital and Timaru Hospital burn coal as a portion of their energy source. In January 2020, the coalition government announced a \$12 billion infrastructure package. Part of the funds will help the public sector, including hospitals, to decarbonise. The South Canterbury District Health Board (i.e., Timaru Hospital) received \$5 million, of which \$3 million will be spent to replace their two coal fire boilers with greener energy sources. See Al Williams and Samesh Mohanlall, "South Canterbury MPs disappointed as Government announces \$12b spend up," *Stuff*, January 29, 2020, <https://www.stuff.co.nz/timaru-herald/news/119125364/south-canterbury-mps-disappointed-as-government-announces-12b-spend-up>.

<sup>423</sup> Kiely Evans, "Genesis Establishes a Pathway to a Coal-Free Electricity Future," news release, February 13, 2018, <https://www.genesisenergy.co.nz/about/media/news/genesis-establishes-a-pathway-to-a-coal-free-elect>.

future risk of security of supply.”<sup>424</sup> Then, on October 18, 2018, it was publicised that the company had to buy coal and gas in the wholesale market to supplement its fuel supplies. Chief executive Marc England was cited as saying that low storage and reduced gas supplies from the Pohokura field had put pressure on the sector.<sup>425</sup> This sequence of events highlights the importance of consultation and underscores the need for planning. It also revealed that there are no shortcuts or quick fixes.<sup>426</sup> Of note, in May 2019, England had backtracked on the company’s stated intention of phasing out coal by adding “if we can.” Now, its plan read: “Our intent is to remove coal by 2030 if we can.”<sup>427</sup>

It is also important to underline that many of the functions of the government’s agencies (e.g., Waka Kotahi NZ Transport Agency) and their investment choices (e.g., Air New Zealand and KiwiRail) have ecological implications. Also notable, Genesis Energy has a coal-fired power station (the Huntly Power Station) currently in full operation. Additionally, the National Provident Fund and the Government Superannuation Fund Authority have about \$150 million invested in fossil fuels and have so far decided against

---

<sup>424</sup> Genesis Energy Limited, "Genesis Energy’s Submission on the Electricity Price Review First Report," October 23, 2018, 23, <https://www.mbie.govt.nz/dmsdocument/4174-genesis-energy-electricity-price-review-first-report-submission>.

<sup>425</sup> Gavin Evans, "Imported Coal Needed to Keep the Lights on in NZ," *BusinessDesk*, October 18, 2018, <https://www.scoop.co.nz/stories/BU1810/S00561/imported-coal-needed-to-keep-the-lights-on-in-nz.htm>.

<sup>426</sup> It also gives rise to concerns over “carbon leakage.” Carbon leakage is when, for reasons related to the cost of climate policies, companies purchase resources from or transfer their production abroad to other regions with more lenient emission regulations, leading to an overall increase in total emissions. See Mustafa Babiker, "Climate Change Policy, Market Structure, and Carbon Leakage," *Journal of International Economics* 65, no. 2 (2005): 422, <https://doi.org/10.1016/j.jinteco.2004.01.003>.

<sup>427</sup> "Genesis Energy to End Coal Use 'If We Can' by 2030," *Radio New Zealand*, May 20, 2019, <https://www.rnz.co.nz/news/business/389580/genesis-energy-to-end-coal-use-if-we-can-by-2030>

divesting.<sup>428</sup> Put differently, the government can also be viewed as a large corporation.

In total, about 82% of New Zealand's electricity comes from renewables, in particular from hydro and geothermal sources, but, overall, about 40% of New Zealand's energy is generated using renewable sources (including for transport, electricity and industrial heat).<sup>429</sup> Given the composition of the electricity grid, it is sensitive to climate conditions and disruptions in supply. For instance, there have been periods of outages or sustained low inflows. During times of low stock, conservation campaigns have been launched and other forms of generation, like coal, have been used as a substitute.<sup>430</sup> The fluctuation in supply raises doubts over the security of New Zealand's energy supply. Added to this, is the issue of affordable pricing.

As stated earlier, since 1990, transportation emissions have risen more than any other emissions source and now account for about 17.9% of gross emissions.<sup>431</sup> This is mainly due to the country's large and sparsely populated land area, high vehicle ownership, large numbers of older vehicles, the limited electric vehicle market, lack of domestic vehicle manufacturing, and the cost and availability of public transport. Moreover, New Zealand is one of the few

---

<sup>428</sup> Max Towle, "Government Funds to Continue Investing in Fossil Fuels," *Radio New Zealand*, December 5, 2019, <https://www.rnz.co.nz/news/in-depth/404873/government-funds-to-continue-investing-in-fossil-fuels>.

<sup>429</sup> New Zealand Productivity Commission, *Low-Emissions Economy*, 29.

<sup>430</sup> The public was asked to conserve electricity in 1992, 2001, 2003, 2008, and 2020.

<sup>431</sup> Ministry for the Environment, *New Zealand's Greenhouse Gas Inventory 1990–2017*, 55, 73.

developed countries without vehicle emissions standards. As such, there is scope to reduce transport emissions by shifting to cleaner sources of transport.

In addition to the common narratives, is New Zealand's version of the corporate assault on climate change. On several occasions, vocal climate change contrarians have been invited to address New Zealand audiences. For instance, in the early 1990s, the state-owned enterprise Coal Corporation (later rebranded as Solid Energy) sponsored the visit of a leading climate change contrarian, Professor Fred Singer, to the Coal Research Association conference.<sup>432</sup> More recently, in 2007, the lobby group, the New Zealand Business Roundtable invited leading climate change sceptic, Lord Nigel Lawson to Auckland to give a lecture.<sup>433</sup> Here, efforts were made to refute the established climate science and undermine public concern about global warming.

At around the same time, pressure was exerted upon some New Zealand scientists working in the field of climate science. For example, in 2009, climate scientist Jim Salinger was dismissed by NIWA for breaching the institute's policy of not speaking publicly without gaining prior approval from management. This policy meant that NIWA scientists could not communicate with the news

---

<sup>432</sup> Coal Corporation of New Zealand Limited, *Annual Report 1991-1992*, 4. In 1996, Coal Corporation was rebranded and restructured into Solid Energy New Zealand. The state-owned enterprise entered voluntary liquidation in 2015.

<sup>433</sup> Nigel Lawson, "A Cool Look at Global Warming: The Economics and Politics of Climate Change" (lecture, The Sir Ronald Trotter Lecture, Auckland War Memorial Museum, November 15, 2007) <file:///C:/Users/em10878/Downloads/The-Economics-and-Politics-of-Climate-change.pdf>. See also Brian Fallow, "Lawson Free Now to Say What He Pleases on Climate Change," *The New Zealand Herald*, November 17, 2007, [https://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=10476569](https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10476569). In 2012, NZBR merged with the New Zealand Institute to form the New Zealand Initiative.

media nor members of parliament without official permission.<sup>434</sup> Effectively, the media's access to credible sources of scientific information was suppressed. More harshly, this practice evokes the idea of censorship.

Recently, in 2016, Professors Tim Naish and James Renwick had an official complaint lodged against them with the Royal Society of New Zealand for a breach of the Society's Code of Professional Standards and Ethics for a public presentation they had conducted around the country about global warming and climate change. A review by the Professional Standards and Ethics Panel found no basis for a breach of the Code.<sup>435</sup> There have been other attacks on scientists, including lawsuits and open vilification on conservative websites.<sup>436</sup> These incidents illustrate the different ways scientists are being discredited and/or discouraged from imparting their expertise.

### **Political Discourse: New Zealand's Commitments and Targets**

Let us now examine how the preceding narratives were connected with social relations of power and domination as the challenges and incidents

---

<sup>434</sup> For an account of Salinger's experience as a scientist in NIWA see the section on "A Voice Muzzled" in Schneider's book *Science as a Contact Sport: Inside the Battle to Save Earth's Climate*. See also "NIWA Sacks Scientist for Helping Media," *Radio New Zealand* April 25, 2009, <https://www.rnz.co.nz/news/national/13332/niwa-sacks-scientist-for-helping-media>; New Zealand Press Association, "Jim Salinger Sacking Justified - Era," *Stuff*, December 21, 2009, <http://www.stuff.co.nz/national/3185809/Jim-Salinger-sacking-justified-ERA>.

<sup>435</sup> The Royal Society of New Zealand, *Report of Professional Standards and Ethics Panel of the Royal Society of New Zealand in Relation to a Complaint of Dr Geoff Duffy, Dr David Kear and Others against Professor Tim Naish and Professor James Renwick* (Wellington: The Royal Society of New Zealand, December 2016), <https://www.climateconversation.org.nz/wp/wp-content/uploads/2016/12/final-report-of-rsnz-panel.pdf>.

<sup>436</sup> See also Hendy, *Silencing Science*.

discussed were not simply politically motivated attacks but also ideological.<sup>437</sup> Here, my focus shifts to how the work of politics and government are imbued within various discourses. It is important to note that politics and government are not synonymous terms. Like Fairclough, I associate politics with tensions amongst different groups of the population over important matters of public concern and view government as the management and practice of these tensions.<sup>438</sup>

In 1988, the government's response to the threats of global warming began with the establishment of the New Zealand Climate Change Programme (NZCCP).<sup>439</sup> Key features include: an international programme; a science programme; development and implementation of policies and measures; business and economic development; and monitoring, reporting, review and compliance.<sup>440</sup> Shortly after, the responses were brought together under the Comprehensive Strategy on Climate Change. Then, from the 1990s onwards the government started to approach global warming and its effects in a more serious manner.<sup>441</sup>

---

<sup>437</sup> Erik Conway, "Communicating the Science of Climate Change: Lessons from History" (paper presented at the Climate Futures Forum— Pathways for Society, New Zealand Climate Change Research Institute, 31 March–1 April 2011), 45, <https://www.wgtn.ac.nz/sgees/research-centres/documents/climate-futures.pdf>.

<sup>438</sup> Norman Fairclough, *New Labour, New Language?* (London: Routledge, 2000), 11.

<sup>439</sup> See Daniel Rimmer's doctoral dissertation for a more detailed account of the political history of New Zealand's climate change response and governmental decisions. Daniel Rimmer, "Breakdown of Governance: A Critical Analysis of New Zealand's Climate Change Response" (PhD diss., Massey University, 2016).

<sup>440</sup> Ministry for the Environment, *National Communication 2001: New Zealand's Third National Communication under the Framework Convention on Climate Change* (Wellington: Ministry for the Environment, 2002), 38, <https://www.mfe.govt.nz/sites/default/files/national-communication-2001-jan02.pdf>.

<sup>441</sup> *Climate Change: The New Zealand Response: New Zealand's First National Communication under the Framework Convention on Climate Change* (Wellington: Ministry for the Environment, 1995), <https://unfccc.int/resource/docs/natc/newnc1.pdf>.

### *The Earth Summit*

In accepting that global warming posed a serious threat, requiring state intervention and collective collaboration, New Zealand participated in the 1992 Earth Summit in Brazil and signed the resulting climate treaty.<sup>442</sup> In doing so, the government pledged to “adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs.”<sup>443</sup> Following the conference, in 1994, the government announced that it would set a non-binding target of reducing the growth in gross CO<sub>2</sub> emissions by 20% and stabilising net CO<sub>2</sub> emissions at 1990 levels by 2000. If the country was not on track to achieve its Rio goals a “carbon charge” would be introduced in 1997.<sup>444</sup>

In the foreword to the First National Communication, Minister of Foreign Affairs and Trade Don McKinnon and Minister for the Environment Simon Upton proclaimed:

---

<sup>442</sup> The summit resulted in five key documents on sustainable development issues. Of these, two were legally binding conventions: *The Biodiversity Convention* and *The Framework Convention on Climate Change*. The other three documents were non-binding agreements: *The Forest Principles*, *The Rio Declaration*, and *Agenda 21*. See Rowan Taylor et al., *The State of New Zealand's Environment 1997*, eds. Anna Saunders, David Swain, and Bronwen Wall (Wellington: The Ministry for the Environment, 1997), 4.23, <https://www.mfe.govt.nz/sites/default/files/ser-1997.pdf>.

<sup>443</sup> United Nations, United Nations Framework Convention on Climate Change, 12,

<sup>444</sup> It would be set at a maximum of NZD\$10 per tonne CO<sub>2</sub>-e.

Governments need to show joint leadership on the issue of climate change, but it has become such a fundamental question for the world community that all sectors and interests must play their part. Business, environment groups and individuals must all contribute in their own way to the global effort. An increasingly interdependent world means that partnerships are essential, especially to meet such critical environmental challenges as climate change.<sup>445</sup>

The representation of the world as being “increasingly interdependent” reflects New Zealand’s growing economic dependency on other nations. In signalling that the world is more connected than ever, the two ministers indicate that reforms to temper the (potential) impacts of global warming will require individual and global cooperation.

In the executive summary, McKinnon and Upton added GHG emission reduction targets were contingent on “certain conditions, including cost-effectiveness, not reducing our competitive advantage in international trade, and having a net benefit to New Zealand society.”<sup>446</sup> The focus throughout was upon reassuring the corporate sector that there would be no loss to their economic interests. Also, New Zealand was characterised as being in competition with other nation-states. But it is unclear who these competing nation-states are. Moreover, in listing several caveats, McKinnon and Upton cast doubts on the validity of their concern for the environment. Subsequently, from 1990 to 2000, both national gross and net GHG emissions increased by 15.6% and 21.3%, respectively.<sup>447</sup>

---

<sup>445</sup> Ministry for the Environment, *New Zealand’s First National Communication under the Framework Convention on Climate Change*.

<sup>446</sup> *Ibid.*, 3.

<sup>447</sup> "New Zealand's Greenhouse Gas Emissions," Stats NZ, last modified April 18, 2019, <https://www.stats.govt.nz/indicators/new-zealands-greenhouse-gas-emissions>.

Academic Catharine Knight observed that Upton was “keenly aware of the issue of climate change” but that some of his colleagues were cautious about “acting ‘too soon’.”<sup>448</sup> Moreover, the government was also susceptible to the influence of interest group lobbying. For instance, the Greenhouse Policy Coalition (GPC) argued that any charge imposed on emissions would disadvantage the nation.<sup>449</sup> Consequently, on March 12, 1997, the government announced that the decision on a carbon charge had been deferred until early 1998. Upton explained that “it would make no sense for New Zealand to act unilaterally when we are advocating at the global level more flexible and sophisticated international mechanisms which would allow greenhouse gas emissions to be reduced in a much less economically disruptive way.”<sup>450</sup> The minister’s explanation here allows the government to appease its different constituencies. It claims to recognise the problem of rising GHGs while signalling that the country will continue along the path of economic growth until it is compelled to change.

### *The Kyoto Protocol*

After the Rio Earth Summit, there was widespread recognition that more climate action was needed. Eventually, negotiators followed up with the Kyoto

---

<sup>448</sup> Catherine Knight, *Beyond Manapouri: 50 Years of Environmental Politics in New Zealand* (Christchurch: Canterbury University Press, 2018), 153.

<sup>449</sup> Members of the Greenhouse Policy Coalition included: Carter Holt Harvey Pulp and Paper; Comalco Aluminium Ltd; Business New Zealand; Norske Skog Tasman; Pan Pacific Forest Products Ltd; Coal Association of New Zealand; NGC Ltd; New Zealand Aluminium Smelters Ltd; Fletcher Building Ltd; Fonterra Cooperative Group Ltd; Holcim (New Zealand) Ltd; New Zealand Steel Ltd; Solid Energy New Zealand Ltd; and Winstone Pulp International.

<sup>450</sup> Simon Upton, "Government Defers Decision on a Carbon Charge," news release, March 12, 1997, <https://www.beehive.govt.nz/release/government-defers-decision-carbon-charge>.

Protocol. In the lead up to the international negotiations, Upton gave a speech, observing:

There are probably some countries which hope nothing will be agreed at Kyoto. The New Zealand Government isn't one of them. I am working hard to try to arrange a meeting of Annex I countries prior to Kyoto to make some progress at the political level. But you should be in no doubt that an agreement that does not allow for a flexible least cost approach, that fails to foreshadow the inclusion of rapidly developing countries in the near future, and that does not allow for innovative mechanisms such as emission trading, will not be a durable one.<sup>451</sup>

The opening three sentences suggest that the government was keen on climate action. However, the rest of the excerpt cast doubts over its commitment to international governance on the issue. The collocation of “flexible” with “least cost approach” is not common. Its construction, here, draws attention to the amenable nature of the government’s climate policy. Subsequently, in October 1999, the government confirmed that its policy for pricing carbon was a domestic emissions trading program, to commence in 2008.<sup>452</sup>

According to Upton, the least cost approach would enable “the broadest possible range of opportunities to reduce emissions across the full range of greenhouse gases; flexibility over where emission reductions occur through mechanisms such as international emission trading; and (within limits) flexibility over when emission reductions occur, including recognition of early action.”<sup>453</sup> He went on to explain, “A least cost approach simply means that New

---

<sup>451</sup> "Climate Change: Addressing the Real Issues," news release, September 19, 1997, <https://www.beehive.govt.nz/speech/climate-change-addressing-real-issues>.

<sup>452</sup> For a timeline of the government’s climate change policy from 1992 to 2005, see Pete Hodgson, "Government Adds Detail to 2002 Carbon Tax Policy," news release, May 4, 2005, <https://www.beehive.govt.nz/release/government-adds-detail-2002-carbon-tax-policy>.

<sup>453</sup> Simon Upton, "Upton Announces Climate Change Position," news release, December 3, 1997, <https://www.beehive.govt.nz/release/upton-announces-climate-change-position>.

Zealand opposes a costly approach to lowering emissions when the same environmental outcome could be achieved at lower cost. Least cost is not no cost: New Zealand would still face adjustment costs like every other developed country.”<sup>454</sup> Here, the government pivots around the threat of global warming. Change is foregrounded, but it is not deemed to be a disruptive process. Rather, it is advanced as an evolving response. The repeated use of “flexibility” indicates that it is a major preoccupation for the government. Thus, the vagueness of Upton’s explanations allowed the government to keep its options open.

Then, following years of negotiations, an international treaty with binding targets for GHG emission reductions was finalised. The Kyoto Protocol was adopted on December 11, 1997 and came into force on February 16, 2005. It saw New Zealand and other industrialised countries commit to “not to exceed 1990 emission levels, on average, during 2008-2012, or otherwise take responsibility through use of the mechanisms in the Kyoto Protocol” ( $\leq 5\%$  below the 1990 level).<sup>455</sup> Shortly after the negotiations, in November 1999, a Labour-led coalition took control of parliament.

The new government announced that it would conduct two rounds of consultation on its domestic climate policy.<sup>456</sup> During this time, the government

---

<sup>454</sup> Ibid.

<sup>455</sup> Ministry for the Environment, *National Communication 2001*, 11. The Kyoto Mechanism includes Emissions Trading, the Clean Development Mechanism, and Joint Implementation.

<sup>456</sup> The first consultation, held towards the end of 2001, was on policy options, and the second, held in May 2002, was on the preferred policy package (informed by the outcomes of the first consultation).

revived the idea of a carbon charge, prompting a swift response from various economic sectors including agriculture, energy, and fossil fuels. For instance, both the GPC and The Climate Change Plan Industry Group commissioned the New Zealand Institute of Economic Research (NZIER) to assess the economic implications of curbing rising emissions on New Zealand society.<sup>457</sup> The reports stated that the government needed to be “extremely cautious” about its domestic emission abatement policies so as to not lose its international competitiveness, especially in the absence of a global approach.<sup>458</sup> It is worth noting the government’s use of the term carbon “charge” as opposed to “tax”. The adoption of the term, charge, distances the government from the negative attitudes many have toward taxes. For some individuals, there is little to no utility from taxpaying.<sup>459</sup>

Also, in advance of the announcement on the climate policy package, the Convenor of the Ministerial Group on Climate Change, Pete Hodgson, had signalled that the agriculture sector should contribute more to research funding

---

<sup>457</sup> The Climate Change Plan Industry Group includes: The Greenhouse Policy Coalition; New Zealand Forest Industries Council; Road and Transport Forum of New Zealand; Todd Energy; Business New Zealand; Petroleum Exploration Association New Zealand; Meat Industry Association; Carter Holt Harvey; Wellington Regional Chamber of Commerce; and Building Industry Association.

<sup>458</sup> See New Zealand Institute of Economic Research, *The Economic Effects of Greenhouse Gas Emission Policies: A Quantitative Evaluation* (Wellington: New Zealand Institute of Economic Research, November 2001); Alex Sundakov, Jean-Pierre de Raad, and John Ballingall, *The Kyoto Protocol: Issues for New Zealand’s Participation: Trade Realities and New Zealand’s Role in the International Response to the Threat of Global Warming* (Wellington: New Zealand Institute of Economic Research, February 2002).

<sup>459</sup> See Abigail Sussman and Christopher Olivola, "Axe the Tax: Taxes Are Disliked More Than Equivalent Costs," *Journal of Marketing Research* XLVIII (2011), <https://doi.org/10.1509/jmkr.48.SPL.S91>; Runar Brannlund and Lars Persson, "To Tax, or Not to Tax: Preferences for Climate Policy Attributes," *Climate Policy* 12, no. 6 (2012), <https://doi.org/10.1080/14693062.2012.675732>.

for biological GHG emission reductions. From then onwards, he petitioned the sector to increase its contribution and explicitly stated that if industry funding was not forthcoming, then a research levy would be necessary. In response, representatives from the sector told Hodgson and the Minister of Agriculture, Jim Sutton, that the sector did not want to use their own levy mechanisms to raise funding for research. Shortly after this exchange, the so-called “O’Hara report” was released, which recommended an additional investment of some NZD\$4.5 to 8.4 million a year into agricultural emission research.<sup>460</sup> Consequently, the government announced the proposal for a statutory levy to fund research into methane emission abatement.<sup>461</sup>

In justifying the levy, Hodgson explained:

The Government is exempting agriculture from emissions charges—the ‘carbon tax’—on greenhouse gases produced by farming. Other industries face charges on their process emissions by 2008, but agriculture is exempt until at least 2012. If the Government really was imposing a [flatulence] tax’ on farm emissions the cost to the sector would be almost \$1 billion a year. Instead the Government is proposing a very modest levy to raise \$8.4 million a year for additional research into agricultural greenhouse gases. The taxpayer already spends \$4.7 million a year on this and will continue to do so.<sup>462</sup>

His announcement drew heavy opposition from various agricultural groups, championed by Federated Farmers. Farmers decried the (mis)labelled “fart tax”

---

<sup>460</sup> Peter O’Hara, John Freney, and Marc Ulyatt, *Abatement of Agricultural Non-Carbon Dioxide Greenhouse Gas Emissions* (Wellington: Ministry of Agriculture and Forestry, 2003), 14-15, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.458.3182&rep=rep1&type=pdf>.

<sup>461</sup> Pete Hodgson, "Climate Change Policy on Agriculture: Clear and Consistent," news release, September 4, 2003, <https://www.beehive.govt.nz/release/climate-change-policy-agriculture-clear-and-consistent>.

<sup>462</sup> "Farmers Must Face up to Climate Change," news release, September 5, 2003, <https://www.beehive.govt.nz/release/farmers-must-face-climate-change>.

or “back-door tax” as being unnecessary and an unfair imposition.<sup>463</sup> Here, despite the government’s efforts, the levy was regularly linked to the idea of a ‘tax’. Following a high-profile campaign to block the measure, the proposal was abandoned in October 2003.

Back in October 2002, Hodgson had announced that a carbon charge would be applied to fossil fuels and industrial process emissions, which would be comparable to the international emissions price and have a cap of \$NZD25 a tonne of CO<sub>2</sub>-e. However, the agricultural sector would be exempt from any pricing measures during the first commitment period (CP1).<sup>464</sup> Accordingly, the Climate Change Response Act was passed by Parliament on November 13, 2002. The Act established a climate change registry to manage carbon units and credits. It also saw the development of institutional arrangements in accordance with the Kyoto Protocol requirements.<sup>465</sup> In his press release, Hodgson proclaimed, “We will meet our international obligations and past commitments. We will be putting this nation in a position to make a measured transition to a carbon-constrained economy, rather than acting late and facing the necessity of more drastic and costly change. We will be setting out on the path to a

---

<sup>463</sup> “Farmers invade capital for ‘fart tax’ protest,” *The New Zealand Herald*, September 4, 2003, <https://www.nzherald.co.nz/nz/farmers-invade-capital-for-fart-tax-protest/6OAPZ5KHG2OT2O5EVCGIOKN4IU/>.

<sup>464</sup> “Government Confirms Key Climate Change Policies,” news release, October 18, 2002, <https://www.beehive.govt.nz/release/government-confirms-key-climate-change-policies>. The first commitment period of the Kyoto Protocol ran from January 1, 2008 to December 31, 2012.

<sup>465</sup> Climate Change Response Act, November 18, 2002, no. 40, <http://www.legislation.govt.nz/act/public/2002/0040/latest/DLM158584.html>.

sustainable energy future.”<sup>466</sup> The use of the pronoun “we” can be inclusive, taken to mean New Zealand, or exclusive, by referring to the government itself. The first and second “we” is the government. But the third “we” is more ambivalent and raises the question of who the “we” here is. What is problematic in the usage of “we” is that despite its apparent inclusiveness, its vagueness hides difference and division.<sup>467</sup>

On May 4, 2005, in a speech to Parliament, Hodgson explained that owing to the government’s international commitments, a carbon tax would commence in April 2007. It would be set at NZD\$15 per tonne CO<sub>2</sub>-e and would apply until 2012 (unless there was a substantial variation in the international price). He added that agricultural CH<sub>4</sub> and N<sub>2</sub>O emissions would be exempt. Also, it was made clear that the net revenue from the tax would be returned into the economy through other tax changes. In his concluding remarks, Hodgson noted that “if we are going to tackle climate change, we need to start taking the environment into account in the economic choices we all make. This is what a carbon tax does.”<sup>468</sup> This is again an inclusive “we,” but the exclusion of agricultural emissions makes it obvious that its inclusiveness is limited.

---

<sup>466</sup> "Climate Change Response Bill Passed, NZ Poised to Ratify Kyoto Protocol," news release, November 14, 2002, <https://www.beehive.govt.nz/release/climate-change-response-bill-passed-nz-poised-ratify-kyoto-protocol>.

<sup>467</sup> Fairclough, *New Labour, New Language?* 35-37.

<sup>468</sup> Pete Hodgson, "Carbon Tax Speech," (speech, The Beehive, Parliament, May 4, 2005), <https://www.beehive.govt.nz/speech/carbon-tax-speech>.

Subsequently, on June 17, 2005, Hodgson proclaimed that New Zealand was not on track to meet its Kyoto obligations by about 36.2 metric tons of carbon dioxide equivalent (mt CO<sub>2</sub>-e) and that further action was needed. He outlined three possible options for increasing New Zealand's abatement of GHGs: accelerating energy efficiency; improving the efficiency of the vehicle fleet; and the introduction of biofuels. He also reiterated that there would be no change to the proposed carbon tax policy.<sup>469</sup> However, in the face of strong opposition from the industry and farming lobby groups including Business New Zealand, the Business Roundtable, and the Forest Industries Council, the carbon tax policy was abandoned within six months.<sup>470</sup> During that time, the Labour-led government was re-elected for a third term but had lost its majority parliamentary support for the tax.

By December 22, 2005, the newly appointed Minister Responsible for Climate Change Issues, David Parker, announced that the government would not be proceeding with the proposed carbon tax. Instead, they would consider alternative ways to ensure that New Zealand met its Kyoto obligations; "The government has decided not to implement a carbon tax, or any other broad-based tax, in the first commitment period under the Kyoto Protocol. Officials now advise that the proposed carbon tax would not cut emissions enough to justify its introduction."<sup>471</sup> Note the absence of "we" from Parker's communication, instead

---

<sup>469</sup> "Climate Change Challenge Increases in New Zealand," news release, June 17, 2005, <https://www.beehive.govt.nz/release/climate-change-challenge-increases-new-zealand>.

<sup>470</sup> See also *Hot Air*, directed by Alister Barry and Abi King-Jones (Vanguard Films, 2013).

<sup>471</sup> David Parker, "Carbon Tax Will Not Go Ahead in 2007," news release, December 22, 2005, <https://www.beehive.govt.nz/release/carbon-tax-will-not-go-ahead-2007>.

preferring the more explicit acknowledgement of “the government.” On October 7, 2006, in speech notes to the Climate Change Policy Symposium, Parker stated:

Looking to the future, I would like to take this opportunity to make it clear that the government recognises that economy wide price-based measures for emissions are likely to form part of the mix of post 2012 policies. The types of measures that will need to be considered are mechanisms such as emissions trading, also known as cap and trade, and offset planting of forests that sequester equivalent quantities of carbon.<sup>472</sup>

This signalled that emissions would be controlled through a trading program.

Subsequently, on September 20, 2007, the Emissions Trading Scheme (NZ ETS) was announced.<sup>473</sup> The expression of “looking to the future” can be interpreted to mean a severance from the past, heralding in Labour’s new approach to climate mitigation.

The following day, Parker gave a parliamentary speech. In his introduction, he reiterated Prime Minister Helen Clark’s vision of a carbon-neutral nation.<sup>474</sup> He stated that the scheme was chosen because it “maintains economic flexibility, equity between sectors, and between industry, consumers and taxpayers. It does all this while achieving environmental integrity at least cost in the long term.”<sup>475</sup> Here, the idea of safeguarding the Earth centres upon

---

<sup>472</sup> "The Way Forward on Climate Change," news release, October 7, 2006, <https://www.beehive.govt.nz/speech/way-forward-climate-change>.

<sup>473</sup> Much of my focus is on New Zealand’s principal policy response to climate change, the NZ ETS. However, emissions trading is only one part of the government’s strategy to reduce emissions. For more information see Ministry for the Environment, *New Zealand’s Seventh National Communication - Fulfilling Reporting Requirements under the United Nations Framework Convention on Climate Change and the Kyoto Protocol*.

<sup>474</sup> Helen Clark, "Prime Minister’s Statement to Parliament," news release, February 14, 2007, <https://www.beehive.govt.nz/speech/prime-minister’s-statement-parliament-0>.

<sup>475</sup> David Parker, "A New Zealand Emissions Trading Scheme," news release, September 21, 2007, <https://www.beehive.govt.nz/speech/new-zealand-emissions-trading-scheme>. Also, following public and industry-based consultation, the MfE found that between 2006 and 2008 there was significant support for an emissions trading scheme.

“economic flexibility”, “equity between sectors”, “industry, consumers and taxpayers”, and “least cost”. All these words are economic-related terms. The only term related to the environment is “environmental integrity” and that in itself is a complex concept to describe. Also of note is the comment: “The most important feature is that the scheme encompasses all gases and all sectors.”<sup>476</sup>

Parker explained:

A scheme which excluded agriculture would be more expensive for the economy as a whole because it would exclude those low cost emission reduction opportunities that exist in agriculture. It would distort the economy. It would also be unfair to other sectors like forestry (which would not get credits), unfair to other industry [*sic*] (which would have to do more than its fair share), and unfair to taxpayers (who would carry the whole cost of agricultural emissions).<sup>477</sup>

The above extract implies an inclusive discourse but then, Parker added that the introduction of “all gases and all sectors” would take place over a period, with forestry being the first and agriculture the last to join the scheme. It is important to note that, to date, agricultural emissions are still not included in the NZ ETS.

On December 5, 2007, The Climate Change (Emissions Trading and Renewable Preference) Bill was introduced to Parliament. Finance Minister, Michael Cullen said, “The Emissions Trading Scheme establishes a market which provides incentives to reduce greenhouse gas emissions. It will do so while maintaining economic flexibility, equity, and environmental integrity at least cost in the long term.”<sup>478</sup> Notice again, the use of “least cost in the long term.”

---

<sup>476</sup> Ibid., section 5.

<sup>477</sup> Ibid.

<sup>478</sup> David Parker and Michael Cullen, "Climate Change Legislation Introduced," news release, December 5, 2007, <https://www.beehive.govt.nz/release/climate-change-legislation-introduced>.

This leads to the question of according to who? On September 11, 2008, Parker announced that the Climate Change Response (Emissions Trading) Amendment Act had passed, resulting in the establishment of the NZ ETS and the New Zealand Units (NZUs).<sup>479</sup> While the scheme became law, it lacked bipartisan support. Nevertheless, Parker proclaimed:

I'm proud to be part of a government that takes climate change seriously and has committed to meaningful action, even though it has been challenging at times...For the first time we will start factoring in the true cost of greenhouse gas emissions into our economy. This is in line with developments in the rest of the world."<sup>480</sup>

However, his confidence would be short-lived.

Here, it should be mentioned that unlike in Australia, successive governments in New Zealand have never experienced vehement and sustained climate denialism in public debates. However, at the First Reading of the Climate Change Response Amendment Bill on May 10, 2005, John Key, who at the time was the National Party's finance spokesperson and would go on to be the prime minister, stated: "The impact of the Kyoto Protocol, even if one believes in global warming—and I am somewhat suspicious of it—is that we will see billions and billions of dollars poured into fixing something that we are not even sure is a problem."<sup>481</sup> But following his appointment as Leader of the National Party in November 2006, Key asserted in an interview with broadcaster

---

<sup>479</sup> The Act was formerly called the Climate Change (Emissions Trading and Renewable Preference) Bill.

<sup>480</sup> David Parker, "Historic Climate Change Legislation Passes," news release, September 11, 2008, <https://www.beehive.govt.nz/release/historic-climate-change-legislation-passes>.

<sup>481</sup> Climate Change Response Amendment Bill — First Reading, May 10, 2005, [https://www.parliament.nz/en/pb/hansard-debates/rhr/document/47HansD\\_20050510\\_00001115/climate-change-response-amendment-bill-first-reading](https://www.parliament.nz/en/pb/hansard-debates/rhr/document/47HansD_20050510_00001115/climate-change-response-amendment-bill-first-reading).

Kathryn Ryan that he firmly believed in climate change and always had.<sup>482</sup> Also of note, in 2008, minor party ACT, led by Rodney Hide, described climate change as “a hoax.” The party subsequently maintained this approach to climate policies.<sup>483</sup>

The results of the 2008 general election saw the National Party and its allies form a governing coalition. Shortly thereafter, on May 20, 2009, the newly appointed Minister for Climate Change Issues, Nick Smith, outlined the new government’s approach to climate change policy:

It is just unrealistic to continue to pretend we are, or can be, world leaders in reducing emissions. Our unique emissions profile, with such a large proportion coming from agriculture, makes our job of reducing carbon pollution more difficult than most developed countries. We also need to recognise that as a small open trading nation, accounting for 0.2% of global emissions, tough emission reduction policies would just export emission-intensive industries offshore. For these reasons, the new Government’s policy goal is not about being first but ensuring New Zealand does its fair share as a developed country in constraining and reducing emissions.<sup>484</sup>

In light of this, the minister announced that the NZ ETS would be amended to make the scheme “workable and affordable.”<sup>485</sup> The amendments included deferring the obligations of the agriculture sector, introducing intensity-based allocations for emissions-intensive and trade-exposed industries, and putting in

---

<sup>482</sup> Kevin List, "2005 vs 2006: Key and Climate Change," November 29, 2006, <https://www.scoop.co.nz/stories/HL0611/S00487/2005-vs-2006-key-and-climate-change.htm>.

<sup>483</sup> ACT New Zealand, "Climate Change (Emissions Trading and Renewable Preference) Bill - Rodney Hide MP," news release, September 2, 2008, <https://www.scoop.co.nz/stories/PA0809/S00042.htm>. More recently, the sole ACT MP, David Seymour signalled that he would oppose the sitting government’s Zero Carbon Bill. But during the vote in November 2019, he was not in the House to oppose the Bill, allowing it to pass with complete support.

<sup>484</sup> Nick Smith, "Opening Address to the New Zealand Climate Change Centre Conference in Wellington," news release, May 20, 2009, <https://www.beehive.govt.nz/speech/opening-address-new-zealand-climate-change-centre-conference-wellington>.

<sup>485</sup> "Revised ETS Balances NZ’s Environment & Economy " news release, September 15, 2009, <https://www.beehive.govt.nz/release/revised-ets-balances-nz’s-environment-economy>.

place transitional measures, such as the two-for-one surrender and a fixed price option (a NZD\$25 price cap on the value of an NZU).<sup>486</sup> The changes to the ETS were heavily criticised by economist Geoff Bertram and researcher Simon Terry. In their book, *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, they explained that the original ETS excluded two-thirds of CP1 emissions but following the changes, coverage was reduced from one-third to one-quarter of CP1 emissions.<sup>487</sup> This led them to conclude:

The ETS, in both its 2008 and 2009 versions, is about redistributing wealth within the New Zealand community—not about confronting New Zealand's collective responsibilities under the Kyoto Protocol. The main effect of the 2009 changes is to push the bulk of the liability even further out and onto a future generation of taxpayers.<sup>488</sup>

From Smith's May excerpt, the National Government's use of the plural pronouns of "we" and "our" evokes the idea of inclusivity, advancing the idea of a collective identity. Yet, it is clear that this was not the case. Smith identified agriculture and trade as being exposed to climate mitigation activities. Also, the usage of "fair share" is reflective of traditional conservative discourse. It needs to be underlined that it is not interchangeable with equality or equity. The idea of a fair share is a myth because it is contingent on the measures of responsibilities, impacts, and financial costs being evenly distributed, yet they are disproportionately spread across the nation (and the globe). It is also important

---

<sup>486</sup> See Catherine Leining and Suzi Kerr, *A Guide to the New Zealand Emissions Trading Scheme* (Wellington: Motu Economic and Public Policy Research 2018), <https://motu.nz/assets/Documents/our-work/environment-and-agriculture/climate-change-mitigation/emissions-trading/ETS-Explanation-August-2018.pdf>.

<sup>487</sup> Geoff Bertram and Simon Terry, *The Carbon Challenge: New Zealand's Emissions Trading Scheme* (Wellington: Bridget Williams Books, 2010), 61.

<sup>488</sup> *Ibid.*, 80.

to realise that attention is only on the “economic burden” of climate mitigation. The issue of the socio-economic costs of climate inaction is never present in political discourses. Also notable is that the National government’s discourse is made up of lists (of justifications or requirements). Lists can have a persuasive pull with the use of multiple examples, prescripts, and cueing a logical outcome. But they can also simplify the issues and obscure deep disparities and division.

Later, on October 4, 2009, Smith explicated further on the government’s climate policy: “The Government’s environmental agenda is about rolling back Nanny State regulations and achieving better environmental outcomes through financial incentives.”<sup>489</sup> In using the term (or insult) “Nanny State”, Smith was feeding into a certain perspective of the previous government’s actions as being too interfering. The implication is that the current government would be less intrusive. Subsequently, for the CP1 period, New Zealand’s gross national emissions were 372.8 mt CO<sub>2</sub>-e, which was 70 mt CO<sub>2</sub>-e above its emissions target allowance of 302.8 mt CO<sub>2</sub>-e (referred to as Assigned Amount Units, AAUs). However, New Zealand had access to 71.6 mt CO<sub>2</sub>-e of Removal Units (RMUs) from forestry. This enabled the government to exceed its CP1 target. During this period, the government had also acquired 122.2 mt CO<sub>2</sub>-e of imported credits. These foreign credits were predominately Emission Reduction Units (ERUs) from Ukraine and have turned out to be “hot air”. That is, they do

---

<sup>489</sup> Nick Smith, "Goodbye Nanny State; Hello Green Economy," news release, October 4, 2009, <https://www.beehive.govt.nz/release/goodbye-nanny-state-hello-green-economy>.

not represent actual reductions in emissions.<sup>490</sup> To date, New Zealand has a surplus of 123.7 mt CO<sub>2</sub>-e from its CP1 target.

In reflecting on the events and issues that had transpired, academic Ton Bührs wrote in 2008, “Powerful vested interests and the apparent inability and/or unwillingness of governments to adopt a longer, broader and more enlightened view of the ‘national interest’, make it likely that, for the time being, only ‘soft’ and economically attractive and acceptable ‘solutions’ to combat climate change will be adopted.”<sup>491</sup> Additionally, Bertram and Terry observed in 2010:

The New Zealand government’s failure to make progress towards emissions reduction during the 1990s, and the abandonment of tentative moves towards even a minimal carbon tax, reflected the apparent vulnerability of the government and the Ministry to regulatory capture by large industry. Successful lobbying by the latter diverted policy away from economic instruments and emissions reduction targets into the safe but ineffective backwater of ‘voluntary agreements’ between larger emitters and the government.<sup>492</sup>

---

<sup>490</sup> Following the revelation that some carbon units undermined the integrity of emission trading, the rules governing the international offset mechanism evolved. Restrictions were imposed on the use of foreign credits (i.e., ERUs) and as a result the New Zealand government used all its ERUs to meet its Kyoto target. Therefore, it has retained its AAUs to use for future international targets. See Stockholm Environment Institute, *Has Joint Implementation Reduced GHG Emissions? Lessons Learned for the Design of Carbon Market Mechanisms* (Washington D.C: Stockholm Environment Institute, 2015), <https://mediamanager.sei.org/documents/Publications/Climate/SEI-WP-2015-07-JI-lessons-for-carbon-mechs.pdf>; Geoff Simmons and Paul Young, *Climate Cheats: How New Zealand Is Cheating on Our Climate Change Commitments, and What We Can Do to Set It Right*, (Wellington: The Morgan Foundation, 2016), [http://morganfoundation.org.nz/wp-content/uploads/2016/04/ClimateCheat\\_Report8.pdf](http://morganfoundation.org.nz/wp-content/uploads/2016/04/ClimateCheat_Report8.pdf); *Who’s the Real Cheat Here? Climate Cheats II: The Dozen Dirty Businesses* (Wellington: The Morgan Foundation, 2016), <http://morganfoundation.org.nz/real-cheats/>.

<sup>491</sup> Ton Bührs, "Climate Change Policy and New Zealand’s ‘National Interest’: The Need for Embedding Climate Change Policy into a Sustainable Development Agenda," *Political Science*, 60, no. 1 (2008): 71, <https://doi.org/10.1177/003231870806000106>.

<sup>492</sup> Bertram and Terry, *The Carbon Challenge*, 33-34.

They went on to remark, “The ETS is not a break with history: it is a continuation of the past, with payment deferred to a future generation.”<sup>493</sup>

### *The Doha Amendment*

New Zealand’s 2020 net target was announced on March 31, 2011. Smith also revealed that the government had set a long-term goal of reaching a 50% reduction in national net GHG emissions from 1990 gross levels by 2050 (or -50 by 50).<sup>494</sup> Later that year, in a speech to the New Zealand Climate Change Research Institute Forum, Smith explained, “New Zealand’s more modest target reflects the large portion of our emissions that come from agriculture, our already high proportion of renewable electricity, and the challenges of reducing transport emissions in having a small population spread over a comparatively large area.”<sup>495</sup> He went on to stress, “The target need not be set in stone. That is why the Government is committed to the target being regularly reviewed to take into account the latest science, development of new technologies, and progress by other countries.”<sup>496</sup> The extracts show that the National Government views itself as being in stark contrast to its predecessor. The usage of the term “modest” coupled with the idiom “not be set in stone” implies that National is a fairer and more responsive government. It is notable that Smith once again is using the persuasive tool of lists.

---

<sup>493</sup> Ibid., 154.

<sup>494</sup> Nick Smith, "Govt Sets -50% by 2050 Emissions Reduction Target," news release, March 21, 2011, <https://www.beehive.govt.nz/release/govt-sets-50-2050-emissions-reduction-target>.

<sup>495</sup> "Speech to the New Zealand Climate Change Research Institute Forum: Climate Futures – Pathways for Society," news release, April 1, 2011, <https://www.beehive.govt.nz/speech/speech-new-zealand-climate-change-research-institute-forum-climate-futures—pathways>.

<sup>496</sup> Ibid.

Under statutory requirements, a second review of the NZ ETS took place in 2011. Following that, in August 2012, the government introduced the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill.<sup>497</sup> This prompted strong opposition and a notable critic was the Parliamentary Commissioner for the Environment, Jan Wright.<sup>498</sup> In her *Annual Report for the year ended 30 June 2013*, she remarked:

The ETS is the Government's main tool to combat climate change but it had already been weakened by previous amendments. The Bill muted the carbon price signal by shifting the burden of cost even more from the polluter to the taxpayer. By making this subsidy indefinite, the amendments all but remove the incentive to reduce emissions.<sup>499</sup>

Despite criticisms, the Climate Change Response (Emissions Trading and Other Matters) Amendment Act was passed in Parliament in November 2012.

According to Leining and Kerr, "The government's amendments broadened and extended indefinitely the price moderation measures initially set to expire at the end of 2012, enabling low domestic emission prices to continue."<sup>500</sup>

Negotiations for the second commitment period (CP2) of 2013 to 2020 took place in December 2012 in Doha, Qatar. Shortly following, in 2013, the new Minister for Climate Change Issues, Tim Groser, reasserted the government's

---

<sup>497</sup> See The Ministry for the Environment, *Updating the New Zealand Emissions Trading Scheme: A Consultation Document* (April 2012), <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/consultation-ets-changes.pdf>.

<sup>498</sup> See Jan Wright, *Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill* (Wellington: Parliamentary Commissioner for the Environment, 2012), 2, <https://www.pce.parliament.nz/media/pdfs/PCE-Submission-on-the-Climate-Change-Amendment-Bill.pdf>.

<sup>499</sup> *Annual Report for the Year Ended 30 June 2013* (Wellington: The Parliamentary Commissioner for the Environment, 2013), 16, <https://www.pce.parliament.nz/media/1250/pce-annual-report-2013-web.pdf>.

<sup>500</sup> Leining and Kerr, *Lessons Learned from the New Zealand Emissions Trading Scheme*, 20.

approach to climate change, stating that “New Zealand is taking responsibility for its emissions and is committed to doing its fair share to address climate change.”<sup>501</sup> Afterwards, on November 30, 2015, the government accepted the Doha Amendment to the Kyoto Protocol. However, they did not table their emissions reductions targets. Instead, they opted for a voluntary target of 5% below 1990 levels.<sup>502</sup> As a result, New Zealand was banned from surrendering its international units and NZUs were de-linked from the international market. Simply put, New Zealand lost access to the Kyoto market from June 1, 2015, and the NZ ETS, now, operates as a domestic-only system.<sup>503</sup>

In his announcement of the government’s intention to ratify the Doha Amendment, Groser stated, “Delivering existing commitments is an important sign of good faith in the lead up to negotiations for the new agreement.”<sup>504</sup> He went on to remark, “It is also critical that New Zealand can influence decisions that may have significant long-term impacts on our economy such as access to international carbon markets and accounting rules for the land- sector.”<sup>505</sup> Again, the central theme is the economy and the focus has shifted back to

---

<sup>501</sup> Ministry for the Environment, *New Zealand’s Sixth National Communication under the United Nations Framework Convention on Climate Change and Kyoto Protocol* (Wellington: Ministry for the Environment, 2013), 2, <https://www.mfe.govt.nz/sites/default/files/sixth-national-communication%5B1%5D.pdf>.

<sup>502</sup> Ministry for the Environment, *National Interest Analysis - Doha Amendment to the Kyoto Protocol*, [https://www.parliament.nz/resource/en-nz/00DBSCH\\_ITR\\_66164\\_1/940ce51dd897cfb0ba6c2492218eea49e09fcbdd](https://www.parliament.nz/resource/en-nz/00DBSCH_ITR_66164_1/940ce51dd897cfb0ba6c2492218eea49e09fcbdd).

<sup>503</sup> See Leining and Kerr, *Lessons Learned from the New Zealand Emissions Trading Scheme*.

<sup>504</sup> Tim Groser, "New Zealand to Ratify Doha Amendment to Kyoto Protocol," news release, December 2, 2015, <https://www.beehive.govt.nz/release/new-zealand-ratify-doha-amendment-kyoto-protocol>.

<sup>505</sup> Ibid.

international cooperation. To date, the Doha Amendment has not come into force.<sup>506</sup>

New Zealand's carbon budget for CP2 is 509.8 mt CO<sub>2</sub>-e. However, projected emissions show that national gross emissions will exceed this allowance by 122.5 mt CO<sub>2</sub>-e. To counter its underperformance, New Zealand will likely use carbon removal through forestry (108.0 mt CO<sub>2</sub>-e) and international trading (that is, the surplus units carried over from the CP1).<sup>507</sup>

### *The Paris Accord*

In anticipation of the negotiations at COP21 in December 2015, the government announced that it had set a target of reducing GHG emissions 30% below 2005 levels by 2030 (or an 11% reduction from the 1990 emissions level by 2030).<sup>508</sup> They also indicated that the third review of the NZ ETS would take place later in the year. On December 14, 2015, Groser announced that a “huge and historic” agreement had been reached at the Paris conference. On April 22, 2016, New Zealand signed the agreement. The next day, in a press release, the newly appointed Climate Change Issues Minister, Paula Bennett, remarked: “the New Zealand Government’s number one priority is economic growth and the

---

<sup>506</sup> As of January 6, 2020, of the required 144 parties, only 136 parties have accepted it under the UNFCCC.

<sup>507</sup> “Latest update on New Zealand's 2020 net position,” Ministry for the Environment, last modified April 15, 2020, <https://www.mfe.govt.nz/climate-change/climate-change-and-government/emissions-reduction-targets/reporting-our-targets-0>.

<sup>508</sup> Tim Groser, “Climate Change Target Announced,” news release, July 8, 2015, <https://www.beehive.govt.nz/release/climate-change-target-announced>.

Agreement is the foundation of efforts to do that in a sustainable way for the planet.”<sup>509</sup>

In justifying the government’s approach to the Paris agreement, Bennett commented, “A significant benefit of the Government ratifying early is that it guarantees New Zealand a seat at the decision-making table on matters that affect the Paris Agreement at the next United Nations climate change meeting in Marrakech in November.”<sup>510</sup> The effects of, deep uncertainties about, ethical dilemmas over, and the lack of collective agreement on the climate crisis are not foregrounded. Put differently, global warming is not represented as a “super-wicked” problem. Instead, the focus is on climate change as an entity to be presided over.

During this time, the review of the NZ ETS was conducted in two stages. The first stage considered the move to, and management of, the cost associated with full surrender obligations. It resulted in an amendment to remove the one-for-two surrender obligation. The second stage concentrated on the design and operation of the scheme. Following this stage, the government announced, in-principle decisions to better manage the supply of units into the scheme. However, these changes were not passed into law before the September 2017 election, which saw a Labour-led coalition enter parliament.<sup>511</sup>

---

<sup>509</sup> Paula Bennett, "New Zealand Signs Historic Climate Deal," news release, April 23, 2016, <https://www.beehive.govt.nz/release/new-zealand-signs-historic-climate-deal>.

<sup>510</sup> "NZ Ratifies Paris Agreement on Climate Change," news release, October 5, 2016, <https://www.beehive.govt.nz/release/nz-ratifies-paris-agreement-climate-change>.

<sup>511</sup> While the period following extends beyond the purview of this thesis, it should be mentioned that the Climate Change Response (Emissions Trading Reform) Amendment Bill was introduced

The projection of future GHG emissions until 2030 illustrates that the country will exceed its Paris assigned allowance.<sup>512</sup> Moreover, data show that the gap between gross and net emissions will narrow, indicating that there will be fewer removals from the land use, land-use change, and forestry (LULUCF) activities.<sup>513</sup> This suggests that the government will make up the shortfall with the use of international credits. But given the controversy surrounding the international purchase of carbon credits, critics have called for the government to follow other nations by cancelling their stockpile of AAUs carried over from CP1 (which are essentially “laundered” ERUs).<sup>514</sup> However, there is little indication that the government will do so. To date, the government has met its international emission reduction target shortfalls not through sustained efforts to reduce GHG levels but rather via accounting rules and purchasing overseas credits.

The material covered above shows that while New Zealand governments have participated in the international governance of global warming, set emission reduction targets, and implemented a range of strategies and policies,

---

to Parliament in October 2019 and The Climate Change Response (Zero Carbon) Amendment Act was passed in November 2019.

<sup>512</sup> Gross emissions are projected to be 75.3 mt CO<sub>2</sub>-e in 2030 and decrease to 65.3 mt CO<sub>2</sub>-e in 2050. See “New Zealand’s Projected Greenhouse Gas Emissions,” Ministry for the Environment, accessed October 3, 2020, <https://www.mfe.govt.nz/climate-change/emissions-reduction-targets/projected-emissions>.

<sup>513</sup> Ministry for the Environment, *New Zealand’s Seventh National Communication - Fulfilling Reporting Requirements under the United Nations Framework Convention on Climate Change and the Kyoto Protocol* (Wellington: Ministry for the Environment), 21, <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/21-12-17%20Web%20FINAL%20-%20Seventh%20National%20Communication%202017.pdf>.

<sup>514</sup> Simmons and Young, *Climate Cheats*; Jan Wright, *Emissions Trading Scheme Review 2015/16: Other Matters* (Wellington: Parliamentary Commissioner for the Environment, 2016), <https://www.pce.parliament.nz/media/1658/ets-review-submission-other-mattersfinal3.pdf>.

these actions have been ineffective. Up to and during the research period, the nation's pledges are out of proportion with its capacity and responsibility. Moreover, had other countries followed New Zealand's lead, the planet would be heading for warming in excess of 2°C.<sup>515</sup> Also of concern, the policies and strategies in place are unlikely to achieve the future reductions needed, putting New Zealand out of step with the global efforts to avert worsening climate change.<sup>516</sup> Thus, there is a disjuncture between the language used and subsequent action.

In this section, I have focused on the different ways that governments have used language. A central theme has been the tension between the economy and the environment. The prevailing political discourse emphasised that the government's climate policies were part of a broader commitment to sustainable development. But its position, as Bührs pointed out, has often been "circumscribed more by economic than by environmental concerns and imperatives."<sup>517</sup> Arguably, then, it reflected certain constituents' preferences

---

<sup>515</sup> CSO Equity Review, *After Paris: Inequality, Fair Shares, and the Climate Emergency*, (Manila: CSO Equity Review Coalition, 2018), <http://civilsocietyreview.org/report2018/>; *Can Climate Change Fuelled Loss and Damage Ever Be Fair?* (Manila: CSO Equity Review Coalition, 2019), <https://civilsocietyreview.org/report2019/>; "The Climate Action Tracker: Countries: New Zealand," The Climate Action Tracker, accessed February 5, 2020, <https://climateactiontracker.org/countries/new-zealand/>.

<sup>516</sup> For instance, in 2008, a ruling from the Supreme Court asserted that the Resource Management Act (RMA), a key environmental statute, was unable to consider the discharge effects of greenhouse gas emissions. More specifically, in paragraph 55 of the ruling, it stated, "The underlying policy of the Amendment Act was to require the negative effects of greenhouse gases causing climate change to be addressed not on a local but on a national basis while enabling the positive effects of the use of renewable energy to be assessed locally or regionally." *Greenpeace New Zealand Inc v. Genesis Power Ltd*, NZSC 112, SC 94 (2007), <https://www.courtsofnz.govt.nz/assets/cases/2008/sc-94-2007-greenpeace-new-zealandinc-v-genesis-power.pdf>.

<sup>517</sup> Bührs, *Climate Change Policy and New Zealand's 'National Interest'*, 65.

rather than governments' genuine concern for the biosphere. As Knight explained, "neither this knowledge [of the environment] nor the mechanisms we have for dealing with environmental challenges have been used to full effect to resolve the environmental challenges we face. Something has been getting in the way: short-term interests both inside and outside government, otherwise known as 'politics'."<sup>518</sup>

It is important, however, to acknowledge the contrast between the styles of the two major political parties when in office. The excerpts are just part of a much larger picture, but it is evident that the National Party's approach to the climate emergency, first and foremost, sought to minimise the short-term economic damage of climate action, by promoting the need for cost-effectiveness and highlighting the issue of competitive advantage. The Labour Party, in comparison, wanted to be more proactive with their climate policies, although, in the end, they succumbed to political pressures and softened their position. The discourse of "environment versus economy" invoked by both parties presented the false notion that solving global warming will inevitably come at the expense of economic progression.<sup>519</sup>

In summing up, the language and action of New Zealand governments show that the protection of the environment is traded-off against and curtailed

---

<sup>518</sup> Knight, *Beyond Manapouri*, 18.

<sup>519</sup> As noted in the first two chapters, this false dichotomy has been pointed out by scientists and economists who have stated that a delay will be costlier than the present investment needed to move the world away from a carbon and methane-intensive economy.

by economic interests. Initially, successive governments advocated a leadership role for New Zealand in the international governance of global warming and its related matters. Shortly following this, the discourse shifted towards a least cost and low cost approach. Then, later, the Fifth National government espoused the idea of doing our fair share. This is illustrative of political attempts to intertwine the conventional discourse of big business and economics with a discourse of environmental care and international awareness. However, in extolling a cautious approach to regulating emissions, the government, under the auspice of maintaining international competitiveness, has only delayed action. More harshly, I would argue that successive governments tended to act like a corporation, treating certain sections of society as its shareholders rather than as citizens with rights and responsibilities. Before moving on to a discussion about the production of news and climate science news, it is important to situate where the New Zealand public fits in. From the burgeoning research, I shall be commenting on data gathered from studies conducted on New Zealanders' perceptions about and concern for climate change from 2010 through to 2019.

### **The Public Sentiment on Global Warming and Climate Change**

Studies have examined New Zealanders' perceptions about, concern for, and action in response to climate change (see Table 2). They have found that, over time, respondents are becoming more concerned about climate change and are responding to the principles of sustainability. However, climate change is not the most personal nor the most domestically pressing issue facing the New Zealand public. In general, economic issues concern New Zealanders more, while

climate change is broadly perceived to be a global issue. For instance, according to researchers Kenneth Hughey, Geoffrey Kerr, and Ross Cullen's 2010 postal and online survey of people's perception of the state of the environment, 24% of respondents viewed "Water pollution and/ or water (unspecified)" related issues as the most important environmental issue facing New Zealand. However, 24% of respondents believed that the single biggest issue facing the world was "Global warming/ climate change".<sup>520</sup>

In a 2014 study, directed by an online market research company, Horizon Research, 2,246 participants were asked about their attitudes towards important problems including climate change.<sup>521</sup> Of those surveyed, global warming-related matters were perceived as a major problem facing the world (24.7%) and poverty was identified as the major problem facing New Zealand (14%). Also notable were the responses to a series of statements on beliefs about the impacts of climate change. Approximately 652,600 adult New Zealanders strongly agreed and 479,800 strongly disagreed with the statement: "New Zealand is likely to be negatively affected by climate change"; and 451,000 strongly agreed and 898,900 strongly disagreed with the statement: "I am uncertain that climate change is really happening." Respondents were also asked about their concerns on the effects of climate change. Overall, participants were more concerned about the

---

<sup>520</sup> Kenneth Hughey, Geoffrey Kerr, and Ross Cullen, *Public Perceptions of New Zealand's Environment: 2010* (Christchurch: EOS Ecology, 2010), 25.

<sup>521</sup> The study was prepared for Motu Economic and Public Policy Research and the Sustainable Business Council. The authors of the study noted: "Where estimated numbers of New Zealanders are shown in this report, they are based on the New Zealand population 18 years of age or over derived from the 2013 New Zealand Census of Population and Dwellings."

effects of climate change on society (62.9%) than on themselves (57.6%).<sup>522</sup> Thus, some members of the public continue to doubt scientific evidence that the Earth's climate is warming and that this has and will bring about negative effects.

Roy Morgan, a consumer, industry and market research company, also conducted studies into the concerns of New Zealanders. In January 2017, a cross-section of 1,000 men and women were asked the questions: "What do you think is the most important problem facing the World today?" and "What do you think is the most important problem facing New Zealand today?". Respondents chose between a broad category and then a more specific label. Regarding the first question, the biggest world concern was "Economic issues" (27%), followed by "War & Terrorism/ Security issues/ Refugee Crisis" (26%). More specifically, the single biggest problem was cited as "Poverty and the gap between rich and poor" (15%), followed by "Terrorism" (11%). Only 9% of respondents mentioned "Climate change/ Global warming/ Ozone layer/ Greenhouse effect" as the most pressing world problem.<sup>523</sup>

For the second question, regarding New Zealand, respondents were most concerned about "Government/ Public Policy/ Housing/ Human Rights issues" (41%), with many respondents viewing "Housing" as a major problem. Other

---

<sup>522</sup> Horizon Research, *New Zealanders' Climate Change Actions and Attitudes* (Auckland: Horizon Research Limited, 2014), <https://motu.nz/assets/Documents/our-work/environment-and-resources/emission-mitigation/shaping-new-zealands-low-emissions-future/2014-10-20-New-Zealanders-Climate-Change-Actions-and-Attitudes-Final.pdf>.

<sup>523</sup> Roy Morgan, "Most Important Problems Facing New Zealand in 2017 Are Housing Related, but the World Faces Economic and War & Terrorism Problems in Almost Equal Measure According to New Zealanders," February 27, 2017, <http://www.roymorgan.com/findings/7128-most-important-problems-facing-new-zealand-february-2017-201702271519>.

issues mentioned, in order of prominence, were: “Economic issues” (30%), “Social issues” (12%), and “Environmental issues” (8%).<sup>524</sup> The single biggest identified problem was “Poverty and the gap between rich and poor” (17%). Only 2% of respondents answered, “Climate Change/ Global Warming”. This suggests that economic issues were viewed as more pressing issues for New Zealanders.

The following year, in February, Roy Morgan asked the same questions to 999 respondents. Of the issues facing the world, respondents were most concerned about “Economic issues” (27%). But more specifically, the top world problem was identified as “Global warming/ Climate change” (17%), followed by “Poverty and the gap between rich and poor” (16%).<sup>525</sup> For the second question, it was found that “Economic issues” (34%) was the most important contemporary issue facing New Zealand, with the single biggest problem being “Poverty and the gap between rich and poor” (20%). The low status accorded to global warming in New Zealand suggests that the scope, complexity, and urgency of what needs to be done is not a priority for many, given more immediate economic concerns.

Similarly, Colmar Brunton, a market and social research company, found that the issues of global warming and climate change did not feature high on people’s list of concerns. In their 2017 study, the top concern for respondents was “Violence in Society” (69%). Of a list of 38 concerns, climate change ranked

---

<sup>524</sup> It is important to point out here that there is overlap in some of the categorisation of the issues; for example, housing is also an economic issue.

<sup>525</sup> "Economic Issues Dominate New Zealanders Concerns Early in 2018," March 16, 2018, <http://www.roymorgan.com/findings/7534-roy-morgan-problems-facing%20new-zealand-february-2018-201803152343>. The study was conducted from a sample of 999 men and women aged 14 or over.

24th.<sup>526</sup> By the end of 2018, Colmar Brunton had found that the top concern for New Zealanders was the “Build-up of plastic in the environment” (72%). The data also showed that the number of respondents who expressed a high level of concern about the impact of climate change had increased by 7% to 55%.<sup>527</sup> This suggests that over time, publicity about the effects of global warming is reaching more individuals.

The Colmar Brunton findings complemented the results from Taciano Milfont, Marc Wilson, and Chris Sibley’s 2017 study. Using data from the New Zealand Attitudes and Values Study, Milfont et al. found that over the six-year period (October 2009 to October 2015), respondents tended to believe that climate change was real but were less inclined to view it as being anthropogenic. However, over time, the level of agreement with the view that climate change had human causes increased. The researchers observed that they expect climate change beliefs to fluctuate over time. Overall, their evidence indicated that the communication of climate change concerns was having an effect.<sup>528</sup>

---

<sup>526</sup> Colmar Brunton, *Better Futures 2017*, January 24, 2018, <https://www.colmarbrunton.co.nz/water-quality-leads-rising-environmental-concerns-for-kiwis/>. The study was conducted between October 10 and November 13, 2017. It surveyed 1,000 New Zealanders’ attitudes and behaviour towards socially, environmentally, and economically responsible brands.

<sup>527</sup> *Better Futures 2019*, February 12, 2019, <https://static.colmarbrunton.co.nz/wp-content/uploads/2019/05/Colmar-Brunton-Better-Futures-2019-MASTER-FINAL-REPORT.pdf>. The online survey of 1,000 New Zealanders aged 18 and over was conducted between December 4-11, 2018.

<sup>528</sup> Taciano Milfont, Marc Wilson, and Chris Sibley, “The Public’s Belief in Climate Change and Its Human Cause Are Increasing over Time,” *PLOS One* 12, no. 3 (2017): 6-8, <https://doi.org/10.1371/journal.pone.0174246>.

Also noteworthy, in the IAG-Ipsos poll, 84% of respondents thought that humanity could reduce climate change but only 10% thought that it would occur.<sup>529</sup> Moreover, 72% of those polled thought that climate change was an important issue to solve and 60% had grown more concerned. However, only 10% placed climate change in their top three issues of concern.<sup>530</sup> This raises questions over the association between concern and climate action. In an earlier study conducted in 2008 and 2009, Milfont alone used data gathered from 269 participants and discovered positive associations between knowledge, perceived efficacy, and concern about global warming and climate change. He went on to caution, though, that knowledge alone is not enough to create meaningful action.<sup>531</sup> Milfont suggested that emphasis should be placed on the actions members of the public can take to achieve greater environmental benefits (rather than just learning about climate science).

Another study assessed New Zealanders' preparedness to act on climate change. A questionnaire developed by scholars Christopher Aitken, Ralph Chapman, and John McClure involved 192 members of the New Zealand public. The study found that stronger perceptions of powerlessness and the commons dilemma were related to lower levels of mitigative action. The data also showed that the factor most associated with climate action was perceived risk. Simply

---

<sup>529</sup> IAG is New Zealand's largest general insurer and Ipsos is a market research company.

<sup>530</sup> IAG-Ipsos, "IAG-Ipsos Poll: Kiwis Pessimistic That We Will Meet Climate Change Challenge," news release, July 15, 2018, <https://www.iag.co.nz/latest-news/articles/IAG-Ipsos-poll-Kiwis-pessimistic-that-we-will-meet-the-challenge-of-climate-change.html>. The poll was conducted between June 15 and June 22, 2018 and had 1,000 respondents.

<sup>531</sup> Taciano Milfont, "The Interplay between Knowledge, Perceived Efficacy, and Concern About Global Warming and Climate Change: A One-Year Longitudinal Study," *Risk Analysis* 32, no. 6 (2012): 1013-17, <http://doi.org/10.1111/j.1539-6924.2012.01800.x>.

put, those who judged the risks of climate change as being high were more likely to act. Moreover, the correlation between the rating of knowledge and efficacy was weak, suggesting that while knowledge is important for climate action there are other factors to consider. The researchers went on to recommend, like Milfont, that campaigns about climate change will need to provide information about the perceived risks and identify the options for individual climate action.<sup>532</sup>

A study of New Zealand business perceptions about climate change was also conducted. In 2015, the BusinessNZ Major Companies Group and the Sustainable Business Council undertook a survey and facilitated two workshops to gather insights about why business leaders thought climate change was important, where businesses will lead on climate mitigation and adaptation, and what businesses would like to see from the government negotiations at COP21 and in the future. In total, 54 businesses participated in the survey (collectively, they accounted for about 36% of New Zealand's private sector GDP). From the information gathered, it was found that two-thirds of respondents had emission reduction targets in place and 61% had introduced initiatives to reduce their emission levels. However, businesses felt that it was hard to establish a link between climate change, business impact, and the quantification of benefits. Moving forward, they wanted to see a bipartisan approach to global warming,

---

<sup>532</sup> Christopher Aitken, Ralph Chapman, and John McClure, "Climate Change, Powerlessness and the Commons Dilemma: Assessing New Zealanders' Preparedness to Act," *Global Environmental Change* 21, no. 2 (2011): 757-59, <https://doi.org/10.1016/j.gloenvcha.2011.01.002>.

sustainable government procurement, transport initiatives, and increased attention to climate adaptation.<sup>533</sup>

There are significant absences in the studies on public and business perceptions—culpability for anthropogenic global warming and liability for its costs and consequences. For instance, if there is no perception of responsibility, then how do you address global warming? As discussed in the introduction and chapters one and two, global warming is the result of a system predicated on the exploitation of nature and consumerism, advanced in large part by corporations. So, the responsibility for global warming is not equally shared. Consumers do have power but that power pales in comparison to that of corporations. This failure to identify that corporations are the real drivers of environmental destruction and physical harm blinds people to the importance of structural change.

---

<sup>533</sup> The BusinessNZ Major Companies Group and the Sustainable Business Council, *Business Survey on Climate Change* (2015), [https://www.sbc.org.nz/\\_\\_data/assets/pdf\\_file/0003/111198/BusinessNZ-Climate-Survey.pdf](https://www.sbc.org.nz/__data/assets/pdf_file/0003/111198/BusinessNZ-Climate-Survey.pdf).

Table 2: Studies on public and business perceptions of climate change in New Zealand

Authors	Method/ Sample	Findings
Hughey et al., 2010	Postal survey responses from 610 randomly selected New Zealanders. Partnered with an electronic survey of 2,477 volunteers from ShapeNZ's database.	<ul style="list-style-type: none"> <li>- 24% of respondents rated "Water pollution and/or water (unspecified)" related issues as the most important environmental issue facing New Zealand.</li> <li>- 24% of respondents identified "Global warming/ climate change/ ozone layer" as the single most important environmental issue facing the world.</li> </ul>
Aitken et al., 2011	From three locations in New Zealand, 192 members of the public filled in a questionnaire.	<ul style="list-style-type: none"> <li>- 70% of participants reported having acted in relation to climate change.</li> <li>- Individuals who felt more powerless and or had heightened perceptions of the "commons dilemma" were less likely to act on climate change.</li> <li>- Individuals who viewed the risks of climate change as high were more likely to act.</li> <li>- Individuals who felt that others were not taking mitigative action on climate change tended to feel that they were powerless to affect climate change on their own.</li> </ul>
Milfont, 2012	Panel study of 269 New Zealanders' response to three surveys.	<ul style="list-style-type: none"> <li>- There was a positive association between knowledge, efficacy, and concern.</li> <li>- The knowledge-concern relationship can be moderated by other factors (e.g., political affiliation and political ideology).</li> <li>- Path models indicate that the strongest effect was from knowledge to concern and then concern to efficacy.</li> <li>- Increased concern induces feelings of personal efficacy and responsibility for these issues.</li> </ul>
Horizon Research, 2014. <sup>534</sup>	Survey of 2,246 New Zealanders aged 18+ who are members of the HorizonPoll national online research panel.	<ul style="list-style-type: none"> <li>- 24.7% of respondents stated "global warming/ climate change/ greenhouse gases/ the environment" as the major problem facing the world, and 14% stated "poverty" as the major problem facing New Zealand.</li> <li>- 41.6% of respondents disagreed and 37.4% agreed that even if they did act to reduce climate change, their actions would make no difference.</li> <li>- 57.6% of respondents were concerned about the effects of climate change on themselves, and 62.9% were concerned about the effects of climate change on society in general.</li> </ul>

<sup>534</sup> See also Catherine Leining and Scott White, *From Fact to Act: New Zealanders' Beliefs and Actions on Climate Change* (Motu Economic and Public Policy Research, 2015), <https://motu.nz/assets/Documents/our-work/environment-and-resources/emission-mitigation/shaping-new-zealands-low-emissions-future/From-Fact-to-Act-Motu-Note-19-web.pdf>.

BNZMCG and SBC, 2015	Survey of the climate initiatives undertaken by 54 businesses operating in New Zealand; two workshops canvassing business leaders' short-term plans regarding climate change and their long-term ambition for systemic change.	<ul style="list-style-type: none"> <li>- 52% of respondents stated that climate change was a material issue that needed a response.</li> <li>- 61% had introduced initiatives to reduce emissions.</li> <li>- One business was considering aligning its target with the national target and another was investigating aligning its target with the 2°C science-based target.</li> <li>- At Paris, businesses wanted leadership, clarity of direction, ambition, and a unified commitment at a global and national level.</li> <li>- Beyond Paris, businesses wanted a cross-party agreement on New Zealand's approach to global warming, sustainable government procurement, transport initiatives, and a greater focus on climate adaptation.</li> </ul>
Colmar Brunton, 2017	A survey of 1,000 New Zealanders; method not given.	<ul style="list-style-type: none"> <li>- The top concern of respondents was "Violence in Society" (69%).</li> <li>- Many respondents said that they were personally acting more sustainably (e.g., 97% of respondents recycle paper, plastics, glass and tins).</li> </ul>
Milfont et al., 2017.	Analysis of two questions from the data produced by the New Zealand Attitudes and Values Study. <sup>535</sup>	<ul style="list-style-type: none"> <li>- Belief in the reality of climate change and its human origins increased over a six-year period (2009 to 2015).</li> <li>- Agreement with the reality of climate change was consistently stronger than with the idea that climate change was anthropogenic.</li> <li>- Belief in the reality of climate change and its human origins was pronounced from about 2013 onwards.</li> </ul>
Roy Morgan, 2017	Telephone survey of a cross-section of 1,000 New Zealanders aged 14 and/or over.	<ul style="list-style-type: none"> <li>- 41% of respondents replied that "Government/ Public Policy/ Housing issue" was the most important problem facing New Zealand. The fourth biggest theme "Environmental issues" was mentioned by nearly 8% of respondents.</li> <li>- 27% said the biggest world problems involved "Economic issues". The third biggest theme "Environmental issues" was mentioned by nearly 15% of respondents.</li> <li>- 15% said the biggest specific world problem was "Poverty/ the gap between rich and poor". "Climate change/ Global Warming/ Ozone layer/ Greenhouse effect" was mentioned by nearly 9% of respondents and was the third equal biggest theme.</li> </ul>

<sup>535</sup> The study is a national probability sample study that tracks New Zealanders' social attitudes, personality, and health outcomes. The scholars examined two key climate change beliefs from a sample of over 10,000 New Zealanders from 2009 to 2015.

IAG-Ipsos, 2018	1,000 New Zealanders polled; method not given.	<ul style="list-style-type: none"> <li>- 72% of respondents thought that climate change was an important issue to solve and 60% became more concerned in recent years. But only 10% placed climate change in their top three issues of concern.</li> <li>- 89% of respondents thought there will be more frequent and extreme storms, 87% expected inundation of coastal locations owing to sea level rise, 85% expected more drought.</li> <li>- 84% of those polled thought that humanity could reduce climate change but 60% were unclear whether we would do so. 10% believe that we would take appropriate action.</li> <li>- 43% thought New Zealand's current response was on the right track and 33% thought the Government's response to date was good. 21% approved of the international response so far.</li> </ul>
Kerr and Wilson, 2018 <sup>536</sup>	An online survey of 696 psychology students.	<ul style="list-style-type: none"> <li>- Simple messages about high scientific consensus increase individuals' perception of a scientific consensus.</li> <li>- Messages about the scientific consensus were effective in correcting misunderstandings about the actual level of scientific agreement on climate change.</li> </ul>
Roy Morgan, 2018	Telephone survey of a cross-section of 999 New Zealanders aged 14 or over.	<ul style="list-style-type: none"> <li>- 34% of respondents replied that Economic Issues was the most important problem facing New Zealand. The fourth biggest theme was Environmental issues mentioned by nearly 13% of respondents.</li> <li>- 27% said the biggest world problem involved Economic issues. The second biggest theme Environmental issues was mentioned by nearly 26% of respondents.</li> <li>- 17% said the biggest specific world problem was Global warming/Climate change. The second biggest theme Poverty and the gap between rich and poor was mentioned by nearly 16% of respondents.</li> </ul>
Colmar Brunton, 2019	An online survey of 1,000 New Zealanders aged 18 and over.	<ul style="list-style-type: none"> <li>- The top concern of respondents was the 'build-up of plastic in the environment' (72%).</li> <li>- 55% of respondents expressed high levels of concern around the impact of climate change on New Zealand.</li> </ul>

<sup>536</sup> John Kerr and Marc Stewart Wilson, "Changes in Perceived Scientific Consensus Shift Beliefs About Climate Change and GM Food Safety," *PLOS One* 13, no. 7 (2018), <https://doi.org/10.1371/journal.pone.0200295>.

From the studies on public attitudes about climate change, members of the public do not view it as the most significant issue facing New Zealand. Rather they view climate change as largely a global problem. However, belief in, and concern over, the effects of rising global average temperature has increased over time. This suggests that in the future, more New Zealanders will be inclined to believe that a warmer Earth is a concerning development. The studies also signalled that people are more willing to act against global warming if they perceived the consequences to be serious, if they knew others were doing so, and if they believed humans can influence the climate. In this context, future information campaigns need to focus on the most effective climate change actions that the public can adopt (in addition to but not as a substitute for policy reform).

## **Conclusion**

In this chapter, I elucidated prevailing approaches to the climate crisis in New Zealand by casting a spotlight on how successive governments in New Zealand attempted to combat the issue of global warming. Over time, an incongruity became apparent between the government's desire to safeguard the Earth and the continued pursuit of open-ended economic growth. In official announcements and policies, the narratives and discourses used have been subservient to economic objectives, illustrating the intermingling of politics and special interests. Agricultural and industries' influence on weakening domestic climate policies brings into question political processes. Here, the issue of unequal power relations within society comes to the fore. Undoubtedly, New

Zealand's shift towards a lower-emission economy is not a simple task—a point which has been constantly reiterated. This objective is complicated by New Zealand's small size and geography, emissions profile, and high generation of renewable energy for electricity. Yet, there are viable options that governments can pursue if they shift their outlook beyond the near term. In order to provide context for my study of news media representations, the next chapter analyses the production of news and the media coverage of global warming-related issues and events.

## Chapter Four

### The Social Production of Climate Science News

The media are both context and themselves contextualized. They both construct a world, and are constructed within and by that world. And of course the world is plural not singular.

–Roger Silverstone, *Media and Morality*, 2006

Earlier chapters canvassed the literature surrounding scientific, political, and psychological debates on the climate crisis and brought to attention the difficulties of achieving climate action. This chapter situates the role of the news media as a primary conduit of information and knowledge in publicising global warming-related matters. I begin by detailing the scholarship on the production of news, its role in meaning-making, and the impacts the evolution of communication technology has had on the process of making news. The challenges of making known negative or disturbing events and issues are then explored. Next, I review the international literature on news media representations of global warming-related issues before looking specifically at research conducted in New Zealand. I argue that while mediated representations have limited social influence, they can still draw individuals away from their everyday private realities and experiences into the realm of public concerns and politics.

## Understanding News

### *Defining Journalism and the Craft of Making News*

Back in the 1950s, it was assumed that journalists selected news events or issues based on “what was happening” and thus, the news was “a mirror held up to society” or “a window on the world”.<sup>537</sup> Since then, communication research has challenged this understanding, revealing that there are a multitude of forces beyond the contemporary event or issue itself that shapes media content.<sup>538</sup> In the late 1970s, Gaye Tuchman pointed out that “whom one asks for information influences what information one receives.”<sup>539</sup> Around the same time, in *Policing the Crisis*, Stuart Hall, Chas Critcher, Tony Jefferson, John Clarke, and Brian Roberts defined news as “the end-product of a complex process which begins with a systematic sorting and selecting of events and topics according to a socially constructed set of categories.”<sup>540</sup> These interpretations show that news cannot be defined as a verbatim reiteration of what has happened or is taking place, rather, it is a reconstruction of reality.

Traditionally, the first task for journalists is to choose or find a subject matter to report about. Gill Branston and Roy Stafford found that the sorting and selection of events and information for news is based upon unconsciously

---

<sup>537</sup> Oscar Westlund and Mats Ekström, "News Organisations and Routines," in *The Handbook of Journalism Studies*, eds. Karin Wahl-Jorgensen and Thomas Hanitzsch (Abingdon, OX: Routledge, 2009), ProQuest Ebrary.

<sup>538</sup> See Gans, *Deciding What's News*; Gitlin, *The Whole World Is Watching*.

<sup>539</sup> Tuchman, *Making News*, 81.

<sup>540</sup> Hall et al., *Policing the Crisis*, 53.

held “news values” and a developed sense of the audience.<sup>541</sup> News values primarily consist of importance, interest, controversy, the unusual, timeliness, and proximity.<sup>542</sup> In 2017, Tony Harcup and Deirdre O’Neill proposed an updated set of contemporary news values. The new list consists of exclusivity, bad news, conflict, audio-visuals, shareability, entertainment, drama, follow-up, relevance, magnitude, celebrity, good news, and the news organisation’s agenda.<sup>543</sup> If an event or issue satisfies one or more of the values it is likely to be transformed into a news item. Therefore, certain events and issues are more likely to lend themselves to news coverage whereas others will receive little to no media spotlight. Pamela Shoemaker and Stephen Reese also observed that over time these news values have become “fairly predictable.”<sup>544</sup>

Upon finding a subject matter that appeals to news audiences, the task for the journalist, as stated by Robert Manoff and Michael Schudson, is to address the “five W’s and an H” —the what, who, where, when, why, and how. Ideally, these questions should be addressed early in the news piece. However, the scholars noted that “these questions hide within their simplicity and their apparent common sense a whole framework of interpretation from which

---

<sup>541</sup> Gill Branston and Roy Stafford, *The Media Student’s Book*, 5 ed. (Oxon: Routledge, 2010), 340-49.

<sup>542</sup> Pamela Shoemaker and Stephen D Reese, *Mediating the Message: Theories of Influences on Mass Media Content*, 2nd ed. (New York: Longman Publishers, 1991), 105-06. Johan Galtung and Mari Ruge’s 1965 paper is one of the most frequently cited for detailing how events are selected for news. See Johan Galtung and Mari Ruge, “The Structure of Foreign News: The Presentation of the Congo, Cuba and Cyprus Crises in Four Norwegian Newspapers,” *Journal of Peace Research* 2, no. 1 (1965), <https://doi.org/10.1177/002234336500200104>.

<sup>543</sup> Tony Harcup and Deirdre O’Neill, “What Is News? News Values Revisited (Again),” *Journalism Studies* 18, no. 12 (2017), <https://doi.org/10.1080/1461670X.2016.1150193>.

<sup>544</sup> Shoemaker and Reese, *Mediating the Message*, 105.

reporters—even the best and most ‘objective’ reporters—operate, and necessarily so. After all, the world does not submit directly to blunt interrogation.”<sup>545</sup> Their sentiments reinforce the earlier point that the production of news is complex.

Todd Gitlin added that “the world of news production is not self-enclosed” but that there are routines of journalism that have persisted over time.<sup>546</sup> He explained that these practices “set within the economic and political interests of the news organisations, normally and regularly combine to select certain versions of reality over others. Day by day, *normal* organizational procedures define ‘the story,’ identify the protagonists and the issues, and suggest appropriate attitudes towards them” (italics in original).<sup>547</sup> Gitlin identified these routine procedures as: “(cover the event, not the condition; the conflict, not the consensus; the fact that ‘advances the story,’ not the one that explains it)” (brackets and italics in original).<sup>548</sup> Similarly, Shoemaker and Reese described routines as “those patterned, routinized, repeated practices and forms,” which “may be considered means to an end; but often these means, having become institutionalized, take on a life of their own.”<sup>549</sup> This suggests a strong organisational influence on news coverage.

---

<sup>545</sup> Robert Manoff and Michael Schudson, "Reading the News," in *Reading the News: A Pantheon Guide to Popular Culture*, eds. Robert Manoff and Michael Schudson (New York: Pantheon Books, 1986), 3.

<sup>546</sup> Gitlin, *The Whole World Is Watching*, 4.

<sup>547</sup> Ibid.

<sup>548</sup> Ibid., 122-23.

<sup>549</sup> Shoemaker and Reese, *Mediating the Message*, 100-01.

News, as Leon Sigal wrote, “is not what happens, but what someone says has happened or will happen.”<sup>550</sup> In order to answer the “five W’s and an H” the journalist needs to interact with sources to develop an understanding of the unfolding event or issue. Since news sources are the basis of a news story they are identified as having some form of power. Traditionally, news sources have been well-known political, economic, social, or cultural elites. Often these members of society are viewed as being credible and articulate.<sup>551</sup> And while access to the news media is never guaranteed, the struggle over input into news content has been observed to be not evenly distributed.

Recent scholarship has continued to identify differential access to journalists.<sup>552</sup> The preference for authoritative sources for information has raised concerns over whether certain members of the public are treated prejudicially. If the press can amplify certain voices, they can also mute others, which can have implications for the direction of political life. However, it needs to be acknowledged, as Rodney Tiffen et al. have, that news sources “do not necessarily generate the news that they seek.”<sup>553</sup> Moreover, there are a multitude of ways in which subject matter can be represented.

---

<sup>550</sup> Leon Sigal, "Who? Sources Make the News," in *Reading the News: A Pantheon Guide to Popular Culture*, ed. Robert Manoff and Michael Schudson (New York: Pantheon Books, 1986), 15.

<sup>551</sup> See Gans, *Deciding What's News*; Hall et al., *Policing the Crisis*.

<sup>552</sup> For instance, studies have found that news organisations increasingly rely upon pre-packaged materials and routine channels, such as press releases and conferences. See Lawrence C. Soley, *The News Shapers: The Sources Who Explain the News* (New York: Praeger, 1992); Paul Manning, *News and News Sources: A Critical Introduction* (London: SAGE Publications, 2000), ProQuest Ebrary.

<sup>553</sup> Rodney Tiffen et al., "Sources in the News: A Comparative Study," *Journalism Studies* 15, no. 4 (2014): 375, <https://doi.org/10.1080/1461670X.2013.831239>.

News frames, Robert Entman explained, are a set of references coined to interpret and discuss an event or issue. They operate through selection, emphasis, and/or exclusion of information.<sup>554</sup> Similarly, James Hertog and Douglas McLeod wrote that frames “are structures of meaning that include a set of core concepts and ideas, especially basic conflicts, metaphors, myths, and narratives.”<sup>555</sup> This implies that certain definitions and reconstructions of social reality will inevitably be privileged over others. It also connotes the idea of journalists as “gatekeepers” or “watchdogs,” sifting through an abundance of information, monitoring what is taking shape, and publicising what needs to be known.<sup>556</sup> Thus, the issue is not only what is publicised but also what is not.

Relatedly, Nicholas Carah and Eric Louw observed, “The power of meaning-making institutions is embedded in their capacity to construct and control not just meanings but the social spaces and frameworks within which we all make and circulate meaning.”<sup>557</sup> In drawing attention to the scale and potential reach of news coverage, they spotlighted how the news industry occupies an important locus in society. But if it is observed that there are patterns to journalists’ structuring of information and/or meaning, then

---

<sup>554</sup> See Robert M. Entman, "Framing: Toward Clarification of a Fractured Paradigm," *Journal of Communication* 43, no. 4 (1993), <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>; "Framing Bias: Media in the Distribution of Power," *Journal of Communication* 57, no. 1 (2007), <https://doi.org/10.1111/j.1460-2466.2006.00336.x>.

<sup>555</sup> James K Hertog and Douglas McLeod, "A Multiperspectival Approach to Framing Analysis: A Field Guide," in *Framing Public Life: Perspective on Media and Our Understanding of the Social World*, eds. Stephen Reese, Oscar Gandy, and August Grant (Mahwah, NJ: Lawrence Erlbaum Associates, 2003), 159.

<sup>556</sup> McCombs and Shaw, "The Agenda-Setting Function of Mass Media"; Melvin Mencher, *News Reporting and Writing* (Boston: McGraw-Hill, 2000).

<sup>557</sup> Carah and Louw, *Media & Society*, 57.

consideration shifts beyond the narrow concern of media bias to the broader themes of ideology and hegemony. As Alison Anderson explained:

Gaining access to the media and achieving coverage is only half the battle...Control over the media is as much about the power to silence and suppress issues as it is to publicise them. Moreover, claims-makers are engaged in continual definitional struggles, requiring an in-depth and multi-faceted analysis of the factors influencing the effectiveness of media strategies over time.<sup>558</sup>

However, it needs to be reiterated that systems of representation are not necessarily congruent with audience interpretation.

So, journalism can be understood in many ways. One common description of journalism can be found in Bill Kovach and Tom Rosenstiel's *The Elements of Journalism: What Newspeople Should Know and the Public Should Expect*. The two authors advanced that journalism should adhere to "the principles of truthfulness, an allegiance to citizens, and to informing rather than manipulating."<sup>559</sup> Barbie Zelizer noted in her chapter on the definitions of journalism that journalists tended to talk about journalism as (1) a Sixth Sense, (2) a Container, (3) a Mirror, a Story, (4) a Child, and (5) a Service. While scholars were inclined to discuss journalism as (1) a Profession, (2) an Institution, (3) a Text, (4) People, and (5) a Practice.<sup>560</sup>

---

<sup>558</sup> Alison Anderson, "Media, Politics and Climate Change: Towards a New Research Agenda," *Sociology Compass* 3, no. 2 (2009): 173, <https://doi.org/10.1111/j.1751-9020.2008.00188.x>.

<sup>559</sup> Kovach and Rosenstiel, *The Elements of Journalism*, 5-6, 144.

<sup>560</sup> Barbie Zelizer, "Definitions of Journalism" in *Institutions of American Democracy: The Press*, eds. G. Overholser and K. H. Jamieson (New York: Oxford University Press, 2005), [https://repository.upenn.edu/asc\\_papers/671](https://repository.upenn.edu/asc_papers/671).

Other scholars have questioned many of the traditional, normative ways of thinking about journalism. They argued that the changing nature of news consumption and the realities of making news a commercially viable product has meant that it is challenging to provide a complete explanation of journalism. For instance, Michael Schudson remarked that the idea of journalistic work as being a public good “is one goal the news media in a democracy should try to serve, but it is not a good approximation of what role the news media have historically played—anywhere.”<sup>561</sup> Mark Hampton agreed that the notion of the news media as a means to enhance democracy is an ideal. In his opinion, the development of news organisations along commercial lines has eroded their independence: “The great contribution of the ‘Fourth Estate’ ideal may well be that it provides a vision to which journalists often aspire, and an obligation that is met frequently enough to force governments and corporations at least to consider the public response to their actions.”<sup>562</sup> These observations suggest that the ethical standards or values to which journalism holds itself are largely aspirational.

For O’Neill and Harcup, “definitions of news are not fixed.”<sup>563</sup> Similarly, Zelizer went on to conclude in her chapter that “no one definitional set has been capable of conveying all there is to know about journalism.”<sup>564</sup> So, there can be differences in how individuals perceive the activities of journalists. While

---

<sup>561</sup> Michael Schudson, "Four Approaches to the Sociology of News Revisited," in *Media and Society*, ed. James Curran (London: Bloomsbury Publication, 2010), 181.

<sup>562</sup> Mark Hampton, "The Fourth Estate Ideal in Journalism History," in *The Routledge Companion to News and Journalism*, ed. Stuart Allan (London: Routledge, 2009), 10.

<sup>563</sup> Deirdre O’Neill and Tony Harcup, "News Values and News Selection," in *The Handbook of Journalism Studies*, eds. Karin Wahl-Jorgensen and Thomas Hanitzsch, (Abingdon, OX: Routledge, 2009), ProQuest Ebrary, 225.

<sup>564</sup> *Ibid.*, 76.

journalism has lacked a rigid definition, throughout the twentieth century, newsrooms have established codes of ethics and standards of practice to describe journalistic activities.<sup>565</sup>

### *Audience Metrics and News Production*

Traditionally, ownership of news outlets has been characterised by the consolidation and growth of transnational media conglomerates. Then, from about the late 1980s, many media institutions were affected by mergers, closures, and/or layoffs. This resulted in a decline in journalistic resources.<sup>566</sup> Following the emergence of digital platforms and globalisation, trends in news media ownership and control include failures, mergers, acquisitions, and disaggregation, in tandem with a growing presence of banking, equity, and financial corporations.<sup>567</sup>

Recently, large multinational technology companies, notably Google and Facebook, which are unprecedented in scale and reach, have been sharing news content without paying for them.<sup>568</sup> For example, recently, the Australian

---

<sup>565</sup> Edson Tandoc Jr and Ryan Thomas, "The Ethics of Web Analytics," *Digital Journalism* 3, no.2 (2015), 250, <https://doi.org/10.1080/21670811.2014.909122>.

<sup>566</sup> Edward Herman and Robert McChesney, *The Global Media: The New Missionaries of Corporate Capitalism* (London: Cassell, 1997); Robert McChesney, *Digital Disconnect: How Capitalism Is Turning the Internet against Democracy* (New York: The New Press, 2013).

<sup>567</sup> See Robert McChesney and Dan Schiller, *The Political Economy of International Communications: Foundations for the Emerging Global Debate About Media Ownership and Regulation* (Geneva: The United Nations Research Institute for Social Development 2003); Dwayne Winseck, "The State of Media Ownership and Media Markets: Competition or Concentration and Why Should We Care?," *Sociology Compass* 2, no. 1 (2008), <https://doi.org/10.1111/j.1751-9020.2007.00061.x>.

<sup>568</sup> It is not only these two companies that have a share of the revenue from digital advertising, other big technology companies like Amazon, and Microsoft, are also emerging competitors.

Competition and Consumer Commission (ACCC) described Google and Facebook as being “ubiquitous” and argued that through their “opaque operations” it is difficult to determine their exact behaviour.<sup>569</sup> The growing dominance of digital platform companies in the production and hosting of news raises several concerns, including competition, citizen rights over privacy and data protection, and the viability of a free and autonomous press.<sup>570</sup>

The shift from traditional print media to digital media platforms has also resulted in the fragmentation of audiences and ever-growing consumer and advertiser choice. Most scholars would agree that there is now a wider range of news available to a greater number of people, although this does not necessarily guarantee an enhancement of the public sphere. Before the ascendancy of the internet, Graham Murdock pointed out that the proliferation of television channels does not necessarily signify more diversity.<sup>571</sup> So more digital media platforms do not mean that democracy is served more effectively, especially when new communication technologies allow digital content to be created or shared with little critical scrutiny. Put differently, as Edson Tandoc Jr and Ryan Thomas have, “Choice may dress in the garb of empowerment but it is of no

---

<sup>569</sup> Australian Competition & Consumer Commission, *Digital Platforms Inquiry: Final Report* (Canberra: Commonwealth of Australia, 2019), 1.

<sup>570</sup> See Digital Competition Expert Panel, *Unlocking Digital Competition: Report of the Digital Competition Expert Panel* (London: Open Government Licence, 2019). Also, there are mounting calls for greater competition online and more policy and regulation to ensure that journalism can still pursue its ideal public good role.

<sup>571</sup> Graham Murdock, “Large Corporations and the Control of the Communications Industries,” in *Culture, Society and the Media*, ed. Michael Gurevitch et al., (London: Methuen, 1982).

utility to democracy whatsoever if the net result is a more uninformed (or misinformed) and unengaged polity and a fragmented community.”<sup>572</sup>

Furthermore, the dynamics of the internet allows content to be published and made readily available to a wide audience with little to no accordance with fact or reality. Consequently, there has been a proliferation of incorrect information, commonly referred to as “fake news.”<sup>573</sup> This term, Guy Berger pointed out, is an oxymoron.<sup>574</sup> According to Hunt Allcott and Matthew Gentzkow, fake news concerns “news articles that are intentionally and verifiably false, and could mislead readers.”<sup>575</sup> Cheryl Ireton and Julie Posetti added that these articles serve to “become an emotional, weaponised term used to undermine and discredit journalism.”<sup>576</sup> So, today, news organisations not only compete against legitimate institutions but also “hoax” websites (and a range of social network platforms).<sup>577</sup> Much remains unknown about the susceptibility of individuals and institutions to these manipulative practices.<sup>578</sup> However, a

---

<sup>572</sup> Tandoc Jr and Thomas, “The Ethics of Web Analytics,” 249.

<sup>573</sup> Chapter two noted that disinformation and misinformation relate to false and/or flawed information; however, the former is often described as deliberate deception, while the latter is accidental. For example, misinformation can arise from poor journalism or sharing information without verifying the content.

<sup>574</sup> Guy Berger, Foreword to *Journalism, ‘Fake News’ & Disinformation: Handbook for Journalism Education and Training*, by Julie Posetti et al. (Paris: United Nations Educational, Scientific and Cultural Organization, 2018), 7.

<sup>575</sup> See Hunt Allcott and Matthew Gentzkow, “Social Media and Fake News in the 2016 Election,” *Journal of Economic Perspectives* 31, no. 2 (2017): 213, <http://doi.org/10.1257/jep.31.2.211>.

<sup>576</sup> Posetti et al., *Journalism, ‘Fake News’ & Disinformation*, 14.

<sup>577</sup> Stephan Lewandowsky et al., “Misinformation and Its Correction: Continued Influence and Successful Debiasing,” *Psychological Science in the Public Interest* 13, no. 3 (2012): 111, <https://doi.org/10.1177/1529100612451018>.

<sup>578</sup> David Lazer et al., “The Science of Fake News,” *Science* 359, no. 6380 (2018): 1094, <https://doi.org/10.1126/science.aao2998>.

variety of influences have been observed, such as increased cynicism, extremism, and impacts upon electoral competition.<sup>579</sup>

There is also concern about the ease by which individuals can seek out information that is reflective of their social milieu (also known as “selective exposure”). Simply put, despite the diversity of viewpoints audience members can insulate themselves from contrary perspectives, leading them to find information that comports with their views (also referred to as “echo chambers”, “filter bubbles”, and “cyber-ghettos”). Research in this area has yielded equivocal findings.<sup>580</sup> So, the internet can be celebrated for its potential to facilitate and to impart knowledge, but it can also be derided for the spread of misleading or fake information.<sup>581</sup>

Against this background, the question arises of whether the virality of news comes at the expense of veracity? Recently, Matt Carlson remarked that “as long as the news has been an industrialized product, it has been a measured

---

<sup>579</sup> Ibid. See also Gene M. Grossman and Elhanan Helpman, “Electoral Competition with Fake News,” No. w26409, National Bureau of Economic Research, October 2019, <https://doi.org/10.3386/w26409>.

<sup>580</sup> W. Lance Bennett and Shanto Iyengar, “A New Era of Minimal Effects? The Changing Foundations of Political Communication,” *Journal of Communication* 58 (2008): 719, <https://doi.org/10.1111/j.1460-2466.2008.00410.x>.

<sup>581</sup> Other notable concerns about the Internet include issues over access, parity, and privacy. See Arjun Appadurai, “Disjuncture and Difference in the Global Cultural Economy,” in *Media and Cultural Studies: Keywords*, eds. Meenakshi Gigi Durham and Douglas M Kellner (Malden, MA: Blackwell Publishing, 2006); Jan van Dijk and Kenneth Hacker, “The Digital Divide as a Complex and Dynamic Phenomenon,” *The Information Society* 19 (2003), <https://doi.org/10.1080/01972240309487>; Neil Selwyn, “Reconsidering Political and Popular Understandings of the Digital Divide,” *New Media Society* 6, no. 3 (2004), <https://doi.org/10.1177/1461444804042519>.

one.”<sup>582</sup> During the pre-internet era, audience metrics were imperfect and largely based on the quantification of audience numbers. However, with online platforms, news outlets can directly monitor, track, and engage with their audiences. Using platforms like, Chartbeat or Google Analytics, newsrooms can obtain data on news consumers’ behaviour, such as the average time spent on an item, page views, and the number of clicks. Additionally, some news websites allow readers to express their support for, or opposition to news content by commenting, sharing, and/or up- or downvoting. From these inputs, news outlets can gain an in-depth understanding of audiences’ general interest.

Studies have sought to understand if a better knowledge of audience preferences has impacted news content.<sup>583</sup> In 2007, Phil MacGregor found that “journalists check their hunches against the statistical data, and sometimes adapt their actions on the basis of ‘hard’ information.”<sup>584</sup> However, he stated that “it is far too simple to suggest that journalism means an uncritical hunt for markets.”<sup>585</sup> More recently, Hong Tien Vu surveyed 318 American news editors about the influence of online audience metrics on newsroom decision-making. He concluded that “in the digital newsroom today, audiences have a significant role

---

<sup>582</sup> Matt Carlson, "Confronting Measurable Journalism," *Digital Journalism* 6, no. 4 (2018): 407, <https://doi.org/10.1080/21670811.2018.1445003>.

<sup>583</sup> See Irene Meijer, "Journalism, Audiences, and News Experience," in *The Handbook of Journalism Studies*, eds. Karin Wahl-Jorgensen and Thomas Hanitzsch (Abingdon, OX: Routledge, 2009), 392, ProQuest Ebrary; Angela Lee, Seth Lewis, and Matthew Powers, "Audience Clicks and News Placement: A Study of Time-Lagged Influence in Online Journalism," *Communication Research* 41, no.4 (2014), <https://doi.org/10.1177/0093650212467031>.

<sup>584</sup> Phil MacGregor, "Tracking the Online Audience," *Journalism Studies* 8, no.2 (2007): 295, <https://doi.org/10.1080/14616700601148879>.

<sup>585</sup> *Ibid.*, 296.

influencing editorial practices.”<sup>586</sup> In his discussion and conclusion, Vu posited that “occupational pride” may have prevented editors from disclosing the full extent that economic pressures have on editorial decisions.

Also, in some instances, a more comprehensive understanding of news audiences has been ineffective for sustaining the economic viability of the operations. As Rasmus Kleis observed, “Today, fewer and fewer news media companies command a premium as content is increasingly commoditized and the supply of advertising inventory grows more quickly than demand, driving down rates.”<sup>587</sup> The declining revenue from advertising has seen many news organisations reorient their businesses towards subscriptions, patronage, and/or develop their ancillary revenue. However, many of these approaches have been ineffective and so, many news organisations have folded, restructured, and/or laid off staff.<sup>588</sup>

In summary, the changes to the production and consumption of news—fewer entry barriers, more compression of time and space, less dependence on literacy, and continued technological innovation—has resulted in a proliferation of avenues for people to find, create, and publicise information.<sup>589</sup>

---

<sup>586</sup> Hong Tien Vu, “The Online Audience as Gatekeeper: The Influence of Reader Metrics on News Editorial Selection,” *Journalism* 15, no.8 (2014), 1106, <https://doi.org/10.1177/1464884913504259>.

<sup>587</sup> Rasmus Kleis Nielsen, “The Business of News,” in *The SAGE Handbook of Digital Journalism*, eds. Tamara Witschge, et al., (London: SAGE Publications, 2016). 64.

<sup>588</sup> See Merja Myllylahti, *New Zealand Media Ownership Report 2017* (Journalism, Media and Democracy, 2017); Elizabeth Grieco, “9 Charts About America’s Newsrooms,” Pew Research Centre, accessed November 26, 2019.

<sup>589</sup> See also Steven Chaffee and Miriam Metzger, “The End of Mass Communication?,” *Mass Communication and Society* 4, no. 4 (2001), [https://doi.org/10.1207/S15327825MCS0404\\_3](https://doi.org/10.1207/S15327825MCS0404_3).

However, as stated earlier, multiplicity does not necessarily equate to a healthy civic discourse nor less inequality. Arguably, there is now more egregious information about, and it is easier to commercialise content and news consumers. To this end, I cite at length Natalie Fenton's erudite observations about the current and future direction of the media landscape:

Journalism is no longer a monologue; rather it increasingly consists of multiple voices. The extension of voice is all too often seen as expanding democratic practice—where voice is attributed to news users and seekers who by voicing opinions in chat rooms, forums and interactive news pages can shape what is seen as newsworthy and how it is reported. But, in an era of electronic news media marked by economic liberalism and globalization with a technology that has enabled a space for convergence between broadcasters and newspapers which compete with each other directly on the web other crucial voices enter the fray with ever more importance—those of advertising and marketing, design and technical personnel influence what gets covered via topic selection and budget allocation as online news sites strive to be profitable. The coordination and prioritization of the tasks, roles and values of these various groups will shed light on the nature of future news. But as news is a business, the business of news is increasingly not the business of journalists.<sup>590</sup>

The discussion so far has sought to elucidate the landscape in which journalists find themselves navigating. What follows considers news reportage of the climate collapse.

### **Dissipating Interest: Bad News Stories**

Given the existential threat of global warming, it is important to look more closely at the media constructions of “bad news” and crises. Bad news stories are issues and events with negative overtones. These are stories that centre on loss, injury, conflict, death, tragedy, and crises.<sup>591</sup> Back in 1948, Paul Lazarsfeld and Robert Merton advanced that there was one considered effect of

---

<sup>590</sup> Natalie Fenton, "News in the Digital Age," in *The Routledge Companion to News and Journalism*, ed. Stuart Allan (London: Routledge, 2009), 564-65.

<sup>591</sup> Harcup and O'Neill, "What Is News?" 1471.

the mass media that had been overlooked: how information provided by the mass media can leave members of the audience feeling “politically apathetic and inert.”<sup>592</sup> They termed this the “narcotising dysfunction” of the mass media and wrote that “this vast supply of communications may elicit only a superficial concern with the problems of society, and this superficiality often cloaks mass apathy.”<sup>593</sup> Lazarsfeld and Merton went on to explain that the average listener or reader:

...comes to mistake *knowing* about problems of the day *for doing* something about them. His social conscience remains spotlessly clean. He *is* concerned. He *is* informed. And he has all sorts of ideas as to what should be done. But, after he has gotten through his dinner and after he has listened to his favoured radio programs and after he has read his second newspaper of the day, it is really time for bed (italics in original).<sup>594</sup>

This suggests that members of the news audience can go from “active participation” to acquiring “passive knowledge.” In time, it appears that the day-to-day information provided by the mass media deviates from its intended purpose of engaging its readers with pertinent issues.<sup>595</sup>

---

<sup>592</sup> Paul F. Lazarsfeld and Robert K. Merton, "Mass Communication, Popular Taste, and Organised Social Action from *the Communication of Ideas* (1948)," in *Mass Communication and American Social Thought: Key Texts, 1919-1968*, eds. John Durham Peters and Peter Simonson (Lanham: Rowman & Littlefield Publishers, 2004), 348.

<sup>593</sup> Ibid.

<sup>594</sup> Ibid.

<sup>595</sup> In the 1970s and 1980s, there were studies that examined the effects of bad news on audiences. However, these studies were largely suggestive rather than definitive. They alluded to the appeal and perception of bad news, as well as how the potential power of the media was something to be reckoned with. See also George Gerbner and Larry Gross, "Living with Television: The Violence Profile," *Journal of Communication* 26, no. 2 (1976), <https://doi.org/10.1111/j.1460-2466.1976.tb01397.x>; Paul Hirsch, "The "Scary World" of the Nonviewer and Other Anomalies: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis. Part I," *Communication Research* 7, no. 4 (1980), <https://doi.org/10.1177/009365028000700401>; "On Not Learning from One's Own Mistakes: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis. Part II," *Communication Research* 8, no. 1 (1981), <https://doi.org/10.1177/009365028100800101>; Jack Haskins, "The Trouble with Bad News," *Newspaper Research Journal* 2, no. 2 (1981), <https://doi.org/10.1177/073953298100200201>; Mary-Lou Galician and Steve Pasternack, "Balancing Good News and Bad News: An Ethical Obligation?," *Journal of Mass Media Ethics* 2, no. 2 (1987), <https://doi.org/10.1080/08900528709358298>.

The idea that news coverage could induce apathy from its audience was revisited in 1996 by Katherine Kinnick, Dean Krugman, and Glen Cameron. Their research showed that the unrelenting coverage of bad news left some members of the audience alienated, resulting in them tuning out social problems. The scholars wrote that “the media contribute to compassion fatigue toward social problems in two primary ways: by providing content that serves as aversive stimuli, prompting avoidance strategies; and by fostering desensitisation to social problems through redundant and predominately negative messages which reach the point of saturation.”<sup>596</sup> “Compassion fatigue,” according to Kinnick et al. brought about “manifestations of desensitization or hypersensitization, with either outcome expected to impact three primary areas: interest in the issue; emotional arousal toward the issue; and information-seeking about the issue.”<sup>597</sup> However, their study also reported that some respondents did not exhibit symptoms of compassion fatigue.

Another compassion fatigue related study was conducted by Susan Moeller. In *Compassion Fatigue: How the Media Sell Disease, Famine, War, and Death*, Moeller analysed how news coverage of international disasters affected the American audience. She discovered that news audiences’ understanding of the catastrophes were compromised by four factors: (1) journalists’ formulaic coverage; (2) the Americanisation of crises; (3) the sensationalist stories; and (4)

---

<sup>596</sup> Kinnick et al., "Compassion Fatigue," 703.

<sup>597</sup> Ibid., 697. Compassion fatigue was first coined by trauma expert Charles Figley to refer to “the cost of caring” for others with experiences of “fear, pain, and suffering.” See Figley; *Treating Compassion Fatigue* (New York: Brunner-Routledge, 2000); "Compassion Fatigue: Psychotherapists' Chronic Lack of Self Care," *Journal of Clinical Psychology* 58, no. 11 (2002), <https://doi.org/10.1002/jclp.10090>.

the use of explicitly graphic images.<sup>598</sup> By “formulaic coverage” she was referring to the “same-as-it-ever-was” reportage, that is, the use of stereotypical images, stock phrases, and or common abstractions in the media. Put differently, news coverage focused on the “who-what-where-when” but bracketed out the “how” and or “why”. Moeller also found that sensationalism coupled with the use of explicit images could result in a repertoire of stereotypes, tropes, and icons of suffering. After a while, to elicit the same level of response, more dramatic coverage is needed. These patterns of news coverage led her to argue that the audience had lapsed into a state of compassion fatigue.

Compassion fatigue, Moeller explained is “the result of inaction and itself causes inaction.”<sup>599</sup> Here, the inability to effect change incites disengagement. This, coupled with the constant representation of the emotional suffering of others, begets emotional suffering in the audience. Additionally, she observed that much of the behaviour of news personnel reflected the newsroom truism that “bad news sells.” But, she argued, this simplified the issues, promoted cultural domination, and/or impeded future coverage of foreign news. For example, she pointed out that a crisis does not begin and end in one day; it takes time for it to unfold, but news organisations tend to wait for it to evolve into a calamity (to maximise audience appeal).<sup>600</sup> This led her to posit whether the scale of the disaster could be minimised with earlier media coverage. Thus, at

---

<sup>598</sup> Moeller, *Compassion Fatigue*, 309-22.

<sup>599</sup> *Ibid.*, 52.

<sup>600</sup> *Ibid.*, 69, 112, 54-55.

issue, also, is the effectiveness and ethicality of how news institutions make known to the world the suffering of others.

Similarly, Suzanne Franks advanced that the media's reportage of the 1984 Ethiopian famine demonstrated the potential power of the media. She stated that the news coverage "was a hugely simplified and depoliticised interpretation," but it brought about a great deal of public response.<sup>601</sup> She maintained that the use of arresting images was successful in attracting audience attention and concern but that "there was no longer-term engagement with the process of development and the same problem of famine recurred soon afterwards."<sup>602</sup> This saw her raise the question as to whether a more nuanced story could have resulted in more sustained engagement with the famine. On this matter, she argued that there is a need to look beyond short to medium-term media effects and consider the less immediate, long-term media effects.<sup>603</sup> Franks went on to acknowledge that over time, media reportage on distant suffering had improved but that inappropriate images were still widely in use.<sup>604</sup>

Lilie Chouliaraki has also considered the mediation of human vulnerability and suffering in *The Spectatorship of Suffering*. Her research detailed the ethics and politics of global power relations. She stated, "Each and every piece of news on suffering is organised using a set of values that appears to

---

<sup>601</sup> Franks, *Reporting Disasters*, 170.

<sup>602</sup> *Ibid.*, 171.

<sup>603</sup> Franks emphasised that it is "naïve" to just assert that journalists need to do better, rather, one must cast a spotlight over the role of institutions in facilitating foreign coverage.

<sup>604</sup> Franks, *Reporting Disasters*, 173-78.

be evident and natural, but, when placed in comparison with others [*sic*], reveals its complicity in sustaining the hierarchy of the places and human lives that media critics denounce.”<sup>605</sup> For Chouliaraki, the production of news is constrained by external forces, which inevitably results in inadequate media representations of distant others and their issues.

In a subsequent publication, she observed that over time the representation of humanitarian communication has shifted from the early stage of using “shock effect” appeals that were decried for dehumanising the sufferer to “positive imagery” appeals that were denounced for glossing over the misery of the sufferer. Now, more commonly, representations are centred around “moral” appeals that foreground dominant Western culture. This has led to ethical critiques, accusations of cultural narcissism, charges of subversion, and an emphasis on personal response rather than collective action.<sup>606</sup> In regard to the current style, which she termed “post-humanitarianism,” Chouliaraki concluded that “rather than challenging the historical patterns of injustice inherent in the moral economy of scarcity, which these [humanitarian] organisations have so accurately diagnosed, the post-humanitarian style may be reinforcing them.”<sup>607</sup>

Next, it is important to revisit Cohen’s work and look more closely at his discussions about the effectiveness of the news media’s imagery in making

---

<sup>605</sup> Lillie Chouliaraki, *The Spectatorship of Suffering* (London: Sage, 2006), 94.

<sup>606</sup> “Post-Humanitarianism: Humanitarian Communication Beyond a Politics of Pity,” *International Journal of Cultural Studies* 13, no. 2 (2010): 107, 21-22.

<sup>607</sup> *Ibid.*, 122.

atrocities and suffering realised. According to Cohen, “Coverage is so selective that the media in effect create a disaster when they recognise it: ‘they give institutional endorsement or attestation to bad events which otherwise have a reality restricted to a local circle of victims.’”<sup>608</sup> In drawing attention to the public agenda-setting function of the media and the idea of media filtering and framing, he viewed journalists as having a primary role in fashioning the cultural imagery of distant victims, suffering, atrocities, and perpetrators.<sup>609</sup> However, Cohen was quick to point out that there is a distinction between news coverage and audience attention, and audience attention and audience understanding.<sup>610</sup>

Cohen also mentioned that a lot of knowledge about the misery of others is not immediate, and given the delay in the news construction of “reality”, it becomes less urgent to people.<sup>611</sup> He observed that “the truth is that the sheer dimensions of mass suffering are difficult to grasp, and even more difficult to retain. The scale of victimisation passes the initial threshold, but interest cannot be sustained; the ‘same’ story cannot keep being repeated.”<sup>612</sup> Thus, journalists have to confront people’s dissipating attention threshold. A potential corollary of this is that the news media can move from one atrocity and instances of suffering to another without resolution.<sup>613</sup> Thus, Cohen went on to state: “Media

---

<sup>608</sup> Cohen, *States of Denial*, 169.

<sup>609</sup> *Ibid.*, 168.

<sup>610</sup> *Ibid.*, 170.

<sup>611</sup> *Ibid.*, 73.

<sup>612</sup> *Ibid.*, 177.

<sup>613</sup> *Ibid.*, 117.

narratives are not composed for prevention.”<sup>614</sup> So, the distinction between the present and the past may appear to be banal but it is important for historical processes.

As more disasters and conflicts unfold against a backdrop of competing political, socio-economic, and cultural objectives, it leads to the questions of how can better media coverage of the climate crisis be ensured? And, whether it is possible to bridge the gap between what people know and what people do?<sup>615</sup> From the materials covered in this section, journalists are indispensable in drawing public attention to (faraway) crises. However, news reportage can also diminish, distort, misconceive, and prolong crises. Therefore, news coverage has the potential to bring about unintended and negative effects on members of the audience and/or the outcome of an event or issue. It is also clear from chapter two that sustaining public engagement with suffering and crises is difficult. As such, there are no easy answers to the above questions. That said, this will be one of the subjects of the concluding chapter.

### **Climate Science in the News**

In view of the foregoing, where do climate change and environment-related news fit in? Anders Hansen wrote:

---

<sup>614</sup> Ibid., 174.

<sup>615</sup> See CARE International, *Suffering in Silence: The 10 Most under-Reported Humanitarian Crises of 2018* (CARE International: 2019).

News about the environment, environmental disasters and environmental issues or problems does not happen by itself but is rather ‘produced’, ‘manufactured’ or ‘constructed’. Environmental news, like other types of news, is the result of a complex set of interactions between claims-makers and media organisations and their operatives. The way these operate is in turn circumscribed by political and economic and cultural factors.<sup>616</sup>

Maxwell Boykoff added, “Nowadays ‘climate change’ is no longer thought of merely as an environmental or scientific issue. Rather, the Kautskian ‘climate question’ is considered one that, now more than ever, permeates our individual, as well as shared, economic, political, cultural and social lives.”<sup>617</sup> Here, these scholars underscored the complexity and overarching nature of climate science news.

Early news representations of global warming-related matters emerged in British and American print media. From about the 1980s, news coverage of the issues increased, reflecting its growing politicisation. However, in the early 1990s, news attention waned. Anderson attributed this to “editorial fatigue” and competing topics, such as the recession of the early 1990s and the Persian Gulf War and its aftermath.<sup>618</sup> Her use of editorial fatigue alludes to the challenge of finding new angles on global warming-related matters. Put differently, over time, the perceived banality of articles saw editors devote fewer resources and

---

<sup>616</sup> Anders Hansen, *Environment, Media and Communication*, 2nd ed. (Oxon: Routledge, 2019), 66.

<sup>617</sup> Maxwell T. Boykoff, *Who Speaks for the Climate? Making Sense of Media Reporting on Climate Change* (Cambridge: Cambridge University Press, 2011), 1.

<sup>618</sup> Anderson, "Media, Politics and Climate Change," 168.

less space to and placed less significance on information and events concerning global warming.<sup>619</sup>

Then, with the international climate summits in Rio de Janeiro in 1992 and Kyoto in 1997, there was a notable rise in news coverage. So, as the issues became politicised, media attention shifted to the international summits and the proposed policy decisions and activities. Also, key publications or features, such as the *Brundtland Report*, Al Gore's film *An Inconvenient Truth*, and the *Stern Review*, received considerable news coverage. Given this, Anderson has lamented that journalists favoured an episodic rather than a thematic approach to their reportage of the crisis.<sup>620</sup> If the focus is on specific events or cases then media attention is fleeting. This can create a shallower understanding of the issues and impede news audiences' understanding of the core of the problem and its potential solutions.<sup>621</sup> However, a thematic approach could widen the attribution of responsibility and encompass more of the socio-political and economic factors of global warming.

During the late 1990s and early 2000s, there was a slight resurgence in media coverage of climate change matters. In the 2010s, the manifestations of climate change became more visible and so, too, did the media spotlight. At the

---

<sup>619</sup> Aaron M. Hoffman et al., "How Does the Business of News Influence Terrorism Coverage? Evidence from *the Washington Post* and *USA Today*," *Terrorism and Political Violence* 22, no. 4 (2010), <https://doi.org/10.1080/09546553.2010.493778>.

<sup>620</sup> Anderson, "Media, Politics and Climate Change," 175.

<sup>621</sup> See also Maxwell Boykoff and J Timmons Roberts, *Human Development Report 2007/2008. Media Coverage of Climate Change: Current Trends, Strengths, Weaknesses*. (United Nations Development Programme, 2007): 13, [http://hdr.undp.org/sites/default/files/boykoff\\_maxwell\\_and\\_roberts\\_j.\\_timmons.pdf](http://hdr.undp.org/sites/default/files/boykoff_maxwell_and_roberts_j._timmons.pdf).

same time, there was an increase in scientific research and political attention on the problems.<sup>622</sup> Recent news coverage has also seen a wider geographic scope, cross-national comparisons, and reports on major research projects from across the globe. Correspondingly, over time, news reportage of climate science has gained more scholarly attention. In general, the following review of the studies (summarised in Table 3) revealed that the issue of global warming has been represented in highly variable ways.

In some studies, it was found that a news institution's operating environment was a determinant factor in how journalists reported on what was unfolding. For example, Dominique Brossard, James Shanahan, and Katherine McComas's cross-cultural comparison of French and American newspapers' (1987–1997) discovered that journalistic culture can influence news coverage of global warming. They observed that “the environmental issue itself may be perceived differently by different cultures.”<sup>623</sup> In another study, Anabela Carvalho and Jacquelin Burgess reported that three British broadsheet papers' representations of the issues (1985–2003) were influenced by scientific insights, the socio-economic context, and linked to political agendas. The authors noted that “values and ideological cultures are key to explain variations in the media's

---

<sup>622</sup> See also Maxwell Boykoff, Marisa McNatt, and Michael Goodman, "Communicating in the Anthropocene: The Cultural Politics of Climate Change News Coverage Around the World," in *The Routledge Handbook of Environment and Communication*, eds. Anders Hansen and Robert Cox (Oxon: Routledge, 2015).

<sup>623</sup> Dominique Brossard, James Shanahan, and Katherine McComas, "Are Issue-Cycles Culturally Constructed? A Comparison of French and American Coverage of Global Climate Change," *Mass Communication & Society* 7, no. 3 (2004): 374, [https://doi.org/10.1207/s15327825mcs0703\\_6](https://doi.org/10.1207/s15327825mcs0703_6).

reinterpretations of scientific knowledge on climate change.”<sup>624</sup> This led them to conclude that “dangerous climate change is thus both politically defined and ideologically constrained.”<sup>625</sup>

Also, Craig Trumbo’s empirical content analysis of five US national newspapers from 1985 to 1995 found that primary news sources tended to be scientists and political figures (official sources). He observed that scientists were associated with news frames that emphasised problems and causes, while politicians and special interests were associated with news frames that emphasised judgments and remedies.<sup>626</sup> In addition, he noted, as climate change became increasingly politicised, scientists declined as news sources. More recently, Ulrika Olausson’s framing analysis of three widely circulated Swedish newspapers from 2004 to 2005 showed that there were “numerous similarities between media and international policy discourse on the issue of climate change.”<sup>627</sup> As a result, she advanced that the “relationship between media frames and the structures of power seems to expand *beyond* the borders of the nation-state, into the transnational sphere of Europe” (italics in original).<sup>628</sup>

---

<sup>624</sup> Anabela Carvalho and Jacquelin Burgess, "Cultural Circuits of Climate Change in UK Broadsheet Newspapers, 1985–2003," *Risk Analysis* 25, no. 6 (2005): 1467, <https://doi.org/10.1111/j.1539-6924.2005.00692.x>.

<sup>625</sup> Ibid.

<sup>626</sup> Craig Trumbo, "Constructing Climate Change: Claims and Frames in US News Coverage of an Environmental Issue," *Public Understanding of Science* 5, no.2 (1996): 277, <https://doi.org/10.1088/0963-6625/5/3/006>.

<sup>627</sup> Ulrika Olausson, "Global Warming - Global Responsibility? Media Frames of Collective Action and Scientific Certainty," *Public Understanding of Science* 18, no.4 (2009): 432, <https://doi.org/10.1177/0963662507081242>.

<sup>628</sup> Ibid., 433.

In keeping with other research, Simon Billett noticed that news coverage was responsive to its political settings. His study of Indian news media's representation of the global warming debate between January 2002 and June 2007 showed that the English-language press had depoliticised the doubt over global warming and there was no attention given to its domestic significance. He argued that this served to highlight the North-South divide.<sup>629</sup> Here, the news media presented the climate crisis as being divided along growth-related and postcolonial lines. However, research has also challenged the idea that a news publisher's operating environment helped to determine its reconstruction of issues and events. For instance, in their investigation of prominent American and Swedish dailies coverage of the global summits in Kyoto and Bali, Adam Shehata and David Hopmann concluded that the reportage was "strikingly similar." However, they suggested that this could be because the UN climate summits "entail a very specific news-reporting context."<sup>630</sup> They went on to conclude that "in situations where frames are clearly institutionally defined, counter-frames are less likely to gain prominence in the news, despite the presence of oppositional voices within domestic official circles."<sup>631</sup>

One influential study found that the journalistic norms of objectivity, fairness, accuracy, and in particular, the pursuit of balance (neutrality) was

---

<sup>629</sup> Simon Billett, "Dividing Climate Change: Global Warming in the Indian Mass Media," *Climatic Change* 99 (2010): 15, <https://doi.org/10.1007/s10584-009-9605-3>.

<sup>630</sup> Adam Shehata and David Nicolas Hopmann, "Framing Climate Change," *Journalism Studies* 13, no. 2 (2012): 188, <https://doi.org/10.1080/1461670X.2011.646396>.

<sup>631</sup> *Ibid.*, 189.

problematic in discussions of anthropogenic global warming.<sup>632</sup> Maxwell Boykoff and Jules Boykoff's research into global warming coverage in the US prestige-press from 1988 to 2002 showed that there was a significant difference between scientific and media discourses. In short, news coverage of global warming-related matters gave more credence to countervailing points of view (than there scientifically was).<sup>633</sup> In a later study, Maxwell Boykoff alone reaffirmed his earlier findings. His research into American newspapers and television news reportage of global warming from 1995 to 2006 showed that amid convergent scientific views on the basics of climate science, journalists generated the perception that the evidence was conflicting and contentious.<sup>634</sup> He offered two possible explanations for this outcome. The first concerns the "complex socio-political and economic reasons rooted in macro-power relations, as well as micro-processes that undergird professional journalism."<sup>635</sup> The second points to the "innate biophysical characteristics that contradictorily shape knowledge and epistemic framings at multiple scales over time."<sup>636</sup> Consequently, the reportage could have added to public confusion over anthropogenic global warming and impeded climate action.

---

<sup>632</sup> Earlier, in 1984, Robert Hackett pointed out that in news content, "accuracy" (non-distortion) and "balance" are not synonymous. See Robert Hackett, "Decline of a Paradigm? Bias and Objectivity in News Media Studies," *Critical Studies in Media Communication* 1, no. 3 (1984), <https://doi.org/10.1080/15295038409360036>.

<sup>633</sup> Maxwell Boykoff and Jules Boykoff, "Balance as Bias: Global Warming and the U.S. Prestige Press," *Global Environmental Change* 14 (2004), <https://doi.org/10.1016/j.gloenvcha.2003.10.001>.

<sup>634</sup> Maxwell Boykoff, "From Convergence to Contention: United States Mass Media Representations of Anthropogenic Climate Change Science," *Transactions of the Institute of British Geographers* 32, no. 4 (2007), <https://www.jstor.org/stable/4626266>.

<sup>635</sup> *Ibid.*, 486.

<sup>636</sup> *Ibid.* See also Liisa Antilla, "Climate of Scepticism: US Newspaper Coverage of the Science of Climate Change," *Global Environmental Change* 15, no. 4 (2005), <https://doi.org/10.1016/j.gloenvcha.2005.08.003>.

Other inquiries into news coverage of global warming matters found that the issues were portrayed in an over-generalised way. Xinsheng Liu, Arnold Vedlitz, and Letitia Alston's content analysis of the *Houston Chronicle's* representation of global warming from 1992 to 2005 demonstrated that the newspaper failed to connect the global issue of rising GHGs to local and regional problems and issues. This pattern of news coverage, they argued, could have devalued local public and policy attention, promoted scepticism, and led to confusion about actual climate change risks.<sup>637</sup> Additionally, Katrina Ahchong and Rachel Dodds research into two Canadian newspapers' portrayal of climate change found that it was depicted as a destructive, large-scale national and global issue. In so doing, for the period 1988–2007, the regional and local consequences of and perspectives on global warming were largely missing.<sup>638</sup>

Also, in the mid-2000s, Boykoff and Roberts were tasked to conduct a large survey of the international media's coverage of climate change for the United Nations. The report encompassed forty English-language newspapers and revealed that the media occupied a dual role: they both enable and inhibit social change. The scholars concluded:

---

<sup>637</sup> Xinsheng Liu, Arnold Vedlitz, and Letitia Alston, "Regional News Portrayals of Global Warming and Climate Change," *Environmental Science and Policy* 11, no. 5 (2008), <https://doi.org/10.1016/j.envsci.2008.01.002>.

<sup>638</sup> Katrina Ahchong and Rachel Dodds, "Anthropogenic Climate Change Coverage in Two Canadian Newspapers, the Toronto Star and the Globe and Mail, from 1988 to 2007," *Environmental Science & Policy* 15, no. 1 (2012), <https://doi.org/10.1016/j.envsci.2011.09.008>.

...the press has been quite reformist in its portrayal of the needed action on climate change, when the scientific projections suggest the issue may call for truly revolutionary changes. The difficult position of the media in capitalist society is that commercial news outlets require huge amounts of advertising to pay their salaries and other expenses, and the greatest advertisers are for automobiles, real estate, airlines, fast food, and home furnishings. To create demand for real mitigation of climate change emissions would require the media to repeatedly and insistently call for truly revolutionary changes in society, precisely away from consumption of the products of their advertisers.<sup>639</sup>

The identification of news organisations as being governed by such market incentives underscores that the ability of media institutions to effectively convey climate change issues can be constrained.

Over time, there has been less denialism of global warming in news content. Sara Shipley Hiles and Amanda Hinnant interviewed 11 US senior environment journalists and concluded that newsrooms were now more aware of the trappings of objectivity and balance. Increasingly, journalists were adopting a “weight-of-evidence” approach, whereby journalists find and report where the scientific consensus and expert opinions lie.<sup>640</sup> Subsequently, Michael Brüggemann and Sven Enges discovered that if climate denialism was included in news pieces, it tended to be contextualised or subjected to counter-interpretation. Their transnational, two-part study (2011–2012) showed that in news coverage of the issues there was more climate change consensus. However, they noted that contrarians added to the news value of controversy.<sup>641</sup>

---

<sup>639</sup> Boykoff and Roberts, *Human Development Report 2007*, 34.

<sup>640</sup> See Sara Shipley Hiles and Amanda Hinnant, "Climate Change in the Newsroom: Journalists' Evolving Standards of Objectivity When Covering Global Warming," *Science Communication* 36, no. 4 (2014), <https://doi.org/10.1177/1075547014534077>.

<sup>641</sup> Brüggemann and Engesser, "Beyond False Balance," 66.

Given the evolution in communication technology, scholars have sought to explore the increasing visualisation of global warming issues in media coverage and conduct cross-platform analysis. Findings in these areas are equivocal. For example, Nicholas Smith and Helene Joffe investigated the visuality of the British press' portrayal of climate change (2000–2006). They found that over half of the images were related to the localised impact of global warming. There was a focus on portraying a “human face” to climate change, and notable use of graphical representations of major issues.<sup>642</sup> In another study, researchers Darryn Anne DiFrancesco and Nathan Young reported that there was a dearth of clear imagery concerning the climate crisis in two major Canadian national newspapers (January to July 2008). They observed that the images used, and the content of the given articles frequently referred to “completely different dimensions,” with multiple, and at times competing narratives were presented to the audience.<sup>643</sup>

Research has also sought to assess new media platforms' coverage of global warming-related matters. For instance, Alexandra Olteanú, Carlos Castillo, Nicholas Diakopoulos, and Karl Aberer compared the coverage of climate change-related events on mainstream news media and Twitter (between April 1, 2013, and September 31, 2014). They found that mainstream media had more extensive coverage of publications and meetings, while individuals and

---

<sup>642</sup> Nicholas W Smith and Helene Joffe, "Climate Change in the British Press: The Role of the Visual," *Journal of Risk Research* 12, no. 5 (2009): 658, <https://doi.org/10.1080/13669870802586512>.

<sup>643</sup> Darryn Anne DiFrancesco and Nathan Young, "Seeing Climate Change: The Visual Construction of Global Warming in Canadian National Print Media," *Cultural Geographies* 18, no. 4 (2010): 532, <https://doi.org/10.1177/1474474010382072>.

ordinary, smaller-scale events received more attention on Twitter.<sup>644</sup> In another study, James Painter, Silje Kristiansen, and Mike Schäfer compared legacy and new media reportage of the 21st UN climate change conference (between November 25 and December 16, 2015). They noted that in comparison to legacy media, new media outlets tended to adopt different journalistic tones, quoted different sources, and used more multi-media content.<sup>645</sup>

Considering the varied ways global warming-related issues and events have been represented, there are still questions that need to be considered and reassessed, as well as new lines of inquiry to explore. However, researchers need to be wary about ascribing too much influence on the role of journalists as informers, as the literature shows that there are other forces at play. In short, journalists do not operate in isolation or a sphere separate unto themselves.

Boykoff has also observed:

More media coverage of climate change—even supremely fair and accurate portrayals—is not a panacea. In fact, increased media attention to the issue often unearths more questions to be answered, and *greater* scientific understanding actually can contribute to a *greater* supply of knowledge from which to develop and argue varying interpretations of that science” (italics in original).<sup>646</sup>

---

<sup>644</sup> Alexandra Olteanu et al., "Comparing Events Coverage in Online News and Social Media: The Case of Climate Change," (paper presented at the Ninth International AAAI Conference on Web and Social Media, Oxford, UK, May 26–29, 2015). The authors did not specify the news outlets under analysis. They used the database Global Data on Events, Location, and Tone to gather the articles from 1 April 2013 to 31 September 2014 (barring January 2014).

<sup>645</sup> The legacy media outlets under analysis were: *Le Monde*, *Le Figaro*, *Süddeutsche Zeitung*, *Frankfurter Allgemeine*, *El País*, *El Mundo*, *The Guardian*, *The Telegraph*, *New York Times*, and *USA Today*. James Painter, Silje Kristiansen, and Mike S. Schäfer. "How 'digital-born' media cover climate change in comparison to legacy media: A case study of the COP 21 summit in Paris." *Global Environmental Change* 48 (2018): 1-10, <https://doi.org/10.1016/j.gloenvcha.2017.11.003>.

<sup>646</sup> Boykoff, *Who Speaks for the Climate?* 168.

Nevertheless, news institutions do provide a space for information, and their platforms have the potential to influence public perceptions on matters of pertinent concern.

Table 3: Studies of the news reportage of global warming-related matters

Author(s)	Method/ Sample	Findings
Trumbo, 1996	A content analysis of newspaper representation of climate change in five national American outlets (1985–1995).	<ul style="list-style-type: none"> <li>- As the issue became more politicised, scientists declined as a primary news source.</li> <li>- Scientists tended to promote frames emphasising problems and causes.</li> <li>- Politicians and special interests were associated with frames emphasising judgments and remedies.</li> <li>- News coverage centred on political debate and the proposal of solutions.</li> </ul>
Ungar, 1999 <sup>647</sup>	An analysis of US national television networks' news coverage of extreme weather events (1968–1996).	<ul style="list-style-type: none"> <li>- The data showed that the 1980s was a hot decade.</li> <li>- There was no increase in coverage of foreign extreme weather events.</li> <li>- The various types of extreme weather events were treated differently (e.g., droughts had more coverage than heatwaves).</li> <li>- Peaks in extreme weather events did not lead to increases in coverage.</li> <li>- Coverage peaked as a result of the politics of the Bush administration and the Rio summit.</li> <li>- There was no relationship between the coverage of global warming and the coverage of extreme weather events.</li> </ul>
Boykoff & Boykoff, 2004	A content analysis of US prestige-press coverage of global warming (1988–2002).	<ul style="list-style-type: none"> <li>- A significant difference between the scientific community discourse and the US prestige-press discourse regarding anthropogenic global warming and climate action.</li> <li>- Journalistic norms and values affected the news coverage of the issues.</li> <li>- The US prestige-press proclivity for “balanced” representation was problematic and led to informationally biased coverage.</li> <li>- In adhering to the norm of balanced reporting journalists enabled the US government to avoid responsibility and delayed climate action.</li> </ul>

<sup>647</sup> Sheldon Ungar, "Is Strange Weather in the Air? A Study of U.S. National Network News Coverage of Extreme Weather Events," *Climate Change* 41 (1999), <https://doi.org/10.1023/A:1005417410867>.

Brossard, Shanahan, & McComas, 2004	A cross-cultural comparative content analysis of newspaper coverage of global warming in France ( <i>Le Monde</i> ) and in the US (the <i>New York Times</i> ) (1987–1997).	<ul style="list-style-type: none"> <li>- French reporters focused on the conflicts between the US and Europe.</li> <li>- News coverage in the US emphasised conflicts between scientists, conflicts between politicians, plus a focus on domestic politics.</li> <li>- French newspaper coverage showed less of a “media-attention cycle” pattern than the American outlet.</li> <li>- Journalistic culture can be a major influence on the nature of news coverage.</li> <li>- Audience factors may affect the nature of media coverage on an environmental issue.</li> <li>- Research into the news coverage of global environmental issues needs to extend beyond national-level interests.</li> </ul>
Antilla, 2005	A quantitative review of 225 US newspaper coverage of climate science with a qualitative (1 March 2003 to 29 February 2004), comparative analysis of media-created themes and frames using a social constructivist approach.	<ul style="list-style-type: none"> <li>- The collective newswire/news service was a dominant source of climate science news.</li> <li>- The issue of climate change science was not a prime news topic for most of the newspapers under review.</li> <li>- Many articles framed climate change in terms of debate, controversy, or uncertainty.</li> <li>- There were examples of journalistic balance that led to biased coverage.</li> <li>- Some of the news outlets repeatedly turned to climate sceptics with known fossil fuel industry ties for information.</li> <li>- In some instances, press reports helped to perpetuate the myth that there was a lack of international scientific consensus on anthropogenic climate change.</li> </ul>
Carvalho & Burgess, 2005	A critical discourse analysis of climate change in three British broadsheet papers’ representations (1985–2003).	<ul style="list-style-type: none"> <li>- Values and ideological cultures influenced the media’s reinterpretations of scientific knowledge on climate change.</li> <li>- News coverage was influenced by the political preferences of the news agency.</li> <li>- News discourse on climate change was largely determined by the newspaper’s editorial position.</li> </ul>
Boykoff, 2007	A discourse analysis of US newspapers and television news from 1995 to 2006 and semi-structured interviews with climate scientists and environmental journalists.	<ul style="list-style-type: none"> <li>- Tension continues to plague the fields of science and mass media.</li> <li>- The media emphasised conflict and contentions rather than coherence regarding scientific explanations of anthropogenic climate change.</li> <li>- Differences in the US media coverage of anthropogenic climate change are attributed to macro-power relations and the micro-processes that underpin the practice of journalism.</li> </ul>

Boykoff & Roberts, 2007	A survey of the role of the media in informing and communicating climate change across forty English-language newspapers in 17 countries, across five continents (1988–2006).	<ul style="list-style-type: none"> <li>- Cultural, regional, and national differences can contribute to how the issues are communicated via news representations.</li> <li>- Large-scale economic and political factors shaped the production of news.</li> <li>- Climate news stories often competed with other more immediate issues for public attention.</li> <li>- The performance of the media in communicating climate science was mixed.</li> <li>- The reportage of physical science has improved, while the coverage of the complex biological and human processes and activities began to emerge.</li> <li>- It was difficult for journalists to effectively report on the moral, ethical and cultural issues of climate change.</li> </ul>
Doyle, 2007 <sup>648</sup>	Historical analysis of climate change communication produced by Greenpeace since the early 1990s.	<ul style="list-style-type: none"> <li>- There were five representational phases to Greenpeace's strategy for framing climate change: (1994–1997) establishing the dangers of global warming by presenting the future as an imminent and catastrophic present using metaphors of heat and nuclear catastrophe; (1997) concentrating on the causes and solutions to climate change; (1997–1999) focusing on the fragility of the polar regions and provided renewable solutions; (2001–2003) highlighting the links between dirty oil and dirty politics; and (2002–2007) returning to the visual trope of melting glaciers.</li> </ul>
Liu, Vedlitz, & Alston, 2008	A content analysis of the <i>Houston Chronicle's</i> characterisation of the issue of global warming and climate change (1992–2005).	<ul style="list-style-type: none"> <li>- Media attention to the issue generally increased over time.</li> <li>- An overwhelming majority of the news stories viewed climate change as a harmful problem.</li> <li>- Some news articles reported the consequences of global warming as being mixed, undetermined, or even non-harmful.</li> <li>- There was a tendency to frame global warming as a national or international-global issue rather than as an environmental-ecological problem.</li> <li>- News attention emphasised mitigation strategies over adaptation behaviours.</li> </ul>

<sup>648</sup> Julie Doyle, "Picturing the Clima(C)Tic: Greenpeace and the Representational Politics of Climate Change Communication," *Science as Culture* 16, no. 2 (2007), <https://doi.org/10.1080/09505430701368938>.

Anderson, 2009	A review of the existing literature on media framing of climate change.	<ul style="list-style-type: none"> <li>- Media reporting of climate change was heavily influenced by socio-political factors over time.</li> <li>- Political and industry interests have an increasing presence in news coverage.</li> <li>- News coverage tended to focus on mitigation rather than adaptation.</li> <li>- Changes in media ownership patterns saw more human interest, celebrity-focused, entertainment style reports rather than coverage of complex issues.</li> </ul>
Lester & Cottle, 2009 <sup>649</sup>	A qualitative analysis of daily and high-rating television news programs in six countries (UK, USA, South Africa, India, and Singapore) from 13 to 26 September 2004.	<ul style="list-style-type: none"> <li>- Most western news outlets accepted the reality of anthropogenic global warming.</li> <li>- 33.3% of news stories used symbolic visuals (images that evoke the larger or broader issues, beyond the literal). While 18.5% of news stories used spectacular visuals (images that evoke awe or dread).</li> <li>- Stories that localised the crisis were common (“bringing home” the crisis).</li> <li>- Some images have cultural resonances, calling upon past and “shared or imagined” memories.</li> <li>- The visual rhetoric of television news may affect responses to climate change.</li> </ul>
Sampei & Aoyagi-Usui, 2009 <sup>650</sup>	An analysis of Japan’s mass-media coverage of global warming in the 10 years following the Kyoto conference (1998–2007) and a monthly public opinion survey from July 2005.	<ul style="list-style-type: none"> <li>- Over the sample period, news coverage of global warming slightly increased and was characterised by sudden sharp peaks.</li> <li>- The peaks were largely attributed to international political events, especially international events involving the US.</li> <li>- Public concern for global warming increased dramatically from January 2007.</li> <li>- The number of front-page articles on global warming significantly influenced public concern about global environmental issues but only around the time of publication.</li> </ul>

<sup>649</sup> Libby Lester and Simon Cottle, "Visualizing Climate Change: Television News and Ecological Citizenship," *International Journal of Communication* 3 (2009), <https://ijoc.org/index.php/ijoc/article/view/509/371>.

<sup>650</sup> Yuki Sampei and Midori Aoyagi-Usui, "Mass-Media Coverage, Its Influence on Public Awareness of Climate-Change Issues, and Implications for Japan’s National Campaign to Reduce Greenhouse Gas Emissions," *Global Environmental Change* 19, no. 2 (2009), <https://doi.org/10.1016/j.gloenvcha.2008.10.005>.

Smith & Joffe, 2009	A content and thematic analysis of three British Sunday broadsheets and three Sunday tabloid newspapers (1 January 2000 and 31 December 2006).	<ul style="list-style-type: none"> <li>- Visual imagery accompanied nearly two-thirds of all articles.</li> <li>- Three broad themes identified: immediate localised impact; personification of climate change; and graphical representation of climate change.</li> <li>- Visual imagery is likely to have a powerful role in public conceptions of climate change.</li> </ul>
Billett, 2010	A framing analysis of the four major, national circulation English-language newspapers in India (January 2002 and June 2007). As well as interviews with 15 environmental writers in the English-language press	<ul style="list-style-type: none"> <li>- Newspapers had a strong international focus.</li> <li>- The press tended to focus on historical emissions profiles as the basis of climate change discourse within the nation.</li> <li>- The climate change debate was reframed around a nationalistic argument of “us” versus “them” to the detriment of other key issues in the debate.</li> <li>- The issues of domestic responsibility and the potential for domestic mitigation action within India was under-explored.</li> <li>- Science was depoliticised and replaced by a political frame that influences attitudes towards climate policymaking.</li> </ul>
DiFrancesco & Young, 2010	A content and discourse analysis of how visual communication is deployed in Canadian print media coverage of climate change issues (January 2008 to July 2008).	<ul style="list-style-type: none"> <li>- Most images were focused on human subjects, followed by the natural world, and then industry and technology.</li> <li>- The only prototypically Canadian image to emerge from the research was oil sands.</li> <li>- Often, the images used were completely different from the content of the text.</li> <li>- Images were attached <i>post-facto</i> to articles and tended to be morally or emotionally edgy.</li> <li>- Climate change lacked key visual symbols or metaphors.</li> </ul>
Manzo, 2010 <sup>651</sup>	A review of academic writing on visual strategies of climate change communication in the UK.	<ul style="list-style-type: none"> <li>- It was inherently difficult to capture in a single moment the complexity, invisibility, and change of climate change.</li> <li>- There was a collective effort to move beyond polar bears and melting glaciers as the iconic representations of climate change.</li> <li>- The use of “Inspirational alternative” imagery presented climate change as a future as well as a contemporary problem to help facilitate deeper engagement with the issues.</li> </ul>

<sup>651</sup> Manzo did not specify a time frame for her review.

Olausson, 2010	A critical discourse analysis of three Swedish newspapers (1 September 2004 to 6 September 2005).	<ul style="list-style-type: none"> <li>- The EU was represented as being keen to work towards climate action, while the US was largely portrayed as neglecting the issue and unwilling to discuss regulations.</li> <li>- The conflicts between the two actors were largely constructed as “Us/ We” vs “Them”.</li> <li>- Mitigation was framed as a concern for industrialised nations only and adaptation was framed as a national and local responsibility.</li> <li>- Global warming was framed as a “certainty” (“real” or “a naturalized common-sense concept”).</li> <li>- Political or environmental actors outside the sphere of institutionalised politics were rarely quoted.</li> <li>- News stories about climate change-induced fear and were explicitly related to serious risks and harm.</li> </ul>
Ahchong & Dodds, 2012	Two Canadian newspapers, the <i>Toronto Star</i> and the <i>Globe and Mail</i> (1988–2007).	<ul style="list-style-type: none"> <li>- Both newspapers portrayed anthropogenic climate change as a large-scale, national and international/global problem.</li> <li>- Media attention centred on national and international climate change issues.</li> <li>- In stories about climate change solutions, the emphasis was on climate mitigation.</li> <li>- The <i>Toronto Star</i> showed more of a national perspective.</li> </ul>
Shehata & Hopmann, 2012	A comparative content analysis of climate change coverage in four prominent dailies ( <i>The New York Times</i> , <i>The Washington Post</i> , <i>Dagens Nyheter</i> , and <i>Svenska Dagbladet</i> ) from 1998 to 2007.	<ul style="list-style-type: none"> <li>- News coverages were quite similar in both nations.</li> <li>- International factors had a prominent role in news coverage.</li> <li>- The two US dailies relied more on domestic politicians as sources.</li> <li>- The scientific-uncertainty frame was absent in news coverage of the Kyoto and Bali summits.</li> <li>- The political environment influenced the use of news frames.</li> </ul>
Takahashi & Meisner, 2012 <sup>652</sup>	A content analysis of 10 Peruvian newspaper outlets’ coverage of climate change for the period January 2000 to December 2010.	<ul style="list-style-type: none"> <li>- There was limited coverage of the issue from 2000 to 2006 and 2009 to 2010. While in 2007 and 2008, there was intense coverage.</li> <li>- The effects frame followed by the politics frame were the most used.</li> <li>- There was a significant number of wired stories.</li> <li>- News coverage prioritised the issue of mitigation over adaptation.</li> </ul>

<sup>652</sup> Bruno Takahashi and Mark Meisner, "Environmental Discourses and Discourse Coalitions in the Reconfiguration of Peru's Environmental Governance," *Environmental Communication: A Journal of Nature and Culture* 6, no. 3 (2012), <https://doi.org/10.1080/17524032.2012.700522>.

Zamith, et al., 2012 <sup>653</sup>	An examination of the portrayal of climate change in US ( <i>The New York Times</i> ) and South American ( <i>La Nacion</i> , <i>Folha de São Paulo</i> , and <i>El Tiempo</i> ) newspapers (31 December 2008–1 January 2010).	<ul style="list-style-type: none"> <li>- News coverage was not uniform.</li> <li>- There was an overreliance on government sources.</li> <li>- <i>The New York Times</i> and <i>Folha de São Paulo</i> (Brazil) did not promote frames that challenged the status quo.</li> <li>- <i>La Nacion</i> and <i>El Tiempo</i> were more critical in their representation; however, their output was lower than the other two newspapers.</li> <li>- In the South American outlets, the “science uncertainty” frame was not prominent, while there was moderate use of it in the <i>New York Times</i>.</li> </ul>
Schmidt, Ivanova, & Schäfer, 2013 <sup>654</sup>	A comparative analysis of issue attention in 27 countries (1996–2010).	<ul style="list-style-type: none"> <li>- News coverage of climate change increased in all countries.</li> <li>- The level of media attention and the extent of growth over time differed strongly between countries.</li> <li>- On average, media attention was high in carbon dependent nations that were committed to the Kyoto Protocol.</li> </ul>
Hiles & Hinnant, 2014	In-depth interviews (conducted in 2010) with 11 US elite journalists with experience in climate coverage.	<ul style="list-style-type: none"> <li>- From 2000 to 2010, the most important change noted by all interviewees was the end of “false-balance” story construction.</li> <li>- The 2001 IPCC report was referred to by some as a turning point.</li> <li>- Journalists were divided over whether anthropogenic global warming should be stated as fact (some stated it should be a freestanding fact, others thought that it should be attributed to a source).</li> <li>- Participants described their reporting as being more interpretive and analytical than in the past.</li> <li>- Most journalists no longer viewed objectivity as being “opinion free.”</li> </ul>

<sup>653</sup> Rodrigo Zamith, Juliet Pinto, and Maria Elena Villar, "Constructing Climate Change in the Americas: An Analysis of News Coverage in U.S. And South American Newspapers," *Science Communication* 35, no. 3 (2012), <https://doi.org/10.1177/1075547012457470>.

<sup>654</sup> Andreas Schmidt, Ana Ivanova, and Mike Schäfer, "Media Attention for Climate Change around the World: A Comparative Analysis of Newspaper Coverage in 27 Countries," *Global Environmental Change* 23 (2013), <https://doi.org/10.1016/j.gloenvcha.2013.07.020>.

Schäfer & Schlichting, 2014 <sup>655</sup>	A meta-analysis of 133 relevant studies on the role of media in climate change communication.	<ul style="list-style-type: none"> <li>- There was “a clear growth” in research on media representations of climate change from all continents.</li> <li>- Research coming from the “global south” grew at a low level, while in Latin America and Africa it was at a very low level.</li> <li>- Studies tended to focus on countries responsible for global warming.</li> <li>- A few studies looked at countries that were vulnerable to climate change.</li> <li>- Over two-thirds of the research looked at print media representation of climate change.</li> </ul>
Olteanú, et al., 2015	A comparative analysis of mainstream media and Twitter over 17 months (1 April 2013 to 31 September 2014, baring January 2014).	<ul style="list-style-type: none"> <li>- Mainstream media favoured coverage of disasters and reported more on publications and meetings.</li> <li>- Twitter gave more attention to individual actions and ordinary events (with a lower magnitude rating).</li> </ul>
Björnberg, et al., 2017 <sup>656</sup>	Literature reviews of 161 scientific articles on environmental and climate science denial published in peer-reviewed international journals in the last 25 years.	<ul style="list-style-type: none"> <li>- There was a lack of studies addressing the denial of other environmental issues (non-climate change-related).</li> <li>- Articles tended to focus on organised denial, denialism financed and perpetrated by actors opposed to environmental and climate science, and lay scepticism.</li> <li>- There was an ongoing discussion about the words used to describe the phenomenon of science denial (e.g., “science denial”, “scepticism”, and “denial”).</li> <li>- Strategies to deal with science denial were still limited.</li> </ul>
Brüggemann & Engesser, 2017	An analysis of media content across five nations and a survey of the authors of the respective news articles (2011–2012).	<ul style="list-style-type: none"> <li>- Journalism had shifted from the norm of balance towards a more interpretive style of journalism.</li> <li>- There was still substantial media attention given to contrarians.</li> <li>- News values (e.g., conflict) continued to influence new coverage.</li> <li>- There was more contextualised reporting taking place.</li> </ul>

<sup>655</sup> Mike Schäfer and Inga Schlichting, "Media Representations of Climate Change: A Meta-Analysis of the Research Field," *Environmental Communication* 8, no. 2 (2014), <https://doi.org/10.1080/17524032.2014.914050>.

<sup>656</sup> Karin Björnberg et al., "Climate and Environmental Science Denial: A Review of the Scientific Literature Published in 1990-2015," *Journal of Cleaner Production* 167 (2017), <https://doi.org/10.1016/j.jclepro.2017.08.066>.

Forde, 2017	An overview of the impact of digital and social media on journalism and social movements related to the environmental crisis and climate change (using <i>The Guardian's</i> Keep it in the Ground anti-fossil fuels campaign as a case study).	<ul style="list-style-type: none"> <li>- <i>The Guardian's</i> campaign operated within a reformist framework.</li> <li>- The newspaper advocated for radical change by focusing attention on the actions of a few major corporations rather than calling for radical change from the public.</li> <li>- The outlet practised advocacy journalism on climate change by directly encouraging civic engagement and involving its audiences in the campaign for fossil fuel divestment.</li> <li>- The Guardian's campaign was able to reach Australia because it was delivered through an online platform.</li> <li>- Journalism focused on how social change can be successful.</li> </ul>
Painter, Kristiansen, & Schäfer, 2018	A comparative analysis of the media coverage of the COP21 summit (traditional vs. "digital-born").	<ul style="list-style-type: none"> <li>- The funding models, distribution strategies, corporate organisation and culture, and editorial priorities affect each outlet's coverage of climate change.</li> <li>- In comparison with the legacy media, <i>Huffington Post</i>, <i>Vice</i> and <i>BuzzFeed</i> had a different journalistic tone and quoted different sources.</li> <li>- New media platforms placed more emphasis on multimedia and visual content.</li> </ul>
Born, 2019 <sup>657</sup>	Analysis of feature articles and accompanying images about climate change published in <i>National Geographic</i> (1992 and 2012).	<ul style="list-style-type: none"> <li>- Polar bears have been gradually turned into icons for climate change.</li> <li>- Polar bears were used as a stand-in for humanity's problems and became a metaphor for earth's vulnerability.</li> <li>- The image of the polar bear was "connotatively right but denotatively misleading."</li> <li>- It can render other problems invisible (i.e., localises global climate change to a specific place).</li> </ul>

<sup>657</sup> Dorothea Born, "Bearing Witness? Polar Bears as Icons for Climate Change Communication in National Geographic," *Environmental Communication* 13, no. 5 (2019), <https://doi.org/10.1080/17524032.2018.1435557>.

In summary, research in the field has revealed that it is rather complicated to prescribe a way forward for better communication of the climate crisis. The above studies found that climate change is not solely an issue concerned with science and environmental degradation. It is also a site of political and ideological contestation. Therefore, examinations of the production of global warming-related news need to consider the micro and macro influences on news content and producers. It is also apparent from the literature that reportage of the climate crisis can differ from region to region and from outlet to outlet (be it traditional or digital media). Factors and values such as international, national, and regional political constraints, as well as economic (dis)incentives, social imperatives, and cultural differences can affect how the issues are represented. Next, I review the literature concerning news media representation of global warming issues in New Zealand thus far.

### **Research on Climate Communication in New Zealand**

In New Zealand, studies on global warming communication have tended to focus on the mass media's representation of the issue, in particular television news broadcasts and newspaper reports. Table 4 shows that there were variations in how news personnel reported these matters. However, it was often found that many followed the traditional conventions of news construction. In other words, they adhered to institutionalised routines, followed standardised patterns of gathering news, and adopted shared conventions about news values and representation. Some studies explored the experiences and insights of those

involved in the communication and/or championing of global warming matters. Below, I briefly detail some of the prominent studies in the field.

Back in 1989, Allan Bell carried out a study into news coverage of climate change issues (as then understood) over six months in 1988. In total, 360 clips or transcripts were identified. From these, 201 news stories were cross-referenced with the sources cited therein. Then, Bell sent a questionnaire to the quoted sources and asked them to assess the accuracy of the news reports. From the source respondents, he found that some news stories overemphasised the development of climate change, confused ozone depletion with the greenhouse effect, or misquoted sources. However, Bell concluded, “the majority of stories were at worst only slightly inaccurate.”<sup>658</sup> He attributed the inaccuracies to the pressures and constraints of the news cycle and journalistic conventions.

More recently, in 2006, Ian Spellerberg, Graeme Buchan, and Nick Early looked at three network television’s portrayal of the environment (*TV1*, *TV2* and *TV3*) for a three-month period (November 2004 to January 2005).<sup>659</sup> Their findings showed that television reportage of the environment was narrow in range, making it inconsistent with the stated aims of the Television Charter.

---

<sup>658</sup> Allan Bell, "Media (Mis) Communication on the Science of Climate Change," *Public Understanding of Science* 3 (1994): 271, <https://doi.org/10.1088/0963-6625/3/3/002>. Bell conducted another study in 1994 entitled ‘Climate of opinion: public and media discourse on the global environment’. I have not included his study here because I found that there were some inaccurate assertions and the nature of some questions asked of respondents were misleading.

<sup>659</sup> Examples of environmental televisions programmes included were programmes on Antarctica, ‘Earth reports’, ‘Wild about New Zealand’, some ‘Grassroots’ programmes, ‘Harnessing nature’, ‘Wild New World’, some space exploration programmes, some Michael Palin programmes, and some ‘Zoo’ programmes.

Broadcast coverage tended to centre on the issues of conservation and species protection and had no discussions about sustainability. They went on to conclude: "The treatment and portrayal of 'the environment' was somewhat traditional and occasionally sensational."<sup>660</sup>

Similarly, in 2005, Chris Russill argued that the press coverage of rising GHG emissions was not balanced. His examination of the eight major dailies' coverage of the Kyoto liability reported that there was a lack of ecological, indigenous, or environmental justice perspectives. He also observed that industry lobbyists and expert consultants were able to promote their perspective on mainstream news to the detriment of public understanding of the implications of global warming.<sup>661</sup>

Geoffrey Craig conducted several studies on the news media's representation of the environment. In one study, he examined 319 articles gathered from metropolitan daily and Sunday newspapers from April 5 to May 5, 2007. He analysed the range of coverage, the sources cited, story placement, and the ratio of news stories to opinion articles. He found that reportage of the environment was often understood through an economic and business

---

<sup>660</sup> Ian Spellerberg, Graeme Buchan, and Nick Early, "Television and Environmental Sustainability: Arguing a Case for a Code of Standards in NZ," *Pacific Journalism Review* 12, no. 2 (2006): 143, <https://doi.org/10.24135/pjr.v12i2.866>.

<sup>661</sup> Chris Russill, "The Billion-Dollar Kyoto Botch-Up: Climate Change Communication in New Zealand," *Media International Australia* 127, no. 1 (2008), <https://doi.org/10.1177/1329878X0812700117>.

framework, leading him to conclude that “the environment in New Zealand is now very much the concern of business.”<sup>662</sup>

In another study, Craig used a quantitative survey to study the frequency and distribution of sources and keywords in television news and current affairs programmes that portrayed environmental matters. Overall, he discovered that the administrative frame was dominant and that the most frequently cited source group was “public servant/ government agency personnel.” He also learnt that there were differences between the two mediums. On television, the most cited keyword was “pollution” and in newspaper reportage, it was “climate change”. Also notable, “Citizen/member of the public” was the second most frequently cited source on television clips. Craig explained that these outcomes are suggestive of format constraints. Television news coverage has a limited time frame, so it tends to focus on specific and daily issues and, at times, draws upon the perspectives of members of the public. However, there is little to no time (or space) allocation for exploring the more convoluted issues surrounding the structural, economic, and political features of environmentalism. Craig also pointed out that it is difficult to draw conclusions from the finding that the most prominent newspaper sources remained politicians, businesspersons, and industry personnel because many of those individuals work on environment-related matters.<sup>663</sup>

---

<sup>662</sup> Geoffrey Craig, "Aotearoa/New Zealand Print News Media Reportage of the Environment," *Media International Australia* 127, no. 1 (2008): 164, <https://doi.org/10.1177/1329878X0812700118>.

<sup>663</sup> "Aotearoa/New Zealand Television News and Current Affairs Representations of the Environment," *Australian Journal of Communication* 36, no. 2 (2009), <https://search.informit.com.au/documentSummary;dn=200912188;res=IELAPA>.

Additionally, Rowan Howard-Williams' studies on the level of news coverage concerning the environment showed that environmental news encompasses a broad range of topics and points of view. In one study, he collected news articles from a sample of the Australian and New Zealand daily press for July 2007.<sup>664</sup> He noticed that there was little emphasis on scientific controversies, and it was generally accepted that the cause of global warming was anthropogenic. However, there was little attention given to the links between global warming, social structures, and values.<sup>665</sup> In his later research on television programmes, he reported that references made to the environment "were scattered and did not appear with any degree of consistency."<sup>666</sup> Of note also, he observed that environmental episodes frequently promoted eco-friendly consumer goods.<sup>667</sup> Additionally, of the four programs, *Māori TV* was the only broadcaster to incorporate traditional knowledge and customs of the environment into its segments.<sup>668</sup>

Recently, David William's 2010 study of 39 front-page stories in *The Press* over a five year period (2005–2009) found that the government's point of view

---

<sup>664</sup> The sample included *The Sydney Morning Herald*, *The Courier-Mail*, *The New Zealand Herald*, and *The Press*.

<sup>665</sup> Rowan Howard-Williams, "Ideological Construction of Climate Change," in *Climate Change and the Media*, eds. Tammy Boyce and Justin Lewis (New York: Peter Lang, 2009).

<sup>666</sup> "Consumers, Crazies and Killer Whales: The Environment on New Zealand Television," *the International Communication Gazette* 73, no. 1-2 (2011): 38, <https://doi.org/10.1177/1748048510386740>. The sample was *TV One*, *TV2*, *TV3* and *Māori TV* and covered a four-week period in October and November 2008.

<sup>667</sup> *Ibid.*, 36.

<sup>668</sup> *Ibid.*, 36, 39.

was privileged over the opposition parties.<sup>669</sup> In another study, published in 2015, Kavi Chetty, Vijay Devadas, and Jean Fleming conducted a quantitative content analysis of three New Zealand newspapers' coverage of climate change science from June 2009 to June 2010. They reported that the most common frame type was "politics" and consequently, "political actors" was the most cited source group. They also observed that newspapers had generally moved on from questioning the scientific evidence of global warming (since 2009).<sup>670</sup>

Similarly, Michael Bourk, Jennifer Rock, and Lloyd Davis analysed how climate change was represented and constructed in broadcast media (*Prime News* and *TV3 News*) from April 2 to August 22, 2012. They also conducted semi-structured interviews with news producers and prominent stakeholders. From their interviews, they found that television executives had acknowledged public support for the scientific consensus of global warming. They also reported that news organisations were influenced by the need to attract a large audience to appeal to advertisers. They argued that this prevented television audiences from understanding how climate change is a "super wicked" problem.<sup>671</sup> From their qualitative framing analysis of television news stories, they concluded that the

---

<sup>669</sup> David Williams, "How a Change in Government Affects Climate Change Coverage at the Press," *MEDIANZ: Media Studies Journal of Aotearoa New Zealand* 12, no. 1 (2010), <https://doi.org/10.11157/medianz-vol12iss1id45>.

<sup>670</sup> Kavi Chetty, Vijay Devadas, and Jean Fleming, "The Framing of Climate Change in New Zealand Newspapers from June 2009 to June 2010," *Journal of the Royal Society of New Zealand* 45, no. 1 (2015), <https://doi.org/10.1080/03036758.2014.996234>.

<sup>671</sup> The scholars employed Richard J. Lazarus' definition of "super wicked." Lazarus used the term to convey that global warming is a "heightened challenge" for lawmakers because of the scientific evidence, human nature, and the nature of US law-making institutions. See Richard Lazarus, "Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future," *Cornell Law Review* 94, no. 1153 (2009), <https://scholarship.law.georgetown.edu/facpub/159>.

prevailing narratives were constructed to emphasise the news values of dramatization, personalisation, and conflict. Moreover, the economic consequences and implications of mitigative action dominated broadcast news representation. This led the researchers to note that “in most cases, a scientific voice was absent from stories about climate change.”<sup>672</sup>

Studies have also investigated the relationship between news personnel and those championing environmental causes. Back in 2007, Craig surveyed and interviewed members of environmental groups to assess the relationship between journalists and news sources on environmental matters. He found that environmental groups struggled against a hierarchical order of source selection and the growing corporatisation of the news industry.<sup>673</sup> However, some groups did report a good working relationship with journalists. Recently in 2016, Jonathan Oosterman interviewed climate activists for his thesis research. From the insights gained, he learnt that global warming communicators needed to balance moral obligations and economic imperatives in messages on the issue. By promoting positive values of commonality and stewardship of the planet, in conjunction with people’s need for economic security, he argued that communicators will be better placed to connect with audiences.<sup>674</sup>

---

<sup>672</sup> Michael Bourk, Jennifer Rock, and Lloyd S Davis, "Mediating the Science: Symbolic and Structural Influences on Communicating Climate Change through New Zealand's Television News," *Environmental Communication* 11, no.6, (2015): 8, <https://doi.org/10.1080/17524032.2015.1058289>.

<sup>673</sup> Geoffrey Craig, "Aotearoa New Zealand Environmental Groups and News Media Relations," *Australian Journal of Communication* 34, no. 1 (2007), <https://doi.org/10.11157/medianz-vol12iss1id44>.

<sup>674</sup> Jonathan Oosterman, "Making Climate Action Meaningful: Communication Practices in the New Zealand Climate Movement" (master's thesis, University of Victoria, 2016).

Table 4: Studies related to environment and climate communication in New Zealand

Author(s)	Method/ Sample	News Outlet(s)	Findings
Bell, 1994	A content analysis of 201 press clips and broadcast transcripts and a questionnaire to the scientific and professional sources cited (covering a six-month period in 1988).	24 provincial papers, 33 daily newspapers, nine "metropolitan" newspapers, four major weekly newspapers, national radio, and television news.	<ul style="list-style-type: none"> <li>- One third of the stories were based on a press release.</li> <li>- Over 80% of stories were rated no worse than "slightly inaccurate."</li> <li>- In stories the main problem was overstatement.</li> <li>- Scientists also often considered headlines to be a particular problem.</li> <li>- Pressures of news cycle, space, writing capability, and the prominence of news values were areas of concern.</li> </ul>
Dispensa, & Brulle, 2003 <sup>675</sup>	A two-part study, with one component focusing on a comparative content analysis of three countries' newspaper articles for the year 2000.	<i>The New York Times</i> , <i>The Washington Post</i> , <i>The New Zealand Herald</i> , and <i>The Helsingin Sanomat</i> (Finland).	<ul style="list-style-type: none"> <li>- In comparison to US media, New Zealand and Finland have a news media that generally followed scientific consensus on this matter (this was attributed to the lack of fossil fuel industry presence in the two countries).</li> </ul>
Spellerberg, et al., 2006	A survey of the portrayal of the use and treatment of the environment, as well as the reportage of environment news (over a three-month period from November 2004 to January 2005).	<i>TV1</i> , <i>TV2</i> , and <i>TV3</i> .	<ul style="list-style-type: none"> <li>- New Zealand television could do more to portray environmental matters as important issues.</li> <li>- Television news' treatment and portrayal of environmental matters were "somewhat traditional and occasionally sensational."</li> </ul>

<sup>675</sup> Jaclyn Dispensa and Robert Brulle, "Media's Social Construction of Environmental Issues: Focus on Global Warming – A Comparative Study," *International Journal of Sociology and Social Policy* 23, no. 10 (2003), <https://doi.org/10.1108/01443330310790327>.

Boykoff & Roberts, 2007	A survey of 40 English-language newspapers in 17 countries (1988–2006).	<i>The New Zealand Herald</i> , the <i>Dominion Post</i> , and <i>The Press</i> .	<ul style="list-style-type: none"> <li>- New Zealand’s newspaper coverage of global warming and adaptation was low in comparison to Western Europe and North America.</li> <li>- There were peaks in coverage, in particular during and after the release of the IPCC’s assessment reports, the <i>Stern Review</i>, and the film, <i>An Inconvenient Truth</i>.</li> <li>- There is a need for further research in the area of climate science-media-policy/practice.</li> </ul>
Craig, 2007	A questionnaire of 25 environmental group members and follow-up telephone interviews with 12 members.		<ul style="list-style-type: none"> <li>- News media personnel’s relationship with environment groups differs, depending upon factors such as individual relationship, geography, and scale.</li> <li>- Some environmental groups felt that they struggled against a hierarchical order of source selection and the growing corporatisation of the news industry.</li> </ul>
Craig, 2008	A month-long quantitative study of 319 news articles (from 5 April to 5 May 2007).	<i>The New Zealand Herald</i> , <i>The Otago Daily Times</i> , <i>The Dominion Post</i> , <i>The Press</i> , <i>The Waikato Times</i> , <i>The Herald on Sunday</i> and <i>The Sunday Star-Times</i> .	<ul style="list-style-type: none"> <li>- Most of the environmental articles were covered under the section of “general news” (57.1%).</li> <li>- Environmental articles figured relatively strongly in the business section of the newspapers (18.8%)</li> <li>- The keyword “climate change” was the most cited (13.8%).</li> </ul>
Kenix, 2008 <sup>676</sup>	A comparative analysis of two news outlets (i.e., mainstream vs. alternative publication) from 2006 to 2007.	<i>The New Zealand Herald</i> and <i>Scoop</i> .	<ul style="list-style-type: none"> <li>- 86% of all articles did not use the “morality” frame.</li> <li>- There were a lot of references to dire future outcomes.</li> <li>- Little mention was made of climate change as being a scientific issue still under debate.</li> <li>- <i>NZH</i> relied on business sources more than <i>Scoop</i>.</li> </ul>

<sup>676</sup> Linda J. Kenix, "Framing Science: Climate Change in the Mainstream and Alternative News of New Zealand," *Political Science* 60, no. 1 (2008), <https://doi.org/10.1177/003231870806000110>. The study classified *Scoop* as an alternative media outlet and used a small sample size of 50 news articles.

Russill, 2008	Review of all coverage of increasing carbon emissions in the eight major dailies on 17 June 2005.	<i>The New Zealand Herald, The Waikato Times, Hawke's Bay Today, The Dominion Post, The Press, The Otago Daily, The Daily News, and The Southland Times.</i>	<ul style="list-style-type: none"> <li>- There was a lack of an ecological, indigenous, or environmental justice perspective in news coverage of the carbon inventory.</li> <li>- News reports relied on conventional political sources, who advanced a technocratic policy framework.</li> <li>- The perspectives of industry lobby groups and their expert consultancy were amplified.</li> </ul>
Craig, 2009	A quantitative analysis of television and newspaper coverage of the environment from 30 June to 29 August 2008.	<i>One News, Close Up, 3 News, and Campbell Live.</i>	<ul style="list-style-type: none"> <li>- The environment was primarily cast as an administrative or management problem.</li> <li>- "Public servant/government agency personnel" was the most frequently cited source group across both formats.</li> <li>- The public had a more significant representation on television.</li> <li>- 'Pollution' was the most frequently occurring keyword on television coverage.</li> <li>- 'Climate change' was the most frequently occurring keyword on print coverage.</li> </ul>
Howard-Williams, 2009	A qualitative discourse analysis of 135 articles for July 2007.	<i>The Sydney Morning Herald (AU), The Courier-Mail (AU), The New Zealand Herald, and The Press.</i>	<ul style="list-style-type: none"> <li>- There was not much difference between Australian and New Zealand newspapers coverage of the issues.</li> <li>- New Zealand newspapers emphasised the scientific aspects, while Australian papers emphasised the social factors.</li> <li>- Most presented the cause of global warming as being anthropogenic but did not link it to social and economic structures.</li> <li>- 75% of articles proposed solutions, focusing on government or business schemes, or technological fixes.</li> <li>- Government and Industry sources were often cited.</li> </ul>

Te, 2010	An analysis of 338 news materials on the Cypress Mine Project (11 July 2003–April 2008).	<i>The New Zealand Herald, Dominion Post, The Press, Sunday Star Times, The News, Greymouth Star, The West Coast Messenger, and The West Coast Times.</i>	<ul style="list-style-type: none"> <li>- News values rather than normative and environmental values characterised reporting.</li> <li>- The news media tended to frame news around dramatic, conflictual and novel developments.</li> <li>- Journalists tended to rely on official sources.</li> <li>- Journalists followed traditional conventions of news construction.</li> </ul>
Williams, 2010	An analysis of 39 front-page climate stories in <i>The Press</i> newspaper over five years (2005–2009).	<i>The Press</i>	<ul style="list-style-type: none"> <li>- The government's point of view was given twice the prominence of the opposition view.</li> <li>- Aside from feature articles, news coverage tended to be less science-based and more sensationalist.</li> </ul>
Climate Futures Pathways for Society, 2011 <sup>677</sup>	A book compiled from the presentations and dialogue at the Climate Futures Forum—Pathways for Society, held on March 31, to April 1, 2011.		<ul style="list-style-type: none"> <li>- The framing of anthropogenic climate change is key.</li> <li>- The psychological dimensions need to be taken seriously if people are to engage with the problems.</li> <li>- New institutions are needed to ensure a durable policy framework.</li> <li>- China has the potential to play a key role in addressing global warming.</li> </ul>
Howard-Williams, 2011	An empirical analysis of environmental content in NZ-produced television programmes from October and November 2008.	<i>TV One, TV2, TV3 and Māori TV.</i>	<ul style="list-style-type: none"> <li>- References to the environment were scattered, lacked context, and did not appear with any degree of consistency.</li> <li>- Four broad concepts of the environment were identified: threatened, pristine, savage, and recreational environment.</li> <li>- The environment was noticeable by its absence.</li> <li>- <i>Māori TV</i> used traditional knowledge and customs in its programs.</li> </ul>

<sup>677</sup> Judy Lawrence, Alana Cornforth, and Peter Barrett, eds., *Climate Futures Pathways for Society* (New Zealand Climate Change Research Institute and Victoria University of Wellington, 2011).

Schmidt, 2013 <sup>678</sup>	A comparative analysis of issue attention in 27 countries from 1996 to 2010.	<i>The New Zealand Herald</i> and <i>The Press</i>	<ul style="list-style-type: none"> <li>- Climate change is a relevant media topic in all countries.</li> <li>- Media coverage on climate change has increased over time.</li> <li>- Media attention fluctuated and peaked around specific events in all countries.</li> <li>- On average nations with obligations under the Kyoto Protocol had more extensive media coverage.</li> <li>- Non-Annex B countries' media coverage was generally less extensive.</li> </ul>
Boykoff, 2014 <sup>679</sup>	Basic keyword searches of “global warming” or “climate change” and “pause” or “hiatus” across 50 media sources in 20 countries over a 10-year period (January 2004 to December 2013).	<i>The New Zealand Herald</i> , <i>The Dominion Post</i> , and <i>The Press</i> .	<ul style="list-style-type: none"> <li>- There was a sharp increase in media coverage of the global warming “pause” or “hiatus” (slowdown) from the Oceania continent.<sup>680</sup></li> <li>- The Oceania continent had the highest number of articles in 2013.</li> <li>- Media coverage of the slowdown tapped into cultural resonances and for some the view that climate change was not occurring</li> <li>- The focus on the slowdown diverted attention from other issues.</li> <li>- News representation can affect public engagement with climate change.</li> </ul>
Bourk et al., 2015	A qualitative framing analysis (2 April to 22 August 2012) and in-depth interviews with leading media producers, politicians, and scientists.	<i>Prime News</i> , <i>TV3</i> , and <i>One News</i> .	<ul style="list-style-type: none"> <li>- Every story drew on the news value of dramatization, personalisation, and conflict.</li> <li>- Broadcast reportage decontextualized the issues from the broader scientific discussion of climate change.</li> <li>- In most stories, scientific voices were absent.</li> <li>- There were problematic interactions between scientists and news personnel.</li> </ul>

<sup>678</sup> Schmidt, Ivanova, and Schäfer.

<sup>679</sup> Maxwell Boykoff, "Media Discourse on the Climate Slowdown," *Nature Climate Change* 4 (2014), <https://doi.org/10.1038/nclimate2156>.

<sup>680</sup> The category of Oceania included Australia and New Zealand. As noted in chapter two, the global warming “pause” or “hiatus” refers to the slowdown in the rate of average global surface warming during the period from about 1998 to 2012. See Medhaug et al., "Reconciling Controversies About the 'Global Warming Hiatus'."

Chetty et al., 2015	A quantitative content analysis of three major daily newspapers from June 2009 to June 2010.	<i>The New Zealand Herald, The Dominion Post, and The Press.</i>	<ul style="list-style-type: none"> <li>- News frames reflected a strong alignment with the scientific consensus position.</li> <li>- “Politics” (26%), “Social Progress” (21%) and “Economic Competitiveness” (16%) frames dominated news coverage.</li> <li>- “Political actors” (33%) and “Academics” (20%) sources were the most cited groups.</li> </ul>
Oosterman, 2016	In-depth interviews with 14 participants engaged in the climate movement.		<ul style="list-style-type: none"> <li>- Interviewees recognised that economics was a language of political power and a tool for exerting dominance.</li> <li>- Participants believed that economics should align strongly with the wellbeing of people and nature.</li> <li>- Climate communicators need to balance “speaking their own truth” and “meeting people where they are at”.</li> </ul>
Salmon et al., 2017	A review of the academic research on climate change communication (1994–2015).		<ul style="list-style-type: none"> <li>- Mainstream media predominately presented climate change in line with the scientific consensus.</li> <li>- The “Doomsday” frame was not prevalent.</li> <li>- The controversy associated with climate change was framed as a political or social issue.</li> </ul>

In summary, research on New Zealand's communication and coverage of global warming-related matters is limited. Many of the insights mirror international findings. Overall, it was found that there was a predominance of news values, a preponderance of authority figures as news sources, and an adherence to the institutional norms of newsgathering. These news analyses support the view that the production of news is top-down, and the end product supports commercial pursuits. In the next two chapters, I will detail my research inquiry into the digital press' coverage of global warming and climate change-related matters.

## **Conclusion**

To summarise, in a fraught marketplace, it is challenging for journalists to fulfil their ideal responsibilities to the public. Much of the research into the news reportage of bad news, suffering, and climate science has shown that the news media has failed to grasp the complexity of these issues and events. Often, newsroom practices coupled with media organisations' need for capturing a large audience led journalists down a path of simplified but captivating representations of what was unfolding. However, this tended to bracket out the importance of addressing the political, economic, socio-cultural dimensions of environmental ills. Despite the identified shortcomings, the news media are an indispensable tool in the communication of the climate crisis. For this reason, the production and content of news as well as the transformation of the news industry are still critical issues. In light of the foregoing insights, the next two chapters present the findings of my empirical research.

## Chapter Five

### News Coverage of the Climate Crisis in *Stuff* and *The New Zealand Herald*: 2017

As uncomfortable as it may be, journalists have a responsibility to ask the questions that come to mind. Debate does not endanger a country; passive acceptance of ideas does.

–Lisa Finnegan, *No Questions Asked: News Coverage since 9/11, 2006*

In this chapter, I apply the insights gathered from the earlier chapters to critique the digital news media's representation of the climate crisis. I begin by explaining the rationale and objectives for analysing the country's two leading digital news publishers' coverage of the climate crisis for the year 2017. Thereafter, I reiterate my theoretical framework and outline my methodological approach, detailing the sample and categories of analysis. Next, I report on the findings of the news media analysis. Broadly, I argue that news representation of the climate crisis omitted considerations of culpability, structural power, and unequal outcomes of global warming scenarios. Here, the institutional priority of audience engagement coupled with journalists' adherence to organisational routines have resulted in a partial and inadequate representation of the unfolding climate crisis.

## **Rationale, Objectives, and Methodology**

The following inquiry was conducted to extend the body of research concerning New Zealand's news media's representations of the environment, global warming, and climate change. None of the studies summarised in Table 4 positioned their empirical findings within a wider discussion of emissions culpability and climate change politics. As such, the analyses lacked historicity. My critical analysis seeks to describe, interpret, explain, and critique how the nation's two leading digital news publishers, *Stuff* and *The New Zealand Herald* (*NZH*), represented the climate breakdown. My purpose here is to consider how news on global warming and climate change were constructed and ask whether this resultant picture does justice to the crisis.

In this thesis, critical discourse analysis is viewed as a research method that can help provide answers to the above questions. As stated in the introduction, in adopting the broad theoretical framework of critical theory, I assume a pejorative view of structured power and vested interests within society. I argue that global warming results from longstanding arrangements of dominance and inequality associated with the commodification of people and nature to the extent these arrangements have now become naturalised. But I also hold the view that there is potential for an improvement of the social and environmental conditions through critical research that illuminates and critiques the powers that drive and sustain the problems. Therefore, the work that follows seeks to reveal the structural power behind and culpability for

anthropogenic global warming. In the process, I highlight the importance of clear and insightful climate science communication.

In 2003, Fairclough wrote that “the language element has in certain key respects become more salient, more important than it used to be, and in fact a crucial aspect of the social transformations which are going on—one cannot make sense of them without thinking about language.”<sup>681</sup> More recently, Lakoff added that “language that is repeated very often becomes ‘normally used’ language, ideological language repeated often enough can become ‘normal language’ but still activate that ideology unconsciously in the brains of citizens—and journalists.”<sup>682</sup> This is extremely significant in the context of political ideologies. Against this background, discourse as “communication in the medium of language” is an important tool for imparting knowledge, providing explanations of social reality, exercising power, and transforming society.<sup>683</sup> Thus, it is a site of power struggle, where competing discourses and ideologies vie for dominance. As such, my research focus here extends beyond what is communicated to ask why certain content is communicated to news audiences while other content is left unexplored, silent, or hidden.

It needs to be recalled that there are limits to the reach and influence of news messages and that the performance of journalists is conditioned by their

---

<sup>681</sup> Fairclough, *Analysing Discourse*, 203.

<sup>682</sup> George Lakoff, "Why It Matters How We Frame the Environment," *Environmental Communication* 4, no. 1 (2010): 72, <https://doi.org/10.1080/17524030903529749>.

<sup>683</sup> Johnstone, *Discourse Analysis*, xvii.

commercial environment. Still, it is presumed here that news institutions can, first, introduce or raise the salience of the climate crisis and, second, influence how audiences think about it.<sup>684</sup> This realisation is especially significant when the causes of, effects of, and solutions to rising GHG emissions are the subject of conflicting accounts and factual uncertainty. If certain definitions and constructions of social reality are privileged over others or if prevailing political narratives are flawed, then this can limit the potential for understanding global warming and climate mitigation. So, my concern is, also, to link the systematic routines of making news on the climate crisis to the broader themes of power and ideology.

In this chapter, the empirical analysis looks at the function and power of digital news media. I draw from a dataset of digital news texts from the two leading news publishers, *Stuff* and *NZH*, to identify what understandings of the climate crisis are being activated and assess whether these discourses illuminate or obscure the problems. To this end, I employ mainly qualitative and some quantitative methods. Three levels of analysis are used to unpack news articles on global warming and climate change-related matters: (1) text level; (2) sentence and word level; and (3) higher-level concept.<sup>685</sup>

---

<sup>684</sup> Entman, "Framing"; "Framing Bias."

<sup>685</sup> Thomas Huckin, "Critical Discourse Analysis and the Discourse of Condescension," in *Discourse Studies in Composition*, ed. Ellen Barton and Gail Stygall (New Jersey: Hampton Press, 2002).

*The Digital News Market in New Zealand*

As a result of the 2016 proposal to merge *NZH* and *Stuff* by New Zealand Media and Entertainment (NZME) and Fairfax Media (Fairfax), several studies were conducted into the background and operational activities of the two news publishers and these were submitted to the New Zealand Commerce Commission (NZCC).<sup>686</sup> Below is a brief summation of the NZCC's Final and Draft Determination of the proposal and a commissioned expert review of the draft.

Authors of the expert review, David Levy and Robin Foster, noted that New Zealand, in comparison to other countries of its size and background, has a more concentrated news market. They wrote:

...the market is characterised by a small number of mainstream news providers, such as NZME, Fairfax [Media], [Television New Zealand] TVNZ, MediaWorks and [Radio New Zealand] RNZ, alongside a larger number of smaller niche players, such as [National Business Review] NBR and Allied Press [*sic*], some of whom provide digital services only.<sup>687</sup>

They went on to observe that there are five main providers of New Zealand focused news: NZME, Fairfax, TVNZ, MediaWorks, and RNZ. Of these, NZME and Fairfax “account for nearly 90% of the daily circulation of newspapers, control the two largest suppliers of New Zealand online news, employ the largest number of editorial staff by a considerable factor, have an extensive regional

---

<sup>686</sup> In May 2016, NZME and Fairfax filed a merger application with the NZCC, but their proposal was later rejected. Both companies thought that a merger was necessary to survive the ascendancy of global internet companies like Google and Facebook. The case went to the High Court and the Court of Appeal. In September 2018, the Court of Appeal upheld the NZCC's rejection of the proposed deal. Then, late in 2019, NZME signalled an interest in acquiring *Stuff*. This matter has now concluded with *Stuff* chief executive Sinead Boucher's purchase of *Stuff* in May 2020.

<sup>687</sup> Levy and Foster, *Impact of the Proposed NZME/Fairfax Merger*, 12.

presence, account for a substantial part of the radio sector, and face little competition from niche news providers.”<sup>688</sup>

Here, it is important to highlight that, at the time, Fairfax owned in total some 78 news-related items and NZME had 35.<sup>689</sup> Explicating the media landscape in more detail, the Draft Determination, reported that across the various news organisations’ products, [stuff.co.nz](http://stuff.co.nz) had the largest disaggregated reach, constituting about 47% of the population on a monthly basis. This was followed by [nzherald.co.nz](http://nzherald.co.nz) with 39%. By comparison, TVNZ’s *One News* at 6pm attracted about 37% of the population every month.<sup>690</sup> It also found “Fairfax and NZME produce more than three times the number of stories than TVNZ and MediaWorks.”<sup>691</sup> This suggests that the two news publishers provided the most comprehensive service of news and analysis, with their digital services being dominant sites of news access.

---

<sup>688</sup> Ibid., 13.

<sup>689</sup> Mark Berry et al., *Draft Determination: NZME Limited and Fairfax New Zealand Limited* (The Commerce Commission), November 8, 2016, 180, [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0029/77573/NZME-Ltd-and-Fairfax-New-Zealand-Ltd-Authorisation-draft-determination-8-November-2016.PDF](https://comcom.govt.nz/_data/assets/pdf_file/0029/77573/NZME-Ltd-and-Fairfax-New-Zealand-Ltd-Authorisation-draft-determination-8-November-2016.PDF). It is important to list the daily metropolitan and regional papers, as well as the Sunday newspapers owned by the publishers. Fairfax owns: *The Dominion Post*; *The Press*; *Waikato Times*; *Manawatu Standard*; *Marlborough Express*; *Taranaki Daily News*; *Nelson Mail*; *The Timaru Herald*; *The Southland Times*; *Sunday News*; and *Sunday Star Times*. NZME owns: *The New Zealand Herald*; *Wanganui Chronicle*; *The Northern Advocate*; *Bay of Plenty Times*; *Rotorua Daily Post*; *Hawkes Bay Today*; and *The Weekend Herald*.

<sup>690</sup> Ibid., 179. See the report for more details regarding the parameters of measures.

<sup>691</sup> *Determination: NZME Limited and Fairfax New Zealand Limited [2017] NZCC 8* (The Commerce Commission), May 2, 2017, 300, [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0032/77639/2017-NZCC-8-NZME-Limited-and-Fairfax-NZ-Limited-Authorisation-determination-2-May-2017.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0032/77639/2017-NZCC-8-NZME-Limited-and-Fairfax-NZ-Limited-Authorisation-determination-2-May-2017.pdf).

Also of note, in 2017, the NZCC observed:

Within the last two years NZME, Fairfax, TVNZ and MediaWorks have shifted largely to ‘digital-first’ news operations that deliver content first to consumers via online news websites. This means that each of the main media firms typically publish most of their stories (or versions of their stories) online first, rather than waiting to break stories on TV, print or radio platforms.<sup>692</sup>

They added that “NZME and Fairfax typically publishes news for online consumption first and then select articles to be included in print in various newspapers the next day.”<sup>693</sup> This shift in orientation from print and broadcasting towards digital news provision reflects the changing global media landscape as discussed in chapter four.

In terms of the prevalence of digital news produced in New Zealand, data gathered by the NZCC found that, in 2015, the two online news websites had an average combined reach of approximately 2.2 million visitors per month, constituting around 55% of New Zealand’s population over the age of 10 years old. By comparison, MediaWorks had around 12.6%, TVNZ 10.7%, and RNZ 8.8% of the population.<sup>694</sup> In addition, the time spent on each news site in September 2016 was around 3.04 million hours for *Stuff* (averaging about 4.1 hours per month from each browser); *NZH* generated 2.26 million hours (averaging 3.2 hours per month from each browser).<sup>695</sup> The next biggest competitor was TVNZ, with visitors spending less than 0.53 million hours for the month (with an average of about 0.7 hours per month for each browser).<sup>696</sup> Also, for the same

---

<sup>692</sup> Ibid., 131.

<sup>693</sup> Ibid.

<sup>694</sup> *Draft Determination*, 91.

<sup>695</sup> The total time spent on various local news sites accessed is via the web browsers on portable computers and mobile devices but does not include downloads via applications.

<sup>696</sup> *Draft Determination*, 94, 96.

period, the number of pages viewed (page impression) was 177 million for *Stuff* and 107 million for *NZH*. Their closest competitor again was TVNZ, with 18 million-page views.<sup>697</sup>

From the figures, *Stuff* and *NZH* are the main producers of online news by a considerable margin and are each other's closest competitor. They also have a considerable presence through their print media. In terms of the trajectory of the market, Levy and Foster commented that:

...the New Zealand market does appear to exhibit continued demand for print media, alongside a healthy growth in online. It is reasonable, therefore, to work on the assumption that a scenario without a merger is sustainable for the medium term, but on the understanding that markets are changing rapidly and could face further turbulence ahead.<sup>698</sup>

In light of the foregoing, *Stuff* and *NZH* were chosen for analysis as they offer the most comprehensive and regularly updated online news content provided in New Zealand.

### *Sample*

The units of analysis were news texts, including special features, editorials, and opinions, published on the news websites. The range of texts provides for a broad account of the issues discussed. Also, unlike traditional print, news websites can be regularly updated and are not inhibited by set

---

<sup>697</sup> Ibid., 95. Also, in the NZCC's final determination it was reported that for the 12-month period of February 1, 2016 to January 31, 2017, the two news publishers accounted for around 89% of total page views from New Zealand news websites (excluding mobile apps) and 86% of total time spent on New Zealand news websites (excluding mobile apps). See *Determination*, 303.

<sup>698</sup> Levy and Foster, *Impact of the Proposed NZME/Fairfax Merger*, 21.

bulletins, or publishing deadlines. On each news site, the lead story and featured articles on the homepage can change at any time.

The sample period is the year 2017 (January 1, 2017 to December 31, 2017). This time frame was chosen for three reasons. Firstly, during this period global warming matters were publicly and politically prominent, both nationally and internationally. For instance, within New Zealand, this period saw political developments regarding the Paris Climate Accord, the 2015/16 review of the ETS, New Zealand's first climate change lawsuit filed by Waikato University law student Sarah Thomson, and a general election (on September 23, 2017).<sup>699</sup> Shortly after polling day, the new coalition government of Labour and New Zealand First, with Green Party support, signalled their intention to embark upon a new transition in New Zealand's climate policy. Internationally, developments included the inauguration of Donald Trump, the US withdrawal from the Paris Climate Agreement, the appointment of a new Secretary-General of the United Nations, and the failure of the G20 summit to agree on climate action policies.

---

<sup>699</sup> Thomson pursued a legal case against the Government's emissions' targets, arguing that it was inadequate. She challenged the National-led Government's two key climate goals of a 50% reduction in GHG emissions by 2050 and a 30% reduction by 2030 (compared with 2005 levels). Thomson argued that they should have been strengthened after the IPCC's AR5 publication and called for a judicial review of national climate targets under the Paris climate accord. In Justice Jillian Mallon's 75-page decision, she agreed with Thomson that the 2050 target should have been reviewed in light of new information but stated that the matter had been overtaken by the recent election outcome. The second part of Thomson's lawsuit was rejected by the court. Justice Mallon stated that the international governance on climate change had not set out a clear criterion for how a nation should set its NDC targets and so, the New Zealand government is "free to review its 2030 target" on its own accord. See *Thomson v. The Minister for Climate Change Issues*, NZHC 733 (2017).

Secondly, by 2017, New Zealand had experienced, like most countries, the effects of global warming. This period followed the hottest year on record and included several extreme weather events such as the Hawke's Bay wildfires, Christchurch's Port Hills wildfires, and the Edgcumbe floods. At the global level, this period followed a new record for global average surface temperature and weather and climate disaster events across all regions. This trend is indicated by the famine in South Sudan, the Atlantic hurricane season (Hurricane Harvey, Hurricane Irma, and Hurricane Maria), and the heatwaves in Europe. As such, there was growing evidence to suggest that some extreme weather events were made more likely by anthropogenic global warming.<sup>700</sup> Lastly, the year 2017 as a chronological marker of environmental reporting provides, retrospectively, a historical snapshot of how climate change was communicated through the New Zealand news media.

The selection of the sample was conducted using Google Advanced Search.<sup>701</sup> The keywords were "global warming" and "climate change". They were keyed one search at a time in the box: "this exact word or phrase". The search was also refined using the boxes "terms appearing" and "site" (see Appendix 1). In the first box, the drop-down option of "anywhere in the page" was selected. This means that the engine would perform a search for the keyword anywhere on

---

<sup>700</sup> See also Stephanie C. Herring et al., "Explaining Extreme Events of 2017 from a Climate Perspective," *Bulletin of the American Meteorological Society* 100, no. 1 (2019), <https://doi.org/10.1175/BAMS-ExplainingExtremeEvents2017.1>.

<sup>701</sup> A small selection of the sample gathered from Google Advanced Search was cross-referenced with the electronic news databases of Factiva to check for its validity. It was found that Google Advanced Search was more comprehensive, especially given the online presence of both news outlets and the date range.

the page. The two websites were: [stuff.co.nz](http://stuff.co.nz) and [nzherald.co.nz](http://nzherald.co.nz). Then, on the results page, using the “Tools” option, a custom date range could be entered using the drop-down options available under the “Anywhere” tab.

In total, 614 digital articles were found to include either the phrase “global warming” or “climate change” anywhere on the page. Of this, there were 411 articles from *NZH* and 203 articles from *Stuff*. After a manual refinement to remove duplicates, live blogs, and peripheral stories, 367 articles remained, of which *Stuff* accounted for 217 and *NZH*, 150. Commentaries, opinions, retorts, and guest pieces were also included in the analysis. All articles were analysed for keywords, sources cited, the frames used, and common textual features.

### *Critical Discourse Analysis*

Critical discourse analysis focuses on contextual factors and various aspects of language, ranging from entire texts to a single word. At the text level, my main critical concepts are keywords, heteroglossia, and framing.<sup>702</sup> But I also consider other features, such as the foregrounding, implicatures, ambiguities, and textual silences. Given that the readers’ attention is often drawn to the headline, that is the first point of analysis. Then, attention shifts to the content of the news article. Framing, as Entman noted, “is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a

---

<sup>702</sup> Heteroglossia, according to Thomas Huckin, “is the inclusion of discursive differences, register shifts, or multiple ‘voices’ in a text.” He went on to write that the identification of these voices can shed light on the intertextual linkages, situating the text more deeply within its socio-cultural context. See Huckin, “Critical Discourse Analysis and the Discourse of Condescension,” 161.

way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described.”<sup>703</sup> In this context, the evoked news frame depicts not only the event or issue that has taken place but is also suggestive of the news institution’s orientation.

Traditionally, in cognitive and brain sciences, frames (or schemas) are used to convey how individuals think. Lakoff wrote:

These structures are physically realized in neural circuits in the brain. All of our knowledge makes use of frames, and every word is defined through the frames it neurally activates. All thinking and talking involve ‘framing.’ And since frames come in systems, a single word typically activates not only its defining frame, but also much of the system its defining frame is in.<sup>704</sup>

Also, often words can go beyond their dictionary definition and assume different meanings under different circumstances, so it is important to consider the context in which they are placed. If news offers a reconstruction of a world that mirrors an established order that appears unamendable, then it is crucial to identify how the climate crisis is framed.

Attention is also drawn to any additional or special meanings that can be derived from the text. Here, the focus shifts to the sentence level. Features to consider include the use of emphasis, insinuations, connotation, and presupposition. By way of illustration, in news texts, prominence can be exemplified by the physical size of the text, text effects, placement, word selection, word repetition, common phrases, and or syntactic structure. But equally significant is the omission of information. For one reason or another,

---

<sup>703</sup> Entman, "Framing," 52.

<sup>704</sup> Lakoff, "Why it Matters How We Frame the Environment," 71-72.

information can be left unreported. If textual silences are tactical, it prompts the questions of how information or meaning is organised and structured in news items, and for whose benefit. So, there can be an implied meaning beyond the literal translation.

Of note also, Raymond Williams explained:

We find a history and complexity of meanings; conscious changes, or consciously different uses; innovation, obsolescence, specialisation, extension, overlap, transfer; or changes which are masked by a nominal continuity so that words which seem to have been there for centuries, with continuous general meanings, have come in fact to express radically different or radically variable, yet sometimes hardly noticed, meanings and implications of meanings.<sup>705</sup>

So, a close, detailed inspection of the text can result in the identification of patterns that construct, circulate, strengthen, and suggest such things as societal norms, discursive manipulation, ideology, and hegemony. At this higher concept level, discourse analysis can be undertaken in conjunction with a broader contextual setting.

### *Source Typology*

In order to examine the use of sources by the news media, I recorded all the possible sources and then classified them into the categories identified by Dominique Brossard, Katherine McComas, and James Shanahan. These included: (1) Academic/University professor, researcher, or scientist; (2) Resident/citizen; (3) Business/industry group; (4) Economist; (5) Unnamed expert or official; (6) Unaffiliated or independent research group; (7) Governmental

---

<sup>705</sup> Raymond Williams, *Keywords: A Vocabulary of Culture and Society* (New York: Oxford University Press, 1976), 17.

source; and (8) Environmental group (and non-government organisation [NGO]). After the initial analysis, it became apparent that more source categories could be developed to provide a more comprehensive description of journalists' selection of news sources. As such, six new categories were identified, these were: (1) Academic article, report, or government-commissioned report; (2) Court system source; (3) Other news agency; (4) Non-expert commentator (e.g., celebrity and public figure with no scientific expertise); (5) Dissenter, sceptic, or denialist; and (6) No source.

News sources are defined as organisations, groups, individuals, and/or a spokesperson that are quoted or paraphrased. They may be individuals who witnessed or were involved in the unfolding event. They could be official bureaucrats from the public or private sector. A news source might also be an academic study or an official document. It is possible to code some news sources into numerous source categories but only one category can be selected, which is the category they were primarily introduced and used for.

### *Theme and Frame Categories*

For the framing categorisation of the news articles, the themes were identified from the work of Brossard et al. as well as that of Matthew Nisbet. Table 5 provides a synthesis of their works. In total, 10 common themes were used to categorise the latent meanings of each text. In each news article, the themes were coded as either absent (0), present (1), or dominant (2). While

multiple frames may be coded in the text, only one frame can be coded as dominant.

Table 5: Typology of global warming and climate change news frames

Frame	Description
New evidence or research	- Announcement of a new study or official report
Science	- General scientific and/or technological background of an issue
Consequences of warming	- Predictions, projections, worst- or best-case scenarios
Economics/ costs of remedy	- An economic investment, market benefit or risk, a point of local, national, or global competitiveness
Domestic politics	- Debate over national, local, and regional environmental policy, laws, regulations, political speeches, campaigns
International relations	- International summits, treaties, disputes
Current weather	- Abnormal patterns, severe storms, droughts, famine
Catastrophism	- A need for precaution or action in face of possible catastrophe and out-of-control consequences; or alternatively as fatalism, where there is no way to avoid the consequences or chosen path
Conflict and strategy	- Debate about the causes of global warming; what is known versus unknown; who is winning or losing the debate; a battle of personalities or groups; confirmed knowledge versus hype or alarmism, etc.
Morality and ethics	- A matter of right or wrong; or of respect or disrespect for limits, thresholds, or boundaries, etc.

*Sources:* Dominique Brossard, James Shanahan, and Katherine McComas, "Are Issue-Cycles Culturally Constructed? A Comparison of French and American Coverage of Global Climate Change," *Mass Communication & Society* 7, no. 3 (2004), [https://doi.org/10.1207/s15327825mcs0703\\_6](https://doi.org/10.1207/s15327825mcs0703_6); Matthew Nisbet, "Knowledge into Action: Framing Debates over Climate Change and Poverty," in *Doing News Framing Analysis: Empirical and Theoretical Perspectives*, eds. Paul D'Angelo and Jim Kuypers (New York: Routledge, 2010).

It should be acknowledged that the conceptualisation of this research reflects the time and resource constraints of a doctoral thesis. Also, in adopting CDA as my research method, the results cannot in themselves be considered as being independent of my understanding of society. This is not to suggest that I absolve myself from objectivity, but rather to note that the findings do express an inherent degree of subjectivity. Additionally, given the burgeoning research across disciplines and changing political landscape, the conclusions drawn are

likely to be restricted to a particular period and place. Nevertheless, the research design is appropriate in that it presents a critical analysis of recent news coverage on the climate crisis and expands upon previous work in the field.

### **News Content and Empirical Findings**

From the number of articles gathered, *Stuff* (217 articles) placed more prominence on the climate emergency than *NZH* (150 articles). This may be reflective of *NZH*'s limited resources or suggest that it does not view the climate crisis as a top news priority, although this is difficult to gauge without observing what other stories appeared in the publication. The difference in the number of reporters publishing news items related to global warming matters was also notable. There were 98 reporters associated with *Stuff* and for *NZH*, there were 34 reporters.<sup>706</sup>

For *Stuff*, 15 reporters published more than three news items, three of which were from other news agencies. Only three reporters wrote more than 10 pieces. Ged Cann, a Science and Environment reporter, posted the most articles, with 18. However, five of these were related to Thomson's legal case against the government. In comparison, for *NZH*, six reporters authored more than three articles and only one reporter published more than 10. Science reporter, Jamie Morton, produced the most news stories on global warming-related matters, writing 47 articles. This constituted almost a third of the agency's total news

---

<sup>706</sup> This number includes journalists who authored wired stories and featured articles from other local agencies like the *Newsroom*. Also, the works of *BusinessDesk* co-founder, Patrick Smellie and *The Washington Post*'s Chris Mooney were used on both publishers' websites.

output on global warming matters. The significance of this data will be discussed further in the next chapter.

Much of *Stuff* and *NZH*'s international news on global warming-related issues were reproduced stories from abroad, in particular from Australia, the United Kingdom, and the US. *Stuff*, in comparison to *NZH*, had a higher rate of wire stories. This enabled them to have more scope in their coverage of the issues.<sup>707</sup> Both news publishers also had partnerships with other agencies. For example, *NZH* worked with the humanitarian aid agency, World Vision, to produce one story about the effects of sea-level rise in the Solomon Islands. While *Stuff* collaborated with the United Nations International Children's Emergency Fund New Zealand (UNICEF NZ).

*Stuff* had two special features that had a word length of over 4,000. One of these was republished from the New Zealand-based news and current affairs site, *Newsroom*. The other was written by Charlie Mitchell, in conjunction with UNICEF NZ.<sup>708</sup> There were also several *Stuff* articles that exceeded 1,000 words.<sup>709</sup> Curiously, at *Stuff*, some minor issues and events were covered by

---

<sup>707</sup> See Tracy Watkins and Stacey Kirk, "US Secretary of State Defends Trump on Trade, Climate Change," *Stuff*, June 6, 2017, <https://www.stuff.co.nz/national/politics/93363446/parliament-protest-ahead-of-rex-tillerson-visit>.

<sup>708</sup> Eloise Gibson and Mason Cass, "Billions at Stake as Government Mulls Sea Level Rules," *Stuff*, December 12, 2017, <https://www.stuff.co.nz/national/99770316/billions-at-stake-as-government-mulls-sea-level-rules>; Charlie Mitchell, "The Angry Sea Will Kill Us All: Our Disappearing Neighbours," *Stuff*, October 12, 2017, <https://interactives.stuff.co.nz/2017/10/kiribati-the-angry-sea-will-kill-us-all/>.

<sup>709</sup> See Will Harvie, "The G&T Effect: Antarctica is Melting Differently Than the Arctic," *Stuff*, June 3, 2017, <https://www.stuff.co.nz/the-press/news/92871376/the-gt-effect-antarctica-is-melting-differently-than-the-arctic>; Leith Huffadine, "The 'Weather Detectives' Using Clues from the Past to Study Changing Climate," *Stuff*, December 6, 2017,

more than one reporter.<sup>710</sup> Also, for both publishers, some reporters would write more than one article on an event or issue.<sup>711</sup>

Figures 1 and 2 show a screenshot of the homepage of each news publisher.<sup>712</sup>

The screenshots were captured outside the period of the news media analysis (July 20, 2018). The navigation panels are located down the left side of the page for *NZH* and below the header for *Stuff*. This allows the user to explore the page for more news content. For both publishers, neither the section on “Science” nor that on the “Environment” were included. This implies that both news outlets accorded low status to these matters. In *NZH*, there appeared to be no sections on these two areas. For *Stuff*, these sections existed but were not listed in the navigation panel. For *NZH*, global warming and climate change-related articles

---

<https://www.stuff.co.nz/science/99501713/the-weather-detectives-using-clues-from-the-past-to-study-changing-climate>.

<sup>710</sup> See Charlie Mitchell, "NIWA: 2016 Climate Defined by Extremes," *Stuff*, January 9, 2017, <https://www.stuff.co.nz/the-press/news/88232714/niwa-2016-climate-defined-by-extremes>; Amanda Saxton, "New Zealand Had Its Hottest Ever Recorded Year in 2016, NIWA Climate Summary Says," *Stuff*, January 9, 2017, <https://www.stuff.co.nz/environment/climate-news/88224605/new-zealand-was-hotter-than-ever-in-2016-niwa-climate-summary-says>. See also Ged Cann, "Insurers warn Climate Change will hit Policy Prices and make some Properties Uninsurable," *Stuff*, November 12, 2017, <https://www.stuff.co.nz/business/property/98797867/insurers-warn-climate-change-will-hit-policy-prices-and-make-some-properties-uninsurable>; Nicholas Boyack, "Insurance Likely to Become a Problem for Homes on the Edge of Wellington Harbour," *Stuff*, November 13, 2017, <https://www.stuff.co.nz/environment/climate-news/98815753/insurance-likely-to-become-a-big-problem-for-eastourne-homeowners>. This suggests that there was little communication within the newsroom.

<sup>711</sup> See Charlie Gates and Charlie Mitchell, "NZ Needs to Act Now to Protect People and Property, Leaked Coastal Erosion Report Urges," *Stuff*, September 3, 2017, <https://www.stuff.co.nz/environment/climate-news/96433693/coastal-erosion-report-urges-immediate-action>; Charlie Mitchell, "Counting the Cost of Sea Level Rise," *Stuff*, September 7, 2017, <https://www.stuff.co.nz/environment/96503854/counting-the-cost-of-sea-level-rise>. See also Derek Cheng, "Prime Minister Announces Formulation of Zero Carbon Act, Climate Change Commission," *The New Zealand Herald*, December 18, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11961862](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11961862); "Government Starts Down Pathway to Net Zero Emissions by 2050," *The New Zealand Herald*, December 19, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11962058](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11962058).

<sup>712</sup> Both news publishers have since changed their homepage layout.

were primarily featured in the section on “New Zealand”. Articles were also listed in the section on “The Country”, “World”, “Business”, “Entertainment”, “Travel”, and “Driven Motoring”. For *Stuff*, news articles were often found in the section on “Science”, “Environment”, and “National”. Stories also appeared in the section on “World”, “Business”, “Life & Style”, “Travel”, and “Motoring”.

The screenshot shows the NZ Herald website homepage on Friday, 20 July 2018. The navigation sidebar on the left includes sections for 'My News', 'NZ Herald Home', 'New Zealand', 'Regional News', 'Sport', 'Business', 'Property', 'Technology', 'World', 'Opinion', 'TimeOut Entertainment', 'Lifestyle', 'Travel', 'Rural', 'OneRoof Property', 'YUDU Jobs', 'Driven Motoring', 'News Video', 'Photos', 'Puzzles & Quizzes', 'Classifieds', 'Trending Topics', and 'Weather'. The main content area features a large featured article titled 'Building crash pair lay dead for hours before found' with a timestamp of 20 Jul, 2018 11:00am and a '2 minutes to read' indicator. Below this are several smaller article thumbnails, each with a category label, a headline, a timestamp, and a 'Quick Read' button. The categories include 'NEW ZEALAND', 'ENTERTAINMENT', 'BUSINESS', 'SPORT', 'LIFESTYLE', and 'MAPS'. The headlines include 'Offensive movies scenes we never got to see', 'I'll smash Valerie Morse myself: Peace group threatened', 'We try the latest ice cream trend: Wearing it', 'Vegans take aim at Pak'nSave over meat ad', 'Men with weapons storm Mount Maunganui house', 'Shocking reason for woman's 40kg weight gain', 'Man Utd player breaks Hungry Hungry Hippos world record', and 'The investment that's a guaranteed winner'. A search bar is located in the top right corner.

Figure 1: Web homepage of *NZH* as at July 20, 2018

Stuff Neighbourly Stuff Fibre Mags4Gifts Business Directory Stuff Pix Log in Join

**stuff** July 20 2018, updated 3:02pm Wellington 12°C Max: 13°C Min: 10°C

National World Business Opinion Sport Entertainment Life & Style Travel Motoring **Stuff Nation** Search

From the Hilton to homeless Keith Murdoch kept his past secret Flight Centre's booze-soaked culture Quizzes Newspapers

MAYHEM. MURDER... MAYBE.



**ELUSIVE MISTY**

**Misty, dog that bolted, is found**  
2:10 PM After she jumped from a truck, a bloodied collar was found. Months later, they found the dog.

**Wreck hidden in park**  
16 min ago The wreck of a crash which killed a man and woman was only discovered hours later by a man arriving for work.

**8 dead in US tour boat sinking**  
3 min ago Eight people are dead and several other hospitalised in a lake tour boat accident.

**Sex workers' guardian angel**  
2:36 PM Every night before bed, Suz Merrett gets in her car and looks for sex workers.

**Free speech worth discomfort**  
2:23 PM OPINION: Debate about free speech is healthy. Thank goodness the law has the final say.

**Don't buy the low-wage NZ story**  
OPINION: New Zealand has issues, but the idea it is a "low-wage economy" is a myth.

**Website of the Year\***  
voyager. | Media Awards 2018



The note that shocked the street



Sarcophagus emits putrid stench

**latest news headlines**

- 3:02 PM Franks rivals the 'Beast' ⌵
- 3:00 PM This weekend's garden tasks ⌵
- 2:59 PM 8 dead in US boat sinking
- 2:56 PM More Bourdain-like tourists wanted
- 2:55 PM Beyond neutral eyeshadow
- 2:53 PM Far-Right pair get NZ visas
- 2:52 PM Fuel tax hits commuters' wallets
- 2:45 PM Car crashes into building, 2 dead

**editors' picks**

- Farming's filthy third
- Stop mansplaining #MeToo
- Renters feel like visitors ⌵
- Helicopter noise 'elder abuse' ⌵
- Man consumed by ACC fight ⌵
- Opponents 'out to get' stadium boss
- Far-Right speakers get NZ visas
- Greenpeace protesters plead case ⌵

**most popular**

viewed	shared	commented
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄
📄	📄	📄

Figure 2: Web homepage of *Stuff* as at July 20, 2018

For both publishers, the lead story typically occupied a large section of the page and was accompanied by a photograph. A notable difference between the two publishers is that images feature more prominently on *NZH's* homepage. On *Stuff's* homepage, users can better gauge what other news consumers are reading and following (from the "most popular" box on the right side of the page). Within the news articles themselves, *NZH* provided an estimate of how long each article would take to read and *Stuff* allowed users to comment on some articles.

Generally, news articles on global warming matters were composed of a bold headline, a photograph, links to share the article, and the text. For *Stuff*, article length ranged from a word count of 184 to 4,828, with an average of 835 words. For *NZH*, articles varied between 313 to 2,925 and on average, they were about 851 words long. Overall, for both organisations the register of the news articles was semi-formal. Some articles contained supplementary features such as emphasised quotes, maps, graphs, videos, and social media excerpts (e.g., Tweets and Facebook posts). There were also embedded links, mainly to publications or reports, within the news text. Both outlets also had several articles that contained spelling mistakes and grammatical errors.<sup>713</sup>

The visual images used in the articles tended to be about the localised effects of global warming. As such, images included the impacts of sea-level rise on properties, flooding on the landscape, farm animals, and smoke rising from power plants. Profile pictures of researchers were also common. The iconic representations of global warming and climate change, that of polar bears and melting ice caps, did feature in news imagery, although much of it was specifically related to the content of the story. Examples included: “NZ scientist alarmed at vanishing sea ice”; and “Emaciated polar bear kicks off discussion

---

<sup>713</sup> See Henry Cooke, "Mayors Urge Government to Take More Action on Climate Change Now," *Stuff*, July 23, 2017, <https://www.stuff.co.nz/national/politics/95022276/mayors-urge-government-to-take-action-on-climate-change-now>; Laura Walters, "New Zealand Tells the World of Its Plan to Join the Fight against Climate Change," *Stuff*, November 17, 2017, <https://www.stuff.co.nz/national/politics/98981300/new-zealand-tells-the-world-of-its-plan-to-join-the-fight-against-climate-change>; Nicholas Jones, "Law Change on Oil Exploration Signalled as Amazon Warrior Reaches NZ Waters," *The New Zealand Herald*, November 26, 2017, [https://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=11948834](https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11948834).

about climate change.”<sup>714</sup> Both publishers recycled some visual materials from earlier stories. For instance, a 2013 photograph was reused in several stories for *Stuff*.<sup>715</sup> Another example of photographs used again can be found in articles from Jamie Morton for *NZH*.<sup>716</sup> This suggests that news organisations have a repository of stock photographs on global warming and climate change.

Video content included other news agencies’ reports, interviews, debates, film trailers, and aerial shots.<sup>717</sup> Footages ranged in length, with an average of 2:43 seconds for *NZH* and 3:86 seconds for *Stuff*. For *NZH*, the duration of the footage ranged from a 0:15 seconds clip of protesters throwing water balloons at a Trump effigy to a 17:01 seconds coverage of Prime Minister Bill English and US Secretary of State Rex Tillerson’s press conference. For *Stuff*, the lengthiest video was of the *Stuff* Leaders’ election debate that lasted 92:23 seconds and the

---

<sup>714</sup> See Jamie Morton, "NZ Scientist Alarmed at Vanishing Sea Ice," *The New Zealand Herald*, January 3, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11776133](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11776133); Eli Rosenberg, "Emaciated Polar Bear Kicks Off Discussion About Climate Change," *Stuff*, December 10, 2017, <https://www.stuff.co.nz/environment/99709599/emaciated-polar-bear-kicks-off-discussion-about-climate-change>.

<sup>715</sup> Ged Cann, "Council Plans to Fight Rising Sea Levels Threaten Kiwi Seaside Property Dream," *Stuff*, January 20, 2017, <https://www.stuff.co.nz/environment/climate-news/88479496/council-plans-to-fight-rising-sea-levels-threaten-kiwi-seaside-property-dream>; Nicholas Boyack, "Insurance Likely to Become a Problem for Homes on the Edge of Wellington Harbour," *Stuff*, November 13, 2017, <https://www.stuff.co.nz/environment/climate-news/98815753/insurance-likely-to-become-a-big-problem-for-eastourne-homeowners>.

<sup>716</sup> See Jamie Morton, "How Can NZ Insure Homes for Climate Change?" *The New Zealand Herald*, April 28, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11847281](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11847281); "Higher Seas May Force New Zealand Towns to Retreat Inland: GNS Science Study to Investigate," *The New Zealand Herald*, May 21, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11860267](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11860267). See also "The Big Read: Our Slow-Moving Disaster as Sea Level Rises," *The New Zealand Herald*, October 23, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11935975](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11935975); "Climate Change: NZ Lacks Co-ordinated Plan," *The New Zealand Herald*, December 15, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11960273](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11960273).

<sup>717</sup> It should be noted that in 2017, Al Gore released the sequel to his 2006 film, *An Inconvenient Truth*.

shortest video was a 0:06 seconds footage of rain and strong winds battering St Clair's Esplanade in Dunedin. It should be noted that some videos had no sound and given the time lag, a few would not play. Additionally, the same video content clips were occasionally used on consecutive days.<sup>718</sup>

In some instances, the video footage used was tangential to the news content and this raises questions about the practice of news footage in online news.<sup>719</sup> In other words, the footage was almost certainly a tool to engage news consumers' attention. Furthermore, a lot of articles had a few videos and photographs embedded in them.<sup>720</sup> This is significant in that it allows more space for advertising. Audiences are encouraged to scroll down through content and access other links through suggestions like "read more" or "related articles". Potentially, this lengthens their "time-spent" on the website and allows the organisation to collect more data. The recycling of content may also reflect the quick news cycle or the limited resources available to journalists in this digital age. Generally, video content embedded in wire stories were more comprehensive. However, both agencies are primarily publishers and not

---

<sup>718</sup> See Charlie Mitchell and Alden Williams, "Climate Change Could Spell 'Extreme Poverty' in Coastal NZ Towns," *Stuff*, April 21, 2017, <https://www.stuff.co.nz/environment/91778352/climate-change-could-spell-extreme-poverty-in-coastal-nz-towns>; Mitchell and Fyers.

<sup>719</sup> See Derek Cheng, "Shaw to UN Conference: NZ Now a Leader in Climate Change," *The New Zealand Herald*, November 17, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11945026](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11945026). The video was aired on October 26, 2017, and then reused for an article dated November 17, 2017.

<sup>720</sup> See Brian Deese, "Donald Trump's Climate Denial Could Have Deadly Consequences," *Stuff*, June 1, 2017, <https://www.stuff.co.nz/world/americas/donald-trumps-america/93220661/donald-trumps-climate-denial-could-have-deadly-consequences>; Claire Trevett and Nicholas Jones, "Climate Protesters at Parliament as Rex Tillerson Lands in NZ," *The New Zealand Herald*, June 06, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11870478](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11870478).

broadcasters of news. So, while both agencies' news coverage of the climate crisis was mediated in different ways, the crux of their story was in the text.

### *Keyword Patterns*

For both organisations, the search term “climate change” appeared more in news articles than “global warming”. Moreover, in headlines, *Stuff* used the expression “climate change” 79 times and “global warming” 11 times. By comparison, *NZH* employed “climate change” 42 times and did not reference the words “global warming.” In many instances, the two terms could be employed interchangeably. For example, “Putting the freeze on climate change,” “Quirky native spider among species threatened by climate change,” and “Mayors urge Government to take more action on climate change now.”<sup>721</sup> So, news organisations tended to opt for climate change over global warming, implying that it is the preferred term to convey the climate crisis and its related issues. This suggests that “climate change” has become popularised in public and political discourses. Also, it may indicate that journalists and/or news organisations have come to view that the scientific evidence for global warming is settled such that they no longer need to foreground it. Instead, they have shifted their focus towards the effects of warmer average surface temperature.

---

<sup>721</sup> Aimee Shaw, "Putting the Freeze on Climate Change," *The New Zealand Herald*, January 21, 2017, [https://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=11781747](https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11781747); Jamie Morton, "Quirky Native Spider among Species Threatened by Climate Change," *The New Zealand Herald*, June 18, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11878797](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11878797); Cooke, "Mayors Urge Government to Take More Action on Climate Change Now".

The issue of uncertainty also featured in news content, although it largely came through the remarks of scientists and other researchers.<sup>722</sup> For example, scientist James Renwick was cited by Leith Huffadine as stating, “it tends to be quite hard to model El Nino events successfully. The group that wrote the paper are doing a pretty good job... It’s plausible, but the future for El Nino is still pretty murky.”<sup>723</sup> In Morton’s “The Big Read: Our slow-moving disaster as sea level rises,” he wrote, “On a local scale, scientists still had huge knowledge gaps to fill.”<sup>724</sup> Another example can be found in his interview with Associate Professor Nancy Bertler:

Q: Why are there opposing views as to whether this is related to anthropogenic climate change?

A: It is impossible to determine for any single event whether it is caused by climate change or whether it represents “just” an extraordinary event - climate and environmental processes can be messy.<sup>725</sup>

Here, the issue of how knowledge is not fixed is constantly foregrounded. However, by drawing attention to the evolving nature of science, it raises the matter of whether news representation makes out the conclusions to be more tentative and fragile than they really are. If so, then, uncertainty can cast doubts in readers’ minds about the reliability of the scientific evidence for global warming. This adds to the challenge of prioritising anthropogenic global warming issues among news consumers.

---

<sup>722</sup> The issue of uncertainty in scientific data was also underscored by deniers or sceptics of global warming, as well as, vested interest groups. This will be discussed in the next subsection entitled “Analysis of Cited Sources.”

<sup>723</sup> Leith Huffadine, “Extreme El Nino Events Likely to Become Twice as Common in New Zealand,” *Stuff*, July 25, 2017, <https://www.stuff.co.nz/science/95078291/extreme-el-nino-events-likely-to-become-twice-as-common-in-new-zealand>.

<sup>724</sup> Morton, “The Big Read: Our Slow-Moving Disaster as Sea Level Rises.”

<sup>725</sup> “Q&A: Antarctica’s New Trillion-Tonne Iceberg,” *The New Zealand Herald*, July 13, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11890071](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11890071).

Terms related to the agriculture industry appeared in the headlines, as well as in the body of the text. The headlines highlighted the range of views concerning the contribution of the agricultural sector to rising GHG emissions and its role in climate mitigation policies:

*Stuff:*

- Mar 29 Greenhouse gas awareness of livestock's contribution to emissions rise among farmers
- Apr 3 Dr Andy Reisinger: livestock impact on climate change set to rise
- Apr 4 Alfred Harris: Farm within biological and ecological constraints
- Jun 14 Dairy industry to test cutting greenhouse gas emissions at farm level
- Jun 15 Cutting the number of NZ's belching cows is off the table, so where to next?
- Jul 8 Farming must adapt for climate change, Nat's candidate says
- Sep 8 Federated Farmers say moving to ETS will cost primary industry \$83m
- Sep 15 DairyNZ says farmers can take some hot air out of greenhouse gas emissions by managing herds
- Nov 13 Farm animals responsible for quarter of global warming, study shows
- Nov 13 Farmers must find 'sweet spot' of economic, environmental sustainability

*NZH:*

- Mar 3 Agriculture seen as No 2 environmental problem
- Apr 25 Federated Farmers: It's damn lies and alternative facts
- Aug 2 Methane discovery could change climate priorities
- Aug 23 Opinion: Farmers advocate takes wrong message from climate report – Andy Reisinger
- Oct 4 Agriculture's methane figures solid, scientists say
- Oct 18 Federated Farmers: Getting to grips with climate change challenge
- Nov 16 Greenpeace – Fonterra must reduce the dairy herd
- Dec 5 Film-maker James Cameron takes aim at dairy and meat
- Dec 13 Rod Oram: Big changes will see farms with more trees and fewer animals
- Dec 16 Vaccine to reduce methane from cows could be '5 to 7 years away'

The collated titles showed that researchers and interest group representatives from the agriculture industry had a presence in news discourse. It also suggests that there is a struggle over the facts and information available to the wider public. Of the two publishers, *NZH* articles focused more on the conflict between opposing interest groups and individuals. Also notable is the virulent rhetoric set by the vested interest group, Federated Farmers (e.g., “will cost” and “damn lies”). In general, these articles reflected the large contribution of agricultural

emissions to New Zealand's GHG inventory and drew attention to the debate over ascribing more culpability to the sector.

Several articles used keywords related to the fossil fuel industry in their headings:

*Stuff:*

- Mar 3 Burning fossil fuels at speed provides excitement for participants and spectators
- Mar 24 The slow demise or temporary slump of New Zealand's oil and gas industry
- Apr 10 University of Auckland and Auckland Council called on to divest fossil fuels
- May 29 Students occupy University of Auckland, demanding divestment from fossil fuels
- Jun 21 Auckland University staff demand fossil fuel divestment
- Jun 23 Roger Hanson: The problem with coal
- Sep 18 University of Auckland hosts climate change event while still supporting fossil fuel industry
- Oct 7 Thousands protest across Australia against giant Adani coal mine
- Nov 2 Editorial: Drilling for fossil fuels not worth the costs of climate change
- Dec 12 NZ asks WTO to help end fossil fuel subsidies

*NZH:*

- Apr 12 Auckland Council to pull investments from coal, oil and gas companies
- May 29 Fossil fuel protesters leave historic clock tower at university of Auckland after occupation
- Jun 21 240 Auckland University staff join fossil fuel divestment push
- July 22 Lucy Lawless wants to stop oil drilling for the sake of her children
- Nov 14 Fonterra says it plans to cut back on coal use
- Nov 28 Law change on oil exploration signalled as Amazon Warrior reaches NZ waters
- Dec 12 Fossil fuel subsidies better spent on renewables, Trade Minister David Parker tells WTO conference
- Dec 13 Fonterra to divest all its coal interests by 2025
- Dec 20 Government taken to task over mining permits

From the above, there is some overlap in news content, which is reflective of the stories being event-based (episodic). A number of these events were non-violent protest actions involving students, Greenpeace-led expeditions, and petitions. Often, organisers of these events called for some businesses to stop or cut down their involvement with fossil fuel companies. Here, the fossil fuel industry is

associated with climate activism. This presupposes that newsreaders understand the link between fossil fuel extraction and global warming. However, in bracketing out a discussion of the significance and mitigation of fossil fuel emissions in New Zealand, news coverage depoliticised the issue and failed to address the question of political power.<sup>726</sup>

It is important to briefly discuss the news coverage of David Parker's call for governments to remove fossil fuel subsidies at the eleventh WTO Ministerial Conference, which occurred from December 10–13, 2017 in Argentina. Both outlets published an article about the event and cited the same part of Parker's speech, noting, "Each year, Governments are spending at least \$425 billion subsidising the production and sale of coal, oil, gas and other greenhouse gas-emitting fuels."<sup>727</sup> Both political reporters, Derek Cheng for *NZH* and Henry Cooke for *Stuff*, failed to define subsidies and there was no indication that either reporter interacted with or sought further comments from Parker. Only *Stuff's* reporter, Cooke, drew attention to the critiques of the Green Party, who called attention to the hypocrisy of the government, especially given the tax avoidance by oil companies operating in (and around) New Zealand. Both articles failed to mention that the government (partly) owns and continues to invest in fossil fuel

---

<sup>726</sup> See Ged Cann, "Environment Ministry Rubbishes Clean Green Image, Pokes Holes in Attempts to Address Emissions," *Stuff*, December 7, 2017, <https://www.stuff.co.nz/environment/climate-news/99635380/environment-ministry-rubbishes-clean-green-image-pokes-holes-in-attempts-to-address-emissions>; Derek Cheng, "Prime Minister Announces Formulation of Zero Carbon Act, Climate Change Commission."

<sup>727</sup> Derek Cheng, "Fossil Fuel Subsidies Better Spent on Renewables, Trade Minister David Parker Tells WTO Conference," *The New Zealand Herald*, December 12, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11958070](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11958070); Henry Cooke, "NZ Asks WTO to Help End Fossil Fuel Subsidies," *Stuff*, December 12, 2017, <https://www.stuff.co.nz/national/politics/99775193/nz-asks-wto-to-help-end-fossil-fuel-subsidies>.

companies. Also, depending on the definition of the term, subsidies can include the undercharging for domestic environmental pollution and damage, as well as other broader externalities like road accidents.<sup>728</sup> This example illustrates the journalists' lack of expertise. The incongruences between the government's proclamations and actions were not identified and scrutinised.

Of note, as well, was the emerging locution of "resilience". In a few articles, the word was cited in the headlines to reflect the susceptibility of the human and or natural world to the effects of global warming.<sup>729</sup> News sources also evoked the term, for example, local Green Party representative John Hart was quoted as saying:

Agricultural emissions account for almost half of New Zealand's greenhouse gas emissions. Just because agriculture isn't currently included in the Emissions Trading Scheme, doesn't mean we won't feel the worst effects of climate change here in the regions...The Green Party will work with both farmers and the community to find better solutions to make agriculture more resilient to the effects of climate change.<sup>730</sup>

In general, the use of resilience implies that, in some areas, the managerial and technical discourses have shifted beyond mitigation to adaptation. Adaptation as

---

<sup>728</sup> See David Coady et al., *IMF Working Paper: How Large Are Global Energy Subsidies?* (Washington D.C: International Monetary Fund, May 2015). The IMF Survey projected that in 2015, New Zealand provided USD\$2.51 billion in post-tax subsidies to fossil fuel companies.

<sup>729</sup> For example, Jamie Morton, "Are Islands More Resilient to Sea Level Rise?," *The New Zealand Herald*, May 07, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11851199](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11851199); Sara Meij, "New Zealand Greenshell Mussels Show Resilience in the Face of Climate Change," *Stuff*, June 14, 2017, <https://www.stuff.co.nz/nelson-mail/news/93645374/new-zealand-greenshell-mussels-show-resilience-in-the-face-of-climate-change>; Gerald Piddock, "Good Soil Health Critical to Grow Climate Change Resilient Crops," *Stuff*, December 18, 2017, <https://www.stuff.co.nz/business/farming/99871592/good-soil-health-critical-to-grow-climate-change-resilient-crops>.

<sup>730</sup> Ilya McLellan, "Dr Kennedy Graham to Speak on Effects of Climate Change on Rural New Zealand," *Stuff*, February 28, 2017, <https://www.stuff.co.nz/environment/climate-news/89858889/dr-kennedy-graham-to-speak-on-effects-of-climate-change-on-rural-new-zealand>.

a response to environmental hazards and change is not new.<sup>731</sup> However, its popularisation and construction can be problematic, especially if it portrays mitigative actions, schemes, and policies as a secondary priority. Thus, it is important to be wary of the potential co-option of the term. Does its usage serve to reinforce the status quo?<sup>732</sup>

### *Analysis of Cited Sources*

According to the evidence, for both news publishers, reporters still adhered to traditional processes for routine newsgathering. Official or authoritative sources dominated news discourses, comprising about 80% of the news sources cited for both publishers (see Appendix 2).<sup>733</sup> This finding comports with earlier studies of the use of sources in news content. For *Stuff*, “Government” sources were the most frequently cited at 28%, closely followed by “Academic and Expert” sources at 27%. In news reports from *NZH*, “Academic and Expert” sources were the most selected group, accounting for 29%. This was followed by “Government” sources at 25%.<sup>734</sup> There was not much difference between the types of sources cited by the two publishers.

---

<sup>731</sup> See Mark Pelling, *Adaptation to Climate Change: From Resilience to Transformation* (Oxon: Routledge, 2011).

<sup>732</sup> Also, the ethos of “sustainable development” and “sustainability” did not feature prominently in news articles. See Redclift, “Sustainable Development (1987–2005).”

<sup>733</sup> Official sources consisted of academics and expert sources (including named, unnamed, and unaffiliated), academic studies and expert reports, governmental officials, court system sources, economists, and business sources ( $n = 587$  for *Stuff* and  $n = 355$  for *NZH*).

<sup>734</sup> In a few instances, political figures were treated more like celebrities than politicians, see “Jacinda Ardern Talks Feminism, Climate Change in First International TV Interview,” *The New Zealand Herald*, November 1, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11939205](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11939205); “Canadian Prime Minister Justin Trudeau Kayaks up to Family to Chat Climate Change,” *Stuff*, June 6, 2017, <https://www.stuff.co.nz/world/americas/93394499/canadian-prime-minister-justin-trudeau-kayaks-up-to-family-to-chat-climate-change>.

Academics, experts, published studies and official reports together constituted 41% and 38% respectively of cited sources for *NZH* and *Stuff*.<sup>735</sup> Journalists commonly referred to academic studies and officials reports. For example, journalists would often lead-in by writing, “A recent study in the scientific journal...” and “One study, published last year, found...”<sup>736</sup> The use of “academic publication or expert report” comprised about 12% for *NZH* and about 10% for *Stuff*. Additionally, there was a wire story in *NZH* that was based solely on the publication of findings from a new study.<sup>737</sup> This shows that some reporters were turning to online sources for ideas and information.

For both publishers, the next most cited source category was “Business and Industry” representatives. They accounted for 11% and 10% of sources cited in *NZH* and *Stuff*, respectively. The prevalence of this category is suggestive of the business industry’s knowledge base as well as their keen interest in the management and regulation of the environment. Business industry views are typically perceived by news organisations to be credible; their information and opinions are typically imbued with factual authority.

---

<sup>735</sup> The figures would be 43% and 41% for *NZH* and *Stuff* if the source categories of “Unnamed experts or officials” and “Unaffiliated or independent research group” were included.

<sup>736</sup> Jason Samenow, "Hurricane-Force Atlantic Storm to Push North Pole to Melting Point in Winter," *Stuff*, February 8, 2017, <https://www.stuff.co.nz/world/89194870/hurricane-force-atlantic-storm-to-push-north-pole-to-melting-point-in-winter>; Jamie Morton, "Preparing New Zealand for Climate Change," *The New Zealand Herald*, February 14, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11800198](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11800198).

<sup>737</sup> "Study Looks into Belief That Chemtrails Are Real," *The New Zealand Herald*, November 5, 2017, [https://www.nzherald.co.nz/world/news/article.cfm?c\\_id=2&objectid=11940711](https://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=11940711).

In *Stuff* articles, quotes from “Resident and Citizen” constituted 10% of cited sources. This largely reflects coverage concerning the impacts of sea-level rise on residents and citizen participation in climate marches.<sup>738</sup> Of note, *Stuff* reporter James Pasley’s article entitled “Want to help combat climate change? Have one less child, study says,” gathered the opinions of members of the public from Fairfax’s social networking site, Neighbourly.<sup>739</sup> Also notable, *The Guardian* wrote an article with a similar headline when the study cited was first released on July 12, 2017. However, Pasley published his article a few months following, on October 2, 2017.<sup>740</sup> In contrast, for *NZH* the category of “Resident and Citizen” only represented 5% of the sources mentioned. Residents and citizens were mostly cited for their response to the effects of climate change, as were environmental groups. They largely featured in news content as a result of their climate activism. Of the news sources cited, “Environmental group and NGO” accounted for 6% (*NZH*) and 5% (*Stuff*) of the sample. This category was mainly composed of Greenpeace, Forest & Bird, and the student-led group, Fossil Free UoA.<sup>741</sup>

---

<sup>738</sup> See Adele Redmond, "People's Climate March in Christchurch Spreads Its Message through Theatre," *Stuff*, April 29, 2017, <https://www.stuff.co.nz/the-press/92047011/peoples-climate-march-in-christchurch-spreads-its-message-through-theatre>; Mitchell, "The Angry Sea Will Kill Us All: Our Disappearing Neighbours,"; Nick Truebridge, "Sea Inundation Could Affect Nearly 25,000 Christchurch Properties by 2120: New Report," *Stuff*, November 12, 2017, <https://www.stuff.co.nz/the-press/news/98756380/sea-inundation-could-affect-nearly-25000-christchurch-properties-by-2120-new-report>.

<sup>739</sup> James Pasley, "Want to Help Combat Climate Change? Have One Less Child, Study Says," *Stuff*, October 02, 2017. <https://www.stuff.co.nz/life-style/parenting/family-life/97288090/want-to-help-combat-climate-change-have-one-less-child-study-says>.

<sup>740</sup> Damian Carrington, "Want to Fight Climate Change? Have Fewer Children," *The Guardian*, July 12, 2017, <https://www.theguardian.com/environment/2017/jul/12/want-to-fight-climate-change-have-fewer-children>.

<sup>741</sup> Fossil Free UoA is a student-led organisation, supported by 350 Aotearoa. It was formed in 2015 and set out to campaign for the University of Auckland’s divestment from fossil fuels.

There was also a notable presence of the source category of “Non-expert commentator”, in particular former politicians, celebrities, and other public figures. This category accounted for 6% and 3% of news sources from *NZH* and *Stuff*, respectively. Typically, a well-known person uses their public recognition to attract news coverage of their activities or points of view on the climate crisis. Examples here included former politicians such as Al Gore (American politician), Dick Hubbard (former Mayor of Auckland City and prominent New Zealand businessman), and Nandor Tanczos (former list Member of Parliament with the Green Party of Aotearoa New Zealand). There were also celebrities: Arnold Schwarzenegger (actor and the former Governor of California), Leonardo DiCaprio (actor), and Lucy Lawless (actress). Often these celebrities lend their name or brand to help advocate for climate action. In addition, there were a lot of media personalities such as David Wallace-Wells (*New York Magazine*), Mike Hosking (*Newstalk ZB*), and Rod Oram (columnist for *The Sunday Star-Times* and a regular broadcaster on New Zealand radio and television). Often public figures were male, financially independent, of European descent, and in the older age bracket. They embodied a range of views on the significance of anthropogenic global warming, from denialism and scepticism to concern.

Other less prominent sources included “Non-aligned research group” (2% each), “Court system” (2% for *NZH* and 1% for *Stuff*), “Other news agency” (1% each), and “Dissenter, sceptic, or denialist” (1% for *NZH* and 0.4% for *Stuff*). The source category of the court system included lawyers and judges. Over time, the increase in damages and potential threats of global warming and the

ramifications of inaction have brought the younger generation and coastal residents to seek legal protection. This reflects the growing concerns certain factions of society have over climate-related environmental and financial risks.<sup>742</sup> It also signals the growing use of climate change litigation as a tool to strengthen climate action.

Also of note, was the use of journalistic works as sources. For example, the following articles stated: “In 2011, the New York Times obtained...”, “The front page of the New York Daily News was equally direct, claiming...” and “According to excerpts provided to News Corp....”<sup>743</sup> This suggests that there was a lack of expertise in the newsroom or that the news publishers viewed sourcing news content from other agencies as more financially sustainable (than hiring specialised reporters). It also draws attention to the growing partnerships between news agencies, highlighting the changing nature of producing news.

Dissenters had a platform in news discourses. There was one article that discussed the outright denial of anthropogenic global warming. It was published by *Stuff* reporter Mike Mather in the section on “national”. The article, entitled,

---

<sup>742</sup> The number of climate litigation cases have risen in recent years. See Stichting Urgenda, “Landmark Decision by Dutch Supreme Court,” accessed July 30, 2020, <https://www.urgenda.nl/en/themas/climate-case/>.

<sup>743</sup> See Hannah Martin, “The 16-Year-Old Who Wants to Change the World,” *Stuff*, 08 January 2017, <https://www.stuff.co.nz/environment/87395041/the-16yearold-who-wants-to-change-the-world>; “The Terminator: Arnold Schwarzenegger Slams Trump’s Paris Accord Decision: ‘Only I Can Go Back in Time’,” *The New Zealand Herald*, June 02, 2017, [https://www.nzherald.co.nz/world/news/article.cfm?c\\_id=2&objectid=11868389](https://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=11868389); Latika Bourke, “Tony Abbott Says Climate Change ‘Could Be Beneficial’ Because It Saves Lives,” *Stuff*, October 10, 2017, <https://www.stuff.co.nz/world/australia/97718017/tony-abbott-says-climate-change-could-be-beneficial-because-it-saves-lives>.

“Sir William Gallagher claims climate change a ‘rort’” conveyed to readers Gallagher’s denial that human activities were altering the Earth’s atmospheric temperatures.<sup>744</sup> This interview contained 478 words, of which only 21 (accounting for 4%) were used to note the scientific consensus on anthropogenic. It read: “Research collated by Nasa [*sic*] concludes that 97 peer-reviewed scientific papers published on climate change conclude that human activity is to blame”.<sup>745</sup> Mather did mention that Gallagher obtains most of his information from an event organised and sponsored by the think tank, The Heartland Institute. However, Gallagher’s denialist views on anthropogenic global warming were largely uncontested in the article. This begs the question: Why would the outlet present a biased view of climate science?<sup>746</sup>

Another public figure who cast doubt on, or obfuscated, the scientific evidence over global warming was the former prime minister of Australia, Tony Abbott.<sup>747</sup> In a wire story for *Stuff*, the first half of Latika Bourke’s article reported on Abbott’s speech to the Global Warming Policy Foundation, which was founded by climate sceptic and member of the House of Lords, Nigel Lawson.

---

<sup>744</sup> It should be noted that Gallagher’s business achievements are encapsulated in one sentence. However, his position on climate change is explicit in the headline and dominates the content. As such, Gallagher is coded as a contrarian.

<sup>745</sup> Mike Mather, "Sir William Gallagher Claims Climate Change a 'Rort'," *Stuff*, November 27, 2017, <https://www.stuff.co.nz/national/99284791/sir-william-gallagher-claims-climate-change-a-rort>.

<sup>746</sup> See Boykoff and Boykoff, "Balance as Bias."

<sup>747</sup> Donald Trump was mentioned in several articles, especially following his decision to withdraw the US from the Paris Agreement. It should be prefaced that Donald Trump’s exact position on global warming and climate change is inconsistent, ranging from outright denial, scepticism, confusion, to concern. But it is clear that he adopts an anti-science sentiment and populist stance. However, articles that cite Trump tend to draw on his televised broadcasts and Twitter tweets and reflect upon his action as the political leader of the US. Thus, he is categorised as a government source. See Helier Cheung, "What Does Trump Actually Believe on Climate Change?" *BBC News*, January 23, 2020, <https://www.bbc.com/news/world-us-canada-51213003>.

She wrote, “Tony Abbott says voters should beware the science of climate change but argues that higher temperatures ‘might even be beneficial’ because ‘far more people die in cold snaps’.”<sup>748</sup> Further in the text, she quoted Abbott as remarking, “Beware the pronouncement, ‘the science is settled’.”<sup>749</sup> She did preface his comment by citing NASA, which pointed out that leading scientific organisations worldwide had endorsed the view that global warming is anthropogenic. However, the second half of the article was devoted to the future direction of the Australian government’s energy policies.

Also noteworthy, in *NZH*, Robin Grieve of Pastoral [*sic*] Farming Climate Research wrote two opinion pieces. On January 11, 2017, he wrote a response to Minister of Climate Change Paula Bennett’s article, in which she provided readers with an update of New Zealand’s obligations under the Paris Accord. The introduction to the text stated in bold, “Robin Grieve is chairman of Pastoral Farming Climate Research Inc, an organisation formed to promote livestock emissions of methane as being of a cyclical nature and not responsible for global warming.”<sup>750</sup> A check on Grieve’s credentials shows that he is a retired dairy farmer and has a Diploma in Agriculture from Massey University. His climate research organisation’s website states that its purpose is “to promote livestock methane emissions (from steady state of production) as sustainable and not responsible for global warming.” It needs to be underlined that it has no other

---

<sup>748</sup> Bourke, "Tony Abbott Says Climate Change 'Could Be Beneficial' Because It Saves Lives."

<sup>749</sup> *Ibid.*

<sup>750</sup> Robin Grieve, "Robin Grieve: Climate Change Target Is Not What It Seems," *The New Zealand Herald*, January 11, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11779587](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11779587).

listed members or associated groups.<sup>751</sup> Given this, it appears to be a (one-person) front group. An excerpt from Grieve's opinion piece shows that he views himself as an authority on climate mitigation:

Our net emissions today are, as it happens, 32 per cent lower than our gross emissions of 2005 so it may be that we don't need to reduce our emissions at all to meet our target.

We do have to stop them increasing, which is no little thing, and comes at a potential cost to us all of \$36 billion over 10 years to 2030.

If the cost is as predicted the consequence will be that each Kiwi family will be \$32,000 poorer in 2030 than they would have been had it not been for Paula Bennett committing us to the Paris agreement.

...The minister gets away with this deception because the climate change world and its unique form of carbon accounting is plagued with enough complexity and fabrication that most don't understand it.

Carbon itself is not even real, it is only a theoretical unit with values determined more by politics than science.

It is a world that gets curiouser [*sic*] and curiouser [*sic*] the more you study it; nothing is as it seems. It is oxymoronic with lashings of technical reality coupled with childlike make believe.<sup>752</sup>

Here, he challenged the government's approach but cited no sources. In his second piece, published on August 22, 2017, he provided a summation of the studies published by the Parliamentary Commissioner for the Environment (PCE) and Motu Research. This drew an immediate critical response from a climate scientist, Andy Reisinger, a co-author of the Motu Research publication that Grieve cited. Reisinger argued that the conclusions drawn by Grieve were inaccurate.<sup>753</sup>

---

<sup>751</sup> "Pastoral Farming Climate Research Inc," accessed April 6, 2020, <https://farmcarbon.co.nz>.

<sup>752</sup> "Robin Grieve: Climate Change Target Is Not What It Seems."

<sup>753</sup> Andy Reisinger, "Opinion: Farmers Advocate Takes Wrong Message from Climate Reports - Andy Reisinger," *The New Zealand Herald*, August 23, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11909465](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11909465).

Vested interest groups such as DairyNZ and Federated Farmers also had a presence in news discourses. In total, Federated Farmers appeared in the headlines three times:

*Stuff:*

Sep 8 Federated Farmers say moving to ETS will cost primary industry \$83m

*NZH:*

Feb 17 William Rolleston: Guided by science

Apr 25 Federated Farmers: It's damn lies and alternative facts

Oct 18 Federated Farmers: Getting to grips with climate change challenge

William Rolleston was at the time the National President of the peak organisation. In *NZH*, the articles were opinion pieces. The headlines followed the agenda of the agriculture industry. Arguably, the headlines served to perpetuate the idea that there were disagreements in the scientific community over the scientific evidence for global warming. In the text, Rolleston insinuated that there were misinformation and disinformation about agricultural emissions and implored the reader (the public) to be cautious of information:

In the current climate of “alternative facts” we need to be even more vigilant that science and evidence is not distorted.

It is now more important that we invest in agricultural science to address the production, environmental and market challenges ahead of us; that we [*sic*] that we challenge “alternative facts”; that we ourselves are open to the real facts and are prepared to act on them.<sup>754</sup>

The opinion piece dated April 25, 2017, “Federated Farmers: It's damn lies and alternative facts,” used a provocative headline with the potential to build reaction and promote controversy. The text attempted to obfuscate the research behind climate science and the governance of climate change:

---

<sup>754</sup> William Rolleston, "William Rolleston: Guided by Science," *The New Zealand Herald*, February 17, 2017, [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11802736](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11802736).

It used to be 'lies, damn lies, and statistics', now we're fed irrelevant theories partially linked by academic economists engaged by organisations hardly anyone has heard of.

The latest few are around resource exploitation and climate change from two largely irrelevant organisations, the OECD and Globe NZ.

I won't even give the OECD report the time of day, as this is an organisation that has overseen the biggest financial crisis since the great depression and is totally happy with both Europe and the US continuing to print money as a way of getting out of jail. Another irrelevant, hot-air producing organisation.

**These ill-informed pot shots masquerading as scientific analysis are dumbed down even further to be quoted as the absolute truth on the TV news.**

As for Globe NZ, who are these people? (emphasis in original).<sup>755</sup>

The tone of the given opinions is aggressive; however, the piece published on October 18, 2017 came across as less belligerent. It highlighted the efforts made by farmers to be more informed about the influence of farming on global warming and climate mitigation. But it needs to be noted that the author, Simon Edwards, was a communications advisor to Federated Farmers.<sup>756</sup>

In comparison, the article for *Stuff* was written by an unnamed rural reporter and underscores the economic burden of reining in CH<sub>4</sub> emissions. The figure of "\$83 million" was cited from Federated Farmers. No other source was quoted in relation to this figure.<sup>757</sup> Overall, these vested interest articles illustrate a struggle for control in the debates on climate change policies and the

---

<sup>755</sup> Federated Farmers, "Federated Farmers: It's Damn Lies and Alternative Facts," *The New Zealand Herald*, April 25, 2017, [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11836292](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11836292).

<sup>756</sup> Simon Edwards, "Federated Farmers: Getting to Grips with Climate Change Challenge," *The New Zealand Herald*, October 18, 2017, [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11931513](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11931513). See also "Simon Edwards: Hutt City Central Ward Councillor," accessed April 06, 2020, <https://simonedwards.nz/about/>.

<sup>757</sup> Rural Reporter, "Federated Farmers Say Moving to ETS Will Cost Primary Industry \$83m," *Stuff*, September 08, 2017, <https://www.stuff.co.nz/business/farming/96665676/federated-farmers-say-the-ets-will-cost-the-primary-industry-83-million>.

role of the agriculture sector. It can also be viewed as an attempt to influence public perceptions of the agricultural industry and its members.

It is also worth mentioning that on August 4, 2017, in *Stuff's* Entertainment–Film section, there was an article with the headline “Free screenings of Al Gore’s *An Inconvenient Sequel* sponsored by Z petrol stations”. The article had a word count of about 377 and included an embedded trailer of the film, two photographs (one of Al Gore and the other of a Z Energy petrol station), and a link to the screening times and tickets.<sup>758</sup> Here, the fuel company acknowledged the climate threat while advancing its core oil business model. It should be emphasised that for 2017, Z Energy made up about half of the fossil fuels market in New Zealand and contributed about 8% of New Zealand’s carbon emissions.<sup>759</sup> This sponsorship reflects the use of corporate public relations techniques associated with “greenwash.” It is a reminder that the scientific explanations and significance of anthropogenic climate change represent a discursive and contested space. Overall, of all the sources cited, outright denial of climate change was rare but there were variants of denialism present in news content on the climate crisis.

For both publishers, the source category of “No source” was about 1% of the sources cited. While the source category of “Economist” was not significant

---

<sup>758</sup> "Free Screenings of Al Gore's an Inconvenient Sequel Sponsored by Z Petrol Stations," *Stuff*, August 4, 2017, <https://www.stuff.co.nz/entertainment/film/95446534/free-screenings-of-al-gores-an-inconvenient-sequel-sponsored-by-z-petrol-stations>.

<sup>759</sup> Z Energy, *Z Energy Annual Report 2017*, Wellington: Z Energy, 2007, 38, <https://investors.z.co.nz/static-files/6efef10d-42e2-438a-b21c-2e5ccd524c3a>. In June 2016, Caltex New Zealand was acquired by Z Energy.

enough to register a percentage (0.23% for *NZH* and 0.14% for *Stuff*). However, Ilan Noy, a professor of the economics of disaster, was referred to in two articles, appearing in each outlet. Both articles quoted him about the (potential) cost of insurance for properties affected by sea-level rise.<sup>760</sup> It should be underscored that the year 2017 revealed a number of related economic issues, such as the cost of extreme weather events, the 2015/16 review of the ETS, and the climate change lawsuit. The general election of that year was also a relevant issue. The absence of economists from news discourses suggests the lack of priority accorded to expert economic knowledge. However, this finding could also highlight the communication barriers between reporters and economists.

### *Frame Analysis*

From the data gathered, both publishers had similar usage of framing typologies (see Appendix 3). Here, it needs to be reiterated that some of the opinion pieces for *NZH* were dismissive of anthropogenic global warming and climate action; in a few instances, a rebuttal to such a piece would be published shortly after.<sup>761</sup> This is suggestive of sensational journalistic practice, where

---

<sup>760</sup> Morton, "How Can NZ Insure Homes for Climate Change?"; Lynn Grieveson, "Heads in the Sand, Houses in the Water," *Stuff*, May 3, 2017, <https://www.stuff.co.nz/national/92172625/heads-in-the-sand-houses-in-the-water>.

<sup>761</sup> See Robin Grieve, "Robin Grieve: Carbon Is Not a Fair Measure of NZ's " *The New Zealand Herald*, August 22, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11908116](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11908116); Andy Reisinger, "Opinion: Farmers Advocate Takes Wrong Message from Climate Reports - Andy Reisinger". See also Mike Hosking, "Mike Hosking: Climate Change Commission Will Achieve Nothing," *The New Zealand Herald*, December 19, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11962250](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11962250); Rosalee Jenkin, "Comment: In Response to Mike Hosking on Climate Change, I Say Bring It On," *The New Zealand Herald*, December 21, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11964279](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11964279).

news organisations seek to attract audiences by provoking emotional reactions to their news piece.<sup>762</sup>

Of the ten global warming and climate change-related news frames, *Stuff* and *NZH* shared the three most common and four least used frames. This indicates that there are shared conventions about news values and representation, implying that there are routine practices in the production of news that transcends the agency. The most used news frames, in order of prominence, were “Consequences of warming,” “Domestic politics,” and “New evidence/ research.” The popularisation of framing global warming-related matters around its potential consequences implies that the news media did accept that there is scientific consensus over global warming (20% for *NZH* and 17% for *Stuff*). However, reportage of the (potential) consequences of warmer global average surface temperatures was predominately characterised by negative outcomes. Headlines included, “Great Barrier Reef: ‘See it while you still can’” and “The angry sea will kill us all: our disappearing neighbours.”<sup>763</sup> Generally, reporters provided the details of the adverse outcomes and findings of potential adverse consequences with little countervailing points. It needs to be emphasised that change is inevitable, but the severity of change is still to be

---

<sup>762</sup> See Maria Elizabeth Grabe, Shuhua Zhou, and Brooke Barnett, "Explicating Sensationalism in Television News: Content and the Bells and Whistles of Form," *Journal of Broadcasting & Electronic Media* 45, no. 4 (2001), [https://doi.org/10.1207/s15506878jobem4504\\_6](https://doi.org/10.1207/s15506878jobem4504_6); Paul Hendriks Vettehen, Koos Nuijten, and Allerd Peeters, "Explaining Effects of Sensationalism on Liking of Television News Stories: The Role of Emotional Arousal," *Communication Research* 35, no. 3 (2008), <http://doi.org/10.1177/0093650208315960>.

<sup>763</sup> Jamie Morton, "Great Barrier Reef: 'See It While You Still Can'," *The New Zealand Herald*, March 26, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11823615](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11823615); Mitchell, "The Angry Sea Will Kill Us All: Our Disappearing Neighbours."

determined. This leads to the question of whether the constant exposure to distressing news and information can affect news consumers' belief in the promise of incremental system change.

The second most prominent frame, “Domestic politics”, reflects the politicisation of global warming and climate change in New Zealand (18% for *NZH* and 14% for *Stuff*). This is also suggestive of the importance of proximity as a news value. The common narratives that shaped New Zealand's climate policy were evident in articles. For example, “New Zealand has had higher population growth and our greenhouse gas emissions profile is very different, with vastly more renewable energy generation systems already in place and a far larger reliance on cows.”<sup>764</sup> Another illustration was, “Peter Gunn, defending the case on behalf of the Government, said the legal action wasn't realistic. [New Zealand has] an agricultural sector that is very efficient, based on many metrics.”<sup>765</sup> Here, the constraints that have shaped or put differently—justified—New Zealand's global warming mitigation and adaptation efforts (policy narratives) were reiterated to news audiences.

However, it needs to be acknowledged here that following the ascendance of the Ardern Labour-led coalition government the political discourse shifted.

---

<sup>764</sup> Henry Cooke, "A Tale of Two Countries: Why This Expert Thinks NZ Should Copy UK's Climate Change Policy," *Stuff*, July 27, 2017, <https://www.stuff.co.nz/national/politics/95158809/climate-change-commissioner-calls-for-nz-to-make-climate-targets-law>.

<sup>765</sup> "Climate Change Court Case: 'The Costs of Inaction Are Terrifying'," *The New Zealand Herald*, June 27, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11882663](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11882663).

Consequently, this was reflected in the news discourse. For instance, Laura Walter reported that the newly appointed Climate Change Minister and Green Party co-leader, James Shaw, had proclaimed at the COP23 summit that, “Being small does not absolve us of responsibility. On the contrary, being a developed country confers greater responsibility.”<sup>766</sup> Similarly, in an article about Al Gore’s interview with Ardern, reporter Claire Trevett wrote, “She [Ardern] said although New Zealand's emissions were minute as a percentage of the global emissions, it did not reduce the responsibility for New Zealand.”<sup>767</sup> Unlike the previous National Government, the new administration advanced the view that New Zealand had a social and ethical obligation to take a leadership role in climate action. This set a different tone in news discourse on New Zealand’s approach to the governance of global warming.

Additionally, there were several official reports commissioned by local councils which assessed how climate change would affect a particular region or highlighted the climate action that had been taken thus far.<sup>768</sup> The findings of these reports were also the basis of news stories. Also significant, several news items highlighted the tensions between municipalities and the central

---

<sup>766</sup> Walters, "New Zealand Tells the World of Its Plan to Join the Fight against Climate Change."

<sup>767</sup> Claire Trevett, "New Zealand Ready to Stand up on Climate Change Jacinda Ardern Says," *The New Zealand Herald*, December 5, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11953596](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11953596).

<sup>768</sup> See Frances Cook, "Climate Change to Make Wellington as Hot as Sydney: NIWA Report," *The New Zealand Herald*, August 7, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11899671](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11899671); Damian George, "Wellington Region to Band Together to Tackle Climate Change," *Stuff*, September 17, 2017, <https://www.stuff.co.nz/environment/96927694/wellington-region-to-band-together-to-tackle-climate-change>; "Climate Change Could Threaten Bay of Plenty Kiwifruit Industry," *The New Zealand Herald*, September 16, 2017, [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11922797](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11922797).

government, as well as the differences between political parties. For example, in *Stuff*, a few stories highlighted the conflict between the official response to rising sea levels and its effects on properties, with local governments calling for more input (accountability) from the central government on climate adaptation.<sup>769</sup> As a result, the issue of coastal housing insurance also featured in news discourses.<sup>770</sup> Here, articles drew attention to the financial burden of, uncertainty, and anxiety over coastal property ownership.

In *NZH*, articles about domestic climate policies tended to focus on the central government.<sup>771</sup> With the year 2017 being an election year, there was news coverage on political campaigns around the country. Of note, during that time Ardern emphasised her and the Labour party's commitment to climate action.<sup>772</sup> Also, there was Thomson's litigation case against the Government's GHG emission reduction targets. Cann from *Stuff* followed this event, producing five articles. He reported on the case before the legal proceedings, then followed

---

<sup>769</sup> See Cann, "Council Plans to Fight Rising Sea Levels Threaten Kiwi Seaside Property Dream"; Cooke, "Mayors Urge Government to Take More Action on Climate Change Now"; Mitchell, "Counting the Cost of Sea Level Rise."

<sup>770</sup> See also Morton, "How Can NZ Insure Homes for Climate Change?"; Julie Iles, "Premiums to Rise after Record Year of Weather-Related Insurance Claims," *Stuff*, December 6, 2017, <https://www.stuff.co.nz/business/99578862/climate-change-blamed-for-record-year-of-weatherrelated-insurance-claims>.

<sup>771</sup> See Jamie Morton, "Budget: Greens Slam Environment Funding," *The New Zealand Herald*, May 25, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11863119](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11863119); "Policy Series: Tackling Climate Change," *The New Zealand Herald*, September 07, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11907790](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11907790); Matthew Theunissen, "Leading Environmentalists' Plea to the Next Government," *The New Zealand Herald*, October 01, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11928213](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11928213).

<sup>772</sup> See Claire Trevett, "Jacinda Ardern's Rallying Cry: Climate Change the Nuclear-Free Moment of Her Generation," *The New Zealand Herald*, August 20, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11907789](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11907789); Vernon Small, "Jacinda Ardern's Climate Change Challenge," *Stuff*, August 20, 2017, <https://www.stuff.co.nz/national/politics/95964245/jacinda-arderns-climate-change-challenge>.

the case for three consecutive days, and, lastly, detailed its outcome.<sup>773</sup> *NZH*, published three articles, two written by Morton outlining the filing of the case and the final ruling, and one unauthored article about the legal proceedings.<sup>774</sup> These contestations also partly account for the prevalence of the “Conflict and strategy” frame (11% for both publishers).

There was also significant news coverage on “New evidence/ research”, reflecting the growing academic interest around the effects of global warming (13% for both publishers). This also draws attention to the news values criteria of timeliness and the unusual. There were news stories about scientific annual reports, such as NIWA’s annual climate summary and the WMO’s annual statement on the status of the global climate, as well as, recently published journal articles.<sup>775</sup> Of these stories, the headlines were often constructed around or addressed a question, for example, “Will big ocean fish cope in a warming

---

<sup>773</sup> Ged Cann, "First-of-Its-Kind Case as Student Takes Government to Court over Climate Change," *Stuff*, June 23, 2017, <https://www.stuff.co.nz/environment/climate-news/94015415/firstofitskind-case-as-student-takes-government-to-court-over-climate-change>; "Waikato Law Student Sarah Thomson Takes Government to Court over Climate Change," *Stuff*, June 26, 2017, <https://www.stuff.co.nz/environment/climate-news/94079123/waikato-law-student-sarah-thomson-takes-government-to-court-over-climate-change>; "Government Lawyers Question Court's Ability to Rule on Climate Change Case," *Stuff*, June 27, 2017, <https://www.stuff.co.nz/environment/94124957/government-defends-climate-targets-in-sarah-thomson-lawsuit>; "Student Sarah Thomson's Legal Case against Government Emissions Targets Wraps Up," *Stuff*, June 28, 2017, <https://www.stuff.co.nz/environment/climate-news/94183969/student-sarah-thomsons-legal-case-against-government-emissions-targets-wraps-up>; "High Court Says Previous National Government Should Have Done More on Climate Change Targets," *Stuff*, November 02, 2017, <https://www.stuff.co.nz/environment/98492828/high-court-says-previous-national-government-should-have-done-more-on-climate-change-targets>.

<sup>774</sup> Jamie Morton, "Climate Case: The Student vs the Minister," *The New Zealand Herald*, May 24, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11862450](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11862450); "Climate Change Court Case: 'The Costs of Inaction Are Terrifying'"; "Student vs Former Climate Minister: The Ruling".

<sup>775</sup> Saxton; "World Meteorological Organization Predicts 2017 Will Be Third Hottest Year," *The New Zealand Herald*, November 07, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11941170](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11941170).

world?," "How climate change could affect the way we exercise," and "What lies beneath: Why NZ's slice of Antarctica is at the centre of an eco-mystery."<sup>776</sup> Or they included the use of modal verbs, for instance, "Kiwi research into Southern Ocean *could* change global warming predictions," "Climate change *may* ground more planes making flying more restrictive," and "Some New Zealand climate change impacts *may* already be irreversible, Government report says" (emphasis added).<sup>777</sup> Here, the succession of information releases and the use of modality adds to the impression that researchers are exploring unknown areas.

"Conflict and strategy" was the fourth most used frame for *NZH* (11%) and it was the fifth commonly employed frame for *Stuff* (11%). Here, news content was framed around the climate debate; these included discrepancies in information, knowledge, and outcomes. The structure of these reports often reflected the mainstream journalistic perception of balance and fairness. For instance, in a *Stuff* news piece about the "Stop Adani" movement in Australia, the event was constructed as: "Environment groups say the mine would contribute to global warming and damage the Great Barrier Reef...Adani says

---

<sup>776</sup> Delwyn Dickey, "Will Big Ocean Fish Cope in a Warming World?," *Stuff*, March 01, 2017, <https://www.stuff.co.nz/business/farming/89899039/will-big-ocean-fish-cope-in-a-warming-world>; Sarah Berry, "How Climate Change Could Affect the Way We Exercise," *Stuff*, April 27, 2017, <https://www.stuff.co.nz/life-style/well-good/teach-me/91967001/how-climate-change-could-affect-the-way-we-exercise>; Will Harvie, "What Lies Beneath: Why NZ's Slice of Antarctica is at the Centre of an Eco-Mystery," *Stuff*, November 25, 2017, <https://www.stuff.co.nz/science/98902415/measuring-antarctic-unpredictable-sea-ice-to-help-understand-climate-change>.

<sup>777</sup> Ged Cann, "Kiwi Research into Southern Ocean Could Change Global Warming Predictions," *Stuff*, March 07, 2017, <https://www.stuff.co.nz/environment/climate-news/90135156/kiwi-research-into-southern-ocean-could-change-global-warming-predictions>; Jenna Gallegos, "Climate Change May Ground More Planes Making Flying More Restrictive," *Stuff*, July 14, 2017, <https://www.stuff.co.nz/travel/news/94757789/climate-change-may-ground-more-planes-making-flying-more-restrictive>; Charlie Mitchell and Ged Cann, "Some New Zealand Climate Change Impacts May Already Be Irreversible, Government Report Says," *Stuff*, October 19, 2017.

the project would pay billions of dollars in royalties and taxes, create jobs and export coal to India help bring electricity to rural regions.”<sup>778</sup> Another example appeared in the *NZH*:

There is truth in Trump’s claim that eastern US temperatures on New Year’s Eve will possibly be the coldest on record. Temperatures are forecast to be about 15 to 30 degrees Fahrenheit [*sic*] lower than normal for the next seven to 10 days. But one bone-chilling week does not disprove climate change. In fact, climate change can cause extreme weather - and that includes cold snaps.<sup>779</sup>

These stories highlighted conflicts among competing factions of society and drew attention to the fraught, ongoing response to the consequences and risks of global warming.

Traditionally, non-violent direct actions taken by environmentalists have helped to attract news media attention, although arguably this has played into the stereotypical activist image of rejecting conventional values. Nevertheless, such practices persist and were carried out during 2017. Examples include Greenpeace’s protests at sea and Parliament and the various protest actions taken by Fossil Free UoA.<sup>780</sup> The level of media attention was dependent upon the type of protest. For instance, in response to US Secretary of State Rex Tillerson’s visit, 350.org organised a protest, in which some 200 (or 300)

---

<sup>778</sup> "Thousands Protest across Australia against Giant Adani Coal Mine," *Stuff*, October 7, 2017, <https://www.stuff.co.nz/world/australia/97656222/thousands-protest-across-australia-against-giant-adani-coal-mine>.

<sup>779</sup> Megan Gattey, "As Trump Lauds 'Good Old Global Warming', Here's the Truth About Climate Change," *Stuff*, December 29, 2017, <https://www.stuff.co.nz/world/100247928/as-trump-lauds-good-old-global-warming-heres-the-truth-about-climate-change>.

<sup>780</sup> Jack Barlow, "Russel Norman-Led Greenpeace Activists under Investigation for Disrupting Oil Exploration Ship," *Stuff*, April 10, 2017, <https://www.stuff.co.nz/environment/91403752/russel-normanled-greenpeace-activists-under-investigation-for-disrupting-oil-exploration-ship>; Trevett and Jones; James Pasley, "Students Occupy University of Auckland, Demanding Divestment from Fossil Fuels," *Stuff*, May 29, 2017, <https://www.stuff.co.nz/auckland/93077753/students-occupy-university-of-auckland-demanding-divestment-from-fossil-fuels>.

individuals participated, but more media spotlight was placed on four Greenpeace activists scaling a crane and their subsequent arrest. The direct action taken by Greenpeace had elements that made it more visually arresting.<sup>781</sup>

Also of note, the terms “protestors” and “activists” were used to describe participants. These labels have a more negative connotation than “environmentalists.” Moreover, in an article about the protest, Sara Meij for *Stuff* reported, “An unrepentant Maeder said despite this being her second arrest she wasn’t worried. [Maeder:] ‘It is quite extreme, people ask me why do you do that, it’s always the same answer...for me non-violent direct action is like another way of reaching people.’”<sup>782</sup> By Maeder’s own admission, she partakes in the news media’s preference for events and novel developments. However, the description of Maeder cues readers to view her as being defiant and/or unruly. This engenders the stereotypical typecasting of climate activism. It should be emphasised that often those with power in society are usually at the centre of news construction, while those who are positioned at the periphery often seek ways to attract news media attention. This raises the question as to whether activists’ desire for audience attention undermines their messages about the need for environmental protection.

---

<sup>781</sup> Tracy Watkins and Stacey Kirk; Trevett and Jones; Sara Meij, "Nelson Climate Change Activist Arrested for Protest in Wellington," *Stuff*, June 7, 2017, <https://www.stuff.co.nz/nelson-mail/news/93412220/nelson-climate-change-activist-arrested-for-protest-in-wellington>. Each outlet had different estimates of the size of the protest, with *NZH* estimating 200 and *Stuff*, 300 protestors.

<sup>782</sup> "Nelson Climate Change Activist Arrested for Protest in Wellington."

The above pattern of news construction is indicative of an episodic rather than a thematic approach to the coverage of the climate crisis. This finding is also exemplified in the coverage of official report releases,<sup>783</sup> as well as the lead-up to, and outcomes of, international conferences.<sup>784</sup> Further, this draws attention to the prevalence of news values and suggests that there are predictable peaks in news coverage, which reflect a formulaic approach to news representations of global warming-related matters.

For *Stuff*, the fourth most common frame was “Science” (11%) and for *NZH*, this frame was the sixth most common (10%). As stated earlier, much of the publicised scientific data about the climate crisis concerned emerging research. This suggests that news organisations assumed a certain basic level of understanding of global warming among their readers. In several articles published by *NZH*, reporters provided a summary, in the form of bullet points at the end of the article, referring to facts about New Zealand and climate change.<sup>785</sup> News stories also contained visual materials, such as graphs and maps, to aid reporters in conveying the science. Unlike many other news issues,

---

<sup>783</sup> See Cook, "Climate Change to Make Wellington as Hot as Sydney"; Mitchell and Cann, "Some New Zealand Climate Change Impacts May Already Be Irreversible"; Truebridge, "Sea Inundation Could Affect Nearly 25,000 Christchurch Properties by 2120."

<sup>784</sup> See Cheng, "Shaw to UN Conference: NZ Now a Leader in Climate Change"; Walters; Cheng, "Fossil Fuel Subsidies Better Spent on Renewables, Trade Minister David Parker Tells WTO Conference"; Cooke, "NZ Asks WTO to Help End Fossil Fuel Subsidies."

<sup>785</sup> See Christine Allen, "Climate Change - Northland Hotter, More Droughts, Floods and Erosion," *The New Zealand Herald*, January 20, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11785214](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11785214); Jamie Morton, "More Kiwis Believe Climate Change Is Real," *The New Zealand Herald*, March 29, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11827705](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11827705).

the climate breakdown has required reporters to transform technical data into simplified information for the general audience.

The low-level occurrence of framing global warming matters around “Economics/ costs of remedy” reflects the fact that there is little rigorous experimental evidence on climate mitigation. It was the sixth and fifth most used frame for *Stuff* (10%) and *NZH* (11%), respectively. This finding could suggest that economists have little to no experience in managing a green economy. It may also reflect the contentious political environment with reining in GHG emissions, given that there are vested interests associated with maintaining the status quo. Conventionally, the financial cost of mitigation (and adaptation) has been positioned as being larger than the burden of inaction.

For both publishers, there was news coverage on the issue of intergenerational conflict. For instance, Lisa McLaren, the national convener for the Zero Carbon Act campaign from Generation Zero, a youth-led climate organisation, wrote an opinion piece for both publishers.<sup>786</sup> There was also reportage around student climate protest movements and the student climate lawsuit against the government.<sup>787</sup> Additionally, there was also reportage on New Zealand’s “commitment” to helping the Pacific Island nations cope with

---

<sup>786</sup> Lisa McLaren, "Climate Change: We Need Cross-Party Action," *The New Zealand Herald*, March 16, 2017, [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11819560](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11819560); "Lisa McLaren: US Climate Move Galvanises Rest of World," *Stuff*, June 8, 2017, <https://www.stuff.co.nz/environment/climate-news/93455218/lisa-mclaren-us-climate-move-galvanises-rest-of-world>.

<sup>787</sup> See Pasley, "Students Occupy University of Auckland, Demanding Divestment from Fossil Fuels"; Morton, "Climate Case: The Student vs the Minister."

climate change, especially following the change in government.<sup>788</sup> The framing of events and issues related to the climate crisis around the principled distinction between right and wrong (“Morality and ethics”) did not feature prominently. Only 8% of articles for both publishers inferred or referred to this distinction.

It needs to be emphasised that foreign news did not figure prominently in either publishers’ content. Historically, wire services have played a key role in the coverage of world news in New Zealand. This implies that it has been financially unsustainable to have a dedicated team producing news on foreign content. Stories that evoked the frame of the “international relations” mainly centred around New Zealand’s involvement in the global governance of and role in militating against global warming. Several articles were generated from the UN climate summit, Tillerson’s visit to New Zealand, and the US withdrawal from the Paris Accord. In total, 6% of *Stuff* and 5% of *NZH* articles were structured around “International relations”.

The two least employed news frames for both publishers were “Current weather” (*Stuff* 5% and *NZH* 2%) and then “Catastrophism” (*Stuff* 5% and *NZH* 2%). The low prominence given to framing the climate crisis on worst-case scenarios suggests that reporters were wary of exaggerating the risks concerning

---

<sup>788</sup> See Nina Hall and Max Harris, "Nina Hall and Max Harris: NZ Must Speak out for Pacific on Climate Change," *Stuff*, June 27, 2017, <https://www.stuff.co.nz/environment/climate-news/94018862/nina-hall-and-max-harris-nz-must-speak-out-for-pacific-on-climate-change>; "Media Take: Climate Change Means 'Game over for the Pacific Islands,'" *Stuff*, October 17, 2017, <https://www.stuff.co.nz/business/industries/97967073/media-take-climate-change-means-game-over-for-the-pacific-islands>; "Jacinda Ardern Talks Feminism, Climate Change in First International TV Interview."

global warming. News organisations appeared to be cognisant that there is no need to overstate the data, especially if this goes beyond the level that is supported by scientific evidence. The small number of stories framed around abnormal weather patterns, severe storms, droughts, famine, and the like indicates that news discourses did not foreground the link between the Earth's warming and its changing weather patterns. It also reflects the lack of news coverage on international events and issues.

Here, it is also important to discuss editorials. For the period, *NZH* had no editorials on this matter. In contrast, there were five editorials in *Stuff's* publications:

Mar 24	<i>The Dominion Post</i>	New Zealand needs a climate change plan
Jul 14	<i>The Press</i>	The high costs of winter storms
Sep 8	<i>The Press</i>	Leaked report reveals \$19b risk from climate change
Oct 23	<i>The Press</i>	There are some answers in a bleak climate change report
Nov 2	<i>The Press</i>	Drilling for fossil fuels not worth the costs of climate change

Three of the five editorials were based on the publications of new reports. All the editorials called for more political action to address the climate crisis. Of note was the editorial on the possibility of underwater exploratory drilling off the coast of North Otago. It was one of the few articles that cast a spotlight over the issue of CO<sub>2</sub> emissions in New Zealand. The editorial was critical of the following prospects:

Undersea drilling at a depth of almost a kilometre and building a pipe to shore are both risky activities and if the potential rewards for the company are high, so are the potential risks of environmental catastrophe... high-risk efforts to unearth more fossil fuels should not be seen as New Zealand's path to economic success.<sup>789</sup>

The coverage illustrated some journalistic acumen: "But dig a little deeper and the numbers are not quite as rosy."<sup>790</sup>

A few of the editorials were critical of the government. Examples of concluding sentences in the editorials include: "A problem of this scale [cannot] cope with any more political dithering" and "It is past time for New Zealand to live up to its valuable clean, green image and make a sincere effort to cut its CO<sub>2</sub> emissions."<sup>791</sup> Also notable, some editorials called for the public to take more climate action. For example, "They are also questions for small and medium-sized businesses and even households" and "But making smarter transport choices is something we can also do at an individual level."<sup>792</sup> Overall, the editorials understood the nature of the climate emergency.

---

<sup>789</sup> "Editorial: Drilling for Fossil Fuels Not Worth the Costs of Climate Change," *Stuff*, November 2, 2017, <https://www.stuff.co.nz/environment/98438746/editorial-drilling-for-fossil-fuels-not-worth-the-costs-of-climate-change>.

<sup>790</sup> Ibid.

<sup>791</sup> "Editorial: Leaked Report Reveals \$19b Risk from Climate Change," *Stuff*, September 8, 2017, <https://www.stuff.co.nz/the-press/opinion/96589298/editorial-leaked-report-reveals-19b-risk-from-climate-change>; "Editorial: Drilling for Fossil Fuels Not Worth the Costs of Climate Change."

<sup>792</sup> "Editorial: The High Costs of Winter Storms," *Stuff*, July 14, 2017, <https://www.stuff.co.nz/the-press/opinion/94695976/editorial-the-high-costs-of-winter-storms>; "Editorial: There Are Some Answers in a Bleak Climate Change Report," *Stuff*, October 23, 2017, <https://www.stuff.co.nz/environment/98055056/editorial-there-are-some-answers-in-a-bleak-climate-change-report>.

## Discussion and Implications

From the information gathered, the news reportage on the climate crisis evolved from early representations of it being an environmental or scientific issue to one with political dimensions. This reaffirmed the understanding that news discourses follow the convergent scientific views on the basics of climate science. It also indicates that global warming has been and is always political. If the climate crisis is linked to political ends, it is also ideologically constrained. This means that economic inequalities, cultural challenges, and the social impacts of the crisis largely fall outside the purview of news attention. In other words, unequal power relations shape how the problems, issues, and policy implications of anthropogenic global warming are conceived.

In 2017, news coverage of the climate crisis was characterised by a surfeit of information. The burgeoning field of research provided reporters with an abundance of material to report on. The accessibility and convenience of online platforms saw journalists adapt these new publications into a news story. Journalists could gather and assemble the facts without having to leave the newsroom, nor interact with others. This is either suggestive of the realities of professional journalism in today's marketplace of new production or a sign that newsrooms are not bothering to find new angles on global warming-related matters. Another question here is whether news consumers are receiving too

much information, and, if so, what impacts does “infoglut” have upon the audience understanding of the climate crisis?<sup>793</sup>

It was also found that digital news content relating to the climate emergency was descriptive rather than prescriptive. Emphasis centred on the (potential) adverse consequences of global warming. This approach enables reporters to capture and retain readers’ attention, but it is selective in what topics are covered and can obscure and overlook the multiple issues at stake. For instance, there was little consideration given to what individuals can do personally to mitigate global warming and to adapt to climate change. And while it is important to not downplay the risks, journalists could reframe such information so that news consumers could feel, in some sense, that they have some individual agency in future outcomes. However, by failing to provide any countervailing points, many articles led readers to assume that the outcomes are inevitable, even though the scale and range of climate change are still to be determined. If potential outcomes are constructed as being inescapable, an individual’s belief and/or engagement in incremental change (as their civic duty) may be constrained.

By comparison, the topic of culpability for anthropogenic global warming was largely absent from news discourses. Following political discourse, news coverage centred on the contribution of CH<sub>4</sub> emissions from agricultural

---

<sup>793</sup> See Mark Andrejevic, *Infoglut: How Too Much Information Is Changing the Way We Think and Know*, (New York: Routledge, 2013), ProQuest.

activities to the nation's GHG inventory, leaving largely unexplored how global warming is predicated on fossil capitalism. Also absent was the growing issue of how society has become more enmeshed within the mediations of market exchange. If corporate culpability, which includes government organisations, is bracketed out of the news agenda, how is the link between socio-economic polarisation and environmental degradation to be conceived? Further, it is important to note that news items advocating for less consumption would be counterintuitive or paradoxical given that news organisations depend on advertising revenue. It needs to be emphasised though that lifestyle changes should be seen as one important avenue for change rather than a substitute for policy reform. Thus, the news media, by failing to draw attention to the main causative factors that drive rising global surface temperatures, limit the scope for change.

There was also a lack of historical process in news dialogue. As such, the incongruences between what was stated and what was occurring, as well as the differences between the purported future outcomes and past results, were not detailed. Historical consciousness is important because it offers evidence about how things have functioned in the past and can give an indication of likely outcomes. It can also aid audiences in their assessments of those in power, giving them critical insights with which to evaluate the performance of an official or the nature of a situation.

Also notable, reporters did not question or press politicians to provide answers in detail. It needs to be underscored that objectivity does not equate to passive acceptance of information. For the public to make informed decisions, they need information in context. Reporters have the power to ask for clarification or more explanation from officials. However, questions about contradictory explanations or inconsistencies were often not raised. Also, issues such as culpability, time frame, and the exploration of other alternative solutions were rarely discussed.<sup>794</sup> This suggested that reporters either lacked resources, expertise and/or failed to search for information that supported or challenged what officials have stated. It could also be indicative of the relationship between politicians and journalists, suggesting that journalists are not the force they have been touted to be in the political process. But regardless of the response from politicians, one of the key roles of a reporter is to ask follow-up questions.

The preponderance of authoritative figures (elite sources) reaffirmed the view that the production of news is top-down. Little attention was given to actors outside the sphere of institutionalised politics and the scientific realm. For example, environmental groups and non-government organisations were often cited as a result of their involvement in protest actions despite the credentials of some of its members. However, journalists may view activists as having a conflict of interest, although this raises the issue of whether it is possible to be

---

<sup>794</sup> Examples of alternative solutions include the development of new institutional mechanisms, a closer examination of recycling, a reconsideration of the building regulatory system, and land redistribution.

purely disinterested in the crisis. Yet, the outcome is a lack of consideration given to alternate insights into the climate breakdown.

In terms of what accounts for the limited range of news sources, it is unclear if this is the by-product of the unrelenting news cycle and/or constrained resources. It could also result from communication barriers between journalists and other actors, reminiscent of the challenges that exist between how scientists communicate and what journalists require from a news source. This casts a spotlight on how news sources are vetted and how journalists communicate to potential news sources. It also points to the likelihood that the search for “authoritative” (and impartial) sources who are articulate, concise, and easily accessible, privileges a certain way of being or outlook. Or it could simply be that reporters fail to seek out potential sources. In any case, the outcome simplifies the climate crisis by reducing the communicative space for critical discussion and reflection.

The issue of differential suffering was also largely not present in news coverage. The effects of global warming will affect some groups more than others but there was little mention of that reality. For instance, there was no reference to those living in the tropical nations of Bangladesh, South Sudan, the Philippines, among other places. However, this is suggestive of both publishers’ limited geographic scope as news about foreign affairs was scant and published primarily from wired pieces.

In terms of the geographical context that is closer to the Australasian region, there was little news coverage on climate change in the Pacific nations and New Zealand's ethical obligations to the region. Although, notably, there was even less news attention given to the effects of global warming on Māori. Overall, news content was bereft of Pacific and Māori perspectives on the climate crisis. Here, it is important to emphasise that global warming is not a leveller but an amplifier of existing social inequalities, economic insecurities, and ecological damage.

Summing up, this analysis showed that over the surveyed period news reports on global warming-related matters have advanced from early representations of the issues and events. There is less adherence to the idea of "balance" and now news discourses tend to reflect scientific discourses. This is promising, but the reliance upon official sources for information raises the question of whether news makes its audience myopic in their views and understanding of the climate crisis and its underlying causes. That is, do they provide a partial view of the world—privileging the status quo? Journalism thrives when it scrutinises the assertions and actions of those in power. However, if the news is reducible to a collage of facts and information and the transcription of political points of views or announcements from mainstream news sources, how are the powerful held to account?

## Conclusion

From the preceding news analysis, journalists from *Stuff* and *NZH* kept the climate crisis in the minds of its audiences. However, they tended to follow traditional practices of news production. News reports were characterised by news routines, news values, and trusted sources. In general, disparate facts and information abounded in the coverage; argument and critical analysis were absent. The issues of culpability and climate mitigation outside the framework of mainstream political discourses were rarely explored. This raises the matter of how members of the news audience can fully engage with the problem of anthropogenic global warming. These findings also suggest that some of the work of reporters has swayed from the ideal pursuit of the public good. This, then, leads to another matter—whether news organisations have lost sight of what constitutes a real story and the responsibilities of the job. It is important, then, to complement the observations in this chapter with journalists' accounts of their experiences. That is the aim of chapter six.

## Chapter Six

# Semi-structured Interviews with Science and Environmental Journalists

You cannot solve a problem without naming it.

–George Monbiot. *How Did We Get Into This Mess?* 2016

This chapter illuminates the process of news construction concerning the climate crisis in New Zealand through first-hand accounts from four senior journalists. Using a semi-structured interview method, I explore reporters' understanding of matters related to global warming and climate change. I also discuss their views of journalism and delve into their newsroom practices. In what follows, I outline the purpose of qualitative interviewing before detailing the selection and recruitment of participants, the interviewing process, and how questions were formed. Then, I provide a summation of the interview content and an associated commentary. Put simply, I focus upon journalistic practices of making news on the climate emergency and make suggestions for further development.

## Qualitative Interviews: Purpose and Process

An interview, according to George Gaskell, “is a joint venture, a sharing and negotiation of realities.”<sup>795</sup> Similarly, Steven Taylor, Robert Bogdan, and Marjorie DeVault wrote that an “interview is a form of social interaction.”<sup>796</sup> Here, the scholars emphasised that an exchange takes place between two separate individuals. In the interview process, the interviewer draws from their knowledge, experiences, and views to explore, understand, and develop the experiences and insights of the interviewee. In turn, the interviewee, prompted by the interviewer, is afforded an opportunity to recall stories, tell accounts, and provide explanations. In some instances, the interview process allows the interviewer and interviewee to articulate some ideas and experiences they may not have articulated before. Against this background, the data obtained from interviews are “co-constructed.”<sup>797</sup>

Gaskell also explained that qualitative interviewing “may be an end in itself, providing a ‘thick description’ of a particular social milieu; it can be used as a basis for generating a framework for further research; it may provide empirical data to test expectations and hypotheses developed out of a particular theoretical perspective.”<sup>798</sup> The interviews designed here seek to obtain

---

<sup>795</sup> George Gaskell, "Individual and Group Interviewing," in *Qualitative Researching with Text, Image and Sound: A Practical Handbook for Social Research*, ed. Martin Bauer and George Gaskell (London: SAGE Publications, 2000), 45.

<sup>796</sup> Steven Taylor, Robert Bogdan, and Marjorie DeVault, *Introduction to Qualitative Research Methods: A Guidebook and Resource* (New Jersey: John Wiley & Sons, 2016), 112, ProQuest Ebrary.

<sup>797</sup> Kathryn Roulston, "Analysing Interviews," in *The Sage Handbook of Qualitative Data Collection*, ed. Uwe Flick (London: SAGE Publications 2013), 309.

<sup>798</sup> Gaskell, "Individual and Group Interviewing," 40.

information about climate science and environmental journalism in New Zealand. Based on my dialogue with reporters, I explored the views, definitions, and experiences that they have in relation to their work on the climate crisis. The interview data can also help verify, validate, and/or offer additional or alternate explanations for the news analysis of the previous chapter.

The interviews were of a semi-structured type with a single participant. Participants were identified as New Zealand journalists who wrote specifically for *Stuff* and *NZH*, and who had over the 2017 period, published three or more news articles related to global warming and/or climate change. It is important to acknowledge, echoing Rhian Salmon, Rebecca Priestley, Michele Fontana, and Taciano Milfont, that there are not many environmental and/or science reporters in New Zealand. From 2011 to 2016, the number of full-time science journalists ranged from one to three.<sup>799</sup> In total, nine recruitment emails were sent out to identified reporters and, following a positive response, an information sheet and consent form were sent out (see Appendix 4). The final sample size for interviews was four. Each interview was scheduled for an hour via a phone call or the Zoom platform.

Each interview was recorded and then transcribed. A detailed journal was also maintained during the interviews to assist in the interpretation and analysis of the data. It follows that by interviewing multiple reporters, general

---

<sup>799</sup> Rhian Salmon et al., "Climate Change Communication in New Zealand," in *Oxford Research Encyclopedia of Climate Science* (2017), 20, <http://doi.org/10.1093/acrefore/9780190228620.013.475>.

theories about the social milieu of newsroom environments can be developed. Prior to the interviews, a guide was developed. It was first devised after a reading of the literature and discussions with experienced researchers. Then, following the findings of the media analysis the guide was further revised. Its framework centres around issues of how the climate crisis is understood, the practicality of making climate news, and communicating the climate emergency.

The guide was designed to prompt the interviewer. Therefore, while there was a preferred order to the main questions below, the interview process was largely determined by the interviewee's spontaneous remarks to the questions posed. In using a semi-structured approach, the respondent has time to consider their responses and can communicate in their own words. Seven open-ended questions were presented to help guide the interview:

1. Could you tell me about a journalist's role?
2. In terms of your journalistic work, how do you understand climate change?
3. Could you take me through this process of making climate science news?
4. How important is climate journalism?
5. Can you tell me about the role of the news audience?
6. What constraints, if any, have you encountered or seen while you worked?
7. Can you think of any key challenges to communicating the causes and consequences of the climate crisis?

Probing questions were also identified to help manage the interview. This can help to encourage participants to answer in detail and provide them with the chance to clarify their comments.<sup>800</sup> Examples included: "What is the role of the news director?" and "How do you gauge audience feedback?" Interviewees were

---

<sup>800</sup> Herbert Rubin and Irene Rubin, "Preparing Follow-up Questions," in *Qualitative Interviewing: The Art of Hearing Data* (Thousand Oaks: SAGE Publications, 2012).

not necessarily asked the same probing questions because probes are cued from what a respondent said. At times, they may need to be adjusted to fit the participant's responses. Towards the end of the interview, "loose-end questions" were posed. For example: "Earlier, you were saying that..." and "Is there anything else you would like to add?" The use of these questions can aid in the exploration of issues and topics that were mentioned briefly or missed.<sup>801</sup>

Immediately after the interview, the content was transcribed. My transcription followed some of the conventional punctuation of written language by using capital letters, commas, and full stops. Descriptive comments and features of conversation that influence how the content can be understood were marked. However, I omitted utterances that do not contribute to an enhanced understanding of the data, such as "um" and "ah".<sup>802</sup> During the reading and rereading to the text corpus, notes were taken. Here, key topics, ideas, and words were marked on the transcript. Transcripts were considered individually and then collectively alongside the existing literature and in comparison, with the findings from the news media analysis.<sup>803</sup>

In a semi-structured interview, while both the interviewer and interviewee are engaged in the interview, the data obtained largely follows the

---

<sup>801</sup> Thomas Lindlof and Bryan Taylor, *Qualitative Communication Research Methods*, 4th ed. (Los Angeles: SAGE Publications, 2017), 268-69.

<sup>802</sup> Roulston, "Analysing Interviews."

<sup>803</sup> See Philip Burnard, "A Method of Analysing Interview Transcripts in Qualitative Research," *Nurse Education Today* 11, no. 6 (1991), [https://doi.org/10.1016/0260-6917\(91\)90009-Y](https://doi.org/10.1016/0260-6917(91)90009-Y).

trajectory of the interviewee's talk.<sup>804</sup> Ideally, the interviewer plays a "facilitative and neutral" role, but as pointed out by Timothy Rapley, there is a distinction between "doing" and "being". The pursuit of neutrality is complicated by the fact that the interviewer poses the questions, and thus to an extent controls the course of the talk.<sup>805</sup> Nevertheless, any extracts and findings from the interview were presented in the context in which it occurred. The reliability of the analysis can be judged off the page.

In terms of the interview data, it needs to be acknowledged that given the subject matter some journalists may have been unwilling or unable to articulate crucial information. Moreover, since the participants were aware that the interview was being recorded for scholarly research their responses may have been carefully crafted. It should also be borne in mind that at times there are differences between what people think, say, and do. In these contexts, the interview process can "produce unreal responses." However, these limitations do not invalidate the method, rather it calls to attention the need to understand the interviews in context. Or as Kathryn Roulston and Myungweon Choi put it, "It is useful, then, to remember that all research is partial, and the aim of each study is to contribute understandings to a larger field of study."<sup>806</sup>

---

<sup>804</sup> The views and opinions expressed in the interviews are strictly those of the individuals and do not reflect any official position. Even though the analysis is based on the recounts and expertise presented by the interviewees, the interpretations in the thesis are mine.

<sup>805</sup> See Timothy Rapley, "The Art(Fulness) of Open-Ended Interviewing: Some Considerations on Analysing Interviews," *Qualitative Research* 1, no. 3 (2001), <https://doi.org/10.1177/146879410100100303>.

<sup>806</sup> Kathryn Roulston and Myungweon Choi, "Qualitative Interviews," in *The Sage Handbook of Qualitative Data Collection*, ed. Uwe Flick (London: SAGE Publications 2018), 244.

The limitations of the interviews included the small number of participants and the fact that all those interviewed were senior journalists. However, the number of potential interviewees was not large. This may indicate the significance placed upon the topic, the difficulty of the topic, or the limited resources available to the newsroom. Also, by 2020, increasing casualisation and mass redundancies meant that not all journalists from the news analysis were still working with news publishers or keen for an interview.<sup>807</sup> It needs to be reiterated that the newsroom is hierarchical; the insights and experiences of those just entering the newsroom can differ from those who were already established within the institution.

## Findings

In 2017, there were 98 reporters associated with *Stuff* and 34 from *NZH* who published content related to global warming and climate change. These figures included journalists working for other partnered news agencies.<sup>808</sup> In total, there were 11 reporters from *Stuff* and six from *NZH* who produced more than three global warming or climate change-related items for publication.<sup>809</sup> At *Stuff*, the journalists assigned to cover issues related to the environment and/or

---

<sup>807</sup> See Tom Pullar-Strecker, "Media Moves to Cut Jobs and Pay, but Minister Indicates Help Will Only Come in 'Medium Term'," *Stuff*, April 01, 2020, <https://www.stuff.co.nz/business/120747099/media-moves-to-cut-jobs-and-pay-but-minister-indicates-help-will-only-come-in-medium-term>; "NZME to Cut 200 Jobs as Advertising Revenue Plummet," *Radio New Zealand*, April 14, 2020, <https://www.rnz.co.nz/news/business/414165/nzme-to-cut-200-jobs-as-advertising-revenue-plummets>.

<sup>808</sup> Across both institutions there were 132 reporters publishing news items on the climate crisis. Of this figure, 102 journalists were based in New Zealand.

<sup>809</sup> Overall, there were not many reporters writing consistently about global warming matters. In requiring the participants to have had published three articles for the year helped to ensure that there was a larger sample of journalists to interview.

science produced a small number of news stories about global warming. Science and environment reporter Ged Cann was the most prolific; he published 18 news items, of which five pieces were related to one event. Cann was followed by national correspondent Charlie Mitchell with 13 and then, community journalist James Pasley with 10.<sup>810</sup> In comparison, at *NZH*, science reporter Jamie Morton produced 47 news items. This constituted almost one-third of his agency's total news output on global warming matters. He was followed by four colleagues, each producing four news pieces.

By 2020, of the 17 potential interviewees, eight from *Stuff* had moved on to other forms of employment, leaving nine potential participants.<sup>811</sup> Of those, four reporters accepted the invitation for an interview. There were two reporters from each publisher: National Correspondent Charlie Mitchell and Interviewee 3 from *Stuff*; and Science Reporter Jamie Morton and Multimedia Journalist Frances Cook from *NZH*.<sup>812</sup> Of those interviewed, Mitchell and Morton had long been reporting on climate change-related issues and continue to do so in a full-time capacity.<sup>813</sup> In 2017, across both publishers, Morton produced the most news items. The other two participants, Interviewee 3 and Cook, each published three articles.<sup>814</sup>

---

<sup>810</sup> In 2020, Cann and Pasley were no longer employed with *Stuff*.

<sup>811</sup> This suggests that in comparison to *NZH*, *Stuff* had a relatively higher turnover of staff.

<sup>812</sup> The participants were offered the chance to participate in the study anonymously. For that reason, the second reporter from *Stuff* is referred to as Interviewee 3.

<sup>813</sup> In 2018, *Stuff* launched "Quick! Save the Planet," a climate change campaign aimed at giving more prominence to news coverage of the issues and established a team, made up of two reporters to write about global warming related matters. Before then, Mitchell was the primary full-time reporter covering climate change related issues.

<sup>814</sup> Cook is the only reporter who no longer specifically focuses on science and/or the environment. She is now a podcast production manager and writes more about business and finance.

Of note, press gallery reporters and political journalists were largely unresponsive to requests for interviews.<sup>815</sup> Other respondents, for various reasons, were not inclined to give an interview. One reporter, for example, felt that he had not covered the topic area enough to warrant an interview and instead suggested another reporter to approach. This indicates that for some journalists the issue of credibility weighed on their mind. In general, reporters who specifically covered science and environment issues were more willing to participate in the study.

The interviews began in April and ended in June 2020.<sup>816</sup> The length of the interviews ranged from about 25 to 45 minutes. Notwithstanding the time lag from the media analysis to the interviews, the participants had all been working at each institution for a long period of time. Their knowledge and experiences allow for a deeper understanding of the production of climate science news and can shed light on some of the findings identified in the previous chapter. Furthermore, other areas which are of concern for climate science journalism and journalism, in general, may be uncovered.

---

<sup>815</sup> The interviews took place during the Covid-19 outbreak. For that reason, it can be assumed that many political journalists were preoccupied with covering the government's response to the pandemic. It is also possible that they were unwilling to share their experiences.

<sup>816</sup> The research project started on January 30, 2017. The digital news media analysis took place from late-2018 through till mid-2019. I intended to start face-to-face interviews with journalists shortly after; however, I took a six-month leave of absence from September 1, 2019 to January 31, 2020. Then, I intended to start my interviews in March 2020, but they could not take place because of the coronavirus pandemic lockdown. The interviews were rescheduled to take place on Zoom or by phone, starting in April 2020.

### *Defining Journalism*

All four journalists interviewed generally described the role of a journalist as making information available to the public. Mitchell remarked:

I guess for me, the main thing about being a journalist is just providing accurate information about issues of public interest is probably the most simple way of putting it. It doesn't really matter what, what topic that's on it, it's just that's the key element, is getting accurate information that people - need or should hear about.

Interviewee 3 stated that "you've got to get the facts as best as they can be ascertained on deadline before the public." Similarly, Morton explained that he viewed his role as "simplifying, explaining, breaking down and sort of making things more accessible or for people to be able to engage with." Here, the emphasis is on ascertaining and conveying valid information and correct details about what has taken or is taking place for news consumers.

Cook, in her response, underscored the potential significance or relevance of such information:

The role of a journalist is to find out information and make it clear to people who need to know it. And that can be all sorts of information, but it is often political or business or scientific, it is information that people need in their lives, and that is relevant to them. And that will help them make very important decisions about voting and how they live their lives. And it is just as important in finding that information to make sure you make it clear because ultimately, your job is to communicate things that people didn't know before. And so, it should be, yeah, it should be relevant, it should be important, and it should always be clear.

But she went on to make it clear that the newsroom should be "neutral" and remarked that "sometimes I do feel like there's an over-reliance on newsrooms to champion a cause, where that is not always necessarily the responsible move from a newsroom." Likewise, Morton and Interviewee 3, when probed, were

cautious about news institutions shifting from being a message carrier to adopting any kind of advocacy position on issues.

All journalists tended to view the profession as fulfilling some form of public service. Interviewee 3 stated that the purpose of journalistic work is “for the benefit of readers.” Cook also asserted, “I truly do believe in the role of the media as for the state, that you...need people to ask the important questions and to find information that powerful people would rather keep hidden.” Mitchell’s sentiments echoed what the others had expressed. He recalled that when writing about climate change “it sort of feels like you’re doing something meaningful, I guess.” For Morton, there are elements of altruism in the job, “we could be in other jobs and earn a lot more money, like if we went into public relations, or communications, that we could earn a lot more money and do a lot less work. But I think the reason we do what we do is because we want to actually do good.” In general, the journalists’ sentiments bring to mind the idea of journalism as being a job with a purpose or having a moral significance or value (that is not necessarily reflected in how much money it pays).

### *The Practicality of Making Climate News*

Both news institutions operate on a “round” system. That is, journalists are assigned to report on a specific topic or area (beat). For instance, Interviewee 3 commented that as a science journalist they were “interested in science that is happening in New Zealand. And, like all science, it can be very complicated. So, my job is to simplify it for a lay audience, an intelligent lay audience, and to tell

the stories of scientists and science as done in New Zealand.” Their description evokes a clear demarcation of duties. Morton also explained:

Round reporters are expected to basically work their rounds and come up with their own stories that they’ll pitch. Up in Auckland, they’ll have reporters’ meetings in the morning. So, they’ll all gather round to basically pitch their stories for that day or just tell, you know, tell the chief reporter what they’re working on.

When asked if he delved much into the political side of global warming, Morton made it clear that he rarely crosses over into other rounds, replying that “when it comes to that, I try to leave that to our press gallery. I mean, they are generally quite good at keeping on top of the issues.”

Mitchell was also asked a similar probe question, his response was:

Yeah, I don’t tend to...because we have a press gallery, so they seem to focus on, on the politics. Like I think Henry Cooke covers climate issues sort of within our press gallery team. So, we try not to cross over too much, but yeah. I personally just find the politics of it not that interesting, but I think that’s just more and more my own personal interests are in science and that sort of thing. Yeah, I, I just find the politics can be quite shallow, maybe that’s just the way it’s been reported previously. Yeah. And I just don’t really like that sort of, he said, she said type reporting and I find the, the climate reporting around politics tends to be a bit like that. Yeah so, it’s mostly a personal preference, I guess.

As a person who is interested in the area, his impression of the political coverage of the issues as being “quite shallow” suggests that press gallery reporters need to do more to engage with potential readers. Moreover, the concentrated focus of journalists also brings to the fore the question of how it impacts news audiences’ understanding of the problems and solutions associated with global warming. That is, if the issues and events related to the climate crisis are separated out in news coverage, can the complexity of what is unfolding, including the issue of culpability and political obligations, be grasped by those reading the news? But it

also raises the question of whether it is acceptable and practical to have that expectation of journalists.

All the reporters stated that they had to come up with their own story ideas. For instance, Interviewee 3 relayed, “I typically start with a Google Scholar alert system...which alerts me to every, well in theory, it alerts me to every time a New Zealand science paper, academic paper is published.” While Morton observed, “for as long as I can remember, I’ve always, always just been basically relied upon to come up with my own stories and it’s just rounds reporting, you know, like education, health.” He added that “it’s all about basically keeping on top of whatever research, whatever reports or whatever developments are coming out of that space and covering it.” Similarly, Mitchell indicated that his ideas come from “a bit all over the place” and:

...all of that just comes from keeping in touch with scientists who work on the stuff and just reading through the many, many government reports that come out and just taking issues that I think seem quite interesting and finding ways to personalise them a bit and then just sort of figure out how to make them relatable to people, which is always the hard part.

These explanations support the news media findings that journalists obtain information from official and/or authoritative sources.

In general, the time taken to produce a news item depended on the type of story, word length, and primary source(s) used. Mitchell explained, “It can take a few months, but sometimes it could just take a couple of weeks. It just sort of depends. Yeah, it also depends if I need to travel or not...I’ve done a couple of say 4,000–5,000 word stories about climate issues that have taken probably a month

or so each to, to produce but I'm also doing other stuff on the side as well while I'm doing that." While Cook detailed:

I mean, the writing is the least of it. I can bash out 500 words in like 15 minutes but in terms of gathering the information, reading, talking to people, like getting people to call you back, convincing them to go on tape...So, it very much depends on how much research you're doing, who you're talking to. The research and lining up interviews and convincing people to have a chat to you is often the bit that takes so much time...some stories take 15 minutes, some take a week, some take a month, some take a year. For me with the average climate story, it was probably a day to do a good job on a piece that was maybe the result of research or an event because we had to make sure that it also got other people. It could be a week if it was something that was a slower burner.

Also notable, Cook mentioned:

The more junior you are, the more you will be assigned stories essentially, you won't even necessarily get the chance to pitch and then you sort of get the opportunity to pitch more. And then it might be, they might say yes or no. And as you get more senior, it might not even necessarily be a pitch. I mean, these days, I pretty much tend to say I'm doing this story and they just say, "Okay" (laughs). And then how much they like it or don't like it will depend whether it just goes online, my stories always go online but it might say, you know, they might also put it in the paper. So, that might be the placement that shows how much they like or don't like a story, but I pretty much do what I want these days. So, as a junior, you can often pitch stories but in order to get those chances, you often might be finding stories on your own time.

Her comments draw attention to the on-site training of new journalists and the hierarchical culture of the newsroom.<sup>817</sup> It follows that those with more seniority are afforded more freedom. The rigidness during the early stages of employment suggests an induction program, where the skills of new journalists are refined to fit the newsroom culture. Here, it is important to reiterate that all four journalists interviewed are senior journalists (and the experiences of junior journalists reporting about global warming matters were likely to be different).

---

<sup>817</sup> A related issue is how the level of esteem a journalist has among their colleagues and their status with the public also differ within and among the various mediums. See Kimberly Meltzer, "The Hierarchy of Journalistic Cultural Authority," *Journalism Practice* 3, no. 1 (2009), <https://doi.org/10.1080/17512780802560757>.

In excerpts above from Morton and Mitchell on the process of making news, both underscored their working relationships with scientists. They were probed about their interactions with other groups in society. Morton said that he had “good relationships” with NGOs, such as Forest & Bird, Greenpeace, and Environmental Defence Society. Mitchell, however, said that he interacts with NGOs “a fair amount,” but tended “to stick to the scientists as much as possible.” He went on to explain that NGOs “can become quite charged, quite political if you get NGOs too involved in, in your reporting, sometimes you’d want that but in the sort of thing that I do, I don’t really.” His point of view does shed some light on the limited use of NGOs as news sources in the news texts under analysis.

Morton and Mitchell were also probed about their interactions with iwi and about providing Māori points of view in journalistic work on global warming-related matters. They both conceded that this was not a straightforward process. Morton stated he has “worked with Māoridom quite a lot but not so, not so much, often as an environment reporter but it’s very complex. And it just comes down to relationships and everything.” Mitchell was candid in his remarks, asserting that “there’s very little Māori journalism certainly in the mainstream generally, I think. I think that’s probably just the general issue. I mean, if you look in most newsrooms, you struggle to find many people who are Māori or writing for Māori issues. But that seems like a very obvious problem that needs to be

addressed.”<sup>818</sup> Then, when prompted to recall his own experiences engaging with Māori representatives or iwi, Mitchell replied:

I’ve tried a couple of times and it’s been very difficult, which I’ve spoken to others in journalism who have kind of had the same issues. I think it’s probably a bit of distrust towards, towards mainstream media. I think probably rightfully so. So, it can be hard. There’s just a bit of a, I guess the way we do journalism is not always consistent with what they would, with like a Māori world view. I guess, I don’t know.

Their responses suggest that more could be done to facilitate better relationships between journalists and Māori communities.

When asked about the role of the news audience, Morton said that he gauges audience engagement via reading time:

...we use a whole bunch of different metrics. I mean, there’s a misconception in the public that the media is about generating clicks. You know, we’re all about wanting people to click on it. Well, that’s wrong. What we want people to do is engage, we want people to read, read our stories longer and then transfer onto another story once they’ve read that one.

However, as Mitchell pointed out, “We can look at the number of people who read an article, say, and some of the articles do quite well in terms of viewer numbers, but that doesn’t really tell you whether they liked it or not or whether they found it interesting or engaged them in some way.” His insight brings to the fore the challenges of measuring engagement and ascertaining the retention of news content. That is, are readers cognitively processing, retaining, and acting on the content of the news or are they superficially engaging with the content?

---

<sup>818</sup> In July 2020, *Stuff* launched a ‘Pou Tiaki’ section on the website to focus on Te Ao Māori (the Māori world).

Both Interviewee 3 and Cook used the words “quite depressing” when reflecting on the data gathered from audience engagement metrics. Interviewee 3 noted:

...at *Stuff* we can tell how deep into a story a reader went...You know, by, by, as they scroll down, we can capture that data and we can see where they stopped. Yeah, where did, where they clicked away rather. And so, that can be quite, quite depressing, especially for the longer stuff, the 2,000-word stories...not, not many people are getting to the bottom of those.

While Cook remarked, “we get all sorts of different stats and when I was at a different newsroom, you could see how far people scrolled down your story. And that is quite depressing, most people will only read the first four paragraphs or so, there’s a very steep drop off after that.” She added, “So, it is on you to try and convey the guts of it in those first four paragraphs and then give more and more as you can to those who stick around.”

Cook also mentioned the placement of news items, suggesting that the location(s) of the news item was indicative of the importance the news editor ascribed to its content. Here, it needs to be reiterated that it is difficult to gather data about audience engagement from print publications. Morton, too stated, “it just comes down to prominence also on the website, like your story will always be competing with stories right around, like a court decision or a political story or some consumer story. So, you’ve got to be realistic about the fact that your story is not going to sit in the front and centre of the *Herald* website all day.”

Towards the end of the interview, Morton revealed that since February 2020 he has not written a single climate change-related story because the

coronavirus pandemic had usurped much of his attention. This illustrates how the climate crisis competes against other issues and events for attention such that its news relevance is not guaranteed. Mitchell also touched upon this realisation, arguing that the topic needs to be treated “as an everyday issue, not something that you just write about when a new report comes out or anything like that.” His observations invoke earlier media research findings that have called for a thematic as opposed to an episodic approach to news coverage of global warming-related issues.

Journalists were also probed about whether they received feedback from their readers. Mitchell said, “I get quite a lot of feedback. That is, people saying that climate change isn’t real. A lot of just that kind of stuff you see on Facebook quite a lot, conspiracies and misinformation, a lot of people just send me emails about that.” Similarly, Morton remarked:

I deal with climate scientists from one end and then I get a whole lot of hate mail from climate change deniers all the time, which is good. I think it’s good because it shows, it suggests to me that basically they’re being pushed to the fringes and they’re not liking it. And so, you know, the more irrelevant they become the angrier they become. And, you know, I’ve had challenges with people taking me to the press council and things like that. I don’t often get that sort of feedback from neutral people. I don’t think people really, you know, if you read a news story, you’re not going go and email the reporter and say it was a good story, thanks for doing that.

In Cook’s response to this probe question, she emphasised that certain rounds attracted more feedback:

When I covered politics, that was a nightmare, that was overwhelmingly negative. I think a lot of political journalists...get a very strong blowback, literally for just reporting what has happened, just reporting something that changed into law, you get very strong negative feedback as if you wrote the law sometimes, you know? Climate science can be both...Personal finance, now that I'm basically telling people how to pay off their mortgage and budget better, is overwhelmingly positive because people think that they're getting help with something that they otherwise didn't understand. So, it's, it's such a mixed bag in terms of the feedback you get, it very much depends on what you're covering.

These journalists' experiences bring to light another area that gets less publicised—the criticism, intimidation, and/or harassment of journalists.

One probing question for Morton was whether he had noticed any changes in the volume of complaints over time. His response was, "I think it will have increased. Yeah, I think so, cause you know, these people kind of have been de-platformed. You know, they used to have a voice. There was a time when the media was giving these people more airtime." This suggests that it has become a common element of daily journalistic work and raises the question of whether the added external pressure impacts how journalists perform. Morton went on to say that most of his complaints come via email (and not so much from social media). He suspected that this was so because most of the climate change deniers who contact him are part of an older generation (and so may not be very apt in using technological platforms). Mitchell and Interviewee 3 also reported that a lot of their feedback came through emails, indicating that communication between journalists and news consumers has yet to completely shift towards social media platforms.

In terms of the key constraints on climate science-related news stories, Mitchell and Morton talked about time and resources. Mitchell observed that he was usually “juggling a few things at once,” and Morton acknowledged “there are so many stories that we should be writing about, reporting on, but we can’t because we don’t have time because we’re just basically committed to other things.” Interviewee 3 admitted that the gap in technical knowledge makes it more challenging to report on this round, stating: “I’m not a climate scientist, not an atmospheric specialist, that kind of thing. So, what some of the more technical stuff gets, gets out of my, out of my depth.” However, they pointed out that, over time, researchers have been producing better supplementary resources to aid in the communication of their research, such as graphical material and videos.

Cook and Mitchell mentioned that finding ways to capture reader and viewer attention was a key constraint. Cook explained, “The constraint is often to convey it in the space that you will get and also in the space that the average person will read till.” Mitchell expressed, “Like I don’t face any institutional constraints at all, like I can write about climate [change] all day, every day if I wanted to and there would be no one stopping me from doing it. It’s purely just a matter, of just reporting it in a way that’s interesting and makes people want to read it and actually have sort of an impact.” From these responses, it appears that the challenges of conveying the urgency of the climate crisis do not solely derive from resource constraints and the quick news cycle but also the topic

itself. Thus, journalists are grappling with the various psychological barriers associated with communicating global warming-related matters.

### *Understanding the Global Warming and Climate Change*

All journalists demonstrated a grasp of scientific knowledge about global warming and climate change. Cook stated that “Climate change is the result of human activity, releasing mostly gases that are changing our environment in a way that could make the Earth uninhabitable for humans.” Mitchell broadly defined climate change as “the warming of the atmosphere. Sort of for me it’s caused mainly by carbon dioxide emissions from human sources is very broadly what it means, I guess. But it’s sort of, for me the interesting part is the effects and how it affects people.” Likewise, Morton explained it as “the gradual warming of our planet and the huge range of ramifications.” In general, their explanations did not differentiate global warming from climate change. This reflected a finding from the news analysis where the two terms would often be used interchangeably.

Mitchell and Morton were probed about climate action in New Zealand. Mitchell argued, “You have to mitigate the emissions to start with. But you also sort of need to deal with the effects because now we’ve got a certain amount of warming locked in. So, yeah, there will be affects no matter what we do. And you sort of have to take steps to address them, I guess.” His response signals the advancement of global warming and the need to look beyond containing the problem. For Morton, there are two key approaches:

...there is individual action that we can all take making more sustainable lifestyle choices that might involve using public transport, or heating, or lighting our homes more efficiently, eating less red meat, being conscious consumers. All of these things can make a great deal of difference. But when it comes down to it, the responsibility really lies with our decision-makers. But also, our major polluting companies. So, there is a misnomer that if we all, if we all take the bus then we're going to save the planet where it's not quite true because the, you know, the action has got to happen at a very high level amongst those handfuls of multi-billion, multi-trillion-dollar companies and governments around the world that can actually affect change.

His answer illustrates an awareness of the culpability of big business and the important role of policymakers in restraining the advances of global warming; these insights were largely absent from the 2017 news texts.

Both Morton and Mitchell also conceded that the policy components that contribute to climate action in New Zealand are particularly challenging, especially in terms of capturing and retaining the interest of news audiences. Mitchell drew attention to the convoluted nature of the ETS, commenting that "I know people who are experts on, on emissions trading and even they don't really understand the ETS and how it works in New Zealand. Yeah, it's just one of those things that is just very, very jargonistic, there's a lot of jargon. You have to explain a lot of the terms that are used." He went on to say, "If you, you're just an average person, you wouldn't see why emissions trading would have any effect on you whatsoever if you're not a business or forestry owner." While Morton focused on the composition of the country's emission profile, explaining:

Now, how do you make, basically a working mum from Glen Eden in Auckland care about cow burps or some scientists trying to stop cow burps? Another hugely important issue from New Zealand is our forestry and what sort of trees we should be planting, but also the relationship between forestry and carbon sinks in the ETS, emissions trading scheme. Also, how do you make that same working mum from Glen Eden care about the emissions trading scheme and what New Zealand units are? You know these are the things where New Zealand's contribution to emissions reductions are playing out and it is in these areas, it's not so much in people biking rather than taking the bus, it is in dairy paddocks and it is in forests and is a long way from where most people live and work and there is a disconnect there.

Here, he highlighted the technocratic and mundane nature of climate mitigation as a key obstacle to conveying a sense of agency to members of the public.

In their interviews, Mitchell and Interviewee 3 commented upon their interactions with the local community, in particular those living in flood-prone areas. Interviewee 3 found that there were “pushbacks” against municipal efforts for climate mitigation and or adaptation initiatives, especially from those who thought they would incur financial losses from such efforts. Of note, Mitchell observed, “Well, like I mentioned I've done a fair amount about coastal erosion and flooding and things like that and when you talk to people affected and they don't really want to talk about it in terms of climate change, that want to talk about in terms of flooding.” These insights suggest that there is a disjuncture between knowledge and belief, as well as between awareness and action. It also brings back into the spotlight the psychological challenges of addressing the climate crisis.

### *Communicating the Climate Emergency*

Responses also indicated that the nature of the research on and information about global warming and climate change added to the challenge of

capturing and sustaining audience engagement. Mitchell called climate science news “a hard sell” and pointed out that it lacked the “commercial appeal” of many other issues and events. He went on to observe:

I think some people when they hear about projections or modelling or things like that, they, they sort of see it as it's just a guess rather than something else that has an evidential basis that is, that's, actually like demonstrably the case based on evidence, so that can be quite hard, like when you say sea levels are going to rise by half measure by 2050, a lot of people just say, well, you're just guessing when there's actually very, there's a lot of reasons to believe that that will happen... it's sort of like trying to personalise something that hasn't happened yet. It's always, always very hard.

His discernments also suggest that for some people the past controversies around scientific research has tarnished the credibility of the field, hampering the ability of scientists and journalists to communicate the emerging knowledge about global warming and climate change. Cook also commented, “It's hard because I think our brains aren't great at thinking long-term consequences. And I found that with all sorts of different areas that I've covered over the years that when you start talking long term, people glaze over it.” These insights indicate that journalists are grappling with how to convey uncertainty and historical processes to news audiences.

The proliferation of egregious or erroneous information was also considered a key hindrance to informing news audiences about the climate crisis.<sup>819</sup> Mitchell stated:

---

<sup>819</sup> In July 2020, *Stuff* ceased all its activities on Facebook (and Instagram). See John Anthony, “Stuff stops all activity on Facebook in trial 'inspired by principle',” *Stuff*, July 6, 2020, <https://www.stuff.co.nz/business/industries/122048365/stuff-stops-all-activity-on-facebook-in-trial-inspired-by-principle>.

I guess it would be helpful if, you know that there was less misinformation about climate change that would, that would help a lot, particularly on things like Facebook. You just hear all sorts of crazy things and that sort of makes it hard to get reliable information out there because you're just sort of constantly pushing against things that just aren't true, that people for whatever motivated reasoning they have, want to believe it's true.

Similarly, Morton brought up the issue of social media platforms as channels of news and information, reflecting:

...social media is a kind of a bigger problem for journalism because that's, you know, that's basically it, it can actually nurture misinformation and spread at incredible rates. Journalism couldn't do that. For example, if you look at people taking down 5G towers or burning 5G towers as a result of people sharing stuff on social media.

Here, they both highlight the problematic nature of social media providers being used by the public as a platform to dispense and gather information. This brings to the fore issues around reliability and transparency of content.

Later, Morton mulled over the impact of social media:

...it's quite alarming that our leaders are actually sort of cynically bypassing journalists to go straight to the audiences on Facebook Live, yeah. It's a, social media is an existential threat to journalism, not only because of, it's broken our business model, but also because it's basically undermining the good and accurate information we're trying to put out there. But it can also do, you know, it can also do a lot of good. And I don't think the big climate marches that played out all around the world last year could have happened without social media and without the reach of it.

So, while new communication models have the potential to facilitate public discourse, Morton's astute comments about ordinary people and politicians bypassing traditional media channels to share content draws attention to the threat social media poses for the news media industry and democracy generally.<sup>820</sup> In some instances, facts are detached from the truth, independence

---

<sup>820</sup> The personalisation of politics through the use of social media is an increasing phenomenon in many countries, including New Zealand. The repercussions of this trend are still being played out and research in this field is growing. See Cristian Vaccari and Augusto Valeriani, "Follow the

and objectivity are foregone, leaving high profile social media users as the arbiters of what is important and correct. However, this is not specific to the reportage of the climate crisis.

Communicating the causes and the consequences of global warming were made difficult, according to the journalists, by the seemingly repetitious nature of the content. Interviewee 3 remarked:

I think that the public that, that read and has had an interest in this stuff has been presented with the, has been presented for many years with the theories and the premises and, and the evidence and so there's a certain—what's the word I'm looking for - a certain, they're tired of it because it's all the same or it's, you know, it's not changing. It's just new evidence coming along of course. But, but it's we're repeating ourselves.

Morton recalled a talk he attended where one of the presenters was a New Zealand journalist, Isobel Ewing, who relayed a conversation she had had with her editor at the time, Patrick Gower. Gower asked her: "What's changed? Is the planet still screwed?" For Morton, this aptly depicts the situation. He expounded:

You know, they [the news audience] are used to basically stories developing or changing. With climate change a big part of it is the fact that you know, it all comes back to this big existential kind of monolithic threat that is there. And, you know, it hasn't gone away and it probably won't, it's probably always going to be there. And so how do you engage people in something that is always going to exist?

These reflections show that journalists continue to find it challenging to sustain audience engagement with "bad news" or a "looming disaster".

---

Leader! Direct and Indirect Flows of Political Communication During the 2013 Italian General Election Campaign," *New Media & Society* 17, no. 7 (2015); Caroline Fisher, David Marshall, and Kerry McCallum, "Bypassing the Press Gallery: From Howard to Hanson," *Media International Australia* 167, no. 1 (2018), <https://doi.org/10.1177/1329878X18766077>.

When asked about the state of climate science journalism in New Zealand, the journalists all believed that the news coverage of the issues had improved over time. For instance, Interviewee 3 remarked:

...at *Stuff* we had to get over a, we had to get over a, the problem of whether we should be allowing two sides to every story. So there, as you know, there's the climate change sceptics and further, further afield, climate change deniers and whether we need to give those people, they need to be quoted in every story on science, on climate change, and senior management at *Stuff*, senior editorial management at *Stuff* decided that you did not have to give those people a say in every story. And we don't publish their letters to the editor or their comments or record them, in general, climate, climate change stories.

Cook pointed out that "New Zealand newsrooms are taking it really seriously. How much it reaches the average person is so difficult to say." For Mitchell, climate science journalism has changed a lot, but he thought that "it still leaves a lot to be desired" and argued that it "tends to get drowned out by just the typical news of the day."

Throughout the interviews, each journalist made various references to the limits of journalism and the precarious future of the news industry. Cook commented that given "the pressures that journalism is often under" a reporter could only persist in this field if they believed in the ideal vision of their work as being a public good. In Morton's interview, he conceded, "Yeah, well, I hate to admit it, but journalism is only really one part of the picture now. You know, like it used to be that we were the, you know, the big, the big influencers, but now everyone's on Instagram, Twitter or Facebook or whatever. Social media plays a huge role." His admission implies that the centrality of news in people's everyday life has been dissipated by social media platforms. This gives rise to the question

of how traditional models of communication can maintain their relevance and adapt to the public's changing preferences.

Towards the end of his interview, Morton stated:

It all comes down to critical mass though. I mean, our industry is on its knees at the moment...We, you know, we don't know what sort of future we face. It's conceivable that a lot of our major players could collapse. Basically, it comes down to how much people value and support journalism. We, our, business model is broken. People aren't paying for news, but people need to because it's a public service. And if more people supported journalism, paid for it, journalists would have more journalists that could actually cover climate change. With the amount of pressure that we're under at the moment and how under-resourced we are I think it's quite incredible how much climate change coverage we do actually provide in New Zealand.

His remarks, coupled with the other journalists' sentiments, prompts the question: how should society measure and remunerate work that matters? News organisations are struggling to find audiences who are able and/or willing to pay their prices, and the situation is only likely to get worse. Therefore, how can the nonmonetary contribution of journalism be acknowledged and sustained?

## **Discussion and Implications**

From the interviews, it is clear that science and/or environmental reporters were aware of the scientific evidence for global warming. They knew of its causes, consequences, and remedies. However, more needs to be done to unpack the deeper and larger questions that global warming and its implications ask of people. Ideally, journalists search and probe for information, bringing to light what might otherwise remain obfuscated. But how much of climate science journalism, if it brackets out the social, economic, and political underpinnings, is about asking key questions and scrutinising the decisions of those in power? It

needs to be underlined that journalism does not have to answer these important questions, but they should ask them.

Interviewees found the climate action needed to avert more negative global warming outcomes were challenging to convey to news audiences. Here, reporters referenced many known psychological barriers to the communication of the climate crisis. It is important to add that some of the new information or events, for instance, new climate science research, the annual meeting of the UNFCCC Parties, and the climate mitigation and adaptation options for New Zealand, are unlikely to be arresting enough to capture and or sustain audience engagement. This calls for a rethinking of how to convey the events and issues. Journalists writing about the climate crisis need to constantly reconsider how they select and convey the crux of the story. However, the challenges of communicating the climate breakdown were not limited to the topic itself. Some of the journalists spoke about other commitments in the newsroom that competed for their time and diverted their attention, leaving areas unexplored in global warming news discourses.

The comments regarding audience metrics suggest that media scholars need to pay closer attention to the early segments of a news item. Future research should consider what news consumers' gain or lose by only reading the first four paragraphs of a news text (in comparison to the whole text). Also, the remarks about audience feedback suggest that management and news editors should be wary of the exchanges taking place between journalists and news

consumers. It also raises the question of whether such criticisms divert attention and resources away from producing news on the climate crisis. Are reporters becoming too cognisant of how their work will be perceived by the audience? Additionally, there is potential for critical and negative feedback to adversely affect journalists' mental health, especially if they have not been exposed to such exchanges.

The interviews also showed that the communication difficulties that had, in earlier years, persisted between scientists and journalists are largely non-existent. However, for other groups in society, there are some communication barriers, so consideration needs to be given to how to bridge these gaps. For instance, advocacy groups need to make communication choices that are better aligned with the quick and condensed cycle of the news, and journalists need to find better ways to express what they require from advocacy groups. Also, journalists' use of academic sources needs to expand beyond the field of science. For example, the works and points of view emerging from other scholarly fields, such as history, economics, law, and urban planning, could potentially break up the sometimes-repetitive coverage of the climate crisis.

Thought also needs to be given to the relationship between Māori and the news industry. It was evident from the news analysis that Māori voices on the climate crisis in news discourses were absent, whether because of an aversion to the industry, from a lack of representation, or for other reasons. However, indigenous views of the land and the wider environment are important. They can

offer new approaches to integrate, value, and preserve the Earth. Mitchell's candid remarks about barriers in communication with Māori and the lack of diversity within the industry itself suggests that news organisations should consider the ways that inequality can manifest in the news. Although, it needs to be underlined that in this thesis these points remain largely speculative.

However, if inequality exists, it should be addressed properly as it can aid in the process of developing a news narrative that better reflects society and ensures better engagement from the community at large.

At issue, also, is cooperation and collaboration among journalists. Science and environmental reporters need to consider if it is possible to work more with other colleagues reporting on different rounds, especially those writing on politics and business. The complex nature of global warming means that the research and the events unfolding transgress any given field. The climate crisis results not only from pushing against and the breaching of planetary boundaries, but it also reflects economic interests and political priorities. The failure to recognise and convey this reality has enabled negative global warming outcomes to build and spread. Journalists, therefore, need to integrate their reportage with a larger critique of power—its distribution and accountability. Doing so will generate new areas of inquiry, expand knowledge, and can help to bring about a change in public sentiment and action.

The interviewees' responses also indicate, to varying degrees, a sense of trepidation about the future of journalism. The ascendancy of the internet and

social media platforms has broken the mass media's business model of selling news and challenged the authority of journalism itself. Thus, the debate on the role of journalism in society is recast. Two central questions arise here: Is news simply the relaying of information or is it a platform that enables calls for systematic change? And, how can journalism recapture its waning relevance in the public mind? This is especially significant when issues of utmost importance like the climate crisis require public scrutiny. These questions will be grappled with in the concluding chapter.

## **Conclusion**

In summary, the shortcomings of climate science news and news related to global warming appear to arise from the topic's very nature, the culture of the newsroom, and the economic constraint of the marketplace in making news. Of those interviewed, all possessed a good level of understanding about the scientific evidence for global warming and its implications, and all were conscious of the professional limitations and constraints of journalism. However, there were important historical, economic, political, and social components to the climate debate that were missing from news discourses. More still needs to be done to engage news audiences with the climate emergency. The thesis conclusion offers ways in which the communication of the climate crisis can move forward.

## Conclusion

### Covering the Climate Crisis: The Urgency of Now

The task to be accomplished is not the conservation of the past, but the redemption of the hopes of the past.

–Theodor W. Adorno & Max Horkheimer, *Dialectic of Enlightenment*, 1947

This chapter begins by arguing that the climate crisis, as usually understood, has been misinterpreted. The climate crisis is not reducible to a mere scientific or environmental issue. Next, I summarise how global warming and its related matters have been communicated to the New Zealand public and identify key constraints and challenges faced by journalists. I show that news coverage of global warming and climate change issues and events need to consider historical interpretation, power and politics, the lives of others, and practical ways forward. In my view, to properly understand the fundamental ecological problems that we are facing, it is important to provide a long and broad perspective of what is unfolding.

#### Understanding Global Warming and Climate Change

The year 2019 marked a quarter of a century from when the United Nations Framework Convention on Climate Change entered into force. Yet, the number of heat-trapping pollutants in the atmosphere have increased, resulting in record-breaking climate statistics. In 2018, global carbon emissions were at an all-time high (55.3 GtCO<sub>2</sub>e) and recent data suggests that 2019 will (just) exceed

this record.<sup>821</sup> The manifestations of global warming are also unremitting: extreme weather events have continued to kill or displace people; species extinction has continued to rise; and the arctic sea ice has continued to melt. Such outcomes signal that the problems facing everyone have not subsided, rather they have deepened.

From the growing body of knowledge on climate science, the development and implementation of practical countermeasures have been slow. International cooperation has largely stalled, complicated by various factors. Kunelius and Eide explained that the global effort to address and limit the effects and risks of global warming “saturates decision-making from everyday life and local politics to global governance; it penetrates deep into the structural conditions of modern societies and their social order and reaches from the distant past hundreds of years into the future.”<sup>822</sup> They went on to point out that “there is *no outside* position from which to formulate questions, construct knowledge or give advice” (italics in original).<sup>823</sup> The scale, depth, and complexity of global warming are unprecedented, so everyone, to use an idiom, has “skin in the game” (whether they realise it or not).

---

<sup>821</sup> United Nations Environment Programme, *Emissions Gap Report 2019* (Nairobi: United Nations Environment, 2019). Early data from the Global Carbon Project suggest that global emissions will hit a record high in 2019. However, according to the International Energy Agency, for 2019, the output of global emissions has flattened. See "Global Carbon Budget: Summary Highlights," Global Carbon Project, accessed August 27, 2020, [https://www.globalcarbonproject.org/carbonbudget/19/highlights.htm#:~:text=Summary%20Highlights&text=Global%20CO2%20emissions%20from,%2D1%20during%202009%2D2018.&text=Tog ether%2C%20land%20use%20change%2C%20fossil,2.8%20GtCO2%20in%202018.](https://www.globalcarbonproject.org/carbonbudget/19/highlights.htm#:~:text=Summary%20Highlights&text=Global%20CO2%20emissions%20from,%2D1%20during%202009%2D2018.&text=Tog ether%2C%20land%20use%20change%2C%20fossil,2.8%20GtCO2%20in%202018.;); International Energy Agency, "Global CO<sub>2</sub> Emissions in 2019," news release, February 11, 2020, <https://www.iea.org/articles/global-co2-emissions-in-2019>.

<sup>822</sup> Kunelius and Eide, "The Problem: Climate Change, Politics and the Media," 2.

<sup>823</sup> Ibid.

Science alone has failed to unite everyone in action to tackle the climate crisis. Often, the pursuit of power and/or economic returns underestimates the complexity of the Earth system. Politicians and businesses who know that their skin is very much in the game cast an eye towards the recent past, the present, and/or the immediate future, obscuring doubt over the security of the long-term future. This results in part because politicians are beholden to their constituents and in some countries, political donors, while businesses are beholden to a profit opportunity.<sup>824</sup> Consequently, much of the burden for remedying global warming shifts onto others, including future generations. Moreover, those responsible for polluting the environment and delaying its clean-up are very rarely made to face the consequences of their decisions and actions. Often, their personalities, shrewdness, and/or connections elide the fact that power, by conscious design, resides among the elites.

The likelihood of implementing a global political arrangement that is capable of lowering emission levels and appeasing everyone is slim. Individual and group inequality coupled with the stark realities of differentiated vulnerability leads to a socio-economic and political quagmire. As discussed in chapters one and two, some of the imbalances are not only historical but also persistent, from the distribution of profits between capital and labour to the

---

<sup>824</sup> Here, it is important to underline that some politicians are also part of the pecuniary class. Power is also conferred by wealth. The current base salary of a Member of Parliament is about \$164,000, while a Cabinet Minister receives about \$296,000. The amount of remuneration for politicians is reflective of the office(s) they hold. Also, some politicians, once they leave office go on to take up other prominent corporate positions. For example, former prime minister John Key was appointed to the board of directors of Air New Zealand and is the chairman of ANZ Bank New Zealand. While former National Party cabinet minister Steven Joyce has established a consultant agency called Joyce Advisory, where he is the director and a consultant.

distribution of environmental harm between production and consumption.

Therefore, there is a case for governments to devise incentives to spur businesses to create ecologically protective services and to invest in such services.

At issue, also, is that many existing environmental agreements, schemes, and programmes can be easily circumvented. For example, in some cases, emitters simply purchase (dubious) credits to offset their emissions, which largely absolves them of their responsibilities to pursue a low-emission future. In other instances, the burden of emissions takes place in one location while the benefits are reaped in another. In some jurisdictions, the guidelines are not firm and/or there is little regulatory oversight, so businesses may be reporting carbon reductions that they did not achieve. So, with little to no financial deterrents for reining in pollutants and largely no repercussions for noncompliance, individuals, companies, and nations, including New Zealand, can continue to pollute. This casts a critical spotlight over the relevancy of climate negotiations.

Another key hindrance to effective climate action is overcoming the onset and prospect of uncertainty, that is, how to embrace and prepare for the unknown—both in scientific knowledge and in future outcomes. It needs to be underscored that there is no escape from uncertainty; much of life lies beyond people's control. But people's interpretations, desires, and antipathies—their responses—can be influenced. Many possible futures still lie ahead. They range from quite bad to disastrous. Uncertainty need not be shrouded in negativity, but rather it can be viewed as an opportunity to improve the world today. It can give

way to new understandings and create avenues for progress. Its open-ended nature implies that an ecological catastrophe is not necessarily imminent, nor a foregone conclusion.

Also, amongst the voluminous scientific data, there is a comprehensive picture that forms: the warmer the Earth becomes, the graver the risks and consequences for all. Therefore, action is needed now. At present, there is no one quick fix to avert an environmental collapse but it is clear that structural changes are needed. Here, citizen responses can aid in climate action by imploring politicians to act by informed voting, voicing concerns, supporting local groups, and taking part in demonstrations and petitions.

In summary, for too long climate action has been largely deferred but it cannot be let to drift any longer. Global warming and climate change ought to give people a new understanding of humanity's vulnerability on the Earth's stage but the severe breakdowns have not been startling enough for the powerful few. Structural changes and institutional reforms continue to lag the scientific consensus. So, it needs to be continuously reiterated that the repercussions and risks of a warmer planet are symptomatic of the pressing problem of accumulation—capital accumulation, wealth accumulation, product accumulation, and experience accumulation—combined with the failure of political intervention.

## Climate Politics in New Zealand

Like other nations, New Zealand can no longer afford to delay action on global warming and its effects. GHG outputs not only exacerbate the situation but also compounds it. For that reason, inaction itself effectively sees the government abdicating its responsibilities and duty to the general public and others. As detailed in chapter three, New Zealand's approach to environmental collapse has been permeated by six key narratives. These narratives centres around the country's size, unconventional emissions profile, low-emission electricity sector, specialised economic base, and its implementation of an emissions trading scheme. For instance, New Zealand's small size has been used as a justification for its inability to influence global emissions. Its renewable energy portfolio has also been lauded as a symbol of a national commitment to green energy resources. While its farming sector has been peddled as being one of the most productive and efficient in the world. However, these declarations are naïve and overlook the fact that New Zealand is far from being clean and green.

In 2017, 60.2% of the country's primary energy came from oil, natural gas, and coal.<sup>825</sup> Therefore, New Zealand still needs to be less dependent on electricity generated by coal and gas, and transportation powered by petrol and diesel. It still needs to rethink its approach to the NZ ETS so that it incentivises individuals and businesses to reduce GHG emissions. It still needs to reshape its economic structure to be less dependent on carbon-intensive industries. It still needs to take partisan party politics out of climate policies. It still needs to lower

---

<sup>825</sup> Ministry of Business Innovation and Employment, *Energy in New Zealand 2018*, 14-15.

its per capita emissions. Overall, global warming-related debates need to be broadened to consider the issues of culpability and accountability and to ensure that New Zealand's climate action aligns with its marketed image and publicised commitments to the environment.

My critical analysis of the political discourse on climate-related announcements and policies in chapter three found that successive governments did attempt to implement climate protections, but that these measures were, and are, largely inadequate for reducing GHG emissions. There was a disjunction between understanding the consequences and risks of global warming and planning for them. Climate change policies require a series of actions over an extended period, and their future benefits need to be prioritised over immediate inconveniences. The differing time scales of short-term costs and long-term benefits, coupled with uncertainty, has seen political leaders succumb to the pervasive short-term pressures of staying in office. As a result, certain industries, such as farming, mining, and automotive, are prioritised over others.

So, how can a long view on this crisis be reconciled with a three-year election cycle? Under previous governments, climate policies have tended to be plagued by party ideologies. The divisive political nature of the issue results in little momentum for many climate initiatives. The difference between the two major parties has centred on where, how deeply, and at what pace to reduce the nation's GHG emissions. Overall, the Labour Party has tended to be more assertive than the right-leaning National Party in attempting to commit to

climate policies. However, most of the time, their ambitions exceeded their abilities. On the other hand, the National Party has a propensity to downplay the consequences and risks of global warming in favour of big business and economic growth. The lack of political consensus over the issue sees it used as a political tool to retain or lure potential voters.

It needs to be reiterated that certain state activities have a commercial orientation. Governments have made investments in energy, aviation, transport, among others. The challenge for them is to balance the drive for long-term goals with the need to keep the country economically strong in the present and immediate future. However, global warming and climate change also pose a huge fiscal risk to the country. Future government interventions, such as disaster relief and recovery and climate adaptation, will add heavily to the national deficit. Therefore, governments will need to reconsider how it does business. It needs to model the environmentally friendly values and behaviour that is required to set New Zealand on a low-emissions path. Moving forward, governments will need to plan for economic reform. They need to invest more in research on new technologies and put in place policies to curb and price carbon emissions—policies that will deter pollution and allow the market to direct resources toward smart and clean investments.

### **The News Media's Understanding of the Climate Emergency**

The news media analysis in this thesis has focused on a critical period in the evolving debate over climate action in New Zealand. In 2017, the climate

collapse was accelerating and so, too, was the politics of the crisis. It was being played out at the municipal and central government level, debated in the House, and deliberated upon in the courtroom. It also featured prominently during the 2017 election campaign, with the Labour Party leader hailing global warming as “my generation’s nuclear-free moment.”<sup>826</sup> But while the climate debate was intensifying by the year’s end, not much eventuated. National emission levels for 2017 were higher than the previous year. Additionally, the conclusion of the 2015/16 NZ ETS Review only saw some in-principle decisions being considered and no immediate changes to the operations of the scheme. The High Court also dismissed the nation’s first request for a judicial review of the government’s climate policy, stating among other things that the government had followed the international framework.<sup>827</sup> The year-long study undertaken here draws attention to these global warming-related events and issues to pose the question: how was the relevant content and information represented to digital news audiences?

### *Online News Coverage of the Climate Breakdown*

At the core of this project was a sample of the online news media’s coverage of global warming and climate change-related issues and events. To research the digital press is to imply that it is a crucial avenue for obtaining news and knowledge. The volume of site visits to *Stuff* and *NZH* suggest that these news publishers are still relevant in this changing world. Overall, *Stuff*

---

<sup>826</sup> Trevett, "Jacinda Ardern's Rallying Cry."

<sup>827</sup> See *Thomson v. The Minister for Climate Change Issues*, NZHC 733 (2017).

had more journalists writing about the issue and published more news items, but their news content was largely indistinguishable from *NZH*. Both agencies accepted the scientific evidence behind global warming, although denialists and/or sceptics did at times have a voice in their news items.<sup>828</sup> Journalists from both publishers also tended to construct news stories about global warming and climate change around scientific or environmental themes, mischaracterising the global problem and obscuring its underlying causes. Global warming is a symptom of and, therefore, a challenge to, the conventional economic orthodoxy of increasing growth. Over time, inadequate political governance has enabled the manifestations of global warming to metastasise, devastating certain groups and populations more than others.

The findings revealed that there is a litany of scientific data and information relating to risks and planning assessments in news reportage on global warming matters, such that there is a banality to the stories journalists tell. As discussed in chapter four, this assessment recalls Susan Moeller's observations about the "formulaic coverage" of international disasters and catastrophes. In terms of documenting the latest scientific findings, the news stories under review were generally well detailed and easy to follow, but they rarely addressed the inevitable question that followed: "and, so?" At times, the scientific evidence was detached from its underlying causes, possible remedies,

---

<sup>828</sup> In 2019, both publishers signed up for Covering Climate Now, a project co-founded by *Columbia Journalism Review* (CJR) and *The Nation*, in partnership with *The Guardian*, aimed at the promotion of stronger climate news coverage around the world. See Mark Hertsgaard, "Covering Climate Now Signs on over 170 News Outlets," *Columbia Journalism Review*, 28 August 2019.

and broader implications. It needs to be re-emphasised that the (record-breaking) climate science data being observed are signs and symptoms of global warming, they are not the cause of it.

It is important to highlight that the scientific evidence tended to show that changes brought about by human actions were predominantly negative. Moreover, with little attention paid towards a solution or solutions, it is easy to fathom how the inundation of bad news would leave news audiences disengaged, disenchanted, and/or depressed. It can also create an atmosphere of fear, which can result in unpleasant feelings and be a barrier to engagement.<sup>829</sup> Thus, there is a case for journalists to balance bad news coverage with news stories that are more inspiring or offer solutions. New Zealand journalists could, for instance, provide examples of how similar global warming problems have been tackled elsewhere.

Political information was largely presented as it was relayed to journalists, with little critical appraisal of the information given. Arguably, the digital press was a medium for promoting official accounts. The underlying reasons for the growth of environmental (and social) ills were rarely mentioned. That is, the issue of politics and power were largely unexamined, allowing political leaders and businesses to be insulated from accountability. It is important to reiterate that scientists make assumptions, test those assumptions,

---

<sup>829</sup> See Saffron O'Neill and Sophie Nicholson-Cole, "Fear Won't Do It': Promoting Positive Engagement with Climate Change through Visual and Iconic Representations," *Science Communication* 30, no. 3 (2009), <https://doi.org/10.1177/1075547008329201>.

and then report on the then-available science. They do not impart critical judgement without a scientific basis. That is not a part of their professional responsibility, nor should it be. However, this cannot be said for politicians and businesspeople. It can then be asked if this bias is paradoxical. If anthropogenic global warming primarily results from the activities of the wealthy, powerful energy capitalists, and their political allies, as is argued here, then, turning to those sources for information is perversely counter-intuitive. In short, the ideas and arguments about global warming and climate change remain largely defined by the views and actions of the people it should critique.

The propensity for official points of views in news coverage comports with traditional news conventions. The news industry prefers information that is reliable, factual, and easily accessible. Those with official titles tend to fit these categories. However, this raises the question of whether it leads to biased coverage of the issues, problems, and remedies. That is, does such coverage present a skewed view of anthropogenic global warming and climate mitigation? Placing more emphasis on official understandings can minimise the importance of alternative and/or indigenous knowledge. Its gender, class, cultural, regional, and ideological divisions and struggles are simplified if not lost. Simply put, a top-down perspective deprives the climate crisis of its complexity. And given the lack of progress on curbing rising GHG emissions, there is a case for more inputs from a variety of perspectives.

Generally, for both news publishers, news coverage of the issue lacked nuance, complexity, and an international focus. The key components of fossil capitalism, limits to economic growth, consumer culture, and differential suffering were rarely explored. It needs to be repeated that other geographic locations show more signs of a severe climate breakdown. However, since much of the journalists' focus was on New Zealand, these realities received little news attention. As discussed in chapter one, certain groups, regions, or nations are more affected but less culpable for the changing climate. In many of these places, people are living in poverty and/or are under ineffective leadership so are less likely to withstand global warming impacts. For example, in the populous city of Mumbai, millions live in slums along the city's coastline and will be adversely affected by flooding. The global spotlight is important for climate action and climate justice. Moreover, alternate examples of and approaches to climate change can give the issue more salience.<sup>830</sup> But if the experiences of others fall outside mainstream news coverage in less affected countries, it can be hard to grasp the issues of culpability, accountability, and differential suffering.

News coverage also failed to consider historical content. As detailed in chapter one, this current epoch is likely to be called the Anthropocene. The discussions around this historical marker offer alternative interpretations and insights into the climate crisis. It also brings to attention the issue of power. A critique of power is important for understanding the structural relationships

---

<sup>830</sup> See Bill McKibben, *Eaarth: Making a Life on a Tough New Planet* (New York: St. Martin's Griffin, 2010); Paul Hawken, ed. *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming* (New York: Penguin Books, 2017); Joan Fitzgerald, *Greenovation: Urban Leadership on Climate Change*, (New York: Oxford University Press, 2020).

between people and between countries, and how this contributes to the uneven distribution of harm. Additionally, as detailed in chapters one and two, the problem of burning fossil fuels was identified in the late 1950s and publicised on the world stage in the late 1980s. The earlier periods of struggle to get clarity and action around global warming needs to be acknowledged if we are to understand how the problem has evolved into a crisis. It also makes known the constraints, hostilities, and apathy that scientists and climate activists have had to confront. By extending the chronology, the motives of primary actors and vested interests, as well as the economic and political pressures, are brought out. It can also signal the likely futures of climate action and climate justice.

A longer chronological view of the crisis is also important for holding those in power to account. For instance, politicians in government need to feel the weight of their ministerial responsibilities. They need to know that the failures of policies and judgements have consequences. If ministerial (in)decisions do not acknowledge and heed these repercussions, the basic principles of a democratic society are pointless. If events and actions are separated out by stretches of time, it can be difficult to see the long-term casual linkages and the recurring patterns of interpretations and behaviours. If there are similar occurrences, they can serve as the building blocks to a better understanding of the situation. Put differently, taking a broad perspective can also allow for the identification of the political culture which has helped to shape climate policies. Therefore, the public can better discern the degree of government commitment necessary to safeguard the Earth.

*The Values and Practices of Environmental and Science Journalists*

The second component of my empirical research comprised interviews with science and environmental reporters about what guides their news judgments, how they view news audiences, and what professional and communicative constraints they encounter. The findings offered insights into the professional practices and aspirational ideals of the four participants and their newsrooms. All the interviewees I spoke with gravitated to the profession and remained in it largely because of its ethical altruism. All of them talked about, in some sense, the potential for journalism to advance democratic principles. They emphasised the importance of the news industry for the functioning of society, especially the ability of journalists to facilitate the engagement of the public with matters of pertinent concern. However, they all conceded that journalism is not an easy craft given the quick, unrelenting news cycle, complex topics, hostile members of the news audience, and low salaries.

The participants also brought up a range of practices and values for reporting: originality, research, well-sourced information, and autonomy. Here, they espoused traditional journalistic values, highlighting that these norms have endured over time. At issue, then, is how have these news routines shaped the contours and content of the climate crisis. It was found that the scope of news reportage on global warming and climate change matters was limited. For example, in several of the interviews, it was clear that there are routine channels for gathering information. Additionally, some interviewees were reluctant or hesitant to venture into areas adjacent to climate science. This suggests that

journalists failed to recognise that matters of science and the environment are not divorced from economic power structures, social power, and the politics that govern it. Simply put, the issues around the climate crisis are not reducible to an “either/or” field.

Notably, the interviewees were all adamant that they had a high level of independence, maintaining that while they were cognisant of the business model of making news, their work was not stymied by the commercial or ideological motivations of editorial teams and managers. It can be assumed, though, since all those interviewed were senior journalists, that they would have received newsroom training (or informal on-the-job training) and mentoring. They would have learnt how to negotiate and reinterpret information as well as how to align their work with the reputation of the newsroom. This, then, raises the issue of how to apportion accountability for the shortcomings found in the news analysis. Does the blame lie primarily with the news organisation? Or do the shortcomings stem from inadequate journalistic training in handling the deeper issues? Alternatively, does the news content reflect the perceived interest of its audience?

One of the journalists from *Stuff* mentioned that the newsroom was not representative of wider society. This can have implications for the ideas that circulate, what issues are examined, and how they are analysed.<sup>831</sup> Of concern

---

<sup>831</sup> Newsrooms should aim to reflect the diversity of the community. In addressing this matter, news organisations need to be wary of shifting the responsibility of dealing with issues of diversity and inclusion onto journalists from marginalised communities. In many organisations, too often, certain members of the team are transformed into a poster child of inclusivity.

also, was how announcements, ideas, issues, and events passed without much critical scrutiny. Often journalists “replayed” official announcements, that is, the prevailing short-term economic priorities and political interests. One *Stuff* journalist even mentioned his distaste for the political coverage of global warming matters. This suggests the need for new initiatives to improve how activities associated with the governance of the environment are reported. It is important to underscore that the decisions and choices journalists make can contribute to the audience’s interpretation of the information. If political rhetoric and climate policies are left unexplored in news content, then the ecological collapse is mischaracterised as being purely a scientific problem that needs a scientific solution. Put simply, if the problem is simply the emission of GHGs, then the answer is simple: stop emitting GHGs. Yet, global GHG emissions continue to rise. So, why is it so difficult to reduce GHG emissions?

All the participants were attuned to how news audiences respond to their work. However, the nature of the journalist-audience relationship is not easy to discern. Audience metrics do not adequately convey how members of the audience viewed and understood a particular news piece. Moreover, it needs to be borne in mind that the news audience is not an amorphous mass. Still, audience engagement was measured, through page views, reading time, and page scrolls. Of note, also, all the interviewees mentioned that they received public feedback via email. One journalist commented that over the course of his

---

Journalists from underrepresented groups should not solely bear the burden of trying to change an unfair and unjust system, which often involves many working additional hours with minimal recognition.

career, the number of audience opinions he received directly had increased. The content of such responses was said to vary but tended to be negative rather than constructive. This growing occupational hazard is an area that needs to be monitored and explored further.

All the interviewees did express a desire to capture readers' attention. However, as stated in chapter two, the climate crisis is "super-wicked". Its invisible gases, uncertain outcomes, distant threats, and the necessity for collective cooperation makes climate communication a challenge. Global warming and its effects are worthy of media attention but over time, their importance has waned in people's minds. For some, it has become dull and uninteresting. For others, news coverage of the issues is increasingly repetitive and too laden with scientific and technical terms. Over time, the complexities of global warming have failed to satisfy many of the primary criteria for news: importance, interest, controversy, the unusual, timeliness, and proximity. If the coverage is too abstract and too distant, it can result in many individuals not taking the warning signs seriously. As such, journalists will need to link the problems of a warmer Earth to issues that people can relate to as part of their everyday lives. Such issues, from food and travel to waste and technology, could be a backdrop for conversations about global warming.

One of the interviewees from *NZH* expressed frustration with the unregulated nature of social media and its impingement on the news industry. In an age of communicative abundance, there are many avenues to create,

disseminate, and obtain information. However, unlike the news industry, many of these new platforms do not adhere to the practice of checking and corroborating sources and information. Also, of concern, which one journalist alluded to, are the growing appeals to audiences' emotions and personal beliefs. Increasingly, political leaders are blurring the line between the private and the public spheres, taking it upon themselves to communicate with their constituents on various platforms. This gives rise to concerns about social media being used as a public relations and propaganda tool. These issues offer an important avenue for future study.

To further test the arguments I have developed here, future research could provide a comparative analysis of how the news media presents issues related to the economy and the environment, and politics and the environment. News as it appears on handheld devices also deserves further research attention. There should be a focus, too, on how news consumers rely upon the information that is instantaneously visible—the image, headline, and the lead statement. Here, attention is on surface information. It would also be helpful to capture a longitudinal qualitative understanding of how members of the audience perceive the news stories and whether they retain the knowledge that is imparted. Also, journalists' interaction with the public (e.g., on social media and via audience feedback) offer promising directions for future research.

In summary, there were four key structural absences in the digital news reportage of the climate crisis: a long chronological view; the underlying causes

of rising greenhouse gases; differential suffering; and solution-focused approaches. The failure of the news media to address the underlying relationships between global warming and the exploitation of nature, and global warming and power, see the climate crisis deepen. Further, the paucity of coverage containing historical information and stories and ideas for reconstructing a more ecologically just society serves to disengage the public from understanding the complexity of rising GHG emissions and championing a low-carbon future.

As detailed at the end of chapter two, there is a range of tools and information available to journalists and communicators to help promote pro-environmental behaviours and action. The literature has established that future climate communication strategies will need to develop more interactive communication approaches that instil positive emotions and behaviour and elicit a sense of belonging. It is important to stress that people need to be correctly informed about the issues, but, at the same time, they need to apply that knowledge and decide what they want to see in the future. Then, they need to find ways to bring it about and vote for who best can deliver this outcome.

In conclusion, since the early twentieth century, the health of society has been linked to but not reducible to systems of communication. Effective and constructive communication can keep the public informed on matters of concern. In this context, the news industry can publicise misdeeds and problems, and give the public new points of contention. However, in order to speak truth to power,

journalists must first realise that there are long-standing structural problems and work to understand why they are occurring. Then, they need to be able to render these visible to the wider public. From my research, this was not always the case. Some of the causes of global warming and its advancement are explicit, active, and obvious, while others are more implicit, passive, or hidden. Both sets of causes need to be publicly communicated.

In order to tackle global warming and climate change, individuals need to confront unequal power relations in society. The scholarship in terms of what needs to be done, how it needs to be achieved, and how it ought to be communicated is available and research continues to advance. All that is missing is political will. Members of the public need to understand and be reminded that global warming is not a mere accident and the problems it brings will not self-rectify without harm. So, political leaders and businesses will need to move from soundbites and camera angles to advance policies and perspectives that can result in structural change. If not, then, whatever slim chance there is of averting disaster will be lost.

# Appendices

## Appendix 1

### Search Criteria

Google

Advanced Search

Find pages with...

all these words:	<input type="text"/>	To do this in the search box.
<b>this exact word or phrase:</b>	<input type="text" value="global warming"/>	Type the important words: tri-colour rat terrier
any of these words:	<input type="text"/>	Put exact words in quotes: "rat terrier"
none of these words:	<input type="text"/>	Type OR between all the words you want: miniature OR standard
numbers ranging from:	<input type="text"/> to <input type="text"/>	Put a minus sign just before words that you don't want: -rodent, -"Jack Russell"
		Put two full stops between the numbers and add a unit of measurement: 10..35 kg, £300..£500, 2010..2011

Then narrow your results by...

language:	<input type="text" value="any language"/>	- Find pages in the language that you select.
region:	<input type="text" value="any region"/>	- Find pages published in a particular region.
last update:	<input type="text" value="anytime"/>	- Find pages updated within the time that you specify.
<b>site or domain:</b>	<input type="text" value="stuff.co.nz"/>	Search one site (like wikipedia.org ) or limit your results to a domain like .edu, .org or .gov
<b>terms appearing:</b>	<input type="text" value="anywhere in the page"/>	- Search for terms in the whole page, page title or web address, or links to the page you're looking for.
SafeSearch:	<input type="text" value="Show most relevant results"/>	- Tell SafeSearch whether to filter sexually explicit content.
file type:	<input type="text" value="any format"/>	- Find pages in the format that you prefer.
usage rights:	<input type="text" value="not filtered by licence"/>	- Find pages that you are free to use yourself.

Google

"global warming" site:stuff.co.nz

All Images News Videos Maps More Settings **Tools**

Any time ▾ All results ▾

- Any time
- Past hour
- Past 24 hours
- Past week
- Past month
- Past year
- Custom range..**

ment > climate-explained-how-...

**d: How much of climate change is natural ...**

s livestock affect global warming? The pressures of maintaining food

s growing population is having a significant ...

of global warming?

## Appendix 2

### *Cited Sources*

Source	<i>Stuff</i>		<i>NZH</i>	
	Number of sources	%	Number of sources	%
Academic/University professor, researcher, or scientist	200	27	127	29
Resident/citizen	70	10	20	5
Business/industry group	72	10	47	11
Economist	1	0	1	0
Unnamed expert or official	4	1	1	0
Unaffiliated or independent research group	18	2	7	2
Governmental source	208	28	112	25
Environmental group and non-government organisation	37	5	28	6
Academic article, report, or government commissioned report	76	10	54	12
Court system source	8	1	7	2
Other news agency	8	1	4	1
Non-expert commentator	22	3	27	6
Dissenter, sceptic, or denialist	3	0	3	1
No source	8	1	3	1
<b>Total</b>	<b>735</b>	<b>100</b>	<b>441</b>	<b>100</b>

### Appendix 3

#### *Framing Analysis*

Frame	<i>Stuff</i>		<i>NZH</i>	
	Number of frames	%	Number of frames	%
New evidence/research	144	13	84	13
Science	129	11	65	10
Consequences of warming	196	17	128	20
Economics /costs of remedy	112	10	70	11
Domestic politics	161	14	120	18
International relations	74	6	31	5
Current weather	63	5	13	2
Catastrophism	56	5	14	2
Conflict and strategy	123	11	73	11
Morality and ethics	89	8	55	8
Total	1147	100	653	100

## Appendix 4

### *Explanatory Document for Participants*



## Information Sheet

### Date Information

28 January 2019

### Project Title

*Confronting the Climate Crisis in New Zealand.*

### What is the purpose of this research?

Research has shown that members of the public do not view global warming as the most significant issue facing New Zealand. The low status accorded to global warming suggests that the scope, complexity, and urgency of what needs to be done are not a priority for many, especially with more immediate economic concerns. In response to the lack of public concern and political action for global warming and its associated issues, this study aims to explore the ways whereby global warming issues can be effectively communicated across a fragmented mediascape and in highly politicised and polarised rhetorical environments.

### How was I identified and why am I being invited to participate in this research?

You were chosen for this research project on the basis of your professional expertise and knowledge. Your contact details were obtained from your organisation's public website.

### How do I agree to participate in this research?

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

### What will happen in this research?

If you agree to be in this study, you will be asked to allocate 60 minutes of your time for an interview. This will be conducted at a time and place convenient to you. You will be asked open-ended questions relating to your professional experiences and expert knowledge on the communication about climate change related matters. You will be offered an opportunity to review the transcribed notes and field notes to check for their veracity and accuracy.

### What are the discomforts and risks?

It is not expected that there will be any discomforts or risks. However, if you do not feel comfortable at any stage you are free to discontinue your participation in the interview. You can also withdraw from the study if you change your mind.

### How will these discomforts and risks be alleviated?

AUT Health Counselling and Wellbeing is able to offer three free sessions of confidential counselling support for adult participants in an AUT research project. These sessions are only available for issues that have arisen directly as a result of participation in the research, and are not for other general counselling needs. To access these services, you will need to:

- drop into our Auckland centres at WB219 or AS104 or phone 09 921 9992 City Campus or 09 921 9998 North Shore campus to make an appointment. Appointments for South Campus can be made by calling 09 921 9992
- let the receptionist know that you are a research participant, and provide the title of my research and my name and contact details as given in this Information Sheet

You can find out more information about AUT counsellors and counselling on <https://www.aut.ac.nz/being-a-student/current-postgraduates/your-health-and-wellbeing/our-counselling-and-mental-health-services>.

**What are the benefits?**

The benefits of the study include voicing your expertise, knowledge, and concerns regarding the communication of climate change to the New Zealand public. This study aims to advance the research of climate change communication in New Zealand to help facilitate social change.

**What compensation is available for injury or negligence?**

In the unlikely event of a physical injury as a result of your participation in this study, rehabilitation and compensation for injury by accident may be available from the Accident Compensation Corporation, providing the incident details satisfy the requirements of the law and the Corporation's regulations.

**How will my privacy be protected?**

If you have indicated that you would like to participate in confidence a number will be assigned to your information and your personal contact details will be stored separately.

**What are the costs of participating in this research?**

The interview is approximately 60 minutes. The interviews will take place at a time, place, and format convenient to you.

**What opportunity do I have to consider this invitation?**

It would be appreciated if you could please indicate your willingness to participate in this study by the 8 June 2020.

**Will I receive feedback on the results of this research?**

If you have indicated on the Consent Form that you would like to be notified of the findings I will email you with a link to the available thesis once it is available.

**What do I do if I have concerns about this research?**

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Wayne Hope, [wayne.hope@aut.ac.nz](mailto:wayne.hope@aut.ac.nz), 09 921 9999 ext. 8422.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), 09 921 9999 ext. 6038.

**Whom do I contact for further information about this research?**

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

***Researcher Contact Details:***

Saing Te  
Address: Level 10, WG Building,  
Email: [saing.te@aut.ac.nz](mailto:saing.te@aut.ac.nz)  
Phone: XXX XXX XXXX

***Project Supervisor Contact Details:***

Professor Wayne Hope  
Address: Level 10, WG Building,  
Email: [wayne.hope@aut.ac.nz](mailto:wayne.hope@aut.ac.nz)  
Phone: 09 921 9999 ext. 8422

## Participant Consent Form



### Consent Form

*Project title:* **Confronting the Climate Crisis in New Zealand**

*Project Supervisor:* **Professor Wayne Hope**

*Researcher:* **Saing Te**

- I have read and understood the information provided about this research project in the Information Sheet dated 28 January 2019.
- I have had an opportunity to ask questions and to have them answered.
- I understand that the interview will be audio-taped and then transcribed, and that notes could also be taken.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I understand that my name, profession, and or organisation will be published, unless I have opted to not have my details disclosed (see below).
- I wish to provide input confidentially (please tick one): Yes  No
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one): Yes  No

Participant's signature: .....

Participant's name and contact details (if appropriate):

.....  
 .....  
 .....  
 .....

Date:

*Note: The Participant should retain a copy of this form.*

**Approved by the Auckland University of Technology Ethics Committee on *type the date on which the final approval was granted* AUTEK Reference number *type the AUTEK reference number*.**

## Bibliography

- ACT New Zealand. "Climate Change (Emissions Trading and Renewable Preference) Bill - Rodney Hide MP." News release, September 2, 2008, <https://www.scoop.co.nz/stories/PA0809/S00042.htm>.
- Adams, Matthew. *Ecological Crisis, Sustainability and the Psychosocial Subject: Beyond Behaviour Change*. London: Palgrave Macmillan, 2016.
- Ahchong, Katrina, and Rachel Dodds. "Anthropogenic Climate Change Coverage in Two Canadian Newspapers, the Toronto Star and the Globe and Mail, from 1988 to 2007." *Environmental Science & Policy* 15, no. 1 (2012): 48-59. <https://doi.org/10.1016/j.envsci.2011.09.008>.
- Aitken, Christopher, Ralph Chapman, and John McClure. "Climate Change, Powerlessness and the Commons Dilemma: Assessing New Zealanders' Preparedness to Act." *Global Environmental Change* 21, no. 2 (2011): 752-60. <https://doi.org/10.1016/j.gloenvcha.2011.01.002>.
- Albritton, D, B Bolin, B Callander, K Denman, R Dickinson, L Gates, H Grassl, et al. "Technical Summary." In *Climate Change 1995: The Science of Climate Change*, edited by J Houghton, L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattenberg and K. Maskell, 9-49. Cambridge: Cambridge University Press, 1996. [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_sar\\_wg\\_I\\_full\\_report.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf).
- Aldy, Joseph. "Per Capita Carbon Dioxide Emissions: Convergence or Divergence?" *Environmental & Resource Economics* 33 (2006): 533-55. <https://doi.org/10.1007/s10640-005-6160-x>.
- Allcott, Hunt, and Matthew Gentzkow. "Social Media and Fake News in the 2016 Election." *Journal of Economic Perspectives* 31, no. 2 (2017): 211-38. <http://doi.org/10.1257/jep.31.2.211>.
- Allen, Christine. "Climate Change - Northland Hotter, More Droughts, Floods and Erosion." *The New Zealand Herald*, January 20, 2017. <https://www.nzherald.co.nz/nz/climate-change-northland-hotter-more-droughts-floods-and-erosion/NLRULUZF7BSDVJ3NAC45Z2U2TA/>.
- Althanasiou, Tom. "The Age of Greenwashing." *Capitalism Nature Socialism* 7, no. 1 (1996): 1-36. <https://doi.org/10.1080/10455759609358660>.
- Anderson, Alison. "Media, Politics and Climate Change: Towards a New Research Agenda." *Sociology Compass* 3, no. 2 (2009): 166-82. <https://doi.org/10.1111/j.1751-9020.2008.00188.x>.

- Andrejevic, Mark. *Infoglut: How Too Much Information Is Changing the Way We Think and Know*. New York: Routledge, 2013. ProQuest Ebrary.
- Angus, Ian. *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System*. New York: NYU Press, 2016.
- Antilla, Liisa. "Climate of Scepticism: US Newspaper Coverage of the Science of Climate Change." *Global Environmental Change* 15, no. 4 (2005): 338-52. <https://doi.org/10.1016/j.gloenvcha.2005.08.003>.
- Anthony, John. "Stuff stops all activity on Facebook in trial 'inspired by principle'." *Stuff*, July 6, 2020. <https://www.stuff.co.nz/business/industries/122048365/stuff-stops-all-activity-on-facebook-in-trial-inspired-by-principle>.
- Appadurai, Arjun. "Disjuncture and Difference in the Global Cultural Economy." In *Media and Cultural Studies: Keywords*, edited by Meenakshi Gigi Durham and Douglas M Kellner, 584-603. Malden, MA: Blackwell Publishing, 2006.
- Arghiri, Emmanuel. *Unequal Exchange: A Study of the Imperialism of Trade*. London: New Left Books, 1972.
- Arora-Jonsson, Seema. "Virtue and Vulnerability: Discourses on Women, Gender and Climate Change." *Global Environmental Change* 21 (2011): 744-51. <https://doi.org/10.1016/j.gloenvcha.2011.01.005>.
- Arrighi, Giovanni, Beverly J. Silver, and Benjamin D. Brewer. "Industrial Convergence, Globalization, and the Persistence of the North-South Divide." *Studies in Comparative International Development* 38, no. 1 (2003): 3-31. <https://doi.org/10.1007/BF02686319>.
- Australian Competition & Consumer Commission. *Digital Platforms Inquiry: Final Report*. Canberra: Commonwealth of Australia, 2019. <https://www.accc.gov.au/publications/digital-platforms-inquiry-final-report>.
- Babiker, Mustafa. "Climate Change Policy, Market Structure, and Carbon Leakage." *Journal of International Economics* 65, no. 2 (2005): 421-45. <https://doi.org/10.1016/j.jinteco.2004.01.003>.
- Bailey, Ian, and Tor Inderberg. "New Zealand and Climate Change: What Are the Stakes and What Can New Zealand Do?" *Policy Quarterly* 12, no. 2 (2016): 3-12. <https://doi.org/10.26686/pq.v12i2.4598>.
- Balbus, Arielle. *Increasing Public Understanding of Climate Risks & Choices: Learning from Social Science Research and Practice*. Erb Institute/ Union of Concerned Scientists, 2012. <https://www.ucsusa.org/sites/default/files/attach/2018/01/gw-Increasing-Public-Understanding-of-Climate-Risks-and-Choices.pdf>.

- Barlow, Jack. "Russel Norman-Led Greenpeace Activists under Investigation for Disrupting Oil Exploration Ship." *Stuff*, April 10, 2017. <https://www.stuff.co.nz/environment/91403752/russel-norman-led-greenpeace-activists-under-investigation-for-disrupting-oil-exploration-ship>.
- Barnosky, Anthony D., Nicholas Matzke, Susumu Tomiya, Guinevere O. U. Wogan, Brian Swartz, Tiago B. Quental, Charles Marshall, *et al.* "Has the Earth's Sixth Mass Extinction Already Arrived?". *Nature* 471 (2011): 51-57. <https://doi.org/10.1038/nature09678>.
- Baudrillard, Jean. *The Consumer Society: Myths and Structures*. London: Sage Publications Ltd, 1998.
- . *System of Objects*. Translated by James Benedict. London: Verso, 2005.
- Baum, Matthew. "Sex, Lies, and War: How Soft News Brings Foreign Policy to the Inattentive Public." *The American Political Science Review* 96, no. 1 (2002): 91-109. <https://doi.org/10.1017/S0003055402004252>.
- Bauman, Zygmunt. *Work, Consumerism and the New Poor*. Berkshire: McGraw-Hill Education, 2005.
- Becker, Lee B., and Tudor Vlad. "News Organizations and Routines." In *The Handbook of Journalism Studies*, edited by Karin Wahl-Jorgensen and Thomas Hanitzsch, 59-72. Abingdon, OX: Routledge, 2009. ProQuest Ebrary.
- Bedall, Philip, and Christoph Görg. "The Climate Justice Coalition Viewed in Light of a Theory of Societal Relationships with Nature." In *Routledge Handbook of the Climate Change Movement*, edited by Matthias Dietz and Heiko Garrelts, 44-65. Abingdon Routledge, 2014.
- Beder, Sharon. "bp: Beyond Petroleum?" In *Battling Big Business: Countering greenwash, infiltration and other forms of corporate bullying*, edited by Eveline Lubbers, 26-32. Devon: Green Books, 2002. <http://www.herinst.org/sbeder/PR/bp.html>.
- . *Global Spin: The Corporate Assault on Environmentalism*. Victoria: Australian Print Group, 1997.
- Bell, Allan. "Media (Mis) Communication on the Science of Climate Change." *Public Understanding of Science* 3 (1994): 259-75. <https://doi.org/10.1088/0963-6625/3/3/002>.
- Bennett, Hayley, Rhys Jones, Gay Keating, Alistair Woodward, Simon Hales, and Scott Metcalfe. "Health and Equity Impacts of Climate Change in Aotearoa- New Zealand, and Health Gains from Climate Action." *New Zealand Medical Journal* 127, no. 1406 (2014): 16-31.

<http://www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2014/vol-127-no-1406/6366>.

Bennett, Paula. "New Zealand Signs Historic Climate Deal." News release, April 23, 2016, <https://www.beehive.govt.nz/release/new-zealand-signs-historic-climate-deal>.

———. "NZ Ratifies Paris Agreement on Climate Change." News release, October 5, 2016, <https://www.beehive.govt.nz/release/nz-ratifies-paris-agreement-climate-change>.

Bennett, W. Lance, and Shanto Iyengar. "A New Era of Minimal Effects? The Changing Foundations of Political Communication." *Journal of Communication* 58 (2008): 707–31. <http://doi.org/10.1111/j.1460-2466.2008.00410.x>.

Bero, Lisa A. "Tobacco Industry Manipulation of Research." *Public Health Reports* 120 (2005): 200-08. <http://doi.org/10.1177/003335490512000215>.

Berry, Mark, Sue Begg, Elisabeth Welson, and Graham Crombie. *Determination: NZME Limited and Fairfax New Zealand Limited [2017] NZCC 8*. The Commerce Commission, May 2, 2017. <file:///C:/Users/em10878/Downloads/2017-NZCC-8-NZME-Limited-and-Fairfax-NZ-Limited-Authorisation-determination-2-May-2017.pdf>.

———. *Draft Determination: NZME Limited and Fairfax New Zealand Limited*. The Commerce Commission, November 8, 2016. [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0032/77639/2017-NZCC-8-NZME-Limited-and-Fairfax-NZ-Limited-Authorisation-determination-2-May-2017.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0032/77639/2017-NZCC-8-NZME-Limited-and-Fairfax-NZ-Limited-Authorisation-determination-2-May-2017.pdf).

Berry, Sarah. "How Climate Change Could Affect the Way We Exercise." *Stuff*, April 27, 2017. <https://www.stuff.co.nz/life-style/well-good/teach-me/91967001/how-climate-change-could-affect-the-way-we-exercise>.

Bertram, Geoff, and Simon Terry. *The Carbon Challenge: New Zealand's Emissions Trading Scheme*. Wellington: Bridget Williams Books, 2010.

Bervini, Benedetta, and Graham Murdock, eds. *Carbon Capitalism and Communication: Confronting Climate Crisis*. Cham: Palgrave MacMillan, 2017. ProQuest Ebrary.

Billett, Simon. "Dividing Climate Change: Global Warming in the Indian Mass Media." *Climatic Change* 99 (2010): 1-16. <https://doi.org/10.1007/s10584-009-9605-3>.

Björnberg, Karin, Mikael Karlsson, Michael Gilek, and Sven Hansson. "Climate and Environmental Science Denial: A Review of the Scientific Literature Published in 1990-2015." *Journal of Cleaner Production* 167 (2017): 229-41. <https://doi.org/10.1016/j.jclepro.2017.08.066>.

- Blanco, Gabriel, Reyer Gerlagh, Sangwon Suh, John Barrett, Heleen C. de Coninck, Cristobal Felix Diaz Morejon, Ritu Mathur, *et al.* "Drivers, Trends and Mitigation." In *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, *et al.*, 351-411. Cambridge: Cambridge University Press, 2014.  
[https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_chapter5.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter5.pdf).
- Bodansky, Daniel "The Paris Climate Change Agreement: A New Hope." *The American Journal of International Law* 110, no. 2 (2016): 288-319.  
<https://doi.org/10.5305/amerjintlaw.110.2.0288>.
- Bonneuil, Christophe, and Jean-Baptiste Fressoz. *The Shock of the Anthropocene: The Earth, History and Us*. London: Verso Books, 2016.
- Born, Dorothea. "Bearing Witness? Polar Bears as Icons for Climate Change Communication in National Geographic." *Environmental Communication* 13, no. 5 (2019): 649-63. <https://doi.org/10.1080/17524032.2018.1435557>.
- Borochoff-Porte, Ali. Exxon's Campaign of Intimidation against Climate Defenders Ushers in a New McCarthy Era. *EarthRight International* (blog). Accessed November 22, 2019. <https://earthrights.org/blog/exxons-campaign-of-intimidation-against-climate-defenders-ushers-in-a-new-mccarthy-era/>.
- Bourk, Michael, Jennifer Rock, and Lloyd S Davis. "Mediating the Science: Symbolic and Structural Influences on Communicating Climate Change through New Zealand's Television News." *Environmental Communication* 11, no.6, (2015): 1-19. <https://doi.org/10.1080/17524032.2015.1058289>.
- Bourke, Latika. "Tony Abbott Says Climate Change 'Could Be Beneficial' Because It Saves Lives." *Stuff*, October 10, 2017.  
<https://www.stuff.co.nz/world/australia/97718017/tony-abbott-says-climate-change-could-be-beneficial-because-it-saves-lives>.
- Boyack, Nicholas. "Insurance Likely to Become a Problem for Homes on the Edge of Wellington Harbour." *Stuff*, November 13, 2017.  
<https://www.stuff.co.nz/environment/climate-news/98815753/insurance-likely-to-become-a-big-problem-for-eastourne-homeowners>.
- Boykoff, Maxwell. "From Convergence to Contention: United States Mass Media Representations of Anthropogenic Climate Change Science." *Transactions of the Institute of British Geographers* 32, no. 4 (2007): 477-89.  
<https://www.jstor.org/stable/4626266>.

- . "Media Discourse on the Climate Slowdown." *Nature Climate Change* 4 (2014): 156-58. <https://doi.org/10.1038/nclimate2156>.
- . *Who Speaks for the Climate? Making Sense of Media Reporting on Climate Change*. Cambridge: Cambridge University Press, 2011.
- Boykoff, Maxwell, and J Timmons Roberts. *Human Development Report 2007/2008. Media Coverage of Climate Change: Current Trends, Strengths, Weaknesses*. United Nations Development Programme: 2007. [http://hdr.undp.org/sites/default/files/boykoff\\_maxwell\\_and\\_roberts\\_j\\_timmons.pdf](http://hdr.undp.org/sites/default/files/boykoff_maxwell_and_roberts_j_timmons.pdf).
- Boykoff, Maxwell, and Jules Boykoff. "Balance as Bias: Global Warming and the U.S. Prestige Press." *Global Environmental Change* 14 (2004): 125–36. <https://doi.org/10.1016/j.gloenvcha.2003.10.001>.
- Boykoff, Maxwell, Marisa M. McNatt, and Michael K. Goodman. "Communicating in the Anthropocene: The Cultural Politics of Climate Change News Coverage Around the World." In *The Routledge Handbook of Environment and Communication*, edited by Anders Hansen and Robert Cox, 221-31. Oxon: Routledge, 2015.
- Brannen, Peter. "Earth Is Not in the Midst of a Sixth Mass Extinction." *The Atlantic*, June 13, 2017. <https://www.theatlantic.com/science/archive/2017/06/the-ends-of-the-world/529545/>.
- Brannlund, Runar, and Lars Persson. "To Tax, or Not to Tax: Preferences for Climate Policy Attributes." *Climate Policy* 12, no. 6 (2012). <https://doi.org/10.1080/14693062.2012.675732>.
- Branston, Gill, and Roy Stafford. *The Media Student's Book*. 5th ed. Oxon: Routledge, 2010.
- Brechin, Steven. "Ostriches and Change: A Response to 'Global Warming and Sociology'." *Current Sociology* 56, no. 3 (2008): 467–74. <https://doi.org/10.1177/0011392107088239>.
- Bronner, Stephen Eric. *Critical Theory: A Very Short Introduction*. New York: Oxford University Press, 2011. ProQuest Ebrary.
- Brossard, Dominique, James Shanahan, and Katherine McComas. "Are Issue-Cycles Culturally Constructed? A Comparison of French and American Coverage of Global Climate Change." *Mass Communication & Society* 7, no. 3 (2004): 359-77. [https://doi.org/10.1207/s15327825mcs0703\\_6](https://doi.org/10.1207/s15327825mcs0703_6).
- Brüggemann, Michael, and Sven Engesser. "Beyond False Balance: How Interpretive Journalism Shapes Media Coverage of Climate Change." *Global Environmental Change* 42 (2017): 58-67. <https://doi.org/10.1016/j.gloenvcha.2016.11.004>.

- Brulle, Robert, and Kari Marie Norgaard. "Avoiding Cultural Trauma: Climate Change and Social Inertia." *Environmental Politics* (2019): 1-23.  
<https://doi.org/10.1080/09644016.2018.1562138>.
- Bryant, Jennings and Mary Beth Oliver, eds. *Media Effects: Advances in Theory and Research*. New York: Routledge, 2009.
- Bryant, Jennings and Dolf Zillmann. "A Retrospective and Prospective Look at Media Effects." In *The SAGE Handbook of Media Processes and Effects*, edited by Robin Nabi and Mary Beth Oliver. Thousand Oaks: SAGE Publications, 2009.
- Bührs, Ton. "Climate Change Policy and New Zealand's 'National Interest': The Need for Embedding Climate Change Policy into a Sustainable Development Agenda." *Political Science*, 60, no. 1 (2008): 61-72.  
<https://doi.org/10.1177/003231870806000106>.
- Bunker, Stephen G. *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*. Champaign, IL: University of Illinois Press, 1985.
- Burnard, Philip. "A Method of Analysing Interview Transcripts in Qualitative Research." *Nurse Education Today* 11, no. 6 (1991): 461-66.  
[https://doi.org/10.1016/0260-6917\(91\)90009-Y](https://doi.org/10.1016/0260-6917(91)90009-Y).
- Calarco, Matthew. "Being toward Meat: Anthropocentrism, Indistinction, and Veganism." *Dialectical Anthropology* 38, no. 4 (2014): 415-29.  
<https://doi.org/10.1007/s10624-014-9349-y>.
- "Canadian Prime Minister Justin Trudeau Kayaks up to Family to Chat Climate Change." *Stuff*, June 6, 2017.  
<https://www.stuff.co.nz/world/americas/93394499/canadian-prime-minister-justin-trudeau-kayaks-up-to-family-to-chat-climate-change>.
- Cann, Ged. "Council Plans to Fight Rising Sea Levels Threaten Kiwi Seaside Property Dream." *Stuff*, January 20, 2017.  
<https://www.stuff.co.nz/environment/climate-news/88479496/council-plans-to-fight-rising-sea-levels-threaten-kiwi-seaside-property-dream>.
- . "Environment Ministry Rubbishes Clean Green Image, Pokes Holes in Attempts to Address Emissions." *Stuff*, December 7, 2017.  
<https://www.stuff.co.nz/environment/climate-news/99635380/environment-ministry-rubbishes-clean-green-image-pokes-holes-in-attempts-to-address-emissions>.
- . "First-of-Its-Kind Case as Student Takes Government to Court over Climate Change." *Stuff*, June 23, 2017.  
<https://www.stuff.co.nz/environment/climate-news/94015415/firstofitskind-case-as-student-takes-government-to-court-over-climate-change>.

- . "Government Lawyers Question Court's Ability to Rule on Climate Change Case." *Stuff*, June 27, 2017.  
<https://www.stuff.co.nz/environment/94124957/government-defends-climate-targets-in-sarah-thomson-lawsuit>.
- . "High Court Says Previous National Government Should Have Done More on Climate Change Targets." *Stuff*, November 2, 2017.  
<https://www.stuff.co.nz/environment/98492828/high-court-says-previous-national-government-should-have-done-more-on-climate-change-targets>.
- . "Insurers Warn Climate Change Will Hit Policy Prices and Make Some Properties Uninsurable." *Stuff*, November 12, 2017.  
<https://www.stuff.co.nz/business/property/98797867/insurers-warn-climate-change-will-hit-policy-prices-and-make-some-properties-uninsurable>.
- . "Kiwi Research into Southern Ocean Could Change Global Warming Predictions." *Stuff*, March 7, 2017.  
<https://www.stuff.co.nz/environment/climate-news/90135156/kiwi-research-into-southern-ocean-could-change-global-warming-predictions>.
- . "Student Sarah Thomson's Legal Case against Government Emissions Targets Wraps Up." *Stuff*, June 28, 2017.  
<https://www.stuff.co.nz/environment/climate-news/94183969/student-sarah-thomsons-legal-case-against-government-emissions-targets-wraps-up>.
- . "Waikato Law Student Sarah Thomson Takes Government to Court over Climate Change." *Stuff*, June 26, 2017.  
<https://www.stuff.co.nz/environment/climate-news/94079123/waikato-law-student-sarah-thomson-takes-government-to-court-over-climate-change>.
- Carah, Nicholas, and Eric Louw. *Media & Society: Production, Content & Participation*. London: SAGE Publications, 2015.
- CARE International. *Suffering in Silence: The 10 Most under-Reported Humanitarian Crises of 2018*. CARE International: 2019.  
[https://insights.careinternational.org.uk/media/k2/attachments/CARE\\_Suffering\\_In\\_Silence\\_2018.pdf](https://insights.careinternational.org.uk/media/k2/attachments/CARE_Suffering_In_Silence_2018.pdf).
- Carlson, Matt. "Confronting Measurable Journalism." *Digital Journalism* 6, no. 4 (2018): 406-17. <https://doi.org/10.1080/21670811.2018.1445003>.
- Carrington, Damian. "IPCC Vice-Chair: Attacks on Climate Science Echo Tobacco Industry Tactics." *The Guardian*, October 28, 2010.  
<https://www.theguardian.com/environment/2010/oct/28/ipcc-climate-science-attacks-tobacco>.
- . "Want to Fight Climate Change? Have Fewer Children." *The Guardian*, July 12, 2017.

<https://www.theguardian.com/environment/2017/jul/12/want-to-fight-climate-change-have-fewer-children>.

Carson, Rachel. *Silent Spring*. 40th ed. Boston: Houghton Mifflin Harcourt, 2002.

Carter, Jacob, Emily Berman, Anita Desikan, Charise Johnson, and Gretchen Goldman. *The State of Science in the Trump Era: Damage Done, Lessons Learned, and a Path to Progress*. Union of Concerned Scientists, 2019. <https://www.ucsusa.org/sites/default/files/attach/2019/01/ucs-trump-2yrs-report.pdf>.

Carvalho, Anabela, and Jacquelin Burgess. "Cultural Circuits of Climate Change in UK Broadsheet Newspapers, 1985–2003." *Risk Analysis* 25, no. 6 (2005): 1457-69. <https://doi.org/10.1111/j.1539-6924.2005.00692.x>.

Center for International Environmental Law. "Smoke & Fumes." Accessed date December 30, 2019. <https://www.smokeandfumes.org/fumes>.

Chaffee, Steven, and Miriam Metzger. "The End of Mass Communication?" *Mass Communication and Society* 4, no. 4 (2001): 356-79. [https://doi.org/10.1207/S15327825MCS0404\\_3](https://doi.org/10.1207/S15327825MCS0404_3).

Chakrabarty, Dipesh. "The Climate of History: Four Theses." *Critical Inquiry* 35, no. 2 (2009): 197-222. <https://www.jstor.org/stable/10.1086/596640>.

Chancel, Lucas, and Thomas Piketty. *Carbon and Inequality: From Kyoto to Paris Trends in the Global Inequality of Carbon Emissions (1998-2013) & Prospects for an Equitable Adaptation Fund*. Paris: Paris School of Economics, 2015. <http://piketty.pse.ens.fr/files/ChancelPiketty2015.pdf>.

Cheng, Derek. "Fossil Fuel Subsidies Better Spent on Renewables, Trade Minister David Parker Tells WTO Conference." *The New Zealand Herald*, December 12, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11958070](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11958070).

———. "Government Starts Down Pathway to Net Zero Emissions by 2050." *The New Zealand Herald*, December 19, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11962058](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11962058).

———. "Prime Minister Announces Formulation of Zero Carbon Act, Climate Change Commission." *The New Zealand Herald*, December 18, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11961862](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11961862).

———. "Shaw to UN Conference: NZ Now a Leader in Climate Change." *The New Zealand Herald*, November 17, 2017.

[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11945026](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11945026).

Chetty, Kavi, Vijay Devadas, and Jean Fleming. "The Framing of Climate Change in New Zealand Newspapers from June 2009 to June 2010." *Journal of the Royal Society of New Zealand* 45, no. 1 (2015): 1-20. <https://doi.org/10.1080/03036758.2014.996234>.

Cheung, Helier. "What Does Trump Actually Believe on Climate Change?" *BBC News*, January 23, 2020. <https://www.bbc.com/news/world-us-canada-51213003>.

Chouliaraki, Lilie. "Post-Humanitarianism: Humanitarian Communication Beyond a Politics of Pity." *International Journal of Cultural Studies* 13, no. 2 (2010): 107-26. <https://doi.org/10.1177/1367877909356720>.

———. *The Spectatorship of Suffering*. London: SAGE Publications, 2006.

Ciplet, David, and J. Timmons Roberts. "Splintering South: Ecological Unequal Exchange Theory in a Fragmented Global Climate." *Journal of World-Systems Research* 23, no. 2 (2017): 372-98. <https://doi.org/10.5195/jwsr.2017.669>.

Clandinin, D. Jean, and M. Shaun Murphy. "Relational Ontological Commitments in Narrative Research." *Educational Researcher* 38, no. 8 (2009): 598-602. <https://www.jstor.org/stable/25592174>.

Clark, Helen. "Prime Minister's Statement to Parliament." News release, February 14, 2007. <https://www.beehive.govt.nz/speech/prime-minister%E2%80%99s-statement-parliament-0>.

"Climate Change Could Threaten Bay of Plenty Kiwifruit Industry." *The New Zealand Herald*, September 16, 2017. [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11922797](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11922797).

"Climate Change Court Case: 'The Costs of Inaction Are Terrifying'." *The New Zealand Herald*, June 27, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11882663](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11882663).

Climate Change Response Amendment Bill — First Reading, May 10, 2005. [https://www.parliament.nz/en/pb/hansard-debates/rhr/document/47HansD\\_20050510\\_00001115/climate-change-response-amendment-bill-first-reading](https://www.parliament.nz/en/pb/hansard-debates/rhr/document/47HansD_20050510_00001115/climate-change-response-amendment-bill-first-reading).

Climate Investigations Centre. *The Global Climate Coalition: Big Business Funds Climate Change Denial and Regulatory Delay*. Accessed September 28, 2019. <https://climateinvestigations.org/wp-content/uploads/2019/04/The-Global-Climate-Coalition-Denial-and-Delay.pdf>.

- . "1993 Mobil Foundation Grant Recommendations for 1994 Budget." Accessed September 29, 2019. <http://www.climatefiles.com/exxonmobil/1993-mobil-foundation-grant-recommendations-for-1994-budget/>.
- Climate Transparency. *Brown to Green: The G20 Transition to a Low-Carbon Economy*. Berlin: Humboldt-Viadrina Governance Platform, 2018. <https://www.climate-transparency.org/wp-content/uploads/2019/01/2018-BROWN-TO-GREEN-REPORT-FINAL.pdf>.
- Coady, David, Ian Parry, Louis Sears, and Baoping Shang. *IMF Working Paper: How Large Are Global Energy Subsidies?* Washington D.C: International Monetary Fund, May 2015. <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sonew070215a>.
- Coal Corporation of New Zealand Limited. "Annual Report 1991-1992."
- Cohen, Stanley. *States of Denial: Knowing About Atrocities and Suffering*. Cambridge, England: Polity Press, 2001.
- Colmar Brunton. *Better Futures 2017*. <https://www.colmarbrunton.co.nz/water-quality-leads-rising-environmental-concerns-for-kiwis/>.
- . *Better Futures 2019*. <https://static.colmarbrunton.co.nz/wp-content/uploads/2019/05/Colmar-Brunton-Better-Futures-2019-MASTER-FINAL-REPORT.pdf>.
- Conway, Erik. "Communicating the Science of Climate Change: Lessons from History." Paper presented at the Climate Futures Forum— Pathways for Society, New Zealand Climate Change Research Institute, March 31-April 1, 2011. <https://www.wgtn.ac.nz/sgees/research-centres/documents/climate-futures.pdf>.
- Cook, Frances. "Climate Change to Make Wellington as Hot as Sydney: NIWA Report." *The New Zealand Herald*, August 7, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11899671](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11899671).
- Cook, John, Naomi Oreskes, Peter Doran, William Anderegg, Bart Verheggen, Ed Maibach, J. Stuart Carlton, *et al.* "Consensus on Consensus: A Synthesis of Consensus Estimates on Human-Caused Global Warming." *Environmental Research Letters* 11, no. 4 (2016): 1-7. <https://doi.org/10.1088/1748-9326/11/4/048002>.
- Cook, John. "Understanding and Countering Misinformation About Climate Change." In *Handbook of Research on Deception, Fake News, and Misinformation Online*, edited by Innocent Chiluba and Sergei Samoilenko, 281-306. Pennsylvania: IGI-Global, 2019. <https://doi:10.4018/978-1-5225-8535-0.ch016>.

- Cook, John, Dana Nuccitelli, Sarah A Green, Mark Richardson, Bärbel Winkler, Rob Painting, Robert Way, Peter Jacobs, and Andrew Skuce. "Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature." *Environmental Research Letters* 8, no. 2 (2013): 1-7. <https://doi.org/10.1088/1748-9326/8/2/024024>.
- Cooke, Henry. "Mayors Urge Government to Take More Action on Climate Change Now." *Stuff*, July 23, 2017. <https://www.stuff.co.nz/national/politics/95022276/mayors-urge-government-to-take-action-on-climate-change-now>.
- . "NZ Asks WTO to Help End Fossil Fuel Subsidies." *Stuff*, December 12, 2017. <https://www.stuff.co.nz/national/politics/99775193/nz-asks-wto-to-help-end-fossil-fuel-subsidies>.
- . "A Tale of Two Countries: Why This Expert Thinks NZ Should Copy UK's Climate Change Policy." *Stuff*, July 27, 2017. <https://www.stuff.co.nz/national/politics/95158809/climate-change-commissioner-calls-for-nz-to-make-climate-targets-law>.
- Coulter, Cathy, and Mary Lee Smith. "The Construction Zone: Literary Elements in Narrative Research." *Educational Researcher* 38, no. 8 (2009): 577-90. <https://doi.org/10.3102/0013189X09353787>.
- Craig, Geoffrey. "Aotearoa New Zealand Environmental Groups and News Media Relations." *Australian Journal of Communication* 34, no. 1 (2007): 55-70. <https://doi.org/10.11157/medianz-vol12iss1id44>.
- . "Aotearoa/New Zealand Print News Media Reportage of the Environment." *Media International Australia* 127, no. 1 (2008): 152-65. <https://doi.org/10.1177/1329878X0812700118>.
- . "Aotearoa/New Zealand Television News and Current Affairs Representations of the Environment." *Australian Journal of Communication* 36, no. 2 (2009): 55-71. <https://search.informit.com.au/documentSummary;dn=200912188;res=IELAPA>.
- Crist, Eileen, and Helen Kopnina. "Unsettling Anthropocentrism." *Dialectical Anthropology* 38, no. 4 (2014): 387-96. <https://doi.org/10.1007/s10624-014-9362-1>.
- Crowley, Kate. "Up and Down with Climate Politics 2013–2016: The Repeal of Carbon Pricing in Australia." *WIREs Climate Change* 8, no. e458 (2017): 1-13. <https://doi.org/10.1002/wcc.458>.
- Crutzen, Paul J. "Geology of Mankind." *Nature* 415, no. 6867 (2002): 23. <https://doi.org/10.1038/415023a>.

- Crutzen, Paul J, and Eugene F. Stoermer. "The "Anthropocene"." *The International Geosphere - Biosphere Programme (IGBP) Newsletter 41*, May 2000, 17-18.  
<http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf>.
- CSO Equity Review. *After Paris: Inequality, Fair Shares, and the Climate Emergency*. Manila: CSO Equity Review Coalition, 2018.  
<http://civilsocietyreview.org/report2018/>.
- . *Can Climate Change Fuelled Loss and Damage Ever Be Fair?* Manila: CSO Equity Review Coalition, 2019.  
<https://civilsocietyreview.org/report2019/>.
- Deese, Brian. "Donald Trump's Climate Denial Could Have Deadly Consequences." *Stuff*, June 01, 2017.  
<https://www.stuff.co.nz/world/americas/donald-trumps-america/93220661/donald-trumps-climate-denial-could-have-deadly-consequences>.
- Denchak, Melissa "Paris Climate Agreement: Everything You Need to Know." Natural Resources Defense Council, December 12, 2018.  
<https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know>.
- Díaz, S, J Settele, E Brondízio, H Ngo, M Guèze, J Agard, A Arneth, *et al.* *IPBES: Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Bonn: IPBES Secretariat, 2019. [https://ipbes.net/sites/default/files/2020-02/ipbes\\_global\\_assessment\\_report\\_summary\\_for\\_policymakers\\_en.pdf](https://ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf).
- Dickey, Delwyn. "Will Big Ocean Fish Cope in a Warming World?" *Stuff*, March 1, 2017. <https://www.stuff.co.nz/business/farming/89899039/will-big-ocean-fish-cope-in-a-warming-world>.
- DiFrancesco, Darryn Anne, and Nathan Young. "Seeing Climate Change: The Visual Construction of Global Warming in Canadian National Print Media." *Cultural Geographies* 18, no. 4 (2010): 517–36.  
<https://doi.org/10.1177/1474474010382072>.
- Di Giovanni, Elena and Yves Gambier, eds. *Reception Studies and Audiovisual Translation*. Amsterdam: John Benjamins, 2018.
- Digital Competition Expert Panel. *Unlocking Digital Competition: Report of the Digital Competition Expert Panel*. London: Open Government Licence, 2019. <https://www.gov.uk/government/publications/unlocking-digital-competition-report-of-the-digital-competition-expert-panel>.

- Dijk, Teun A. *Discourse Studies: A Multidisciplinary Introduction*. 2nd ed. London: SAGE Publications, 2011.
- Dispensa, Jaclyn, and Robert Brulle. "Media's Social Construction of Environmental Issues: Focus on Global Warming – A Comparative Study." *International Journal of Sociology and Social Policy* 23, no. 10 (2003): 74-105. <https://doi.org/10.1108/01443330310790327>.
- Dobratz, Betty, Linda Waldner, Timothy Buzzell, and Lisa Waldner. *Power, Politics, and Society: An Introduction to Political Sociology*. Oxon: Routledge, 2016. ProQuest Ebrary.
- Douglas, Karen M., and Robbie M. Sutton. "Climate Change: Why the Conspiracy Theories Are Dangerous." *Bulletin of the Atomic Scientists* 71, no. 2 (2015): 98-106. <https://doi.org/10.1177/0096340215571908>.
- Doyle, Julie. "Picturing the Clima(C)Tic: Greenpeace and the Representational Politics of Climate Change Communication." *Science as Culture* 16, no. 2 (2007): 129-50. <https://doi.org/10.1080/09505430701368938>.
- Dryzek, John S. *The Politics of the Earth: Environmental Discourses*. 3rd ed. Oxford: Oxford University Press, 2013.
- Dunlap, Riley, and Aaron McCright. "Organized Climate Change Denial." In *Oxford Handbook of Climate Change and Society*, edited by John S. Dryzek, Richard B. Norgaard and David Schlosberg, 144-60. UK: Oxford University Press 2011.
- Dunlap, Riley, Aaron McCright, and Jerrod Yarosh. "The Political Divide on Climate Change: Partisan Polarization Widens in the US". *Environment: Science and Policy for Sustainable Development* 58, no. 5 (2016): 4-23. <https://doi.org/10.1080/00139157.2016.1208995>.
- "Editorial: Drilling for Fossil Fuels Not Worth the Costs of Climate Change." *Stuff*, November 2, 2017. <https://www.stuff.co.nz/environment/98438746/editorial-drilling-for-fossil-fuels-not-worth-the-costs-of-climate-change>.
- "Editorial: Leaked Report Reveals \$19b Risk from Climate Change." *Stuff*, September 8, 2017. <https://www.stuff.co.nz/the-press/opinion/96589298/editorial-leaked-report-reveals-19b-risk-from-climate-change>.
- "Editorial: The High Costs of Winter Storms." *Stuff*, July 14, 2017. <https://www.stuff.co.nz/the-press/opinion/94695976/editorial-the-high-costs-of-winter-storms>.
- "Editorial: There Are Some Answers in a Bleak Climate Change Report." *Stuff*, October 23, 2017. <https://www.stuff.co.nz/environment/98055056/editorial-there-are-some-answers-in-a-bleak-climate-change-report>.

- Edwards, Simon. "Federated Farmers: Getting to Grips with Climate Change Challenge." *The New Zealand Herald*, October 18, 2017. [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11931513](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11931513).
- . "Simon Edwards: Hutt City Central Ward Councillor." Accessed April 6, 2020. <https://simonedwards.nz/about/>.
- Emmett, Robert, and Thomas Lekan, eds. *Whose Anthropocene? Revisiting Dipesh Chakrabarty's "Four Theses"*. Munich: Rachel Carson Center for Environment and Society, 2016. <http://doi.org/10.5282/rcc/7421>.
- Entman, Robert M. "Framing Bias: Media in the Distribution of Power." *Journal of Communication* 57, no. 1 (2007): 163-73. <https://doi.org/10.1111/j.1460-2466.2006.00336.x>.
- . "Framing: Toward Clarification of a Fractured Paradigm." *Journal of Communication* 43, no. 4 (1993): 51-58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>.
- Evans, Gavin. "Imported Coal Needed to Keep the Lights on in NZ." *BusinessDesk*, October 18, 2018. <https://www.scoop.co.nz/stories/BU1810/S00561/imported-coal-needed-to-keep-the-lights-on-in-nz.htm>.
- Evans, Kiely. "Genesis Establishes a Pathway to a Coal-Free Electricity Future." News release, February 13, 2018. <https://www.genesisenergy.co.nz/about/media/news/genesis-establishes-a-pathway-to-a-coal-free-elect>.
- "Exxon: The Road Not Taken," *Inside Climate News*. September 16, 2015 – December 22, 2015. <https://insideclimatenews.org/content/Exxon-The-Road-Not-Taken>.
- Fairclough, Norman. *Analysing Discourse: Textual Analysis for Social Research*. 2nd ed. London: Routledge, 2003.
- . *Critical Discourse Analysis: The Critical Study of Language*. Essex: Pearson Education Limited, 1995.
- . *Critical Discourse Analysis: The Critical Study of Language*. 2nd ed. New York: Routledge, 2013.
- . *Language and Power*. Essex: Pearson Education Limited, 1989.
- . *New Labour, New Language?* London: Routledge, 2000.
- Fallow, Brian. "Lawson Free Now to Say What He Pleases on Climate Change." *The New Zealand Herald*, November 17, 2007.

[https://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=10476569](https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10476569).

"Farmers invade capital for 'fart tax' protest." *The New Zealand Herald*, September 4, 2003. <https://www.nzherald.co.nz/nz/farmers-invade-capital-for-fart-tax-protest/6OAPZ5KHG2OT2O5EVCGIOKN4IU/>.

Federated Farmers. "Federated Farmers: It's Damn Lies and Alternative Facts." *The New Zealand Herald*, April 25, 2017. [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11836292](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11836292).

Fenton, Natalie. "News in the Digital Age." In *The Routledge Companion to News and Journalism*, edited by Stuart Allan, 557-67. London: Routledge, 2009.

Figley, Charles R. *Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized*. New York: Brunner/Mazel, 1995.

———. "Compassion Fatigue: Psychotherapists' Chronic Lack of Self Care." *Journal of Clinical Psychology* 58, no. 11 (2002): 1433-41. <https://doi.org/10.1002/jclp.10090>.

———. *Treating Compassion Fatigue*. New York: Brunner-Routledge, 2000.

Figueiredo, Patricia, and Patricia Perkins. "Women and Water Management in Terms of Climate Change: Participatory and Inclusive Processes." *Journal of Cleaner Production* 60 (2013): 188-95. <https://doi.org/10.1016/j.jclepro.2012.02.025>.

Fisher, Caroline, David Marshall, and Kerry McCallum. "Bypassing the Press Gallery: From Howard to Hanson." *Media International Australia* 167, no. 1 (2018): 57-70. <https://doi.org/10.1177/1329878X18766077>.

Fitzgerald, Joan. *Greenovation: Urban Leadership on Climate Change*. New York: Oxford University Press, 2020.

Foster, John Bellamy, Brett Clark, and Richard York. *The Ecological Rift: Capitalism's War on the Earth*. New York: Monthly Review Press, 2010.

Foucault, Michel. *Power/ Knowledge: Selected Interviews and Other Writings 1972-1977*. Translated by Colin Gordon, Leo Marshall, John Mepham and Kate Soper. New York: Pantheon Books, 1980.

———. *The Archaeology of Knowledge and the Discourse of Language*. New York: Vintage Books, 2000.

———. *The Order of Things: An Archaeology of the Human Sciences*. Translated by Tavistock Publications. London: Routledge, 1970.

- Frank, Robert H. *Luxury Fever: Weighing the Cost of Excess*. New York: Free Press, 1999.
- Franks, Suzanne. *Reporting Disasters: Famine, Aid, Politics and the Media*. London: Hurst & Company, 2013.
- Franta, Benjamin. "On Its 100th Birthday in 1959, Edward Teller Warned the Oil Industry About Global Warming." *The Guardian*, January 1, 2018. <https://www.theguardian.com/environment/climate-consensus-97-percent/2018/jan/01/on-its-hundredth-birthday-in-1959-edward-teller-warned-the-oil-industry-about-global-warming>.
- "Free Screenings of Al Gore's an Inconvenient Sequel Sponsored by Z Petrol Stations." *Stuff*, August 4, 2017. <https://www.stuff.co.nz/entertainment/film/95446534/free-screenings-of-al-gores-an-inconvenient-sequel-sponsored-by-z-petrol-stations>.
- Freeland, Chrystia. *Plutocrats: The Rise of the New Global Super-Rich and the Fall of Everyone Else*. New York: Penguin Press, 2012.
- Frith, Simon, and Peter Meech. "Becoming a Journalist: Journalism Education and Journalism Culture." *Journalism* 8, no. 2 (2007): 137–64. <https://doi.org/10.1177/1464884907074802>.
- Fuchs, Christian. *Critical Theory of Communication: New Readings of Lukács, Adorno, Marcuse, Honneth and Habermas in the Age of the Internet*. London: University of Westminster Press, 2016. <http://dx.doi.org/10.16997/book1>.
- Gabriel, Yiannis, and Tim Lang. *The Unmanageable Consumer*. 2nd ed. California: SAGE Publications, 2006.
- Galbraith, John Kenneth. *The Affluent Society*. 40th ed. London: Penguin Books, 1999.
- Galician, Mary-Lou, and Steve Pasternack. "Balancing Good News and Bad News: An Ethical Obligation?" *Journal of Mass Media Ethics* 2, no. 2 (1987): 82-92. <https://doi.org/10.1080/08900528709358298>.
- Gallegos, Jenna. "Climate Change May Ground More Planes Making Flying More Restrictive." *Stuff*, July 14, 2017. <https://www.stuff.co.nz/travel/news/94757789/climate-change-may-ground-more-planes-making-flying-more-restrictive>.
- Galtung, Johan, and Mari Ruge. "The Structure of Foreign News: The Presentation of the Congo, Cuba and Cyprus Crises in Four Norwegian Newspapers." *Journal of Peace Research* 2, no. 1 (1965): 64-90. <https://doi.org/10.1177/002234336500200104>.

- Gans, Herbert J. *Deciding What's News: A Study of CBS Evening News, NBC Nightly News, Newsweek, and Time*. Illinois: Northwestern University Press, 1979.
- Gardner, Gary. "Cities in the Arc of Human History: A Materials Perspective." In *State of the World: Can a City Be Sustainable?* The Worldwatch Institute, 11-25. Washington D.C: Island Press, 2016. [https://doi.org/10.5822/978-1-61091-756-8\\_2](https://doi.org/10.5822/978-1-61091-756-8_2).
- Gaskell, George. "Individual and Group Interviewing." In *Qualitative Researching with Text, Image and Sound: A Practical Handbook for Social Research*, edited by Martin Bauer and George Gaskell, 38-59. London: SAGE Publications, 2000.
- Gates, Charlie, and Charlie Mitchell. "NZ Needs to Act Now to Protect People and Property, Leaked Coastal Erosion Report Urges." *Stuff*, September 3, 2017. <https://www.stuff.co.nz/environment/climate-news/96433693/coastal-erosion-report-urges-immediate-action>.
- Gathey, Megan. "As Trump Lauds 'Good Old Global Warming', Here's the Truth About Climate Change." *Stuff*, December 29, 2017. <https://www.stuff.co.nz/world/100247928/as-trump-lauds-good-old-global-warming-heres-the-truth-about-climate-change>.
- Gauntlett, David. *Moving Experiences: Media Effects and Beyond*. 2nd ed. Eastleigh: John Libbey, 2005.
- Genesis Energy Limited. *Genesis Energy's Submission on the Electricity Price Review First Report*. Auckland: Genesis Energy Limited, October 23, 2018. <https://www.mbie.govt.nz/dmsdocument/4174-genesis-energy-electricity-price-review-first-report-submission>.
- "Genesis Energy to End Coal Use 'If We Can' by 2030." *Radio New Zealand*, May 20, 2019. <https://www.rnz.co.nz/news/business/389580/genesis-energy-to-end-coal-use-if-we-can-by-2030>.
- George, Damian. "Wellington Region to Band Together to Tackle Climate Change." *Stuff*, September 17, 2017. <https://www.stuff.co.nz/environment/96927694/wellington-region-to-band-together-to-tackle-climate-change>.
- Geras, Norman. "Essence and Appearance: Aspects of Fetishism in Marx's *Capital*." *New Left Review* 1, no. 65 (1971): 69-85. <https://newleftreview.org/issues/I65/articles/norman-geras-essence-and-appearance-aspects-of-fetishism-in-marx-s-capital>.
- Gerbner, George, and Larry Gross. "Living with Television: The Violence Profile." *Journal of communication* 26, no. 2 (1976): 172-99. <https://doi.org/10.1111/j.1460-2466.1976.tb01397.x>.

- Gibson, Eloise, and Mason Cass. "Billions at Stake as Government Mulls Sea Level Rules." *Stuff*, December 12, 2017. <https://www.stuff.co.nz/national/99770316/billions-at-stake-as-government-mulls-sea-level-rules>.
- Giddens, Anthony. *New Rules of Sociological Method: A Positive Critique of Interpretative Sociologies*. Cambridge: Polity Press, 1993. <https://soth-alexanderstreet-com.ezproxy.aut.ac.nz/cgi-bin/SOTH/hub.py?type=getdoc&docid=S10023089-D000001>.
- Gifford, Robert. "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation," *American Psychologist* 66, no. 4 (2011): 290-302. <https://doi.org/10.1037/a0023566>.
- Gifford, Robert, Karine Lacroix, and Angel Chen. "Understanding Responses to Climate Change: Psychological Barriers to Mitigation and a New Theory of Behavioral Choice." In *Psychology and Climate Change: Human Perceptions, Impacts, and Responses*, edited by Susan Clayton and Christie Manning, 161-83. London: Academic Press, 2018.
- Gilbert, Daniel T. "If Only Gay Sex Caused Global Warming." *Los Angeles Times*, July 2, 2006. <https://www.latimes.com/archives/la-xpm-2006-jul-02-op-gilbert2-story.html>.
- Gitlin, Todd. *The Whole World Is Watching: Mass Media in the Making and Unmaking of the New Left*. Berkeley: University of California Press, 1980.
- Global Carbon Project. "Global Carbon Budget: Summary Highlights." Accessed August 27, 2020. <https://www.globalcarbonproject.org/carbonbudget/19/highlights.htm>.
- Goffman, Erving. *Frame Analysis: An Essay on the Organisation of Experience*. Harmondsworth: Harper & Row, 1974.
- Goldman, Gretchen, Genna Reed, Michael Halpern, Charise Johnson, Emily Berman, Yogin Kothari, and Andrew Rosenberg. *Preserving Scientific Integrity in Federal Policymaking: Lessons from the Past Two Administrations and What's at Stake under the Trump Administration*. Union of Concerned Scientists, 2017. <https://www.ucsusa.org/sites/default/files/attach/2017/01/preserving-scientific-integrity-in-federal-policymaking-ucs-2017.pdf>.
- Goldman, Robert, and Stephen Papson. "Advertising in the Age of Accelerated Meaning." In *The Consumer Society Reader*, edited by Juliet Schor and Douglas Holt, 81-98. New York: The New Press, 1996. ProQuest Ebrary.
- Gore, Timothy. "Extreme Carbon Inequality: Why the Paris Climate Deal Must Put the Poorest, Lowest Emitting and Most Vulnerable People First." News release, December 2, 2015, <https://www.oxfam.org/en/research/extreme-carbon-inequality>.

- Grabe, Maria Elizabeth, Shuhua Zhou, and Brooke Barnett. "Explicating Sensationalism in Television News: Content and the Bells and Whistles of Form." *Journal of Broadcasting & Electronic Media* 45, no. 4 (2001): 635-55. [https://doi.org/10.1207/s15506878jobem4504\\_6](https://doi.org/10.1207/s15506878jobem4504_6).
- Gramsci, Antonio. *Selections from the Prison Notebooks*. New York: International Publishers, 1971.
- Green Alliance. "From Hot Air to Happy Endings: How to Inspire Public Support for a Low Carbon Society." Edited by Sylvia Rowley and Rebekah Phillips. London: Green Alliance, 2010. <https://www.green-alliance.org.uk/resources/From%20hot%20air%20to%20happy%20endings.pdf>.
- Greenpeace USA. "Exxonsecrets." Accessed September 7, 2019. <https://exxonsecrets.org/html/index.php>.
- Grieco, Elizabeth. "9 Charts About America's Newsrooms." Pew Research Center. Accessed November 26, 2019. <https://www.pewresearch.org/fact-tank/2020/04/28/10-charts-about-americas-newsrooms/>.
- Grieve, Robin. "Pastoral Farming Climate Research Inc." Accessed April 6, 2020. <https://farmcarbon.co.nz/>.
- . "Robin Grieve: Carbon Is Not a Fair Measure of NZ's " *The New Zealand Herald*, August 22, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11908116](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11908116).
- . "Robin Grieve: Climate Change Target Is Not What It Seems." *The New Zealand Herald*, January 11, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11779587](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11779587).
- Grieverson, Lynn. "Heads in the Sand, Houses in the Water." *Stuff*, May 3, 2017. <https://www.stuff.co.nz/national/92172625/heads-in-the-sand-houses-in-the-water>.
- Griffin, Paul. "CDP Carbon Majors Report 2017." London: Carbon Disclosure Project, 2017. Accessed December 21, 2018. <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772>.
- Groser, Tim. "Climate Change Target Announced." News release, July 8, 2015, <https://www.beehive.govt.nz/release/climate-change-target-announced>.
- . "Historic Climate Change Deal Struck." News release, December 14, 2015, <https://www.beehive.govt.nz/release/historic-climate-change-deal-struck>.

- . "New Zealand to Ratify Doha Amendment to Kyoto Protocol." News release, December 2, 2015, <https://www.beehive.govt.nz/release/new-zealand-ratify-doha-amendment-kyoto-protocol>.
- Grossman Gene M., and Elhanan Helpman. "Electoral Competition with Fake News." No. w26409, *National Bureau of Economic Research*, October 2019. <https://doi.org/10.3386/w26409>.
- Haberman, Clyde. "Rachel Carson, DDT and the Fight against Malaria." *The New York Times*, January 22, 2017. <https://www.nytimes.com/2017/01/22/us/rachel-carson-ddt-malaria-retro-report.html>.
- Habermas, Jürgen. *The Structural Transformation of Public Sphere: An Inquiry into a Category of Bourgeois Society*. Translated by Thomas Burger. Cambridge: The Massachusetts Institute of Technology Press, 1989.
- Hackett, Robert A. "Decline of a Paradigm? Bias and Objectivity in News Media Studies." *Critical Studies in Media Communication* 1, no. 3 (1984): 229-59. <https://doi.org/10.1080/15295038409360036>.
- Hajer, Maarten, and Wytse Versteeg. "A Decade of Discourse Analysis of Environmental Politics: Achievements, Challenges, Perspectives." *Journal of Environmental Policy & Planning* 7, no. 3 (2005): 175-84. <https://doi.org/10.1080/15239080500339646>.
- Hall, Charles A. S., and Kent A. Klitgaard. *Energy and the Wealth of Nations: Understanding the Biophysical Economy*. New York: Springer 2012.
- Hall, Nina, and Max Harris. "Nina Hall and Max Harris: NZ Must Speak out for Pacific on Climate Change." *Stuff*, June 27, 2017. <https://www.stuff.co.nz/environment/climate-news/94018862/nina-hall-and-max-harris-nz-must-speak-out-for-pacific-on-climate-change>.
- Hall, Stuart "Encoding/ Decoding." In *Media and Cultural Studies: Keywords*, ed. Meenakshi Gigi Durham and Douglas M Kellner, 163-173. Malden, MA: Blackwell Publishing, 2006.
- Hall, Stuart, Chas Critcher, Tony Jefferson, John Clarke, and Brian Roberts. *Policing the Crisis: Mugging, the State and Law and Order*. London: The Macmillan Press, 1978.
- Hampton, Mark. "The Fourth Estate Ideal in Journalism History." In *The Routledge Companion to News and Journalism*, edited by Stuart Allan, 3-12. London: Routledge, 2009.
- Hansen, Anders. *Environment, Media and Communication*. 2nd ed. Oxon: Routledge, 2019.

- Hansen, James. "Statement of Dr James Hansen, Director, Nasa Goddard Institute of Space Studies " Paper presented at the United States Senate Committee on Energy and Natural Resources, Washington D.C, 1988. <https://babel.hathitrust.org/cgi/pt?id=uc1.b5127807&view=1up&seq=45>.
- Hansen, James, Donald Johnson, Andrew Lacis, Sergej Lebedeff, Pius Lee, David Rind, and Gary Russell. "Climate Impact of Increasing Atmospheric Carbon Dioxide." *Science* 213, no. 4511 (1981): 957-66. <https://doi.org/10.1126/science.213.4511.957>.
- Hansen, James, Makiko Sato, Pushker Kharecha, Karina Von Schuckmann, David J Beerling, Junji Cao, Shaun Marcott, *et al.* "Young People's Burden: Requirement of Negative CO<sub>2</sub> Emissions." *Earth System Dynamics* 8 (2017): 577-616. <https://doi.org/10.5194/esd-8-577-2017>.
- Hansson, Sven Ove. "Weighing Risks and Benefits." *Topoi* 23, no. 2 (2004): 145-52. <https://doi.org/10.1007/s11245-004-5371-z>.
- Harcup, Tony, and Deirdre O'Neill. "What Is News? News Values Revisited (Again)." *Journalism Studies* 18, no. 12 (2017): 1470-88. <https://doi.org/10.1080/1461670X.2016.1150193>.
- Hartmann, D.L., A.M.G. Klein Tank, M Rusticucci, L.V Alexander, S Brönnimann, Y Charabi, F.J Dentener, *et al.* "Observations: Atmosphere and Surface." In *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by T.F Stocker, D Qin, G.-K Plattner, M Tignor, S.K Allen, J Boschung, A Nauels, *et al.*, 159-254. Cambridge: Cambridge University Press, 2013. [https://www.ipcc.ch/site/assets/uploads/2017/09/WG1AR5\\_Chapter02\\_FIN\\_AL.pdf](https://www.ipcc.ch/site/assets/uploads/2017/09/WG1AR5_Chapter02_FIN_AL.pdf).
- Harvey, David. *The Enigma of Capital: And the Crises of Capitalism*. London: Profile Books, 2011.
- Harvey, Fiona. "What Was Agreed at COP24 in Poland and Why Did It Take So Long?" *The Guardian*, December 16, 2018. <https://www.theguardian.com/environment/2018/dec/16/what-was-agreed-at-cop24-in-poland-and-why-did-it-take-so-long>.
- Harvie, Will. "The G&T Effect: Antarctica is Melting Differently Than the Arctic." *Stuff*, June 3, 2017. <https://www.stuff.co.nz/the-press/news/92871376/the-gt-effect-antarctica-is-melting-differently-than-the-arctic>.
- . "What Lies Beneath: Why NZ's Slice of Antarctica Is at the Centre of an Eco-Mystery." *Stuff*, November 25, 2017. <https://www.stuff.co.nz/science/98902415/measuring-antarcticas-unpredictable-sea-ice-to-help-understand-climate-change>.

- Haskins, Jack. "The Trouble with Bad News." *Newspaper Research Journal* 2, no. 2 (1981): 3-16. <https://doi.org/10.1177/073953298100200201>.
- Hasemyer, David. "Fossil Fuels on Trial: Where the Major Climate Change Lawsuits Stand Today." *Inside Climate News*, July 22, 2019. <https://insideclimatenews.org/news/04042018/climate-change-fossil-fuel-company-lawsuits-timeline-exxon-children-california-cities-attorney-general>.
- . "U.S. Supreme Court Refuses to Block Exxon Climate Fraud Investigation." *Inside Climate News*, January 7, 2019. <https://insideclimatenews.org/news/07012019/exxon-climate-fraud-investigation-supreme-court-ruling-massachusetts-attorney-general-healey#:~:text=By%20David%20Hasemyer&text=The%20U.S.%20Supreme%20Court%20on,and%20investors%20about%20climate%20change>.
- Hawken, Paul, ed. *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*. New York: Penguin Books, 2017.
- Haynes, Gavin. "The Dirty Story of How Big Tobacco Was Brought Down to Size." *VICE*, November 6, 2018. [https://www.vice.com/en\\_nz/article/vba4zm/the-dirty-story-of-how-big-tobacco-was-brought-down-to-size](https://www.vice.com/en_nz/article/vba4zm/the-dirty-story-of-how-big-tobacco-was-brought-down-to-size).
- Heffron, Raphael. "COP24 Shows Global Warming Treaties Can Survive the Era of the Anti-Climate 'Strongman'." *The Conversation*, December 17, 2018. <https://theconversation.com/cop24-shows-global-warming-treaties-can-survive-the-era-of-the-anti-climate-strongman-107786>.
- Held, David. "The Culture Industry: Critical Theory and Aesthetics." In *Introduction to Critical Theory*, 77-109. Cambridge: Polity Press, 2004.
- Hendy, Shaun. *Silencing Science*. Wellington: Bridget Williams Books, 2016.
- Herman, Edward, and Robert McChesney. *The Global Media: The New Missionaries of Corporate Capitalism*. London: Cassell, 1997.
- Hernon, Peter. "Disinformation and Misinformation through the Internet: Findings of an Exploratory Study." *Government Information Quarterly* 12, no. 2 (1995): 133-39. [https://doi.org/10.1016/0740-624X\(95\)90052-7](https://doi.org/10.1016/0740-624X(95)90052-7).
- Herring, Stephanie C., Nikolaos Christidis, Andrew Hoell, Martin P. Hoerling, and Peter A. Stott. "Explaining Extreme Events of 2017 from a Climate Perspective." *Bulletin of the American Meteorological Society* 100, no. 1 (2019): S1–S117. <https://doi.org/10.1175/BAMS-ExplainingExtremeEvents2017.1>.
- Hertog, James K, and Douglas McLeod. "A Multiperspectival Approach to Framing Analysis: A Field Guide." In *Framing Public Life: Perspective on Media and Our Understanding of the Social World*, edited by Stephen D.

Reese, Oscar Gandy, and August Grant, 141-62. Mahwah: Lawrence Erlbaum Associates, 2003.

Hertsgaard, Mark. "Covering Climate Now Signs on over 170 News Outlets." *Columbia Journalism Review*, August 28, 2019.

[https://www.cjr.org/covering\\_climate\\_now/covering-climate-now-170-outlets.php](https://www.cjr.org/covering_climate_now/covering-climate-now-170-outlets.php).

Hiles, Sara Shipley, and Amanda Hinnant. "Climate Change in the Newsroom: Journalists' Evolving Standards of Objectivity When Covering Global Warming." *Science Communication* 36, no. 4 (2014): 428-53.

<https://doi.org/10.1177/1075547014534077>.

Hillson, David. "Extending the Risk Process to Manage Opportunities."

*International Journal of Project Management* 20, no. 3 (2002): 235-40.

[https://doi.org/10.1016/S0263-7863\(01\)00074-6](https://doi.org/10.1016/S0263-7863(01)00074-6).

Hirsch, Paul. "On Not Learning from One's Own Mistakes: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis. Part II."

*Communication Research* 8, no. 1 (1981): 3-37.

<https://doi.org/10.1177/009365028100800101>.

———. "The "Scary World" of the Nonviewer and Other Anomalies: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis. Part I."

*Communication Research* 7, no. 4 (1980): 403-56.

<https://doi.org/10.1177/009365028000700401>.

Hodgson, Pete. "Carbon Tax Speech." Speech presented at The Beehive,

Parliament, May 4, 2005. <https://www.beehive.govt.nz/speech/carbon-tax-speech>.

———. "Climate Change Challenge Increases in New Zealand." News release,

June 17, 2005, <https://www.beehive.govt.nz/release/climate-change-challenge-increases-new-zealand>.

———. "Climate Change Policy on Agriculture: Clear and Consistent." News

release, September 4, 2003, <https://www.beehive.govt.nz/release/climate-change-policy-agriculture-clear-and-consistent>.

———. "Climate Change Response Bill Passed, NZ Poised to Ratify Kyoto Protocol." News release, November 14, 2002,

<https://www.beehive.govt.nz/release/climate-change-response-bill-passed-nz-poised-ratify-kyoto-protocol>.

———. "Farmers Must Face up to Climate Change." News release, September 5,

2003, <https://www.beehive.govt.nz/release/farmers-must-face-climate-change>.

- . "Government Adds Detail to 2002 Carbon Tax Policy." News release, May 4, 2005, <https://www.beehive.govt.nz/release/government-adds-detail-2002-carbon-tax-policy>.
- . "Government Confirms Key Climate Change Policies." News release, October 18, 2002, <https://www.beehive.govt.nz/release/government-confirms-key-climate-change-policies>.
- Hoffman, Aaron M., Dwaine H. A. Jengolley, Natasha T. Duncan, Melissa Buehler, and Meredith L. Rees. "How Does the Business of News Influence Terrorism Coverage? Evidence from *the Washington Post* and *USA Today*." *Terrorism and Political Violence* 22, no. 4 (2010): 559-80. <https://doi.org/10.1080/09546553.2010.493778>.
- Hoggan, James, and Richard Littlemore. *Climate Cover-Up: The Crusade to Deny Global Warming*. Vancouver: Greystone Books, 2009.
- Hoggan, James, and Grania Litwin, eds. *I'm Right and You're an Idiot: The Toxic State of Public Discourse and How to Clean It Up*. British Columbia, Canada: New Society Publishers, 2016.
- Honneth, Axel, ed. *Reification: A New Look at an Old Idea*. Oxford: Oxford University Press, 2008.
- Hope, Wayne. "Time, Globality and Commodity Fetishism." In *Political Economy of Media Industries: Global Transformations and Challenges*, edited by Randy Nichols and Gabriela Martinez, 262-75. New York: Routledge, 2020.
- Hopkins, Debbie, Colin Campbell-Hunt, Lynette Carter, James Higham, and Chris Rosin. "Climate Change and Aotearoa New Zealand." *WIREs Climate Change* 6 (2015): 559-83. <https://doi.org/10.1002/wcc.355>.
- Horizon Research. *New Zealanders' Climate Change Actions and Attitudes*. Auckland: Horizon Research Limited, 2014. <https://motu.nz/assets/Documents/our-work/environment-and-resources/emission-mitigation/shaping-new-zealands-low-emissions-future/2014-10-20-New-Zealanders-Climate-Change-Actions-and-Attitudes-Final.pdf>.
- Horkheimer, Max, and Theodor W. Adorno. *Dialectic of Enlightenment*. Translated by J Cummings. London, England: Verso, 1997.
- Hornborg, Alf. "Zero-Sum World: Challenges in Conceptualizing Environmental Load Displacement and Ecologically Unequal Exchange in the World-System." *International Journal of Comparative Sociology* 50, no. 3-4 (2009): 237-62. <https://doi.org/10.1177/0020715209105141>.
- Hosking, Mike "Mike Hosking: Climate Change Commission Will Achieve Nothing." *The New Zealand Herald*, December 19, 2017.

[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11962250](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11962250).

Hot Air. Directed by Alister Barry and Abi King-Jones. Vanguard Films, 2013. 1hr., 31 min. <http://www.hotairfilm.co.nz/>.

Howard-Williams, Rowan. "Consumers, Crazies and Killer Whales: The Environment on New Zealand Television." *The International Communication Gazette* 73, no. 1-2 (2011): 27-43. <https://doi.org/10.1177/1748048510386740>.

———. "Ideological Construction of Climate Change." In *Climate Change and the Media*, edited by Tammy Boyce and Justin Lewis, 28-40. New York: Peter Lang, 2009.

Huckin, Thomas. "Critical Discourse Analysis." In *Functional Approaches to Written Text: Classroom Applications*, edited by Tom Miller, 78-92. Washington D.C: United States Information Agency, 1997.

———. "Critical Discourse Analysis and the Discourse of Condescension." In *Discourse Studies in Composition*, edited by Ellen Barton and Gail Stygall, 155-76. New Jersey: Hampton Press, 2002.

Huffadine, Leith. "Extreme El Nino Events Likely to Become Twice as Common in New Zealand." *Stuff*, July 25, 2017. <https://www.stuff.co.nz/science/95078291/extreme-el-nino-events-likely-to-become-twice-as-common-in-new-zealand>.

———. "The 'Weather Detectives' Using Clues from the Past to Study Changing Climate." *Stuff*, December 6, 2017. <https://www.stuff.co.nz/science/99501713/the-weather-detectives-using-clues-from-the-past-to-study-changing-climate>.

Hughey, Kenneth, Geoffrey Kerr, and Ross Cullen. "Public Perceptions of New Zealand's Environment: 2010." Christchurch: EOS Ecology, 2010. [https://researcharchive.lincoln.ac.nz/bitstream/handle/10182/3875/Perceptions\\_2010.pdf;jsessionid=6672326C891AB3FE0947B4EB5B24714D?sequence=1](https://researcharchive.lincoln.ac.nz/bitstream/handle/10182/3875/Perceptions_2010.pdf;jsessionid=6672326C891AB3FE0947B4EB5B24714D?sequence=1).

IAG-Ipsos. "IAG-Ipsos Poll: Kiwis Pessimistic That We Will Meet Climate Change Challenge." News release, 15 July 2018, <https://www.iag.co.nz/latest-news/articles/IAG-Ipsos-poll-Kiwis-pessimistic-that-we-will-meet-the-challenge-of-climate-change.html>.

Iles, Julie. "Premiums to Rise after Record Year of Weather-Related Insurance Claims." *Stuff*, December 6, 2017. <https://www.stuff.co.nz/business/99578862/climate-change-blamed-for-record-year-of-weatherrelated-insurance-claims>.

- International Energy Agency. "Global CO<sup>2</sup> Emissions in 2019." News release, February 11, 2020, <https://www.iea.org/articles/global-co2-emissions-in-2019>.
- IUCN. "The IUCN Red List of Threatened Species. Version 2020-2." Accessed September 10, 2020. <https://www.iucnredlist.org/statistics>.
- "Jacinda Ardern Talks Feminism, Climate Change in First International Tv Interview." *The New Zealand Herald*, November 1, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11939205](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11939205).
- Jackson, Tim. *Prosperity without Growth: Economics for a Finite Planet*. London: Earthscan, 2009. ProQuest Ebrary.
- . *Prosperity without Growth? The Transition to a Sustainable Economy*. London: Sustainable Development Commission, 2009. [https://www.growthintransition.eu/wp-content/uploads/prosperity\\_without\\_growth\\_report.pdf](https://www.growthintransition.eu/wp-content/uploads/prosperity_without_growth_report.pdf).
- Jacques, Peter, Riley Dunlap, and Mark Freeman. "The Organisation of Denial: Conservative Think Tanks and Environmental Scepticism." *Environmental Politics* 17, no. 3 (2008): 349-85. <https://doi.org/10.1080/09644010802055576>.
- Jameson, Fredric. *Postmodernism, or, the Cultural Logic of Late Capitalism*. Durham: Duke University Press, 1991. ProQuest Ebrary.
- Jansen, Sue Curry. *Stealth Communications: The Spectacular Rise of Public Relations*. Cambridge: Polity Press, 2016.
- Jasanoff, Sheila. "A New Climate for Society." *Theory, Culture & Society* 27, no. 2-3 (2010): 233–53. <https://doi.org/10.1177/0263276409361497>.
- Jay, Martin, ed. *Reification: A New Look at an Old Idea*. New York: Oxford University Press, 2012.
- Jenkin, Rosalee. "Comment: In Response to Mike Hosking on Climate Change, I Say Bring It On." *The New Zealand Herald*, December 21, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11964279](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11964279).
- Jennings, Katie, Dino Grandoni, and Susanne Rust. "How Exxon Went from Leader to Skeptic on Climate Change Research." *Los Angeles Times*, October 23, 2015. <https://graphics.latimes.com/exxon-research/>.
- Jerving, Sara, Katie Jennings, Masako Melissa Hirsch, and Susanne Rust. "What Exxon Knew About the Earth's Melting Arctic." *Los Angeles Times*, October 9, 2015. <https://graphics.latimes.com/exxon-arctic/>.

- Johnstone, Barbara. *Discourse Analysis*. New Jersey: John Wiley & Sons, 2018.
- Jones, Nicholas. "Law Change on Oil Exploration Signalled as Amazon Warrior Reaches NZ Waters." *The New Zealand Herald*, November 28, 2017. [https://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=11948834](https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11948834).
- Jones, Rhys, Hayley Bennett, Gay Keating, and Alison Blaiklock. "Climate Change and the Right to Health for Māori in Aotearoa/New Zealand." *Health and Human Rights Journal* 16, no. 1 (2014): 54-68. <https://www.jstor.org/stable/10.2307/healhumarigh.16.1.54>.
- Jorgenson, Andrew K. "The Sociology of Ecologically Unequal Exchange and Carbon Dioxide Emissions, 1960-2005." *Social Science Research* 41 (2012): 242-52. <https://doi.org/10.1016/j.ssresearch.2011.11.011>.
- Joseph, Beate. "Journalism Education." In *The Handbook of Journalism Studies*, edited by Karin Wahl-Jorgensen and Thomas Hanitzsch, 55-69. Abingdon, OX: Routledge, 2009. ProQuest Ebrary.
- Jung, Courtney. "Critical Theory and Practice: Bridging the Global and the Personal. A Lecture." In *Globalization, Critique and Social Theory: Diagnoses and Challenges*, edited by Harry Dahms Bingley, 189-200. West Yorkshire: Emerald Publishing Limited, 2015. ProQuest Ebrary.
- Kahan, Dan. "Fixing the Communication Failure." *Nature* 463 (2010): 296-97. <https://doi.org/10.1038/463296a>.
- Kahneman, Daniel. *Thinking, Fast and Slow*. London: Penguin Books, 2011.
- Kaijser, Anna, and Annica Kronsell. "Climate Change Through the Lens of Intersectionality." *Environmental Politics*, 23, no. 3 (2014): 417-33. <https://doi.org/10.1080/09644016.2013.835203>.
- Kerr, John and Marc Stewart Wilson. "Changes in Perceived Scientific Consensus Shift Beliefs About Climate Change and GM Food Safety." *PLOS One* 13, no. 7 (2018): 1-17. <https://doi.org/10.1371/journal.pone.0200295>.
- Kellstedt, Paul, Sammy Zahran, and Arnold Vedlitz. "Personal Efficacy, the Information Environment, and Attitudes toward Global Warming and Climate Change in the United States." *Risk Analysis* 28, no. 1 (2008): 113-26. <https://doi.org/10.1111/j.1539-6924.2008.01010.x>.
- Kenix, Linda J. "Framing Science: Climate Change in the Mainstream and Alternative News of New Zealand." *Political Science* 60, no. 1 (2008): 117-32. <https://doi.org/10.1177/003231870806000110>.
- Kinnick, Katherine N., Dean M. Krugman, and Glen T. Cameron. "Compassion Fatigue: Communication and Burnout toward Social Problems."

- Journalism and Mass Communication Quarterly* 73, no. 3 (1996): 687-707.  
<https://doi.org/10.1177/107769909607300314>.
- Klein, Naomi. *No Logo: No Space, No Choice, No Jobs*. 10th ed. London: Fourth Estate, 2010.
- Knight, Catherine. *Beyond Manapouri: 50 Years of Environmental Politics in New Zealand*. Christchurch: Canterbury University Press, 2018.
- Kovach, Bill, and Tom Rosenstiel. *The Elements of Journalism*. 3 ed. New York: Three River Press, 2014.
- Krausmann, Fridolin, Simone Gingrich, Nina Eisenmenger, Karl-Heinz Erb, Helmut Haberl, and Marina Fischer-Kowalski. "Growth in Global Materials Use, GDP and Population During the 20<sup>th</sup> Century." *Ecological Economics* 68, no. 10 (2009): 2696-705.  
<https://doi.org/10.1016/j.ecolecon.2009.05.007>.
- Krönig, Jürgen. "Elite Versus Mass: The Impact of Television in an Age of Globalisation." *Historical Journal of Film, Radio and Television* 20, no. 1 (2000): 43-49. <https://doi.org/10.1080/014396800100026>.
- Kunelius, Risto, and Elisabeth Eide. "The Problem: Climate Change, Politics and the Media." In *Media and Global Climate Knowledge: Journalism and the IPCC*, edited by Risto Kunelius, Elisabeth Eide, Matthew Tegelberg and Dmitry Yagodin, 1-32. New York: Palgrave Macmillan, 2017.
- Kunreuther, H, S. Gupta, V. Bosetti, R. Cooke, V. Dutt, M. Ha-Duong, H. Held, et al. "Integrated Risk and Uncertainty Assessment of Climate Change Response Policies." In *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, et al., 151-201. Cambridge: Cambridge University Press, 2014.  
[https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_chapter2.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter2.pdf).
- L'Etang, Jacquie. "Corporate Responsibility and Public Relations Ethics." In *Public Relations: Critical Debates and Contemporary Practice*, edited by Jacquie L'Etang and Magda Pieczka, 405-21. Mahwah, NJ: Lawrence Erlbaum Associates, 2006.
- Lakoff, George. "Why It Matters How We Frame the Environment." *Environmental Communication* 4, no. 1 (2010): 70-81.  
<https://doi.org/10.1080/17524030903529749>.
- Lawrence, Judy, Alana Cornforth and Peter Barrett, eds. *Climate Futures Pathways for Society*. New Zealand Climate Change Research Institute and Victoria University of Wellington, 2011.

<https://www.wgtn.ac.nz/sgees/research-centres/documents/climate-futures.pdf>.

- Lawson, Nigel. "A Cool Look at Global Warming: The Economics and Politics of Climate Change." Lecture given for the thirteenth Sir Ronald Trotter Lecture, Auckland War Memorial Museum, November 15, 2007. <file:///C:/Users/em10878/Downloads/The-Economics-and-Politics-of-Climate-change.pdf>.
- Lazarsfeld, Paul F., and Robert K. Merton. "Mass Communication, Popular Taste, and Organised Social Action from *the Communication of Ideas* (1948)." In *Mass Communication and American Social Thought: Key Texts, 1919-1968*, edited by John Durham Peters and Peter Simonson, 341-56. Lanham: Rowman & Littlefield Publishers, 2004.
- Lazarus, Richard. "Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future." *Cornell Law Review* 94, no. 1153 (2009): 1153-234. <https://scholarship.law.georgetown.edu/facpub/159>.
- Lazer, David, Matthew Baum, Yochai Benkler, Adam Berinsky, Kelly Greenhill, Filippo Menczer, Miriam Metzger, *et al.* "The Science of Fake News." *Science* 359, no. 6380 (2018): 1094-96. <https://doi.org/10.1126/science.aao2998>.
- Le Treut, H., R. Somerville, U. Cubasch, Y. Ding, C. Mauritzen, A. Mokssit, T. Peterson, and M. Prathe. "Historical Overview of Climate Change." In *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, 93-127. Cambridge: Cambridge University Press, 2007. <https://www.ipcc.ch/site/assets/uploads/2018/03/ar4-wg1-chapter1.pdf>.
- Leahy, Terry, Vanessa Bowden, and Steven Threadgold. "Stumbling Towards Collapse: Coming to Terms with the Climate Crisis." *Environmental Politics* 19, no. 6 (2010): 851-68. <https://doi.org/10.1080/09644016.2010.518676>.
- Lee, Angela, Seth Lewis, and Matthew Powers, "Audience Clicks and News Placement: A Study of Time-Lagged Influence in Online Journalism," *Communication Research* 41, no.4 (2014): 505-530. <https://doi.org/10.1177/0093650212467031>.
- Lee, Tien Ming, Ezra M Markowitz, Peter D Howe, Chia-Ying Ko, and Anthony Leiserowitz. "Predictors of Public Climate Change Awareness and Risk Perception around the World." *Nature Climate Change* 5, no. 11 (2015): 1014-20. <https://doi.org/10.1038/nclimate2728>.

- Leining, Catherine, and Suzi Kerr. *A Guide to the New Zealand Emissions Trading Scheme*. Wellington: Motu Economic and Public Policy Research 2018. <https://motu.nz/assets/Documents/our-work/environment-and-agriculture/climate-change-mitigation/emissions-trading/ETS-Explanation-August-2018.pdf>.
- . *Lessons Learned from the New Zealand Emissions Trading Scheme*. Wellington: Motu Economic and Public Policy Research 2016. <https://motu.nz/our-work/environment-and-resources/emission-mitigation/emissions-trading/lessons-learned-from-the-new-zealand-emissions-trading-scheme/>.
- Leining, Catherine, and Scott White. *From Fact to Act: New Zealanders' Beliefs and Actions on Climate Change*. Wellington: Motu Economic and Public Policy Research 2015. <https://motu.nz/assets/Documents/our-work/environment-and-resources/emission-mitigation/shaping-new-zealands-low-emissions-future/From-Fact-to-Act-Motu-Note-19-web.pdf>.
- Leiserowitz, Anthony. "Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values." *Climatic Change* 77 (2006): 45-72. <https://doi.org/10.1007/s10584-006-9059-9>.
- Leiserowitz, Anthony, Geoff Feinberg, Seth Rosenthal, Nicholas Smith, Ashley Anderson, Connie Roser-Renouf, and Edward Maibach. *What's in a Name? Global Warming vs. Climate Change*. New Haven: Yale University and George Mason University, 2014. [https://climatecommunication.yale.edu/wp-content/uploads/2014/05/Global-Warming\\_Climate-Change\\_Report\\_May\\_2014.pdf](https://climatecommunication.yale.edu/wp-content/uploads/2014/05/Global-Warming_Climate-Change_Report_May_2014.pdf).
- Leiserowitz, Anthony, Edward Maibach, Connie Roser-Renouf, Nicholas Smith, and Erica Dawson. "Climategate, Public Opinion, and the Loss of Trust." *American Behavioural Scientist* 57, no. 6 (2013): 818-37. <https://doi.org/10.1177/0002764212458272>.
- Lertzman, Renee. *Environmental Melancholia: Psychoanalytic Dimensions of Engagement*. East Sussex: Routledge, 2015.
- Lester, Libby, and Simon Cottle. "Visualizing Climate Change: Television News and Ecological Citizenship." *International Journal of Communication* 3 (2009): 920-36. <https://ijoc.org/index.php/ijoc/article/view/509/371>.
- Levin, Kelly, Benjamin Cashore, Steven Bernstein, and Graeme Auld. "Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change." *Policy Sci* 45 (2012): 123-52. <https://doi.org/10.1007/s11077-012-9151-0>.
- . "Playing It Forward: Path Dependency, Progressive Incrementalism, and the "Super Wicked" Problem of Global Climate Change." *IOP Conference*

- Series: Earth and Environmental Science* 6 (2009).  
<https://doi.org/10.1088/1755-1307/6/0/502002>.
- Levy, David, and Robin Foster. *Impact of the Proposed NZME/Fairfax Merger on Media Plurality in New Zealand: Expert Review of the Commerce Commission's Draft Determination Document*. November 16, 2016.  
[https://comcom.govt.nz/\\_data/assets/pdf\\_file/0031/77575/Expert-report-on-Commissions-draft-determination-on-NZME-Fairfax-authorisation-16-November-2016.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0031/77575/Expert-report-on-Commissions-draft-determination-on-NZME-Fairfax-authorisation-16-November-2016.pdf).
- Lewandowsky, Stephan, Ullrich Ecker, Colleen Siefert, Norbert Schwarz, and John Cook. "Misinformation and Its Correction: Continued Influence and Successful Debiasing." *Psychological Science in the Public Interest* 13, no. 3 (2012): 106-31. <https://doi.org/10.1177/1529100612451018>.
- Lewandowsky, Stephan, Klaus Oberauer, and Gilles E Gignac. "Nasa Faked the Moon Landing—Therefore, (Climate) Science Is a Hoax: An Anatomy of the Motivated Rejection of Science." *Psychological Science* 24, no. 5 (2013): 622-33. <https://doi.org/10.1177/0956797612457686>.
- Lewis, Simon L, and Mark A. Maslin. *Human Planet: How We Created the Anthropocene*. Great Britain: Pelican Books, 2018.
- Lieberman, Amy, and Susanne Rust. "Big Oil Braced for Global Warming While It Fought Regulations." *Los Angeles Times*, December 31, 2015.  
<https://graphics.latimes.com/oil-operations/>.
- Lindlof, Thomas, and Bryan Taylor. *Qualitative Communication Research Methods*. 4th ed. Los Angeles: SAGE Publications, 2017.
- List, Kevin. "2005 vs 2006: Key and Climate Change." *Scoop*, November 29, 2006. <https://www.scoop.co.nz/stories/HL0611/S00487/2005-vs-2006-key-and-climate-change.htm>.
- Liu, Xinsheng, Arnold Vedlitz, and Letitia Alston. "Regional News Portrayals of Global Warming and Climate Change." *Environmental Science and Policy* 11, no. 5 (2008): 379-93. <https://doi.org/10.1016/j.envsci.2008.01.002>.
- Livingstone, Sonia. "Audience Research at the Crossroads: The 'Implied Audience' in Media and Cultural Theory." *European Journal of Cultural Studies* 1, no.2 (1998): 193-217.  
<https://doi.org/10.1177/136754949800100203>.
- Lowery, Shearon and Melvin DeFleur. *Milestones in Mass Communication Research: Media Effects*. New York: Longman, 1995.
- Louw, Eric. *The Media and Cultural Production*. London: SAGE Publications, 2001.

- Lovins, Amory B., L. Hunter Lovins, and Paul Hawken. "A Road Map for Natural Capitalism." In *Understanding Business: Environments* edited by Michael Lucas, 250-63. London: Taylor and Francis, 2005.
- Luntz, Frank. *Straight Talk*. Luntz Research Companies, 2002. <https://www.the-republican-reversal.com/uploads/1/2/0/2/120201024/luntzresearch.memo2.pdf>.
- MacGregor, Phil. "Tracking the Online Audience." *Journalism Studies* 8, no.2 (2007): 280-98. <https://doi.org/10.1080/14616700601148879>.
- Malm, Andreas. *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*. New York: Verso Books, 2016.
- . *The Progress of the Storm: Nature and Society in a Warming World*. London: Verso, 2018.
- Malm, Andreas, and Alf Hornborg. "The Geology of Mankind? A Critique of the Anthropocene Narrative." *The Anthropocene Review* 1, no. 1 (2014): 62-69. <https://doi.org/10.1177/2053019613516291>.
- Malthus, Thomas Robert. *An Essay on the Principle of Population: The 1803 Edition*. New Haven: Yale University Press, 2018. ProQuest Ebrary.
- Mann, Michael. *The Hockey Stick and the Climate Wars: Dispatches from the Front Lines*. New York: Columbia University Press, 2013.
- Manning, Paul. *News and News Sources: A Critical Introduction*. London: SAGE Publications, 2000. ProQuest Ebrary.
- Manoff, Robert, and Michael Schudson. "Reading the News." In *Reading the News: A Pantheon Guide to Popular Culture*, edited by Robert Manoff and Michael Schudson, 3-8. New York: Pantheon Books, 1986.
- Marcuse, Herbert. *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Abingdon: Routledge, 1964.
- Markowitz, Ezra, and Meaghan Guckian. "Climate Change Communication: Challenges, Insights, and Opportunities." In *Psychology and Climate Change: Human Perceptions, Impacts, and Responses*, edited by Susan Clayton and Christie Manning, 35-63. London: Academic Press, 2018.
- Marshall, George. *Don't Even Think About It: Why Our Brains Are Wired to Ignore Climate Change*. New York: Bloomsbury, 2014.
- Martin, Hannah. "The 16-Year-Old Who Wants to Change the World." *Stuff*, January 8, 2017. <https://www.stuff.co.nz/environment/87395041/the-16yearold-who-wants-to-change-the-world>.

- Marx, Karl. "Commodities and Money." In *Das Kapital: A Critique of Political Economy*, edited by Friedrich Engels, 18-116. Washington D.C: Regnery Publishing, 2012. ProQuest Ebrary.
- Marx, Sabine M., and Elke Weber. "Decision Making under Climate Uncertainty: The Power of Understanding Judgment and Decision Processes." In *Climate Change in the Great Lakes Region: Navigating an Uncertain Future*, edited by Thomas Dietz and David Bidwell, 99-128. Michigan: Michigan State University Press, 2012.
- Maslin, Mark. "The Five Corrupt Pillars of Climate Change Denial." *The Conversation*, March 29, 2019. <https://theconversation.com/the-five-corrupt-pillars-of-climate-change-denial-122893>.
- Maslow, A. H. "A Theory of Human Motivation." *Psychological Review* 50, no. 4 (1943): 370-96. <https://doi.org/10.1037/h0054346>.
- Masood, Ehsan. "Climate Report 'Subject to Scientific Cleansing.'" *Nature*, 13 June 1996, 546. <https://doi.org/10.1038/381546a0>.
- Masson-Delmotte, V, P Zhai, H. O Pörtner, D Roberts, J Skea, P. R Shukla, A Pirani, et al., eds. "Summary for Policymakers." In *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*. Edited by V Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, et al., 3-24. Geneva: Intergovernmental Panel on Climate Change, 2018. [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf).
- Mastrandrea, Michael D., Christopher B. Field, Thomas F. Stocker, Ottmar Edenhofer, Kristie L. Ebi, David J. Frame, Hermann Held, et al. *Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties*. Intergovernmental Panel on Climate Change 2010. [https://www.ipcc.ch/site/assets/uploads/2017/08/AR5\\_Uncertainty\\_Guidance\\_Note.pdf](https://www.ipcc.ch/site/assets/uploads/2017/08/AR5_Uncertainty_Guidance_Note.pdf).
- Mather, Mike. "Sir William Gallagher Claims Climate Change a 'Rort'." *Stuff*, November 27, 2017. <https://www.stuff.co.nz/national/99284791/sir-william-gallagher-claims-climate-change-a-rort>.
- Maxwell, Richard and Toby Miller. "Greening Media Studies." In *Media and the Ecological Crisis*, edited by Richard Maxwell, Jon Raudalen, and Nina Lager-Vestberg, 87-98. New York: Routledge, 2015.

- Mayer, Jane. "Covert Operations: The Billionaire Brothers Who Are Waging a War against Obama." *The New Yorker*, August 23, 2010.  
<https://www.newyorker.com/magazine/2010/08/30/covert-operations>.
- Mayhew, Leon. *The New Public*. Cambridge: Cambridge University Press, 1997.
- McChesney, Robert. *Digital Disconnect: How Capitalism is Turning the Internet against Democracy*. New York: The New Press, 2013.
- . *Rich Media, Poor Democracy: Communication Politics in Dubious Times*. New York: The New Press, 2015. ProQuest Ebrary.
- McChesney, Robert, and Dan Schiller. *The Political Economy of International Communications: Foundations for the Emerging Global Debate About Media Ownership and Regulation*. Geneva: The United Nations Research Institute for Social Development, 2003.  
[https://www.unrisd.org/80256B3C005BCCF9/\(httpAuxPages\)/c9dcba6c7db78c2ac1256bdf0049a774/\\$file/mcchesne.pdf](https://www.unrisd.org/80256B3C005BCCF9/(httpAuxPages)/c9dcba6c7db78c2ac1256bdf0049a774/$file/mcchesne.pdf).
- McCombs, Maxwell E, and Donald L Shaw. "The Agenda-Setting Function of Mass Media." *Public Opinion Quarterly* 36, no. 2 (1972): 176-87.  
<https://doi.org/10.1086/267990>.
- McKibben, Bill. *Eaarth: Making a Life on a Tough New Planet*. New York: St. Martin's Griffin, 2010.
- McKie, Robin. "Climate Change Deniers' New Battle Front Attacked." *The Guardian*, November 9, 2019.  
<https://www.theguardian.com/science/2019/nov/09/doomism-new-tactic-fossil-fuel-lobby>.
- McLaren, Lisa. "Climate Change: We Need Cross-Party Action." *The New Zealand Herald*, March 16, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11819560](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11819560).
- . "Lisa McLaren: US Climate Move Galvanises Rest of World." *Stuff*, June 8, 2017. <https://www.stuff.co.nz/environment/climate-news/93455218/lisa-mclaren-us-climate-move-galvanises-rest-of-world>.
- McLellan, Ilya. "Dr Kennedy Graham to Speak on Effects of Climate Change on Rural New Zealand." *Stuff*, February 28, 2017.  
<https://www.stuff.co.nz/environment/climate-news/89858889/dr-kennedy-graham-to-speak-on-effects-of-climate-change-on-rural-new-zealand>.
- McQuaig, Linda and Neil Brooks. *The Trouble With Billionaires*. London: One World Publications, 2013.
- McQuail, Denis. *McQuail's Mass Communication Theory*. 4th ed. London: SAGE Publications, 2000.

- Meadows, Donella H., Dennis L. Meadows, Jørgen Randers, and William W Behrens III. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books, 1972.
- Medhaug, Iselin, Martin Stolpe, Erich Fischer, and Reto Knutti. "Reconciling Controversies About the 'Global Warming Hiatus'." *Nature* 545 (2017): 41-47. <https://doi.org/10.1038/nature22315>.
- "Media Take: Climate Change Means 'Game over for the Pacific Islands.'" *Stuff*, October 17, 2017. <https://www.stuff.co.nz/business/industries/97967073/media-take-climate-change-means-game-over-for-the-pacific-islands>.
- Meij, Sara. "Nelson Climate Change Activist Arrested for Protest in Wellington." *Stuff*, June 7, 2017. <https://www.stuff.co.nz/nelson-mail/news/93412220/nelson-climate-change-activist-arrested-for-protest-in-wellington>.
- . "New Zealand Greenshell Mussels Show Resilience in the Face of Climate Change." *Stuff*, June 14, 2017. <https://www.stuff.co.nz/nelson-mail/news/93645374/new-zealand-greenshell-mussels-show-resilience-in-the-face-of-climate-change>.
- Meijer, Irene. "Journalism, Audiences, and News Experience." In *The Handbook of Journalism Studies*, edited by Karin Wahl-Jorgensen and Thomas Hanitzsch. Abingdon, OX: Routledge, 2009. ProQuest Ebrary.
- Meltzer, Kimberly. "The Hierarchy of Journalistic Cultural Authority." *Journalism Practice* 3, no. 1 (2009): 59-74. <https://doi.org/10.1080/17512780802560757>.
- Mencher, Melvin. *News Reporting and Writing*. Boston: McGraw-Hill, 2000.
- Michaels, David, and Celeste Monforton. "Manufacturing Uncertainty: Contested Science and the Protection of the Public's Health and Environment." *American Journal of Public Health* 95, no. S1 (2005): S39-S48. <https://doi.org/10.2105/AJPH.2004.043059>.
- Milfont, Taciano. "The Interplay Between Knowledge, Perceived Efficacy, and Concern About Global Warming and Climate Change: A One-Year Longitudinal Study." *Risk Analysis* 32, no. 6 (2012). <http://doi.org/10.1111/j.1539-6924.2012.01800.x>.
- Milfont, Taciano, Marc Wilson, and Chris Sibley. "The Public's Belief in Climate Change and Its Human Cause Are Increasing over Time." *PLOS One* 12, no. 3 (2017): 1-9. <https://doi.org/10.1371/journal.pone.0174246>.
- Miller, Corazon, and Ben Hill. "Auckland Region Has 52,000 Properties Sitting in a Flood Plain." *The New Zealand Herald*, March 20, 2017.

<https://www.nzherald.co.nz/nz/auckland-region-has-52000-properties-sitting-in-a-flood-plain/EOBEIGLLGPKSUO4GP32ZCAK5M/>.

Milman, Oliver "James Hansen, Father of Climate Change Awareness, Calls Paris Talks 'a Fraud'." *The Guardian*, December 12, 2015.

<https://www.theguardian.com/environment/2015/dec/12/james-hansen-climate-change-paris-talks-fraud>.

Ministry for the Environment. *Climate Change Projections for New Zealand: Atmosphere Projections Based on Simulations from the IPCC Fifth Assessment*. Wellington: Ministry for the Environment, 2018.

<https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/Climate-change-projections-2nd-edition-final.pdf>.

———. *Climate Change: The New Zealand Response: New Zealand's First National Communication under the Framework Convention on Climate Change*. Wellington: Ministry for the Environment, 1995.

<https://unfccc.int/resource/docs/natc/newnc1.pdf>.

———. "Latest update on New Zealand's 2020 net position," Last modified April 15, 2020, <https://www.mfe.govt.nz/climate-change/climate-change-and-government/emissions-reduction-targets/reporting-our-targets-0>.

———. *National Communication 2001: New Zealand's Third National Communication under the Framework Convention on Climate Change*. Wellington: Ministry for the Environment, 2002.

<https://www.mfe.govt.nz/sites/default/files/national-communication-2001-jan02.pdf>.

———. *National Interest Analysis - Doha Amendment to the Kyoto Protocol*. Wellington: Ministry for the Environment, n.d.

[https://www.parliament.nz/resource/en-nz/00DBSCH\\_ITR\\_66164\\_1/940ce51dd897cfb0ba6c2492218eea49e09fcbbd](https://www.parliament.nz/resource/en-nz/00DBSCH_ITR_66164_1/940ce51dd897cfb0ba6c2492218eea49e09fcbbd).

———. *New Zealand's Greenhouse Gas Inventory 1990–2017*. Wellington: Ministry for the Environment, 2019.

<https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/nz-greenhouse-gas-inventory-2019.pdf>.

———. "New Zealand's Projected Greenhouse Gas Emissions." Accessed October 3, 2020. <https://www.mfe.govt.nz/climate-change/emissions-reduction-targets/projected-emissions>.

———. *New Zealand's Seventh National Communication - Fulfilling Reporting Requirements under the United Nations Framework Convention on Climate Change and the Kyoto Protocol*. Wellington: Ministry for the Environment, 2017.

<https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/21->

[12-17%20Web%20FINAL%20-%20Seventh%20National%20Communication%202017.pdf](#).

———. *New Zealand's Sixth National Communication under the United Nations Framework Convention on Climate Change and Kyoto Protocol*. Wellington: Ministry for the Environment, 2013.

<https://www.mfe.govt.nz/sites/default/files/sixth-national-communication%5B1%5D.pdf>.

———. *Updating the New Zealand Emissions Trading Scheme: A Consultation Document*. Wellington: Ministry for the Environment, 2012.

<https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/consultation-ets-changes.pdf>.

Ministry for the Environment and Stats NZ. *New Zealand's Environmental Reporting Series: Environment Aotearoa 2019*. Ministry for the Environment and Stats NZ, 2019.

<https://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/environment%20-aotearoa-2019.pdf>.

Ministry of Business Innovation and Employment. *Energy in New Zealand 2018*. Wellington: Ministry of Business, Innovation & Employment, 2018.

<https://www.mbie.govt.nz/assets/d7c93162b8/energy-in-nz-18.pdf>.

———. *Energy in New Zealand 2019*. Wellington: Ministry of Business, Innovation & Employment, 2019.

<https://www.mbie.govt.nz/dmsdocument/7040-energy-in-new-zealand-2019>.

Mitchell, Charlie. "The Angry Sea Will Kill Us All: Our Disappearing Neighbours." *Stuff*, October 12, 2017.

<https://interactives.stuff.co.nz/2017/10/kiribati-the-angry-sea-will-kill-us-all/>.

———. "Counting the Cost of Sea Level Rise." *Stuff*, September 7, 2017.

<https://www.stuff.co.nz/environment/96503854/counting-the-cost-of-sea-level-rise>.

———. "NIWA: 2016 Climate Defined by Extremes." *Stuff*, January 9, 2017.

<https://www.stuff.co.nz/the-press/news/88232714/niwa-2016-climate-defined-by-extremes>.

Mitchell, Charlie, and Ged Cann. "Some New Zealand Climate Change Impacts May Already Be Irreversible, Government Report Says." *Stuff*, October 19, 2017. <https://www.stuff.co.nz/environment/98020081/some-new-zealand-climate-change-impacts-may-already-be-irreversible-government-report-says>

Mitchell, Charlie, and Alden Williams. "Climate Change Could Spell 'Extreme Poverty' in Coastal NZ Towns." *Stuff*, April 22, 2017.

<https://www.stuff.co.nz/environment/91778352/climate-change-could-spell-extreme-poverty-in-coastal-nz-towns>.

- Moeller, Susan D. *Compassion Fatigue: How the Media Sell Disease, Famine, War, and Death*. New York: Routledge, 1999.
- Moore, Jason W., ed. *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. Oakland, CA: PM Press, 2016.
- . "The Capitalocene Part I: On the Nature and Origins of Our Ecological Crisis." *The Journal of Peasant Studies* 44, no. 3 (2017): 594-630.  
<https://doi.org/10.1080/03066150.2016.1235036>.
- . "The Rise of Cheap Nature." In *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*, edited by Jason W. Moore. Oakland, CA: PM Press, 2016.
- Morrow, Raymond, and David Brown. *Critical Theory and Methodology*. Contemporary Social Theory. Edited by Mark Gottdiener California: SAGE Publications, 1994.
- Morton, Jamie. "Are Islands More Resilient to Sea Level Rise?" *The New Zealand Herald*, May 7, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11851199](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11851199).
- . "The Big Read: Our Slow-Moving Disaster as Sea Level Rises." *The New Zealand Herald*, October 23, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11935975](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11935975).
- . "Budget: Greens Slam Environment Funding." *The New Zealand Herald*, May 25, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11863119](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11863119).
- . "Climate Case: The Student vs the Minister." *The New Zealand Herald*, May 24, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11862450](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11862450).
- . "Climate Change: NZ Lacks Co-ordinated Plan." *The New Zealand Herald*, December 15, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11960273](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11960273).
- . "Great Barrier Reef: 'See It While You Still Can'." *The New Zealand Herald*, March 26, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11823615](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11823615).

- . "Higher Seas May Force New Zealand Towns to Retreat Inland: GNS Science Study to Investigate." *The New Zealand Herald*, May 21, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11860267](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11860267).
- . "How Can NZ Insure Homes for Climate Change?" *The New Zealand Herald*, April 28, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11847281](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11847281).
- . "More Kiwis Believe Climate Change Is Real." *The New Zealand Herald*, March 29, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11827705](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11827705).
- . "NZ Scientist Alarmed at Vanishing Sea Ice." *The New Zealand Herald*, January 3, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11776133](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11776133).
- . "Policy Series: Tackling Climate Change." *The New Zealand Herald*, September 7, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11907790](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11907790).
- . "Preparing New Zealand for Climate Change." *The New Zealand Herald*, February 14, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11800198](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11800198).
- . "Q&A: Antarctica's New Trillion-Tonne Iceberg." *The New Zealand Herald*, July 13, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11890071](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11890071).
- . "Quirky Native Spider among Species Threatened by Climate Change." *The New Zealand Herald*, June 18, 2017. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11878797/](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11878797/).
- . "Student vs Former Climate Minister: The Ruling." *The New Zealand Herald*, November 2, 2017. <https://www.nzherald.co.nz/nz/student-vs-former-climate-minister-the-ruling/UELAGCXQKJ5B3MDNXZZ6MJ7IBM/>.
- Morton, Thomas A., Anna Rabinovich, Dan Marshall, and Pamela Bretschneider. "The Future That May (or May Not) Come: How Framing Changes Responses to Uncertainty in Climate Change Communications." *Global*

*Environmental Change* 21 (2011): 103–09.  
<https://doi.org/10.1016/j.gloenvcha.2010.09.013>.

Moser, Susanne C. "Communicating Climate Change: History, Challenges, Process and Future Directions." *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 1 (2010): 31-53. <https://doi.org/10.1002/wcc.11>.

———. "Reflections on Climate Change Communication Research and Practice in the Second Decade of the 21<sup>st</sup> Century: What More Is There to Say?". *Wiley Interdisciplinary Reviews: Climate Change* 7, no. 3 (2016): 345-69. <https://doi.org/10.1002/wcc.403>.

Moser, Susanne C., and Lisa Dilling. "Communicating Climate Change: Closing the Science - Action Gap." In *Oxford Handbook of Climate Change and Society*, edited by John S. Dryzek, Richard B. Norgaard and David Schlosberg, 1-19. Oxford: Oxford University Press 2011. <https://doi.org/10.1093/oxfordhb/9780199566600.003.0011>.

Mulvey, Kathy, Seth Shulman, Dave Anderson, Nancy Cole, Jayne Piepenburg, and Jean Sideris. *The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation*. Union of Concerned Science: 2015. <https://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf>.

Murdock, Graham. "Large Corporations and the Control of the Communications Industries." In *Culture, Society and the Media*, edited by Michael Gurevitch, Tony Bennett, James Curran and Janet Woollacott, 118–50. London: Methuen, 1982.

Myllylahti, Merja. *New Zealand Media Ownership Report 2017*. Journalism, Media and Democracy, 2017. [https://www.aut.ac.nz/\\_data/assets/pdf\\_file/0006/149946/JMAD-2017-Report.pdf](https://www.aut.ac.nz/_data/assets/pdf_file/0006/149946/JMAD-2017-Report.pdf).

National Academies of Sciences Engineering and Medicine. *Communicating Science Effectively: A Research Agenda*. Washington D.C: The National Academies Press, 2017. <https://doi.org/10.17226/23674>.

National Research Council. *Changing Climate. Report of the Carbon Dioxide Assessment Committee*. Washington D.C: The National Academies Press, 1983. <https://doi.org/10.17226/18714>.

Nerlich, Brigitte, Nelya Koteyko, and Brian Brown. "Theory and Language of Climate Change Communication." *WIREs Climate Change* 1 (2010): 97-110. <https://doi.org/10.1002/wcc.2>.

New Zealand Institute of Economic Research. *The Economic Effects of Greenhouse Gas Emission Policies: A Quantitative Evaluation*. Wellington: New Zealand Institute of Economic Research, 2001.

<https://nzier.org.nz/publication/the-economic-effects-of-greenhouse-gas-emission-policies-a-quantitative-evaluation>.

New Zealand Press Association. "Jim Salinger Sacking Justified - Era." *Stuff*, December 21, 2009. <http://www.stuff.co.nz/national/3185809/Jim-Salinger-sacking-justified-ERA>.

New Zealand Productivity Commission. *Low-Emissions Economy: Final Report*. Wellington: New Zealand Productivity Commission, 2018. <https://www.productivity.govt.nz/assets/Documents/4e01d69a83/Productivity-Commission-Low-emissions-economy-Final-Report.pdf>.

Nichols, Tom. *The Death of Expertise: The Campaign against Established Knowledge and Why It Matters*. New York: Oxford University Press, 2017. ProQuest Ebrary.

Nielsen, Rasmus Kleis. "The Business of News." In *The SAGE Handbook of Digital Journalism*, edited by Tamara Witschge, C. W. Anderson, David Domingo and Alfred Hermida, 51-67. London: SAGE Publications, 2016.

Nisbet, Matthew. "Knowledge into Action: Framing Debates over Climate Change and Poverty." In *Doing News Framing analysis: Empirical and Theoretical Perspectives*, edited by Paul D'Angelo and Jim Kuypers, 43-83. New York: Routledge, 2010.

Nisbet, Matthew and John Kotcher, "A Two-Step Flow of Influence? Opinion-Leader Campaigns on Climate Change," *Science Communication* 20, no.3 (2009), 328-354. <https://doi.org/10.1177/1075547008328797>.

"NIWA Sacks Scientist for Helping Media." *Radio New Zealand*, 25 April 2009. <https://www.rnz.co.nz/news/national/13332/niwa-sacks-scientist-for-helping-media>.

Norgaard, Kari. *Living in Denial: Climate Change, Emotions, and Everyday Life*. Cambridge: MIT Press 2011.

———. "'We Don't Really Want to Know' Environmental Justice and Socially Organised Denial of Global Warming in Norway." *Organization & Environment* 19, no. 3 (2006): 347-70. <https://doi.org/10.1177/1086026606292571>.

"NZME to Cut 200 Jobs as Advertising Revenue Plummet." *Radio New Zealand*, April 14, 2020. <https://www.rnz.co.nz/news/business/414165/nzme-to-cut-200-jobs-as-advertising-revenue-plummet>.

O'Connor, James. "Capitalism, Nature, Socialism: A Theoretical Introduction." *Capitalism Nature Socialism* 1, no. 1 (1988): 11-38. <https://doi.org/10.1080/10455758809358356>.

- . "On the Two Contradictions of Capitalism." *Capitalism Nature Socialism* 2, no. 3 (1991): 107-09. <https://doi.org/10.1080/10455759109358463>.
- O'Hara, Peter, John Freney, and Marc Ulyatt. *Abatement of Agricultural Non-Carbon Dioxide Greenhouse Gas Emissions*. Wellington: Ministry of Agriculture and Forestry, 2003. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.458.3182&rep=rep1&type=pdf>.
- O'Neill, Saffron, and Sophie Nicholson-Cole. "'Fear Won't Do It': Promoting Positive Engagement with Climate Change through Visual and Iconic Representations." *Science Communication* 30, no. 3 (2009): 355-79. <https://doi.org/10.1177/1075547008329201>.
- O'Neill, Deirdre, and Tony Harcup. "News Values and News Selection." In *The Handbook of Journalism Studies*, edited by Karin Wahl-Jorgensen and Thomas Hanitzsch, 213-228. Abingdon, OX: Routledge, 2020. ProQuest Ebrary.
- Olausson, Ulrika. "Global Warming - Global Responsibility? Media Frames of Collective Action and Scientific Certainty." *Public Understanding of Science* 18, no.4 (2009): 421-36. <https://doi.org/10.1177/0963662507081242>.
- Olteanú, Alexandra, Carlos Castillo, Nicholas Diakopoulos, and Karl Aberer. "Comparing Events Coverage in Online News and Social Media: The Case of Climate Change." Paper presented at the Ninth International AAAI Conference on Web and Social Media, Oxford, UK, May 26–29, 2015.
- Oosterman, Jonathan. "Making Climate Action Meaningful: Communication Practices in the New Zealand Climate Movement." Master's thesis, University of Victoria, 2016.
- Orange, Donna M. *Climate Crisis, Psychoanalysis, and Radical Ethics*. London, United Kingdom: Routledge, 2016.
- Oreskes, Naomi. "The Scientific Consensus on Climate Change." *Science* 306, no. 5702 (2004): 1686-86. <https://doi.org/10.1126/science.1103618>.
- Oreskes, Naomi, and Erik M Conway. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury Press, 2011.
- Otto, Shawn. *The War on Science: Who's Waging It, Why It Matters, What We Can Do About It*. Minnesota: Milkweed Editions, 2016.
- PA Consultants. *Our Clean Green Image: What's It Worth?* The Ministry for the Environment, 2001. [https://www.mfe.govt.nz/sites/default/files/clean-green-aug01-final\\_0.pdf](https://www.mfe.govt.nz/sites/default/files/clean-green-aug01-final_0.pdf).

- Painter, James, Silje Kristiansen, and Mike S. Schäfer. "How 'digital-born' media cover climate change in comparison to legacy media: A case study of the COP 21 summit in Paris." *Global Environmental Change* 48 (2018): 1-10. <https://doi.org/10.1016/j.gloenvcha.2017.11.003>.
- Parker, David. "Carbon Tax Will Not Go Ahead in 2007." News release, December 22, 2005, <https://www.beehive.govt.nz/release/carbon-tax-will-not-go-ahead-2007>.
- . "Historic Climate Change Legislation Passes." News release, September 11, 2008, <https://www.beehive.govt.nz/release/historic-climate-change-legislation-passes>.
- . "A New Zealand Emissions Trading Scheme." News release, September 21, 2007, <https://www.beehive.govt.nz/speech/new-zealand-emissions-trading-scheme>.
- . "The Way Forward on Climate Change." News release, October 7, 2006, <https://www.beehive.govt.nz/speech/way-forward-climate-change>.
- Parker, David, and Michael Cullen. "Climate Change Legislation Introduced." News release, December 5, 2007, <https://www.beehive.govt.nz/release/climate-change-legislation-introduced>.
- Pascual, Unai, Patricia Balvanera, Sandra Díaz, György Pataki, Eva Roth, Marie Stenseke, Robert T Watson, *et al.* "Valuing Nature's Contributions to People: The IPBES Approach." *Current Opinion in Environmental Sustainability* 26-27 (2017): 7-16. <https://doi.org/10.1016/j.cosust.2016.12.006>.
- Pasley, James. "Students Occupy University of Auckland, Demanding Divestment from Fossil Fuels." *Stuff*, May 29, 2017. <https://www.stuff.co.nz/auckland/93077753/students-occupy-university-of-auckland-demanding-divestment-from-fossil-fuels>.
- . "Want to Help Combat Climate Change? Have One Less Child, Study Says." *Stuff*, October 2, 2017. <https://www.stuff.co.nz/life-style/parenting/family-life/97288090/want-to-help-combat-climate-change-have-one-less-child-study-says>.
- Patel, Raj, and Jason W Moore. *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet*. Carlton, VIC: Black Inc, 2018.
- PBL Netherlands Environmental Assessment Agency. "China Now No. 1 in CO<sub>2</sub> Emissions: USA in Second Position." News release, June 19, 2007, <https://www.pbl.nl/en/Chinanowno1inCO2emissionsUSAinsecondposition>.
- Pearce, Fred "Climategate: Anatomy of a Public Relations Disaster." *Yale Environment 360*. Last modified December 10, 2009.

[https://e360.yale.edu/features/climategate\\_anatomy\\_of\\_a\\_public\\_relations\\_disaster](https://e360.yale.edu/features/climategate_anatomy_of_a_public_relations_disaster).

- . "Victory for Openness as IPCC Climate Scientist Opens up Lab Doors." *The Guardian*, February 9, 2010.  
<https://www.theguardian.com/environment/2010/feb/09/ipcc-report-author-data-openness>.
- Pelling, Mark. *Adaptation to Climate Change: From Resilience to Transformation*. Oxon: Routledge, 2011.
- Perminova, Olga, Magnus Gustafsson, and Kim Wikström. "Defining Uncertainty in Projects – A New Perspective." *International Journal of Project Management* 26, no. 1 (2008): 73-79.  
<https://doi.org/10.1016/j.ijproman.2007.08.005>.
- Piddock, Gerald. "Good Soil Health Critical to Grow Climate Change Resilient Crops." *Stuff*, December 18, 2017.  
<https://www.stuff.co.nz/business/farming/99871592/good-soil-health-critical-to-grow-climate-change-resilient-crops>.
- Pike, Cara, Bob Doppelt, and Meredith Herr. *Climate Communications and Behavior Change: A Guide for Practitioners*. The Climate Leadership Initiative, 2010. <http://hdl.handle.net/1794/10708>.
- Pilhofer, Aron. "Industry Spends Hundreds of Millions on Lobbying, Elections." *The Center for Public Integrity*. Last modified May 19, 2014.  
<https://publicintegrity.org/environment/big-oil-protects-its-interests/>.
- Pine II, B. Joseph, and James Gilmore. "The Experience Economy: Past, Present and Future." In *Handbook on the Experience Economy*, edited by Jon Sundbo and Flemming Sørensen, 21-44. Cheltenham: Edward Elgar, 2013.
- Pitout, Magriet. "Media Audience Theory." In *Media Studies: Media Content and Media Audiences*, edited Pieter Fourie, 389-420. Cape Town: Juta & Co Ltd, 2009.
- Posetti, Julie, Cherilyn Ireton, Claire Wardle, Hossein Derakhshan, Alice Matthews, Magda Abu-Fadil, Tom Trewinnard, Fergus Bell, and Alexios Mantzarlis. *Journalism, 'Fake News' & Disinformation: Handbook for Journalism Education and Training*. Edited by Cherilyn Ireton and Julie Posetti. Paris: United Nations Educational, Scientific and Cultural Organization, 2018.  
[https://en.unesco.org/sites/default/files/journalism\\_fake\\_news\\_disinformation\\_print\\_friendly\\_0.pdf](https://en.unesco.org/sites/default/files/journalism_fake_news_disinformation_print_friendly_0.pdf).
- Powell, James Lawrence. "Climate Scientists Virtually Unanimous." *Bulletin of Science, Technology & Society* 35, no. 5-6 (2015): 121-24.  
<https://doi.org/10.1177/0270467616634958>.

- Prior, Markus. "Any Good News in Soft News? The Impact of Soft News Preference on Political Knowledge." *Political Communication* 20, no. 2 (2003): 149-71. <https://doi.org/10.1080/10584600390211172>.
- Pullar-Strecker, Tom. "Media Moves to Cut Jobs and Pay, but Minister Indicates Help Will Only Come in 'Medium Term'." *Stuff*, April 01, 2020. <https://www.stuff.co.nz/business/120747099/media-moves-to-cut-jobs-and-pay-but-minister-indicates-help-will-only-come-in-medium-term>.
- Rapley, Timothy. "The Art(Fulness) of Open-Ended Interviewing: Some Considerations on Analysing Interviews." *Qualitative Research* 1, no. 3 (2001): 303-23. <https://doi.org/10.1177/146879410100100303>.
- Ratter, Beate, Katharina Philippa, and Hans von Storch. "Between Hype and Decline: Recent Trends in Public Perception of Climate Change." *Environmental Science & Policy* 18 (2012): 3-8. <https://doi.org/10.1016/j.envsci.2011.12.007>.
- Raworth, Kate. *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. London: Random House Business Books, 2017. ProQuest Ebrary.
- Redclift, Michael. "Sustainable Development (1987–2005): An Oxymoron Comes of Age." *Sustainable Development* 13 (2005): 212-17. <https://doi.org/10.1002/sd.281>.
- Redmond, Adele. "People's Climate March in Christchurch Spreads Its Message through Theatre." *Stuff*, April 29, 2017. <https://www.stuff.co.nz/the-press/92047011/peoples-climate-march-in-christchurch-spreads-its-message-through-theatre>.
- Reese, Stephen D. "Prologue—Framing Public Life: A Bridging Model for Media Research." In *Framing Public Life: Perspectives on Media and Our Understanding of the Social World*, edited by Oscar Gandy, August Grant and Stephen Reese, 7-31. Mahwah: Lawrence Erlbaum Associates, 2001.
- Reisinger, Andy. *Climate Change 101: An Educational Resource: Science, Impacts, Adaptation, Mitigation, Decision-Making Challenges*. Wellington: Institute of Policy Studies and New Zealand Climate Change Research Institute 2009. [https://www.wgtn.ac.nz/sgees/research-centres/documents/front\\_matter.pdf](https://www.wgtn.ac.nz/sgees/research-centres/documents/front_matter.pdf).
- . "Opinion: Farmers Advocate Takes Wrong Message from Climate Reports - Andy Reisinger." *The New Zealand Herald*, August 23, 2017. <https://www.nzherald.co.nz/nz/opinion-farmers-advocate-takes-wrong-message-from-climate-reports-andy-reisinger/6VHERFKMMN2OW2J23VUPNJKQMI/>.

- Reser, Joseph, and Janet Swim. "Adapting to and Coping with the Threat and Impacts of Climate Change." *American Psychologist* 66, no. 4 (2011): 277-89. <https://doi.org/10.1037/a0023412>.
- Revkin, Andrew C. "Climate Expert Says NASA Tried to Silence Him." *New York Times*, January 29, 2006. <https://www.nytimes.com/2006/01/29/science/earth/climate-expert-says-nasa-tried-to-silence-him.html>.
- Rimmer, Daniel. "Breakdown of Governance: A Critical Analysis of New Zealand's Climate Change Response." Doctor of Philosophy, Massey University, 2016.
- Ritchie, Hannah, and Max Roser. "CO<sub>2</sub> and Greenhouse Gas Emissions." *Our World in Data*. Last modified August 2020. <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>.
- Robinson, E, and R. C Robbins. *Sources, Abundance, and Fate of Atmospheric Pollutants*. Stanford Research Institute. New York: American Petroleum Institute, 1968. <https://www.smokeandfumes.org/documents/16>.
- Rolleston, William. "William Rolleston: Guided by Science." *The New Zealand Herald*, February 17, 2017. [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=11802736](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11802736).
- Rosenberg, Eli. "Emaciated Polar Bear Kicks Off Discussion About Climate Change." *Stuff*, December 10, 2017. <https://www.stuff.co.nz/environment/99709599/emaciated-polar-bear-kicks-off-discussion-about-climate-change>.
- Rosenberg, Tina. "What the World Needs Now Is DDT." *The New York Times Magazine*, April 11, 2004. <https://www.nytimes.com/2004/04/11/magazine/what-the-world-needs-now-is-ddt.html>.
- Rosling, Hans, Ola Rosling, and Anna Rosling Rönnlund. *Factfulness: Ten Reasons We're Wrong About the World - and Why Things Are Better Than You Think*. New York: Flatiron Books, 2017.
- Roulston, Kathryn. "Analysing Interviews." In *The Sage Handbook of Qualitative Data Collection*, edited by Uwe Flick, 297-312. London: SAGE Publications 2013.
- Roulston, Kathryn, and Myungweon Choi. "Qualitative Interviews." In *The Sage Handbook of Qualitative Data Collection*, edited by Uwe Flick, 233-49. London: SAGE Publications, 2018.
- Roy Morgan. "Economic Issues Dominate New Zealanders Concerns Early in 2018." March 16, 2018. <http://www.roymorgan.com/findings/7534-roy-morgan-problems-facing%20new-zealand-february-2018-201803152343>.

- . "Most Important Problems Facing New Zealand in 2017 Are Housing Related, but the World Faces Economic and War & Terrorism Problems in Almost Equal Measure According to New Zealanders." February 27, 2017. <http://www.roymorgan.com/findings/7128-most-important-problems-facing-new-zealand-february-2017-201702271519>.
- Rubin, Herbert, and Irene Rubin. "Preparing Follow-up Questions." In *Qualitative Interviewing: The Art of Hearing Data*, 2nd ed, 173-200. Thousand Oaks: SAGE Publications, 2012.
- Rural Reporter. "Federated Farmers Say Moving to ETS Will Cost Primary Industry \$83m." *Stuff*, September 8, 2017. <https://www.stuff.co.nz/business/farming/96665676/federated-farmers-say-the-ets-will-cost-the-primary-industry-83-million>.
- Russill, Chris. "The Billion-Dollar Kyoto Botch-Up: Climate Change Communication in New Zealand." *Media International Australia* 127, no. 1 (2008): 138-51. <https://doi.org/10.1177/1329878X0812700117>.
- Salmon, Rhian, Rebecca Priestley, Michele Fontana, and Taciano L. Milfont. "Climate Change Communication in New Zealand." In *Oxford Research Encyclopedia of Climate Science*, 2017. <http://doi.org/10.1093/acrefore/9780190228620.013.475>.
- Samenow, Jason. "Hurricane-Force Atlantic Storm to Push North Pole to Melting Point in Winter." *Stuff*, February 8, 2017. <https://www.stuff.co.nz/world/89194870/hurricane-force-atlantic-storm-to-push-north-pole-to-melting-point-in-winter>.
- Sampei, Yuki, and Midori Aoyagi-Usui. "Mass-Media Coverage, Its Influence on Public Awareness of Climate-Change Issues, and Implications for Japan's National Campaign to Reduce Greenhouse Gas Emissions." *Global Environmental Change* 19, no. 2 (2009): 203-12. <https://doi.org/10.1016/j.gloenvcha.2008.10.005>.
- Saxton, Amanda. "New Zealand Had Its Hottest Ever Recorded Year in 2016, NIWA Climate Summary Says." *Stuff*, January 9, 2017. <https://www.stuff.co.nz/environment/climate-news/88224605/new-zealand-was-hotter-than-ever-in-2016-niwa-climate-summary-says>.
- Sayers, Sean. *Marx and Alienation: Essays on Hegelian Themes*. Hampshire: Palgrave Macmillan, 2011.
- Schäfer, Mike, and Inga Schlichting. "Media Representations of Climate Change: A Meta-Analysis of the Research Field." *Environmental Communication* 8, no. 2 (2014): 142-60. <https://doi.org/10.1080/17524032.2014.914050>.
- Schmidt, Andreas, Ana Ivanova, and Mike Schäfer. "Media Attention for Climate Change around the World: A Comparative Analysis of Newspaper

- Coverage in 27 Countries." *Global Environmental Change* 23 (2013): 1233-48. <https://doi.org/10.1016/j.gloenvcha.2013.07.020>.
- Schneider, Stephen H. *Science as a Contact Sport: Inside the Battle to Save Earth's Climate*. Washington D.C: National Geographic Books, 2009.
- Schor, Juliet, and Douglas Holt, eds. *The Consumer Society Reader*. New York: The New Press, 2000.
- Schroeder, Steven A. "Tobacco Control in the Wake of the 1998 Master Settlement Agreement." *The New England Journal of Medicine* 350, no. 3 (2004): 293-01. <https://doi.org/10.1056/NEJMSr031421>.
- Schudson, Michael. "Four Approaches to the Sociology of News Revisited." In *Media and Society*, edited by James Curran, 164-85. London: Bloomsbury Publication, 2010.
- Selwyn, Neil. "Reconsidering Political and Popular Understandings of the Digital Divide." *New Media Society* 6, no. 3 (2004): 341-62. <https://doi.org/10.1177/1461444804042519>.
- Shah, Sonia. "Don't Blame Environmentalists for Malaria." *The Nation*, March 31, 2006. <https://www.thenation.com/article/archive/dont-blame-environmentalists-malaria/>.
- Shan, Yuli, Dabo Guan, Heran Zheng, Jiamin Ou, Yuan Li, Jing Meng, Zhifu Mi, Zhu Liu, and Qiang Zhang. "China CO<sub>2</sub> Emission Accounts 1997–2015." *Scientific Data* 5, 170201 (2018): 1-14. <https://doi.org/10.1038/sdata.2017.201>.
- Shaw, Aimee. "Putting the Freeze on Climate Change." *The New Zealand Herald*, January 21, 2017. [https://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=11781747](https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11781747).
- Shehata, Adam, and David Nicolas Hopmann. "Framing Climate Change." *Journalism Studies* 13, no. 2 (2012): 175-92. <https://doi.org/10.1080/1461670X.2011.646396>.
- Shoemaker, Pamela, and Stephen D Reese. *Mediating the Message: Theories of Influences on Mass Media Content*. 2nd ed. New York: Longman Publishers, 1991.
- Shome, Debika, Sabine Marx, Kirstin Appelt, Poonam Arora, Roberta Balstad, Kenny Broad, Andrew Freedman, et al. *The Psychology of Climate Change Communication: A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public*. New York: Center for Research on Environmental Decisions, 2009. [http://guide.cred.columbia.edu/pdfs/CREdguide\\_full-res.pdf](http://guide.cred.columbia.edu/pdfs/CREdguide_full-res.pdf).

- Sigal, Leon. "Who? Sources Make the News." In *Reading the News: A Pantheon Guide to Popular Culture*, edited by Robert Manoff and Michael Schudson, 9-37. New York: Pantheon Books, 1986.
- Simmons, Geoff, and Paul Young. *Climate Cheats: How New Zealand Is Cheating on Our Climate Change Commitments, and What We Can Do to Set It Right*. Wellington: The Morgan Foundation, 2016.  
[http://morganfoundation.org.nz/wp-content/uploads/2016/04/ClimateCheat\\_Report8.pdf](http://morganfoundation.org.nz/wp-content/uploads/2016/04/ClimateCheat_Report8.pdf).
- . *Who's the Real Cheat Here? Climate Cheats II: The Dozen Dirty Businesses*. Wellington: The Morgan Foundation, 2016.  
[http://cdn.morganfoundation.org.nz/wp-content/uploads/2016/08/ClimateCheat2\\_Report\\_V8.pdf](http://cdn.morganfoundation.org.nz/wp-content/uploads/2016/08/ClimateCheat2_Report_V8.pdf).
- Skidelsky, Robert, and Edward Skidelsky. *How Much Is Enough? Money and the Good Life*. New York: Other Press, 2012.
- Skovsgaard, Morten. "A Tabloid Mind? Professional Values and Organizational Pressures as Explanations of Tabloid Journalism." *Media, Culture & Society* 36, no. 2 (2014): 200-18. <https://doi.org/10.1177/0163443713515740>.
- Small, Vernon. "Jacinda Ardern's Climate Change Challenge." *Stuff*, August 20, 2017. <https://www.stuff.co.nz/national/politics/95964245/jacinda-arderns-climate-change-challenge>.
- Smart, Barry. *Consumer Society: Critical Issues and Environmental Consequences*. London: Sage Publications, 2010.
- Smith, Nicholas W, and Helene Joffe. "Climate Change in the British Press: The Role of the Visual." *Journal of Risk Research* 12, no. 5 (2009): 647-63.  
<https://doi.org/10.1080/13669870802586512>.
- Smith, Nick. "Goodbye Nanny State; Hello Green Economy." News release, October 4, 2009, <https://www.beehive.govt.nz/release/goodbye-nanny-state-hello-green-economy>.
- . "Govt Sets -50% by 2050 Emissions Reduction Target." News release, March 21, 2011, <https://www.beehive.govt.nz/release/govt-sets-50-2050-emissions-reduction-target>.
- . "Opening Address to the New Zealand Climate Change Centre Conference in Wellington." News release, May 20, 2009, <https://www.beehive.govt.nz/speech/opening-address-new-zealand-climate-change-centre-conference-wellington>.
- . "Revised ETS Balances NZ's Environment & Economy." News release, September 15, 2009, <https://www.beehive.govt.nz/release/revised-ets-balances-nz%E2%80%99s-environment-economy>.

- . "Speech to the New Zealand Climate Change Research Institute Forum: Climate Futures – Pathways for Society." News release, April 1, 2011, <https://www.beehive.govt.nz/speech/speech-new-zealand-climate-change-research-institute-forum-climate-futures-%E2%80%93-pathways>.
- Smythe, Dallas. "On the Audience Commodity and Its Work." In *Media and Cultural Studies: Keywords* edited by Meenakshi Gigi Durham and Douglas M Kellner, 230-56. Malden, MA: Blackwell Publishing, 2006.
- Soley, Lawrence C. *The News Shapers: The Sources Who Explain the News*. New York: Praeger, 1992.
- Somerville, Richard, and Susan Hassol. "Communicating the Science of Climate Change." *Physics Today* (2011): 48-53. <https://doi.org/10.1063/PT.3.1296>.
- Spellerberg, Ian, Graeme Buchan, and Nick Early. "Television and Environmental Sustainability: Arguing a Case for a Code of Standards in NZ." *Pacific Journalism Review* 12, no. 2 (2006): 137-47. <https://doi.org/10.24135/pjr.v12i2.866>.
- Staiger, Janet. *Media Reception Studies*. New York: New York University Press, 2005.
- Stats NZ. "Global New Zealand International Trade, Investment, and Travel Profile: Year Ended December 2017." Accessed date January 11, 2020. <https://www.stats.govt.nz/reports/global-new-zealand-year-ended-december-2017>.
- . "New Zealand's Greenhouse Gas Emissions." Last modified April 18, 2019. <https://www.stats.govt.nz/indicators/new-zealands-greenhouse-gas-emissions>.
- Stauber, John, and Sheldon Rampton. *Toxic Sludge Is Good for You: Lies, Damn Lies, and the Public Relations Industry*. Monroe, ME: Common Courage Press, 1995.
- Steffen, Will, Johan Rockström, Katherine Richardson, Timothy M. Lenton, Carl Folke, Diana Liverman, Colin P. Summerhayes, *et al.* "Trajectories of the Earth System in the Anthropocene." *Proceedings of the National Academy of Sciences* 115, no. 33 (2018): 8252-59. <https://doi.org/10.1073/pnas.1810141115>.
- Stichting Urgenda. "Landmark Decision by Dutch Supreme Court." Accessed July 30, 2020. <https://www.urgenda.nl/en/themas/climate-case/>.
- Stockholm Environment Institute. *Has Joint Implementation Reduced GHG Emissions? Lessons Learned for the Design of Carbon Market Mechanisms*. Washington D.C: Stockholm Environment Institute, 2015. <https://mediamanager.sei.org/documents/Publications/Climate/SEI-WP-2015-07-JI-lessons-for-carbon-mechs.pdf>.

- Stoknes, Per Espen. "Rethinking Climate Communications and the "Psychological Climate Paradox"." *Energy Research & Social Science* 1 (2014): 161-70. <https://doi.org/10.1016/j.erss.2014.03.007>.
- "Study Looks into Belief That Chemtrails Are Real." *The New Zealand Herald*, November 5, 2017. [https://www.nzherald.co.nz/world/news/article.cfm?c\\_id=2&objectid=11940711](https://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=11940711).
- Sullivan, Rory, and Andy Gouldson. "The Governance of Corporate Responses to Climate Change: An International Comparison." *Business Strategy and the Environment* 26 (2017): 413-25. <https://doi.org/10.1002/bse.1925>.
- Sundakov, Alex, Jean-Pierre de Raad, and John Ballingall. *The Kyoto Protocol: Issues for New Zealand's Participation: Trade Realities and New Zealand's Role in the International Response to the Threat of Global Warming*. Wellington: New Zealand Institute of Economic Research, 2002. [https://nzier.org.nz/static/media/filer\\_public/9e/a4/9ea49f61-3344-4f38-9aa7-b374ba836307/kyoto\\_protocol\\_issues\\_for\\_nzs\\_participation.pdf](https://nzier.org.nz/static/media/filer_public/9e/a4/9ea49f61-3344-4f38-9aa7-b374ba836307/kyoto_protocol_issues_for_nzs_participation.pdf).
- Supran, Geoffrey, and Naomi Oreskes. "Assessing Exxonmobil's Climate Change Communications (1977–2014)." *Environmental Research Letters* 12 (2017): 1-18. <https://doi.org/10.1088/1748-9326/aa815f>.
- Sussman, Abigail, and Christopher Olivola. "Axe the Tax: Taxes Are Disliked More Than Equivalent Costs." *Journal of Marketing Research* XLVIII (2011): S91–S101. <https://doi.org/10.1509/jmkr.48.SPL.S91>.
- Swim, Janet, Susan Clayton, Thomas Doherty, Robert Gifford, George Howard, Joseph Reser, Paul Stern, and Elke Weber. *Psychology & Global Climate Change: Addressing a Multifaceted Phenomenon and Set of Challenges*. Washington D.C: American Psychology Association, 2011. <https://www.apa.org/science/about/publications/climate-change-booklet.pdf>.
- . "Psychology's Contribution to Understanding and Addressing Global Climate Change." *American Psychologist* 66, no. 4 (2011): 241-50. <http://doi.org/10.1037/a0023220>.
- Takahashi, Bruno, and Mark Meisner. "Environmental Discourses and Discourse Coalitions in the Reconfiguration of Peru's Environmental Governance." *Environmental Communication: A Journal of Nature and Culture* 6, no. 3 (2012): 346-64. <https://doi.org/10.1080/17524032.2012.700522>.
- Tandoc Jr, Edson and Ryan Thomas, "The Ethics of Web Analytics," *Digital Journalism* 3, no.2 (2015): 243-258. <https://doi.org/10.1080/21670811.2014.909122>.

- Taylor, Betty, and Dave Tilford. "Why Consumption Matters." In *The Consumer Society Reader*, edited by Juliet Schor and Douglas Holt, 463-87. New York: The New Press, 2000.
- Taylor, Matthew, and Jonathan Watts. "Revealed: The 20 Firms Behind a Third of All Carbon Emissions." *The Guardian*, October 9, 2019. <https://www.theguardian.com/environment/2019/oct/09/revealed-20-firms-third-carbon-emissions>.
- Taylor, Rowan, Ian Smith, Peter Cochrane, Brigit Stephenson, and Nicci Gibbs. *The State of New Zealand's Environment 1997*. Edited by Anna Saunders, David Swain and Bronwen Wall. Wellington: The Ministry for the Environment, 1997. <https://www.mfe.govt.nz/sites/default/files/ser-1997.pdf>.
- Taylor, Steven, Robert Bogdan, and Marjorie DeVault. *Introduction to Qualitative Research Methods: A Guidebook and Resource*. New Jersey: John Wiley & Sons, 2016. ProQuest Ebrary.
- Te, Saing. "The Battle for Happy Valley: News Media, Public Relations, and Environmental Discourse." Master's thesis, Auckland University of Technology, 2010.
- Terry, Geraldine. "No Climate Justice without Gender Justice: An Overview of the Issues." *Gender & Development* 17, no. 1 (2009): 5-18. <https://www.jstor.org/stable/27809203>.
- Thacker, Paul D. "The Many Travails of Ben Santer." *Environmental Science & Technology*, October 1, 2006. <http://doi.org/10.1021/es063000t>.
- Thatcher, Margaret. *Prime Minister's Speech at the 1988 Conservative Party Conference*. Brighton. Speech. <https://www.margarethatcher.org/document/107352>.
- The Climate Action Tracker. "The Climate Action Tracker: Countries: New Zealand." Accessed February 5, 2020. <https://climateactiontracker.org/countries/new-zealand/>.
- The Climate Institute. *Policy Brief: The Paris Climate Agreement and Implications for Australia*. Sydney: The Climate Institute, 2015.
- The Electricity Authority. *Electricity in New Zealand*. Wellington: The Electricity Authority, 2018. <file:///C:/Users/em10878/Downloads/Electricity-in-NZ-2018.pdf>.
- The Environmental Pollution Panel. *Restoring the Quality of Our Environment*. Vii-2, 110-33. Washington D.C: President's Science Advisory Committee, 1965.

The Intergovernmental Panel on Climate Change. *Climate Change 1995: The Science of Climate Change*. Edited by J. Houghton, L G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg and K Maskell. Cambridge: Cambridge University Press, 1996. <https://www.ipcc.ch/report/ar2/wg1/>.

———. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Edited by Core Writing Team, R.K. Pachauri and L.A. Meyer. Geneva 2015. [https://www.ipcc.ch/site/assets/uploads/2018/05/SYR\\_AR5\\_FINAL\\_full\\_wcover.pdf](https://www.ipcc.ch/site/assets/uploads/2018/05/SYR_AR5_FINAL_full_wcover.pdf).

The National Institute of Water and Atmospheric Research. "Climate Change Scenarios for New Zealand." Accessed December 25, 2019. <https://niwa.co.nz/our-science/climate/information-and-resources/clivar/scenarios>.

The Organisation for Economic Co-operation and Development. *Environment at a Glance Indicators: Climate Change*. Paris: The Organisation for Economic Co-operation and Development, 2019. <https://doi.org/10.1787/ac4b8b89-en>.

The Royal Society of New Zealand. *Climate Change Implications for New Zealand*. Wellington: The Royal Society of New Zealand, 2016. <https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-implications-for-new-zealand/>.

———. *Human Health Impacts of Climate Change for New Zealand: Evidence Summary*. Wellington: The Royal Society of New Zealand, October 2017.

———. "Report of Professional Standards and Ethics Panel of the Royal Society of New Zealand in Relation to a Complaint of Dr Geoff Duffy, Dr David Kear and Others against Professor Tim Naish and Professor James Renwick." Wellington: The Royal Society of New Zealand, December 2016. <https://www.climateconversation.org.nz/wp/wp-content/uploads/2016/12/final-report-of-rsnz-panel.pdf>.

The Sustainable Business Council and BusinessNZ Major Companies Group. *Business Survey on Climate Change*. November 2015. [https://www.sbc.org.nz/data/assets/pdf\\_file/0003/111198/BusinessNZ-Climate-Survey.pdf](https://www.sbc.org.nz/data/assets/pdf_file/0003/111198/BusinessNZ-Climate-Survey.pdf).

"The Terminator: Arnold Schwarzenegger Slams Trump's Paris Accord Decision: 'Only I Can Go Back in Time'." *The New Zealand Herald*, June 2, 2017. [https://www.nzherald.co.nz/world/news/article.cfm?c\\_id=2&objectid=11868389](https://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=11868389).

- The Topos Partnership, Cara Pike, and Meredith Herr. *Climate Crossroads: A Research Based Framing Guide*. The Social Capital Project, The Partnership Project, and The Topos Partnership, 2009.  
<https://climateaccess.org/system/files/Climate%20Crossroads%20Guide.pdf>.
- Theunissen, Matthew. "Leading Environmentalists' Plea to the Next Government." *The New Zealand Herald*, October 1, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11928213](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11928213).
- Thomas, Bronwen. *Narrative: The Basics*. New York: Routledge, 2016. ProQuest Ebrary.
- Thompson, E P. Preface to *The Making of the English Working Class*, 9-14. New York: Vintage Books, 1963.
- Thompson, John B. *Ideology and Modern Culture*. Stanford: Stanford University Press, 1990.
- "Thousands Protest across Australia against Giant Adani Coal Mine." *Stuff*, October 7, 2017.  
<https://www.stuff.co.nz/world/australia/97656222/thousands-protest-across-australia-against-giant-adani-coal-mine>.
- Tiffen, Rodney, Paul K Jones, David Rowe, Toril Aalberg, Sharon Coen, James Curran, Kaori Hayashi, et al. "Sources in the News: A Comparative Study." *Journalism Studies* 15, no. 4 (2014): 374-91.  
<https://doi.org/10.1080/1461670X.2013.831239>.
- Tourism New Zealand. *Optimising Tourism New Zealand's Future Role and Contribution to New Zealand*. Wellington: Ministry for the Environment, 2019. [https://www.mfe.govt.nz/sites/default/files/clean-green-aug01-final\\_0.pdf](https://www.mfe.govt.nz/sites/default/files/clean-green-aug01-final_0.pdf).
- Towle, Max. "Government Funds to Continue Investing in Fossil Fuels." *Radio New Zealand*, December 5, 2019. <https://www.rnz.co.nz/news/in-depth/404873/government-funds-to-continue-investing-in-fossil-fuels>.
- Trevett, Claire. "Jacinda Ardern's Rallying Cry: Climate Change the Nuclear-Free Moment of Her Generation." *The New Zealand Herald*, August 20, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11907789](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11907789).
- . "New Zealand Ready to Stand up on Climate Change Jacinda Ardern Says." *The New Zealand Herald*, December 5, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11953596](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11953596).

- Trevett, Claire, and Nicholas Jones. "Climate Protesters at Parliament as Rex Tillerson Lands in NZ." *The New Zealand Herald*, June 6, 2017.  
[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11870478](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11870478).
- Truebridge, Nick. "Sea Inundation Could Affect Nearly 25,000 Christchurch Properties by 2120: New Report." *Stuff*, November 12, 2017.  
<https://www.stuff.co.nz/the-press/news/98756380/sea-inundation-could-affect-nearly-25000-christchurch-properties-by-2120-new-report>.
- Trumbo, Craig. "Constructing Climate Change: Claims and Frames in Us News Coverage of an Environmental Issue." *Public Understanding of Science* 5, no.2 (1996): 269-83. <https://doi.org/10.1088/0963-6625/5/3/006>.
- Tuchman, Gaye. *Making News: A Study in the Construction of Reality*. New York: The Free Press, 1978.
- Tversky, Amos, and Daniel Kahneman. "The Framing of Decisions and the Psychology of Choice." *Science* 211, no. 4481 (1981): 453-58.  
<http://doi.org/10.1126/science.7455683>.
- Ungar, Sheldon. "Is Strange Weather in the Air? A Study of U.S. National Network News Coverage of Extreme Weather Events." *Climate Change* 41 (1999): 133-50. <https://doi.org/10.1023/A:1005417410867>.
- Union of Concerned Scientists. *Smoke, Mirrors & Hot Air: How ExxonMobil Uses Big Tobacco's Tactics to Manufacture Uncertainty on Climate Science*. Union of Concerned Scientists, 2007.  
[https://www.ucsusa.org/sites/default/files/2019-09/exxon\\_report.pdf](https://www.ucsusa.org/sites/default/files/2019-09/exxon_report.pdf).
- United Nations. *United Nations Framework Convention on Climate Change*. New York: United Nations, 1992.  
[https://unfccc.int/files/essential\\_background/background\\_publications\\_htmlpdf/application/pdf/conveng.pdf](https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf).
- . *World Population Prospects: 2017 Revisions* (New York: Department of Economic and Social Affairs, Population Division 2017).  
[https://population.un.org/wpp/Publications/Files/WPP2017\\_DataBooklet.pdf](https://population.un.org/wpp/Publications/Files/WPP2017_DataBooklet.pdf).
- . *World Population Prospects 2019: Highlights* (New York: Department of Economic and Social Affairs, Population Division 2019).  
[https://population.un.org/wpp/Publications/Files/WPP2019\\_Highlights.pdf](https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf).
- United Nations Environment Programme. *Emissions Gap Report 2017*. Nairobi: United Nations Environment Programme, 2017.  
[https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR\\_2017.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf?sequence=1&isAllowed=y).

- . *Emissions Gap Report 2018*. Nairobi: United Nations Environment Programme, 2018.  
[http://wedocs.unep.org/bitstream/handle/20.500.11822/26895/EGR2018\\_FullReport\\_EN.pdf?sequence=1&isAllowed=y](http://wedocs.unep.org/bitstream/handle/20.500.11822/26895/EGR2018_FullReport_EN.pdf?sequence=1&isAllowed=y).
- . *Emissions Gap Report 2019*. Nairobi: United Nations Environment, 2019.  
<https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y>.
- . *Global Environment Outlook – Geo-6: Healthy Planet, Healthy People*. Edited by Paul Ekins, Joyeeta Gupta, and Pierre Boileau. Cambridge: Cambridge University Press, 2019.  
[https://wedocs.unep.org/bitstream/handle/20.500.11822/27539/GEO6\\_2019.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/27539/GEO6_2019.pdf?sequence=1&isAllowed=y).
- United Nations Framework Convention on Climate Change. "Historic Paris Agreement on Climate Change: 195 Nations Set Path to Keep Temperature Rise Well Below 2 Degrees Celsius." News release, December 13, 2015. <https://cop23.unfccc.int/news/finale-cop21>.
- Upton, Simon. "Climate Change: Addressing the Real Issues." News release, September 19, 1997, <https://www.beehive.govt.nz/speech/climate-change-addressing-real-issues>.
- . "Government Defers Decision on a Carbon Charge." News release, March 12, 1997, <https://www.beehive.govt.nz/release/government-defers-decision-carbon-charge>.
- . "Upton Announces Climate Change Position." News release, December 3, 1997, <https://www.beehive.govt.nz/release/upton-announces-climate-change-position>.
- Uscinski, Joseph E, Karen Douglas, and Stephan Lewandowsky. "Climate Change Conspiracy Theories." In *Oxford Research Encyclopedia of Climate Science*, 2017. <http://doi.org/10.1093/acrefore/9780190228620.013.328>.
- Vaccari, Cristian, and Augusto Valeriani. "Follow the Leader! Direct and Indirect Flows of Political Communication During the 2013 Italian General Election Campaign." *New Media & Society* 17, no. 7 (2015): 1025–42. <https://doi.org/10.1177/1461444813511038>.
- Van Dijk, Jan, and Kenneth Hacker. "The Digital Divide as a Complex and Dynamic Phenomenon." *The Information Society* 19 (2003): 315–32. <https://doi.org/10.1080/01972240309487>.
- Van Dijk, Teun. "Critical Discourse Analysis." In *The Handbook of Discourse Analysis*, edited by Deborah Schiffrin, Deborah Tannen and Heidi Hamilton. Massachusetts: Blackwell Publishers, 2003.

- Veblen, Thorstein. *The Theory of the Leisure Class*. New York: Dover Publications, 1994.
- Vettehen, Paul Hendriks, Koos Nuijten, and Allerd Peeters. "Explaining Effects of Sensationalism on Liking of Television News Stories: The Role of Emotional Arousal." *Communication Research* 35, no. 3 (2008): 319-38. <http://doi.org/10.1177/0093650208315960>.
- Vu, Hong Tien. "The Online Audience as Gatekeeper: The Influence of Reader Metrics on News Editorial Selection." *Journalism* 15, no.8 (2014): 1094-1110. <https://doi.org/10.1177/1464884913504259>.
- Wake, David B, and Vance T Vredenburg. "Are We in the Midst of the Sixth Mass Extinction? A View from the World of Amphibians." *Proceedings of the National Academy of Sciences* 105 (2008): 11466–73. <https://doi.org/10.1073/pnas.0801921105>.
- Walters, Laura. "New Zealand Tells the World of Its Plan to Join the Fight against Climate Change." *Stuff*, November 17, 2017. <https://www.stuff.co.nz/national/politics/98981300/new-zealand-tells-the-world-of-its-plan-to-join-the-fight-against-climate-change>.
- Wasserstrom, Jeffrey. *China in the 21st Century: What Everyone Needs to Know*. New York: Oxford University Press, 2010.
- Watkins, Tracy, and Stacey Kirk. "US Secretary of State Defends Trump on Trade, Climate Change." *Stuff*, June 6, 2017. <https://www.stuff.co.nz/national/politics/93363446/parliament-protest-ahead-of-rex-tillerson-visit>.
- Watts, Jonathan. "Global warming should be called global heating, says key scientist." *The Guardian*, December 13, 2018. [https://www.theguardian.com/environment/2018/dec/13/global-heating-more-accurate-to-describe-risks-to-planet-says-key-scientist?CMP=share\\_btn\\_tw](https://www.theguardian.com/environment/2018/dec/13/global-heating-more-accurate-to-describe-risks-to-planet-says-key-scientist?CMP=share_btn_tw).
- Watts, Jonathan, Garry Blight, Lydia Smears, and Pablo Gutiérrez. "Half a Century of Dither and Denial – A Climate Crisis Timeline." *The Guardian*, October 9, 2019. <https://www.theguardian.com/environment/ng-interactive/2019/oct/09/half-century-dither-denial-climate-crisis-timeline>.
- Watts, Jonathan, and Kate Connolly. "World Leaders React after Trump Rejects Paris Climate Deal." *The Guardian*, June 2, 2017. <https://www.theguardian.com/environment/2017/jun/01/trump-withdraw-paris-climate-deal-world-leaders-react>.
- Weber, Elke U, and Paul C Stern. "Public Understanding of Climate Change in the United States." *American Psychologist* 66, no. 4 (2011): 315. <https://doi.org/10.1037/a0023253>.

- Westacott, Emrys. *The Wisdom of Frugality: Why Less Is More - More or Less*. Princeton: Princeton University Press, 2016. ProQuest Ebrary.
- Westlund, Oscar, and Mats Ekström. "News Organisations and Routines." In *The Handbook of Journalism Studies*, edited by Karin Wahl-Jorgensen and Thomas Hanitzsch, 73-89. Abingdon, OX, 2009. ProQuest Ebrary.
- Whitmarsh, Lorraine, and Stuart Capstick. "Perceptions of Climate Change." In *Psychology and Climate Change: Human Perceptions, Impacts, and Responses*, edited by Susan Clayton and Christie Manning, 13-33. London: Academic Press, 2018.
- Williams, Al, and Samesh Mohanlall, "South Canterbury MPs disappointed as Government announces \$12b spend up." *Stuff*, January 29, 2020, <https://www.stuff.co.nz/timaru-herald/news/119125364/south-canterbury-mps-disappointed-as-government-announces-12b-spend-up>.
- Williams, David. "How a Change in Government Affects Climate Change Coverage at the Press." *MEDIANZ: Media Studies Journal of Aotearoa New Zealand* 12, no. 1 (2010): 27-39. <https://doi.org/10.11157/medianz-vol12iss1id45>.
- Williams, Raymond. *Keywords: A Vocabulary of Culture and Society*. New York: Oxford University Press, 1976.
- . *Marxism and Literature*. Oxford: Oxford University Press, 1977.
- Wilson, Gordon, Victor Fairén, Javier García-Sanz, Ignacio Zúñiga, Daniel Otto, Helmut Breitmeir, Dina Abbott, and Carolien Kroeze. "Module 1: Introduction to Climate Change in the Context of Sustainable Development." In *T869 Climate Change: From Science to Lived Experience*. The Open University, 2012. [https://www.ou.nl/documents/40554/102890/LECHe\\_Module1\\_Workbook\\_2\\_012.pdf/5244cdaa-beb2-4e70-b1c0-22383ce1f0f6](https://www.ou.nl/documents/40554/102890/LECHe_Module1_Workbook_2_012.pdf/5244cdaa-beb2-4e70-b1c0-22383ce1f0f6).
- Winseck, Dwayne. "The State of Media Ownership and Media Markets: Competition or Concentration and Why Should We Care?". *Sociology Compass* 2, no. 1 (2008): 34-47. <https://doi.org/10.1111/j.1751-9020.2007.00061.x>.
- Wodak, Ruth. "What CDA Is About - A Summary of Its History, Important Concepts and Its Developments." In *Methods of Critical Discourse Analysis*, edited by Ruth Wodak and Michael Meyer, 1-13. London: SAGE Publications, 2001.
- Wodak, Ruth, and Michael Meyer, eds. *Methods of Critical Discourse Analysis*. London: SAGE Publications, 2001.

- Working Group on the 'Anthropocene'. "Results of Binding Vote by AWG." News release, May 21, 2019, <http://quaternary.stratigraphy.org/working-groups/anthropocene/>.
- Wolf, Johanna, and Susanne C Moser. "Individual Understandings, Perceptions, and Engagement with Climate Change: Insights from in-Depth Studies across the World." *Wiley Interdisciplinary Reviews: Climate Change* 2, no. 4 (2011): 547-69. <https://doi.org/10.1002/wcc.120>.
- World Bank. *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*. Washington D.C: World Bank, 2018. <https://openknowledge.worldbank.org/bitstream/handle/10986/30418/9781464813306.pdf>.
- World Meteorological Organisation. "2019 Concludes a Decade of Exceptional Global Heat and High-Impact Weather." News release, December 3, 2019, <https://public.wmo.int/en/media/press-release/2019-concludes-decade-of-exceptional-global-heat-and-high-impact-weather>.
- . *WMO Statement on the State of the Global Climate in 2017*. Geneva, 2018. [https://library.wmo.int/doc\\_num.php?explnum\\_id=4453](https://library.wmo.int/doc_num.php?explnum_id=4453).
- . *WMO Statement on the State of the Global Climate in 2018*. Geneva, 2019. [https://library.wmo.int/doc\\_num.php?explnum\\_id=5789](https://library.wmo.int/doc_num.php?explnum_id=5789).
- . *WMO Statement on the State of the Global Climate in 2019*. Geneva, 2020. [https://library.wmo.int/doc\\_num.php?explnum\\_id=10211](https://library.wmo.int/doc_num.php?explnum_id=10211).
- "World Meteorological Organization Predicts 2017 Will Be Third Hottest Year." *The New Zealand Herald*, November 7, 2017. <https://www.nzherald.co.nz/nz/world-meteorological-organization-predicts-2017-will-be-third-hottest-year/QPE2ETZYFRC7ADXEPBFYH66HFY/>.
- "World Reacts to Trump's Paris Climate Accord Withdrawal." *Al Jazeera*, June 3, 2017. <https://www.aljazeera.com/news/2017/06/170602051722262.html>.
- World Tourism Organization and International Transport Forum. *Transport-Related CO<sub>2</sub> Emissions of the Tourism Sector – Modelling Results*. Madrid: UNWTO, 2019. <https://www.e-unwto.org/doi/pdf/10.18111/9789284416660>.
- Wright, Jan. *Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill*. Wellington: Parliamentary Commissioner for the Environment, 2012. <https://www.pce.parliament.nz/media/pdfs/PCE-Submission-on-the-Climate-Change-Amendment-Bill.pdf>.
- . *Annual Report for the Year Ended 30 June 2013*. Wellington: The Parliamentary Commissioner for the Environment, 2013. <https://www.pce.parliament.nz/media/1250/pce-annual-report-2013-web.pdf>.

- . *Emissions Trading Scheme Review 2015/16: Other Matters*. Wellington: Parliamentary Commissioner for the Environment, 2016.  
<https://www.pce.parliament.nz/media/1658/ets-review-submission-other-mattersfinal3.pdf>.
- Z Energy. *Z Energy Annual Report 2017*. Wellington: Z Energy, 2017.  
<https://investors.z.co.nz/static-files/6efef10d-42e2-438a-b21c-2e5ccd524c3a>.
- Zalasiewicz, Jan, Maria Bianca Cita, Frits Hilgen, Brian R Pratt, André Strasser, Jacques Thierry, and Helmut Weissert. "Chronostratigraphy and Geochronology: A Proposed Realignment." *GSA Today* 23, no. 3 (2013): 4-8. <http://doi.org/10.1130/GSATG160A.1>.
- Zalasiewicz, Jan, Colin Waters, Colin Summerhayes, and Mark Williams. "The Anthropocene." *Geology Today* 35, no. 5 (2018): 177-81.  
<https://doi.org/10.1111/gto.12244>.
- Zalasiewicz, Jan, Colin N. Waters, Colin P. Summerhayes, Alexander P. Wolfe, Anthony D. Barnosky, Alejandro Cearreta, Paul Crutzen, et al. "The Working Group on the Anthropocene: Summary of Evidence and Interim Recommendations." *Anthropocene* 19 (2017): 55-60.  
<https://doi.org/10.1016/j.ancene.2017.09.001>.
- Zalasiewicz, Jan, Colin N. Waters, Mark Williams, Anthony D. Barnosky, Alejandro Cearreta, Paul Crutzen, Erle Ellis, et al. "When Did the Anthropocene Begin? A Mid-Twentieth Century Boundary Level Is Stratigraphically Optimal." *Quaternary International* 383 (2015): 196-203.  
<https://doi.org/10.1016/j.quaint.2014.11.045>.
- Zamith, Rodrigo, Juliet Pinto, and Maria Elena Villar. "Constructing Climate Change in the Americas: An Analysis of News Coverage in U.S. And South American Newspapers." *Science Communication* 35, no. 3 (2012): 334-57.  
<https://doi.org/10.1177/1075547012457470>.
- Zelizer, Barbie. "Definitions of Journalism." In *Institutions of American Democracy: The Press*, edited by G. Overholser and K. H. Jamieson, 66-80. New York: Oxford University Press, 2005.  
[https://repository.upenn.edu/asc\\_papers/671](https://repository.upenn.edu/asc_papers/671).
- Zhang, Hai-Bin, Han-Cheng Dai, Hua-Xia Lai, and Wen-Tao Wang. "U.S. Withdrawal from the Paris Agreement: Reasons, Impacts, and China's Response." *Advances in Climate Change Research* 8 (2017): 220-25.  
<https://doi.org/10.1016/j.accre.2017.09.002>.
- Žižek, Slavoj. *Living in the End Times*. London: Verso, 2010.